AIR QUALITY DIVISION
CHAPTER 6, SECTION 3
OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
122 West 25th Street
Cheyenne, Wyoming 82002

PERMIT NO. 30-145

Issue Date: **January 27, 2004**
Expiration Date: **January 27, 2009**
Effective Date: **January 27, 2004**
Replaces Permit No.: **N/A**

In accordance with the provisions of W.S. §35-11-203 through W.S. §35-11-212 and Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations,

Sinclair *Wyoming Refining Company*
Section 21, T21N, R86W
Carbon County, Wyoming
(Amended February 1, 2006)

is authorized to operate a stationary source of air contaminants consisting of emission units described in this permit. The units described are subject to the terms and conditions specified in this permit. All terms and conditions of the permit are enforceable by the State of Wyoming. All terms and conditions of the permit, except those designated as not federally enforceable, are enforceable by EPA and citizens under the Act. A copy of this permit shall be kept on-site at the above named facility.

Dan Olson, Administrator
Air Quality Division

Date

John V. Corra, Director
Department of Environmental Quality

Date

WAQSR CHAPTER 6, SECTION 3 OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

TABLE OF CONTENTS

General Information 3
Source Emission Points 4
Total Facility Estimated Emissions 6

Facility-Specific Permit Conditions 7
- Facility-Wide Permit Conditions 7
- Source-Specific Permit Conditions 7
- Testing Requirements 11
- Monitoring Requirements 12
- Recordkeeping Requirements 17
- Reporting Requirements 18
- Accidental Release Prevention Requirements 21

WAQSR Chapter 5, Section 2 and 40 CFR 60 Subpart J Requirements 22
WAQSR Chapter 5, Section 2 and 40 CFR 60 Subpart Kb Requirements 24
WAQSR Chapter 5, Section 2 and 40 CFR 60 Subpart GGG Requirements 25
WAQSR Chapter 5, Section 2 and 40 CFR 60 Subpart QQQ Requirements 26
40 CFR 61 Subpart A and Subpart FF Requirements 27
WAQSR Chapter 5, Section 3 and 40 CFR 63 Subpart CC Requirements 28
WAQSR Chapter 5, Section 3 and 40 CFR 63 Subpart UUU Requirements 31

Compliance Certification and Schedule 34
- Compliance Certification 34
- Compliance Schedule 35

General Permit Conditions 37
State Only Permit Conditions 42
Summary of Source Emission Limits and Requirements 44
Abbreviations 56
Definitions 57

Appendix A: Portable Analyzer Monitoring Protocol
Appendix B: Storage Tanks and Pressure Vessels
Appendix C: 40 CFR 60 Subpart J
Appendix D: 40 CFR 60 Subpart Kb
Appendix E: 40 CFR 60 Subparts GGG & VV
Appendix F: 40 CFR 60 Subpart QQQ
Appendix G: Subpart QQQ Equipment Listing
Appendix H: 40 CFR 63 Subpart CC
Appendix I: Subpart CC Equipment List
Appendix J: 40 CFR 63 Subpart UUU
Appendix K: 40 CFR 61 Subpart A and Subpart FF

GENERAL INFORMATION
(Amended February 1, 2006)

Company Name: **Sinclair *Wyoming Refining Company***

Mailing Address: **P.O. Box 277**

City: **Sinclair** State: **WY** Zip: **82334**

Plant Name: **Sinclair Wyoming Refinery**

Plant Location: **Section 21, Township 21N, Range 86W, Carbon County, Wyoming (100 East Lincoln Highway, Sinclair, Wyoming).**

Name of Owner: **Sinclair *Wyoming Refining Company*** Phone: ***(307) 324-3404***

Responsible Official: **P. D. Fritz** Phone: **(307) 324-3404**

Plant Manager/Contact: **John Kusowski** Phone: **(307) 328-3548**

DEQ Air Quality Contact: **District 1 Engineer**
122 W. 25th Street
Cheyenne, WY 82002
Phone: **(307) 777-7391**

SIC Code: **2911**

Description of Process: **The Sinclair Refinery converts crude oil into a variety of marketable products including motor gasolines, jet fuel, distillates, fuel oils, and sulfur. Refinery operations involve the use of modern refining processes such as crude oil distillation, vacuum distillation, hydrodesulfurization, catalytic cracking, reforming, polymerization, hydrogen generation, hydrocracking, and alkylation; associated processes such as fuel gas treatment and sulfur recovery; and ancillary operations such as product blending, crude oil and product storage, petroleum loading/unloading, steam production, process cooling, and wastewater treatment.**

SOURCE EMISSION POINTS

This table does not include all activities at this facility.

SOURCE ID#	SOURCE DESCRIPTION	SIZE	CH. 6, SEC. 2 PERMITS
1	780 FCC Heater B2	66.0 MMBtu/hr	MD-410
2	780 FCC Heater B3	10.0 MMBtu/hr	MD-410
3	780 FCC Heater H2	19.4 MMBtu/hr	MD-410
9	780 FCC Regenerator	N/A	MD-410, CT-1022
10	781 Naphtha Splitter Heater	34.5 MMBtu/hr	MD-410
11	781 #1-HDS Heater	24.0 MMBtu/hr	MD-410
12	781 LEF Heater	24.0 MMBtu/hr	MD-410
13	781 #1 Reformer Heater	42.3 MMBtu/hr	MD-410
14	781 #2 Reformer Heater	48.0 MMBtu/hr	MD-410
15	781 #3 Reformer Heater	9.1 MMBtu/hr	MD-410
16	781 Stabilizer Heater	11.1 MMBtu/hr	MD-410
18	581 Crude Heater #1	66.6 MMBtu/hr	MD-410
19	581 Crude Heater #2	66.6 MMBtu/hr	MD-410
20	581/583 Vacuum Heater	42.0 MMBtu/hr	MD-410
21	582 Pre-Flash Heater-F101	25.5 MMBtu/hr	MD-410
22	582 Crude Heater-F103	19.0 MMBtu/hr	MD-410
23	582 Crude Heater-F102A	43.0 MMBtu/hr	MD-410
24	582 Crude Heater-F102B	17.0 MMBtu/hr	MD-410
25	582 Vacuum Heater-F104	45.0 MMBtu/hr	MD-410
26	#2-HDS Heater	33.0 MMBtu/hr	MD-410
27	#3-HDS Heater	14.0 MMBtu/hr	MD-410
28	Asphalt Heater #1	8.0 MMBtu/hr	MD-410
29	Asphalt Heater #2	8.0 MMBtu/hr	MD-410
30	Asphalt Heater #3	15.2 MMBtu/hr	MD-410
31	Asphalt Heater #4	8.0 MMBtu/hr	MD-410
32	Alkylation (Alky) Heater B15	18.0 MMBtu/hr	MD-410
33	Alky Heater B16	56.0 MMBtu/hr	MD-410
34	Alky Heater H1	18.8 MMBtu/hr	MD-410

SOURCE EMISSION POINTS

This table does not include all activities at this facility.

SOURCE ID#	SOURCE DESCRIPTION	SIZE	CH. 6, SEC. 2 PERMITS
35	#10 High Pressure Boiler	100.0 MMBtu/hr	MD-410
36	Tulip Field Flare	N/A	MD-410
37	Vertical Flare	N/A	MD-410
38	Sulfur Recovery Unit #1	27.7 LTPD	MD-410, CT-1022
39	Sulfur Recovery Unit #2	20 LTPD	MD-410, CT-1022
40	#8 High Pressure Boiler	100.0 MMBtu/hr	MD-410, CT-1022
41	#9 High Pressure Boiler	100.0 MMBtu/hr	MD-410, CT-1022
42	Low Pressure Boilers (four boilers with common stack)	88.0 MMBtu/hr	MD-410, CT-1022
43	Petroleum Loading and Unloading Racks	N/A	None
43B	Light Oil Rack Flare	N/A	MD-356, MD-410
44*	Petroleum Storage Tanks and Petroleum Storage Pressure Vessels	Various	CT-831, CT-962, CT-1022, MD-410
45	Oily Water System	N/A	None
46	Cooling Towers	N/A	None
47	Miscellaneous Process Vents	N/A	None
48	Equipment Leaks	N/A	None
49	#5 Generator	850 kW/hr	MD-410
50	Hydrocracker (HC) Heater H1/H2	38.0 MMBtu/hr	MD-410 Phase I
51	HC Heater H3	56.0 MMBtu/hr	MD-410 Phase I
52	HC Heater H4	57.0 MMBtu/hr	MD-410 Phase I
53	Hydrogen (H2) Plant Heater H-101	288.0 MMBtu/hr	MD-410 Phase I
57	HC Heater H5	35.7 MMBtu/hr	MD-439 Phase I
58	LPG Loading Facility	Fugitive	1/18/00 Waiver
None	Land Treatment Facility	Fugitive	2/26/03 Waiver

* The sources in this table are for identification purposes only and do not represent permit limitations. Additional insignificant activities without explicit permit requirements are identified in the permittee's operating permit application.

** The Petroleum Storage Tanks and Petroleum Storage Pressure Vessels are listed in Appendix B.

TOTAL FACILITY ESTIMATED EMISSIONS

For informational purposes only. These emissions are not to be assumed as permit limits.

POLLUTANT	EMISSIONS (TPY)*
CRITERIA POLLUTANT EMISSIONS	
PM_{10} Particulate Matter	532.9
Sulfur Dioxide (SO_2)	4,806.6
Nitrogen Oxides (NO_X)	1559.6
Carbon Monoxide (CO)	831.4
Volatile Organic Compounds (VOCs)	1743.5
HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS	57.2

* Emissions are potential emissions as reported by Sinclair in the 2002 emissions inventory. Hazardous Air Pollutant emissions are the actual emissions for 2002 as reported.

FACILITY-SPECIFIC PERMIT CONDITIONS

Facility-Wide Permit Conditions

(F1) PERMIT SHIELD [WAQSR Ch 6, Sec 3 (k)]
Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance.

Source-Specific Permit Conditions

(F2) VISIBLE EMISSIONS [WAQSR Ch 3, Sec 2; Ch 6, Sec 2 Permit MD-410; and 40 CFR 63 Subpart CC]

(a) Visible emissions from the units in Table I of this permit shall not exceed the specified limits.

(b) Except for the Tulip Field Flare, Vertical Flare, Light Oil Rack Flare, and #5 Generator (units 36, 37, 43B, and 49) listed in paragraphs F2(c) and F2(d) of this condition, respectively, and the units listed in Table I of this condition with 40 percent opacity limits, visible emissions of any contaminant discharged into the atmosphere from any other single source of emission shall be limited to 20 percent opacity except for one period or periods aggregating not more than six minutes in any one hour of not more than 40 percent opacity.

(c) Visible emissions from the #5 Generator (unit 49) shall not exceed 30 percent opacity except for periods not exceeding 10 consecutive seconds. This limitation shall not apply during a reasonable period of warmup following a cold start or where undergoing repairs and adjustment following a malfunction.

(d) The Tulip Field Flare, Vertical Flare, and Light Oil Rack Flare (units 36, 37, and 43B) shall be operated and maintained smokeless. Smokeless shall be defined as no visible emissions as determined by 40 CFR 60, Appendix A, Method 22, except for periods not to exceed a total of five minutes during any two consecutive hours.

TABLE I: VISIBLE EMISSION LIMITS

SOURCE ID#	SOURCE DESCRIPTION	VISIBLE EMISSIONS (OPACITY) LIMITS (percent)	SOURCE ID#	SOURCE DESCRIPTION	VISIBLE EMISSIONS (OPACITY) LIMITS (percent)
1	780 FCC Heater B2	40	18	581 Crude Heater #1	40
2	780 FCC Heater B3	40	19	581 Crude Heater #2	40
3	780 FCC Heater H2	20	20	583 Vacuum Heater	20
9	780 FCC Regenerator	40	21	582 Pre-Flash Heater-F101	20
10	781 Naphtha Splitter Heater	40	22	582 Crude Heater-F103	20
11	781 #1-HDS Heater	40	23	582 Crude Heater-F102A	20
12	781 LEF Heater	40	24	582 Crude Heater-F102B	20
13	781 #1 Reformer Heater	40	25	582 Vacuum Heater-F104	20
14	781 #2 Reformer Heater	20	26	#2-HDS Heater	20
15	781 #3 Reformer Heater	40	27	#3-HDS Heater	20
16	781 Stabilizer Heater	40	28	Asphalt Heater #1	40

TABLE I. VISIBLE EMISSION LIMITS (CONTINUED)					
SOURCE ID#	**SOURCE DESCRIPTION**	**VISIBLE EMISSIONS (OPACITY) LIMITS (percent)**	**SOURCE ID#**	**SOURCE DESCRIPTION**	**VISIBLE EMISSIONS (OPACITY) LIMITS (percent)**
29	Asphalt Heater #2	40	40	#8 High Pressure Boiler	40
30	Asphalt Heater #3	20	41	#9 High Pressure Boiler	40
31	Asphalt Heater #4	40	42	Low Pressure Boilers	40
32	Alky Heater B15	20	43B	Light Oil Rack Flare	No Visible Emissions
33	Alky Heater B16	20	49	#5 Generator	30
34	Alky Heater H1	20	50	HC Heater H1/H2	20
35	#10 High Pressure Boiler	20	51	HC Heater H3	20
36	Tulip Field Flare	No Visible Emissions	52	HC Heater H4	20
37	Vertical Flare	No Visible Emissions	53	H_2 Plant Heater H-101	20
38	Sulfur Recovery Unit #1	40	57	HC Heater H5	20
39	Sulfur Recovery Unit #2	20			

(F3) PARTICULATE EMISSIONS [WAQSR Ch 6, Sec 2 Permit MD-410]

(a) The 780 FCC Regenerator (unit 9) shall be maintained and operated with particulate emissions no greater than 76.0 lb/hr, 332.0 TPY.

(b) The #8 High Pressure Boiler and the #9 High Pressure Boilers (units 40 and 41) shall be maintained and operated with particulate emissions for each no greater than 14.37 lb/hr, 62.9 TPY.

(c) The Low Pressure Boilers (unit 42) shall be maintained and operated with particulate emissions no greater than 9.58 lb/hr, 42.0 TPY.

(d) The #5 Generator (unit 49) shall be maintained and operated with particulate emissions no greater than 4.3 lb/hr, 18.9 TPY.

(F4) NO_X & SO_2 EMISSIONS [WAQSR Ch 3, Sec 3 and Ch 6, Sec 2 Permit MD-410 and MD-439]

NO_X and SO_2 emissions from the units in Table II of this permit shall not exceed the specified limits:

TABLE II. NO_X AND SO_2 EMISSION LIMITS					
SOURCE ID#	**SOURCE DESCRIPTION**	**SO_2 EMISSIONS**		**NO_X EMISSIONS**	
		(lb/hr)	**(TPY)**	**(lb/hr)**	**(TPY)**
1	780 FCC Heater B2			15.2[1]	66.5
2	780 FCC Heater B3			2.3[1]	10.1

TABLE II. NO_X AND SO_2 EMISSION LIMITS					
SOURCE ID#	SOURCE DESCRIPTION	SO_2 EMISSIONS		NO_X EMISSIONS	
		(lb/hr)	(TPY)	(lb/hr)	(TPY)
3	780 FCC Heater H2			4.5[1]	19.5
9	780 FCC Regenerator	451.0	809.0	62.1	272.0
10	781 Naphtha Splitter Heater			7.9[1]	34.8
11	781 #1-HDS Heater			5.5[1]	24.2
12	781 LEF Heater			5.5[1]	24.2
13	781 #1 Reformer Heater			9.7[1]	42.6
14	781 #2 Reformer Heater			9.6[2]	42.0
15	781 #3 Reformer Heater			2.1[1]	9.2
16	781 Stabilizer Heater			2.6[1]	11.2
18	581 Crude Heater #1			15.3[1]	67.1
19	581 Crude Heater #2			15.3[1]	67.1
20	583 Vacuum Heater			8.4[2]	36.8
21	582 Pre-Flash Heater-F101			3.2[7]	14.0
22	582 Crude Heater-F103			3.8[2]	16.6
23	582 Crude Heater-F102A			8.6[2]	37.7
24	582 Crude Heater-F102B			3.4[2]	14.9
25	582 Vacuum Heater-F104			9.0[2]	39.4
26	#2-HDS Heater			6.6[2]	28.9
27	#3-HDS Heater			2.8[2]	12.3
28	Asphalt Heater #1			1.8[1]	8.1
29	Asphalt Heater #2			1.8[1]	8.1
30	Asphalt Heater #3			3.0[2]	13.3
31	Asphalt Heater #4			1.8[1]	8.1
32	Alky Heater B15			3.6[2]	15.8
33	Alky Heater B16			11.2[2]	49.1
34	Alky Heater H1			4.3[1]	18.9

TABLE II. NO_X AND SO_2 EMISSION LIMITS					
SOURCE ID#	SOURCE DESCRIPTION	SO_2 EMISSIONS		NO_X EMISSIONS	
		(lb/hr)	(TPY)	(lb/hr)	(TPY)
35	#10 High Pressure Boiler	2.3	10.0	23.0[1]	100.7
38	Sulfur Recovery Unit #1	361.9	1,489.0	5.1	22.4
39	Sulfur Recovery Unit #2	186.7	818.0	3.7	16.2
40	#8 High Pressure Boiler	140.2	296.0	33.7[3]	147.4
41	#9 High Pressure Boiler	140.2	296.0	33.7[3]	147.4
42	Low Pressure Boilers	86.6	184.0	26.8[3]	117.2
43B	Light Oil Rack Flare	[illegible]	[illegible]	2.8	12.3
49	#5 Generator	7.1	31.0	43.1	188.8
50	HC Heater H1/H2	0.9	4.0	2.7[4]	11.7
51	HC Heater H3	1.3	6.0	10.1[5]	44.2
52	HC Heater H4	1.3	6.0	4.0[4]	17.5
53	H_2 Plant H-101 Heater	6.7	29.0	18.7[6]	82.0
57	HC Heater H5	0.8	4.0	2.5[4]	10.9

(1) 0.23 lb/MMBtu heat input from WAQSR Chapter 3, Section 3 (a)(ii).
(2) 0.20 lb/MMBtu heat input from WAQSR Chapter 3, Section 3 (a)(i).
(3) 0.23 lb/MMBtu heat input fuel gas, 0.6 lb/MMBtu heat input fuel oil from WAQSR Chapter 3, Section 3 (a)(ii) and (iv).
(4) 0.07 lb/MMBtu heat input based on manufacturers suggested emission rates.
(5) 0.18 lb/MMBtu heat input based on manufacturers suggested emission rates.
(6) 0.065 lb/MMBtu heat input based on manufacturers suggested emission rates.
(7) 0.125 lb/MMBtu heat input from Waiver AP-M31 (8/28/00).

(F5) FUEL GAS AND FUEL OIL USAGE [WAQSR Ch 6, Sec 2 Permit MD-410 and 40 CFR 60 Subpart J]

(a) The fuel gas burned in all heaters and boilers shall be limited to a maximum H_2S concentration of 0.1 gr/dscf.

(b) Fuel oil shall only be burned in the #8 High Pressure Boiler, #9 High Pressure Boiler, and the four Low Pressure Boilers (units 40, 41, and 42).

(c) The fuel oil use in the #8 High Pressure Boiler, #9 High Pressure Boiler, and the four Low Pressure Boilers shall not exceed 105,850 barrels per calendar year.

(d) The sulfur content of the fuel oil shall not exceed 4 percent by weight and the cumulative SO_2 emissions (including fuel oil and fuel gas usage) from the #8 High Pressure Boiler, #9 High Pressure Boiler, and the four Low Pressure Boilers shall not exceed 776 TPY.

(F6) SULFUR RECOVERY UNIT OPERATION [WAQSR Ch 6, Sec 2 Permit MD-410]

(a) The Sulfur Recovery Unit #1 (unit 38) shall have a maximum sulfur input of 27.7 long tons per day and shall have a minimum sulfur recovery efficiency of 93 percent.

(b) The Sulfur Recovery Unit #2 (unit 39) shall have a maximum sulfur input of 20.0 long tons per day and

shall have a minimum sulfur recovery efficiency of 95 percent.

(c) During periods of time when the Sulfur Recovery Unit #2 is out of service, the Sulfur Recovery Unit #1 shall be operated at or near the design sulfur input capacity of 27.7 long tons per day. Excess emissions from the Sulfur Recovery Unit #1 (unit 38), Tulip Field and Horizontal Ground Flare (unit 36), and the Vertical Flare (unit 37) during these periods will be regulated pursuant to Chapter 1, Section 5 of the WAQSR.

(d) Additionally, the Claus sulfur recovery plant shall meet all of the applicable standards and requirements for sulfur oxides contained in 40 CFR Part 60, Subpart J.

(F7) LEAK DETECTION AND REPAIR PROGRAM [WAQSR Ch 6, Sec 2 Permit MD-410]
The permittee shall implement a leak detection and repair (LDAR) program equivalent to Chapter 5, Section 2 Subpart GGG of the WAQSR for all equipment not subject to Chapter 5, Section 3 Subpart CC or Subpart GGG or in heavy liquid service as defined in 40 CFR 60 Section §60.481.

(F8) SOIL VAPOR EXTRACTION (SVE) SYSTEM [WAQSR Ch 6, Sec 2 April 5, 2000 AP-Y40 Waiver]
(Amended 12/15/03 for Waiver AP-1027)

(a) Emissions from SVE System 1 and System 3 are limited as follows:

System	Benzene		BTEX		TVPH	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
SVE	0.03	0.1	0.05	0.2	1.66	7.3

Where: BTEX is benzene, ethyl benzene, toluene and xylenes, and
TVPH is total volatile petroleum hydrocarbons

(b) SVE Systems 1 and 3 shall be equipped and operated with a CatOx control system.

(c) After an 18 month pilot test period is completed (October 15, 2003), SVE System 3 shall be shut off and not operated until an air quality permit is issued. ***On October 7, 2003, Sinclair requested a 6-month extension of the pilot testing program. The extension was granted on October 20, 2003 and requires completion of pilot testing by April 15, 2004.***

Testing Requirements

(F9) SOIL VAPOR EXTRACTION (SVE) SYSTEM TESTING [WAQSR Ch 6, Sec 2 April 5, 2000 AP-Y40 Waiver, October 4, 2001 Letter]

(a) The permittee shall test the SVE System 1 exhaust stack quarterly to confirm emissions are within the limits specified in condition F8 of this permit.

(b) The permittee shall test the SVE System 3 exhaust stack at least monthly to confirm emissions are within the limits specified in condition F8 of this permit.

(c) EPA Method 8021B shall be used to measure emissions of benzene, ethylbenzene, toluene, and xylenes (BTEX) and EPA Method 8015B shall be used to measure total volatile petroleum hydrocarbons (TVPH). Acceptable alternatives to these test methods may be used upon approval of the Administrator.

(d) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

(F10) PARTICULATE EMISSIONS TESTING [W.S. 35-11-110]

(a) The permittee shall test the 780 FCC Regenerator (unit 9) annually at minimum to assess compliance with the particulate emission limits in condition F3 of this permit.

(b) The permittee shall test the #8 High Pressure Boiler and the #9 High Pressure Boiler (units 40 and 41) at least once during the permit term to assess compliance with the particulate emission limits in condition F3 of this permit. The boiler testing shall be performed while firing on fuel oil, and at least one test run on each boiler shall be conducted during a representative time that includes soot blowing.

(c) Methods 1-4 and 5B or 5F shall be used to measure particulate from the 700 FCC Regenerator (unit 9), and Methods 1- 5 shall be used to measure particulate matter emissions from other sources

(d) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

(F11) NO_X EMISSIONS TESTING [WAQSR Ch 6, Sec 3 (h)(i)(C)(I)]

(a) The permittee shall test the following units annually, at minimum, to assess compliance with the NO_X emission limits in condition F4 of this permit: the #10 High Pressure Boiler, #8 High Pressure Boiler, #9 High Pressure Boiler, and the four Low Pressure Boilers (units 35, 40, 41, and 42).

(b) The permittee shall test the following units at least once during the permit term to assess compliance with the NO_X emission limits in condition F4 of this permit: the 780 FCC Heater B2, 781 Naphtha Splitter Heater, 781 #1 Reformer Heater, 781 #2 Reformer Heater, 581 Crude Heater #1, 581 Crude Heater #2, 581/583 Vacuum Heater, 582 Crude Heater-F102A, 582 Vacuum Heater-F104, Alky Heater B16, #5 Generator, HC Heater H3, and H_2 Plant Heater H-101(units 1, 10, 13, 14, 18, 19, 20, 23, 25, 33, 49, 51, and 53).

(c) Methods 1-4 and 7E shall be used to measure NO_X emissions. Alternatively, for the testing required under F11(a), (b), and (c) the permittee may measure NO_X emissions using the Division's portable analyzer monitoring protocol at the increased frequency indicated in Table III of this permit. The portable analyzer monitoring protocol is attached as Appendix A of this permit.

(d) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

(F12) ADDITIONAL TESTING [W.S. 35-11-110]

(a) The Division reserves the right to require additional testing as provided under condition G1 of this permit. Should testing be required:

(i) Methods 1-5 shall be used to measure particulate emissions, except Methods 1-4 and 5B or 5F shall be used to measure particulate from the 700 FCC Regenerator (unit 9).

(ii) Methods 1-4 and 6 shall be used to measure SO_2 emissions.

(iii) Methods 1-4 and 7 or 7E shall be used to measure NO_X emissions.

(iv) Method 9 shall be used to measure visible emissions from sources other than the Tulip Field Flare, and the Vertical Flare (units 36and 37).

(v) Methods 1-4 and 10 shall be used to measure CO emissions.

(vi) Method 22 shall be used to measure visible emissions from the Tulip Field Flare and the Vertical Flare (units 36 and 37).

(vii) For other pollutants, methods approved by the Administrator shall be used to measure emissions.

(b) Unless specified otherwise, testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

Monitoring Requirements

(F13) VISIBLE EMISSIONS MONITORING [WAQSR Ch 6, Sec 3 (h)(i)(C)(I)]

(a) The permittee shall monitor the units described in the following conditions as specified:

(i) The permittee shall conduct Method 9 observations on the 780 FCC Regenerator (unit 9), at minimum, two times per day to measure the opacity of visible emissions.

(A) One opacity observation shall be taken between 6:00 a.m. and Noon, and the second reading shall be taken between Noon and 6:00 p.m.

(B) There shall be at least a one hour delay between the first and second opacity observation unless additional observations are being made which cover a time interval of at least one hour.

(ii) The permittee shall conduct quarterly Method 9 observations on the following units to measure the opacity of visible emissions: the Sulfur Recovery Unit #1, Sulfur Recovery Unit #2, #8 High Pressure Boiler, #9 High Pressure Boiler, the four Low Pressure Boilers, and #5 Generator (units 38, 39, 40, 41, 42, and 49).

(iii) The permittee shall, at minimum, make daily observations of visible emissions from each stack (units 38, 39, 40, 41, 42, and 49) to assure compliance with the opacity limits specified in condition F2. The daily observations shall be conducted by a person who is educated in the general procedures for determining visible emissions but not necessarily certified to perform Method 9 observations. If the opacity of visible emissions from a daily observation approaches the limit under condition F2, a Method 9 observation shall be performed.

(iv) Compliance with opacity limits shall be determined by a qualified observer certified in accordance with Section 3.1 of Method 9 and shall follow the requirements and procedures of Method 9.

(v) If weather conditions prevent an observation from being made in accordance with Method 9 procedures, the visible emissions observer shall document those conditions. The observations shall be re-scheduled as soon as possible after the weather conditions improve.

(b) The permittee shall perform, at minimum, monthly Method 22 tests on the Tulip Field Flare, Vertical Flare, and the Light Oil Rack Flare (units 36, 37, and 43B). The Method 22 tests shall be performed for a period of 15 consecutive minutes. If visible emissions are observed during the 15 minute period, the test shall continue for two consecutive hours.

(c) In lieu of periodic monitoring for visible emissions from the following units, the permittee shall monitor the type of fuel used to ensure refinery fuel gas or natural gas is the sole fuel source for these units: the 780 FCC Heater B2, 780 FCC Heater B3, 780 FCC Heater H2, 781 Naphtha Splitter Heater, 781#1-HDS Heater, 781 LEF Heater, 781 #1 Reformer Heater, 781 #2 Reformer Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 581 Crude Heater #1, 581 Crude Heater, 581/583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alkylation (Alky) Heater B15, Alky Heater B16, Alky Heater H1, #10 High Pressure Boiler, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant Heater H-101, and HC Heater H5 (units 1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 50, 51, 52, 53, and 57). These units are not permitted to burn any fuel other than refinery fuel gas or natural gas.

(F14) PARTICULATE EMISSIONS MONITORING [WAQSR Ch 6, Sec 3 (h)(i)(C)(I)]

(a) Periodic monitoring for particulate emissions from the following units shall consist of the testing required under condition F10 of this permit: the 780 FCC Regenerator, #8 High Pressure Boiler, and #9 High Pressure Boiler (units 9, 40, and 41).

(b) The permittee shall operate and maintain the Low Pressure Boilers (unit 42) in accordance with the manufacturer's specifications and recommendation, or if unavailable, good maintenance practice so the particulate emission limits in condition F3 of this permit are not exceeded.

(c) Periodic monitoring of particulate emissions from the #5 Generator (unit 49) is not required since particulate emissions from this source is of trivial environmental importance.

(F15) NO_X EMISSIONS MONITORING [WAQSR Ch 6, Sec 2 Permit MD-410 and Ch 6, Sec 3 (h)(i)(C)(I)]

(a) The permittee shall install, certify, operate, and maintain a continuous NO_X emission monitor and a flow rate monitor on the 780 FCC Regenerator (unit 9) to determine compliance with the emission limits in condition F4 of this permit.

(i) The NO_X emission monitor required in paragraph F15(a) of this condition shall be installed and certified, and must demonstrate linearity and shall be certified in terms of ppm_v and lb/hr.

(ii) The continuous NO_X emissions monitor required in paragraph F15(a) of this condition shall meet the quality assurance requirements of 40 CFR 60, Appendix F. The permittee shall develop for the Division's approval a quality assurance program for the NO_X emissions monitor.

(b) Periodic monitoring for NO_X emissions from the #10 High Pressure Boiler, #8 High Pressure Boiler, #9 High Pressure Boiler, and the four Low Pressure Boilers (units 35, 40, 41, and 42) shall consist of the testing required under condition F11(a) of this permit.

(c) Periodic monitoring for NO_X emissions from the 780 FCC Heater B2, 781 Naphtha Splitter Heater, 581 Crude Heater #1, 781 #1 Reformer Heater, 781 #2 Reformer Heater, 581 Crude Heater #2, 581/583 Vacuum Heater, 582 Crude Heater-F102A, 582 Vacuum Heater-F104, Alky Heater B16, #5 Generator, the HC Heater H3, H_2 Plant Heater H-101, and the (units 1, 10, 13, 14, 18, 19, 20, 23, 25, 33, 49, 51, and 53) shall consist of the testing required under condition F11(b) of this permit.

(d) The permittee shall operate and maintain the following units in accordance with the manufacturer's specifications and recommendations, or if unavailable, good maintenance practice so the NO_X emission limits in condition F4 of this permit are not exceeded: the 780 FCC Heater B3, 780 FCC Heater H2, 781 #1-HDS Heater, 781 LEF Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 582 Pre-Flash Heater-

F101, 582 Crude Heater-F103, 582 Crude Heater-F102B, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alky Heater B15, Alky Heater H1, Sulfur Recovery Unit #1, Sulfur Recovery Unit #2, Light Oil Rack Flare, HC Heater H1/H2, HC Heater H4, and HC Heater H5 (units 2, 3, 11, 12, 15, 16, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 38, 39, 43B, 50, 52, and 57).

(F16) SO_2 EMISSIONS AND SULFUR EFFICIENCY MONITORING
[WAQSR Ch 6, Sec 2 Permit MD-410 and MD-439, and Ch 6, Sec 3 (h)(i)(C)(I)]

(a) The permittee shall install, certify, operate, and maintain a continuous SO_2 emission monitor and a flow rate monitor on the 780 FCC Regenerator Stack (unit 9) to determine compliance with the emission limits in Table II of this permit.
   (i) The SO_2 emission monitor required in paragraph F16(a) of this condition shall be installed and certified prior to the commencement of operation of the equipment installed in Phase I and must demonstrate linearity and shall be certified in terms of ppm_V and lb/hr.
   (ii) The continuous SO_2 emissions monitor required in paragraph F16(a) of this condition shall meet the quality assurance requirements of 40 CFR 60, Appendix F. The permittee shall develop for the Division's approval a quality assurance program for the SO_2 emissions monitor.

(b) The permittee shall continue to maintain and operate the SO_2 monitors and associated equipment on the #1 and #2 Sulfur Recovery units (units 38 and 39) to determine emissions from each unit on a lb/hr basis.
   (i) The monitoring system shall comply with the requirements of 40 CFR 60, Appendix F.

(c) The permittee shall conduct the following monitoring to determine compliance with the sulfur recovery efficiency limits in condition F6 of this permit:
   (i) The permittee shall continue to maintain and operate the installed H_2S analyzers and acid gas flow meters in order to determine the sulfur flow rates into the #1 and #2 Sulfur Recovery units.
   (ii) The permittee shall continue to monitor the volume of liquid sulfur produced by the #1 and #2 Sulfur Recovery units using the level gauges installed at the #1SRU and #2SRU sulfur pits. Measurements of the liquid sulfur level shall be made on a daily basis, at minimum, from each sulfur pit as well as before and after any sulfur loading operations.

(d) The continuous SO_2 emissions monitoring required in paragraphs F16(a) and F16(b) of this condition shall be installed, calibrated, and operated per the requirements set forth in WAQSR Chapter 5, Section 2 (j).

(e) Additionally, the Claus sulfur recovery plant shall meet all of the applicable monitoring requirements for sulfur oxides contained in 40 CFR Part 60, Subpart J.

(f) Periodic monitoring of SO_2 emissions from the #5 Generator (unit 49) is not required since SO_2 emissions from this source are of trivial environmental importance.

(F17) FUEL GAS AND FUEL OIL MONITORING
[WAQSR Ch 6, Sec 2 Permit MD-410 and Ch 6, Sec 3 (h)(i)(C)(I)]

(a) The permittee shall continue to maintain and operate the H_2S fuel gas monitor for the low and high pressure fuel gas lines. The monitor shall comply with the requirements of 40 CFR 60 Appendix F.

(b) The permittee shall monitor fuel oil and fuel gas usages at the boiler house. Fuel gas usages shall be determined by fuel gas meters calibrated and maintained according to manufacturer's recommendations. Fuel oil usages shall be determined by the down-gauging method every four hours. Sulfur and API contents of the fuel oil shall be determined as follows:
   (i) The fuel oil tank to be charged will not be in service.
   (ii) Once the tank has been charged, the tank mixers will be turned on and a representative sample will be taken and submitted to the laboratory for analysis.
   (iii) The sample shall be analyzed for sulfur and API contents.
   (iv) If additional fuel oil is added to the tank, steps (i)-(iii) must be followed.

(F18) TRUCK DOCK FLARE MONITORING [40 CFR 63 Subpart CC]
Monitoring requirements for the Light Oil Rack Flare (unit 43B) are specified under condition P63-CC1 of this permit.

(F19) SOIL VAPOR EXTRACTION (SVE) SYSTEM MONITORING [WAQSR Ch 6, Sec 3 (h)(i)(C)(I)]
Monitoring for the SVE shall consist of the quarterly testing required under condition F11 of this permit.

(F20) AMBIENT SO_2 AND METEOROLOGICAL MONITORING
[WAQSR Ch 6, Sec 2 Permit MD-410 and Ch 6, Sec 3 (h)(i)(C)(I)]
(a) The permittee shall continue to operate, in accordance with the requirements of 40 CFR Parts 50 and 58, an ambient sulfur dioxide monitoring system acceptable to the Division.
(b) The permittee shall continue to maintain a meteorological station acceptable to the Division.

TABLE III: Summary of Periodic Visible, Particulate, SO_2, and NO_X Emissions Monitoring (1)

SOURCE ID	Visible Emissions Monitoring	Particulate Emissions Monitoring	SO_2 Emissions Monitoring	NO_X Emissions Monitoring
1, 10, 13, 14, 18, 19, 20, 23, 25, & 33	Ensure fuel gas or natural gas is sole fuel source.	N/A	Continuous H_2S concentration monitoring of fuel gas.	Reference Method testing once during the permit term or annual portable analyzer monitoring.
2, 3, 11, 12, 15, 16, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, & 34	Ensure fuel gas or natural gas is sole fuel source.	N/A	Continuous H_2S concentration monitoring of fuel gas.	Operation & maintenance according to manufacturer's specifications or good maintenance practice..
9	Method 9 tests two times per day, morning and afternoon.	Annual Method 5B or 5F testing.	Continuous SO_2 emissions monitoring.	Continuous NO_X emissions monitoring.
35	Ensure fuel gas or natural gas is sole fuel source.	N/A	Continuous H_2S concentration monitoring of fuel gas.	Reference Method testing annually or semi-annual portable analyzer monitoring.
38 & 39	Quarterly Method 9 tests.	N/A	Continuous SO_2 emissions monitoring.	Operation & maintenance according to manufacturer's specifications.
40 & 41	Quarterly Method 9 tests.	Method 5 testing once during permit term.	Monitor fuel oil usage and analyze for sulfur and API contents.	Reference Method testing annually or semi-annual portable analyzer monitoring.

TABLE III: Summary of Periodic Visible, Particulate, SO_2, and NO_X Emissions Monitoring [1]				
SOURCE ID	**Visible Emissions Monitoring**	**Particulate Emissions Monitoring**	**SO_2 Emissions Monitoring**	**NO_X Emissions Monitoring**
42	Quarterly Method 9 tests.	Operation & maintenance according to manufacturer's specifications.	Monitor fuel oil usage and analyze for sulfur and API contents.	Reference Method testing annually or semi-annual portable analyzer monitoring.
36, 37, & 43B	Quarterly Method 22 testing.	N/A	N/A	N/A
49	Quarterly Method 22 testing.	N/A	N/A	Reference Method testing or portable analyzer monitoring once during the permit term.
50, 52, & 57	Ensure fuel gas or natural gas is sole fuel source.	N/A	Continuous H_2S concentration monitoring of fuel gas.	Performance testing within 90 days of achieving maximum design rates. Operation & maintenance according to manufacturer's specifications.
51 &53	Ensure fuel gas or natural gas is sole fuel source.	N/A	Continuous H_2S concentration monitoring of fuel gas.	Performance testing within 90 days of achieving maximum design rates. Reference Method testing or portable analyzer monitoring once during the permit term.

[1] This table summarizes periodic monitoring requirements for visible, particulate, SO_2, and NO_X emissions. Additional recordkeeping and reporting requirements apply to these sources.

Recordkeeping Requirements

(F21) VISIBLE EMISSIONS MONITORING RECORDS [WAQSR Ch 6, Sec 3 (h)(i)(C)(II)]

(a) For the visible emissions monitoring specified under condition F13(a)(i) and F13(a)(ii) of this permit, the permittee shall take field records in accordance with Section 2.2 of Method 9 and record any corrective actions taken upon detecting noncompliance with opacity limitations.

(b) For the visible emissions observations specified under condition F13 (a)(iii) of this permit, the permittee shall record the following:

(i) The date, place, and time of the observation;

(ii) The company or entity that performed the observation;

(iii) The observation techniques or methods used;

(iv) The observation results;

(v) The operating conditions as they existed at the time of the observation; and

(vi) Any corrective actions taken upon observing visible emissions or detecting noncompliance with opacity limitations.

(c) For any Method 22 observations required under condition F13(b) of this permit, the permittee shall keep field records in accordance with Sections 5.2 and 5.5 of Method 22.

(d) The permittee shall retain on-site at the facility the records specified under paragraphs F21(a) and F21(b) of this condition for a period of at least five years from the date such records are generated.

(F22) MAINTENANCE RECORDS [WAQSR Ch 6, Sec 3 (h)(i)(C)(II)]

(a) The permittee shall record all maintenance activities performed on the following units and any associated fuel gas meters as specified in conditions F14(b), F15(d), and F17(b): the 780 FCC Heater B3, 780 FCC Heater H2, 781 #1-HDS Heater, 781 LEF Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102B, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alky Heater B15, Alky Heater H1, Sulfur Recovery Unit #1, Sulfur Recovery Unit #2, Low Pressure Boilers, Light Oil Rack Flare, HC Heater, HC Heater H4, and HC Heater H5 (units 2, 3, 11, 12, 15, 16, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 38, 39, 42, 43B, 50, 52, and 57).

(b) The record of maintenance activities for these units shall include:

(i) The maintenance activity performed;

(ii) The date, place, and time the activity was performed;

(iii) The company and individual(s) that performed the activity;

(iv) The purpose of the activity; and

(v) An explanation for any deviation from the manufacturer's recommendations, or good maintenance practice.

(c) The permittee shall retain on-site at the facility the record of each maintenance or inspection activity for a period of at least five years from the date of the activity.

(F23) TESTING AND PORTABLE ANALYZER MONITORING RECORDS [WAQSR Ch 6, Sec 3 (h)(i)(C)(II)]

(a) For the emissions testing required under conditions F9, F10, and F11, and any additional testing required by Division under condition F12 other than Method 9 observations, the permittee shall record, as applicable the following:

(i) The date, place, and time of sampling or measurements;

(ii) The date(s) the analyses were performed;

(iii) The company or entity that performed the analyses;

(iv) The analytical techniques or methods used;

(v) The results of such analyses; and

(vi) The operating conditions as they existed at the time of sampling or measurement.

(b) For any Method 9 observations required by the Division under condition F12, the permittee shall keep field records in accordance with Section 2.2 of Method 9.

(c) The permittee shall retain on-site at the facility the record of each test, measurement, or observation and support information for a period of at least five years from the date of the test, measurement, or observation.

(F24) SULFUR EFFICIENCY AND SO_2 AND NO_X EMISSIONS MONITORING RECORDS [WAQSR Ch 6, Sec 3 (h)(i)(C)(II)]

(a) Recordkeeping for the continuous NO_X and SO_2 emissions monitoring systems on the FCC Regenerator Stack (unit 9) and the SO_2 emissions monitoring system on the #1 and #2 Sulfur Recovery units (units 38 and 39) shall comply with the requirements of WAQSR Chapter 5, Section 2 (g).

(b) The permittee shall keep the following records so the sulfur recovery efficiencies for the #1 and #2 Sulfur Recovery units can be determined:

(i) Records of the H_2S concentration and flow rate of each acid gas feed stream to #1 and #2 Sulfur Recovery units and the total amount of sulfur fed into each SRU per day.

(ii) Records of the #1SRU and #2SRU sulfur pit measurements and the total amount of sulfur produced per day from each SRU.

(iii) The daily sulfur recovery efficiency for each SRU calculated by dividing the total unit sulfur production per day by the total unit sulfur input per day.

(c) Additionally, the permittee shall meet all of the applicable recordkeeping requirements for the Claus sulfur recovery plant as contained in 40 CFR Part 60, Subpart J.

(d) The permittee shall retain on-site at the facility all records generated under conditions F15 and F16 of this permit for a period of at least five years from the date such records are generated.

(F25) FUEL GAS AND FUEL OIL MONITORING RECORDS [WAQSR Ch 6, Sec 3 (h)(i)(C)(II)]

(a) The permittee shall maintain records of the fuel gas H_2S monitoring required by condition F17(a) and the fuel gas usages at the boiler house required by condition F17(b) of this permit.

(b) The permittee shall maintain records of the fuel oil usage and sulfur and API contents of the fuel oil required by condition F17(b) of this permit.

(c) The permittee shall retain on-site at the facility all records generated under condition F17 of this permit for a period of at least five years from the date such records are generated.

(F26) AMBIENT SULFUR DIOXIDE & METEOROLOGICAL MONITORING RECORDS [WAQSR Ch 6, Sec 2 Permit 410, Ch 6, Sec 3 (h)(i)(C)(II)]

(a) The permittee shall maintain records of the data generated by the ambient sulfur dioxide monitoring program and the meteorological station in accordance with the approved "Quality Assurance Plan" approved by the Division September 1994.

(b) The permittee shall retain on-site at the facility all ambient SO_2 and meteorological monitoring records kept in accordance with this condition for a period of at least five years from the date such records are generated.

(F27) STORAGE TANK RECORDS [WAQSR Ch 6, Sec 2 11/1/99 Waiver AP-N89]

The permittee shall keep records noting the date, liquid amount and type (crude oil, gasoline/fuel oil), and tank number each time liquids are routed to tanks #519 or #520 during a pipeline upset. Records shall be provided to the Division upon request.

Reporting Requirements

(F28) VISIBLE EMISSIONS MONITORING REPORTS [WAQSR Ch 6, Sec 3 (h)(i)(C)(III)]

(a) The following shall be reported to the Division by January 31 and July 31 each year:

(i) Summary results of the visible emissions monitoring required under conditions F13(a)(i), F13(a)(ii), and F13(a)(iii) of this permit. Each opacity measurement and any corrective actions taken upon detecting noncompliance with opacity limitations shall be included in the report.

(ii) Summary results of the flare monitoring required under condition F13(b) of this permit: only monitoring during which visible emissions are observed and any corrective actions taken upon observing visible emissions shall be included in the report. If no visible emissions are observed during the reporting period, this shall be stated in the report.

(iii) Documentation the heaters and the #10 High Pressure Boiler listed in condition F13(c) of this

permit are firing natural gas or propane.

(b) All instances of deviations from the conditions of this permit must be clearly identified in each report.

(c) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

(F29) MAINTENANCE REPORTS [WAQSR Ch 6, Sec 3 (h)(i)(C)III)]

(a) The permittee shall report to the Division by January 31 and July 31 each year whether the permittee has adhered to the manufacturers' specifications and recommendations for each of the following units and associated fuel gas meters as specified in conditions F14(b), F15(d), and F17(b): the 780 FCC Heater B3, 780 FCC Heater H2, 781 #1-HDS Heater, 781 LEF Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102B, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alky Heater B15, Alky Heater H1, Sulfur Recovery Unit #1, Sulfur Recovery Unit #2, Low Pressure Boilers, Light Oil Rack Flare, HC Heater H1, HC Heater H4, and HC Heater H5 (units 2, 3, 11, 12, 15, 16, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 38, 39, 42, 43B, 50, 52, and 57).

(b) Any deviations from the manufacturers' specifications and recommendations or good maintenance practice for maintaining these units must be clearly identified in each report.

(c) If the permittee has adhered to the manufacturers' specifications and recommendations or good maintenance for maintaining these units during the reporting period, this shall be stated in the report.

(d) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

(F30) TEST NOTIFICATION AND TEST REPORTS [Ch 6, Sec 3 (h)(i)(C)(III)]

The permittee shall submit the results of the tests required under conditions F9, F10, F11, and any additional tests the Division may require under condition F12 within 45 days of conducting the tests. The reports shall include the information specified under condition F23 and shall be submitted to the Division in accordance with condition G4 of this permit.

(F31) EXCESS EMISSIONS AND MONITORING SYSTEM PERFORMANCE REPORTS [WAQSR Ch 6, Sec 2 Permits MD-410 & MD-439; and Ch 5, Sec 2 (g)(iii) & (iv)]

(a) Excess emissions reporting for the continuous NO_X and SO_2 emissions monitoring systems on the 780 FCC Regenerator (unit 9) and the continuous SO_2 emissions monitoring systems on the #1 and #2 Sulfur Recovery units (units 38 and 39) shall comply with WAQSR Chapter 5, Section 2 (g) requirements.

(b) The permittee shall submit an excess emissions and monitoring systems performance report quarterly and in the format as described in Chapter 5, Section 2 (g)(iii) of the WAQSR. Written reports of excess emissions shall include the following information:

(i) The magnitude of excess emissions computed in accordance with WAQSR Chapter 5, Section 2 (j)(viii), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(ii) Specific identification of each period of excess emissions occurring during start-ups, shutdowns, or malfunctions of the 780 FCC Regenerator (unit 9) and the #1 and #2 Sulfur Recovery units (units 38 and 39). The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(v) One summary report form for each pollutant monitored at each affected facility in a format approved by the Division.

(A) If the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period and continuous monitoring system downtime for the reporting period is less than five percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in paragraph F28(b) of this condition need not be submitted unless requested by the Administrator.

(B) If the total duration of excess emissions for the reporting period is one percent or greater of the total operating time for the reporting period or the total continuous monitoring system downtime for the reporting period is five percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in paragraph F28(b) of this condition shall both be submitted.

(c) For the purpose of reporting under this condition, excess emissions are defined as follows:

(i) Any one hour period when the average NO_X or SO_2 emissions from the 780 FCC Regenerator (unit 9), as determined by the continuous NO_X and SO_2 monitoring systems, exceed the lb/hr limit of condition F4 or when the TPY limits are exceeded.

(ii) Any twelve hour period when the average SO_2 emissions from the #1 and #2 Sulfur Recovery units (units 38 and 39), as determined by the continuous SO_2 monitoring system, exceed the lb/hr limits specified in condition F4 of this permit or when the TPY limits are exceeded. Excess emissions shall further be defined as any 24 hour period when the sulfur recovery efficiency drops below 93 percent for the Sulfur Recovery Unit #1 or below 95 percent for the Sulfur Recovery Unit #2.

(d) The year-to-date SO_2 emissions (tons) from the 780 FCC Regenerator (unit 9), as determined from the continuous emissions monitoring system, shall be submitted within ten working days from the end of each month.

(e) The results of the quarterly audits required by 40 CFR Part 60, Appendix F shall be submitted with the excess emission report.

(f) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

(F32) FUEL GAS AND FUEL OIL MONITORING REPORTS
[WAQSR Ch 6, Sec 2 Permit MD-410 and Ch 6, Sec 3 (h)(i)(C)(III)]

(a) The permittee shall submit excess emissions reports for the H_2S fuel gas monitoring, specified by condition F17(a) of this permit, as required by condition P60-J3. The quarterly reports shall be submitted within 30 days of the end of each calendar quarter.

(b) The permittee shall submit a monthly report for the #8 High Pressure Boiler, #9 High Pressure Boiler, and the four Low Pressure Boilers (units 40, 41, and 42) within ten working days of the end of the month including the following:

(i) For the previous month, any hourly emission rate (including fuel oil and fuel gas usages) from the boilers that exceed the limits in Table II of this permit and the quantity of fuel oil burned and the corresponding sulfur content(s) that exceed four percent sulfur by weight.

(ii) The calendar year to date cumulative fuel oil usage in barrels and the cumulative SO_2 emission rates (including fuel oil and fuel gas usages) in tons.

(F33) REPORTING EXCESS EMISSIONS & DEVIATIONS FROM PERMIT REQUIREMENTS
[WAQSR Ch 6, Sec 3 (h)(i)(C)(III)]

(a) For all fuel gas combustion devices, reporting requirements for excess SO_2 emissions are described under condition P60-J3 of this permit.

(b) For the all the affected refinery wastewater systems constructed after May 4, 1987, reporting requirements for excess VOC emissions are described under condition P60-QQQ1 of this permit.

(c) General reporting requirements are described under the General Conditions of this permit. The Division reserves the right to require reports as provided under condition G1 of this permit.

(d) Emissions which exceed the limits specified in this permit shall be reported annually with the emission inventory unless specifically superseded by condition G17, condition G21, or other condition(s) of this permit. The probable cause of such exceedance, the duration of the exceedance, the magnitude of the exceedance, and any corrective actions or preventative measures taken shall be included in this annual report. In addition, if at any time emissions exceed the limits specified in this permit by 100 percent, or if a single episode of emission limit exceedance spans a period of 24 hours or more, such exceedance shall be reported to the Division within one working day of the exceedance. (Excess emissions due to an emergency shall be reported as specified in condition G17. Excess emissions due to abnormal conditions or equipment malfunction shall be reported as specified in condition G21.)

(e) Any other deviation from the conditions of this permit shall be reported to the Division in writing within 30 days of the deviation or discovery of the deviation.

(F34) AMBIENT SO_2 MONITORING REPORTS [WAQSR Ch 6, Sec 3 (h)(i)(C)(III)]

(a) The ambient SO_2 monitoring data retained in accordance with condition F26 of this permit shall be submitted to the Division in an acceptable format within 60 days of the end of each calendar quarter.

(b) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

Accidental Release Prevention Requirements

(F35) ACCIDENTAL RELEASE PREVENTION REQUIREMENTS [40 CFR Part 68]

(a) The permittee shall meet all requirements of 40 CFR Part 68 as they apply to the facility.

(b) The permittee shall submit, as part of the annual compliance certification submitted under condition C1 of this permit, a certification statement concerning the facility's compliance with all requirements of 40 CFR Part 68 including the registration and submission of a Risk Management Plan.

WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND 40 CFR 60 SUBPART J REQUIREMENTS

(Subpart J is provided in Appendix C)

(P60-J1) SUBPART J REQUIREMENTS [40 CFR 60 Subpart J and WAQSR Ch 5 Sec 2]

The permittee shall meet all requirements of 40 CFR 60 Subpart J and WAQSR Ch 5 Sec 2, as they apply to the 781 #1-HDS Heater, 781 LEF Heater, 781 #2 Reformer Heater, 581/583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #3-HDS Heater, Asphalt Heater #3, Alky Heater B15, Alky Heater B16, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant H-101 Heater, HC Heater H5 (units 11, 12, 14, 20, 21, 22, 23, 24, 25, 27, 30, 32, 33, 50, 51, 52, 53, and 57), and the Claus sulfur recovery plant [Sulfur Recovery Units #1 and #2 (units 38 and 39)].

(a) The permittee shall meet the standards specified in §60.104.

(b) The permittee shall meet all monitoring requirements specified in §60.105.

(c) The permittee shall meet all testing and procedural requirements as specified in §60.106 when conducting any additional tests required under condition F12 of this permit.

(d) The permittee shall meet all applicable reporting and recordkeeping requirements specified in §60.107.

(P60-J2) RECORDKEEPING [WAQSR Ch 6, Sec 2 Permit MD-410 and Ch 5, Sec 2 (g)(ii) and (g)(iv)]

(a) Recordkeeping for the continuous H_2S and SO_2 monitoring systems required under condition P60-J1(b) of this permit shall comply with the requirements of WAQSR Chapter 5, Section 2 (g).

(b) The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the 781 #1-HDS Heater, 781 LEF Heater, 781 #2 Reformer Heater, 581/583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #3-HDS Heater, Asphalt Heater #3, Alky Heater B15, Alky Heater B16, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant H-101 Heater, HC Heater H5 (units 11, 12, 14, 20, 21, 22, 23, 24, 25, 27, 30, 32, 33, 50, 51, 52, 53, and 57), and the Claus sulfur recovery plant [Sulfur Recovery Units #1 and #2 (units 38 and 39)]; any malfunction of the air pollution control equipment; or any periods during which the continuous monitoring systems are inoperative. These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.

(c) The permittee shall maintain records of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by the NSPS conditions of this permit, recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(P60-J3) QUARTERLY EXCESS EMISSIONS REPORTS

[WAQSR Ch 5, Sec 2 (g)(iii) and Chapter 6, Section 2 Permit MD-410]

(a) The permittee shall submit an excess emissions and monitoring systems performance report (excess emissions are defined in paragraph P60-J3(b) of this condition) and/or a summary report form (see paragraph P60-J3(a)(v) of this condition) to the Administrator quarterly. All reports shall be postmarked by the 30th day following the end of each calendar quarter. Written reports of excess emissions shall include the following information:

(i) The magnitude of excess emissions computed in accordance with WAQSR Chapter 5, Section 2 (j)(viii), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(ii) Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, malfunctions of the 781 #1-HDS Heater, 781 LEF Heater, 781 #2 Reformer

Heater, 581/583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #3-HDS Heater, Asphalt Heater #3, Alky Heater B15, Alky Heater B16, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant H-101 Heater, HC Heater H5 (units 11, 12, 14, 20, 21, 22, 23, 24, 25, 27, 30, 32, 33, 50, 51, 52, 53, and 57), and the Claus sulfur recovery plant [Sulfur Recovery Units #1 and #2 (units 38 and 39)]. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been in operative, repaired, or adjusted, such information shall be stated in the report.

(v) One summary report form for each pollutant monitored at each affected facility in a format approved by the Division.

(A) If the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period and continuous monitoring system downtime for the reporting period is less than five percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in paragraph P60-J3(a) of this condition need not be submitted unless requested by the Administrator.

(B) If the total duration of excess emissions for the reporting period is one percent or greater of the total operating time for the reporting period or the total continuous monitoring system downtime for the reporting period is five percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in paragraph P60-J3(a) of this condition shall both be submitted.

(b) (i) For SO_2 emissions from the following units, excess emissions are defined under §60.105 (e)(3): the 781 #1-HDS Heater, 781 LEF Heater, 781 #2 Reformer Heater, 581/583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #3-HDS Heater, Asphalt Heater #3, Alky Heater B15, Alky Heater B16, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant H-101 Heater, and HC Heater H5 (units 11, 12, 14, 20, 21, 22, 23, 24, 25, 27, 30, 32, 33, 50, 51, 52, 53, and 57).

(ii) For SO_2 emissions from the Claus sulfur recovery plant [Sulfur Recovery Units #1 and #2 (units 38 and 39)], excess emissions are defined under §60.105 (e)(4).

(c) Notwithstanding the frequency of reporting requirements specified in paragraph P60-J3(a) of this condition, a permittee who is required by an applicable subpart to submit excess emissions and monitoring systems performance reports (and summary reports) on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual as described in WAQSR Chapter 5, Section 2 (g)(iv). Any reduction in reporting frequency requires a significant modification to this operating permit pursuant to WAQSR Chapter 6, Section 3 (d)(vi)(C).

(d) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

(P60-J4) GOOD AIR POLLUTION CONTROL PRACTICE [WAQSR Ch 5, Sec 2 (i)(iv)]

At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the following units, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions: the 781 #1-HDS Heater, 781 LEF Heater, 781 #2 Reformer Heater, 581/583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #3-HDS Heater, Asphalt Heater #3, Alky Heater B15, Alky Heater B16, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant H-101 Heater, HC Heater H5 (units 11, 12, 14, 20, 21, 22, 23, 24, 25, 27, 30, 32, 33, 50, 51, 52, 53, and 57), and the Claus sulfur recovery plant [Sulfur Recovery Units #1 and #2 (units 38 and 39)].

WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) SUBPART Kb REQUIREMENTS

(Subpart Kb is provided in Appendix D)

(P60-Kb1) SUBPART Kb REQUIREMENTS

[40 CFR 60 Subpart Kb; WAQSR Ch 5, Sec 2; and Ch 6, Sec 2 Permits MD-410, MD-701]

The permittee shall meet all requirements of 40 CFR 60 Subpart Kb and WAQSR Ch 5 Sec 2, as they apply to the storage tanks (Tank Numbers 407, 408, and 409).

(a) The permittee shall meet all standards specified in Subpart Kb §60.112b. The permittee shall cmply with the following requirements for Tanks 407, 408, and 409:

(i) That each opening through the deck of the floating roof for a slotted guidepole shall be equipped with a deck cover, a pole wiper and a pole float. The deck cover shall also be equipped with a gasket between the cover and the deck. The wiper or seal of the pole float shall be at or above the height of the pole wiper.

(ii) That the sliding cover shall be in place over the slotted-guidepole opening through the floating roof at all times except when the sliding cover must be removed for access. If the control technology used includes a guidepole float, the float shall be floating within the guidepole at all time except when it must be removed for access to the stored liquid or when the tank is empty.

(iii) That the permittee shall visually inspect the deck fitting for the slotted guidepole at least once every 10 years and each time the vessel is emptied and degassed. If the slotted guidepole deck fitting or control devices have defects, or if a gap of more than 0.32 centimeters (⅛ inch) exists between any gasket required for control of the slotted guidepole deck fitting and any surface that is intended to seal, such items shall be repaired before filling or refilling the storage vessel with regulated material.

(iv) Tanks taken out of hydrocarbon service, for any reason, do not have to have any controls in place during the time they are out of service.

(b) The permittee shall meet all testing and procedural requirements specified in Subpart Kb §60.113b.

(c) The permittee shall meet all reporting and recordkeeping requirements specified in Subpart Kb §60.115b.

(d) The permittee shall meet all monitoring requirements specified in Subpart Kb §60.116b.

(P60-Kb2) RECORDKEEPING [WAQSR Ch 5, Sec 2 (g)(ii) and (g)(iv)]

(a) The permittee shall maintain records of the occurrence and duration of any malfunction of the air pollution control equipment for the storage tanks (units 407, 408, and 409). These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.

(b) The permittee shall maintain records of all measurements, reports, and other information required by the NSPS conditions of this permit recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(P60-Kb3) GOOD AIR POLLUTION CONTROL PRACTICE [WAQSR Ch 5, Sec 2 (i)(iv)]

At all times, including periods of malfunction, the permittee shall, to the extent practicable, maintain and operate the air pollution control equipment for the storage tanks (units 407, 408, and 409) in a manner consistent with good air pollution control practice for minimizing emissions.

WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND 40 CFR 60 SUBPART GGG REQUIREMENTS

(Subparts GGG and VV are attached as Appendix E)

(P60-GGG1) SUBPART GGG REQUIREMENTS [40 CFR 60, Subpart GGG; WAQSR Ch 5, Sec 2; and Ch 6, Sec 2 Permit MD-410]

The permittee shall meet all requirements of 40 CFR 60 Subpart GGG and WAQSR Ch 5, Sec 2 as they apply to the #2 Sulfur Recovery Unit, the #3 Hydrodesulfurization Unit, and the Hydrocracker Unit and associated equipment at the facility.

(a) The permittee shall meet all standards, test methods and procedures, and recordkeeping and reporting requirements specified in 40 CFR 60.592 with exceptions specified in §60.593.

(b) The summary results of the VOC monitoring shall be reported to the Division in accordance with condition G4 of this permit within 60 days of the end of the monitoring period.

(P60-GGG2) RECORDKEEPING [WAQSR Ch 5, Sec 2 (g)(ii) and (g)(v)]

(a) The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the #2 Sulfur Recovery Unit, the #3 Hydrodesulfurization Unit, and the Hydrocracker Unit; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.

(b) The permittee shall maintain records of all measurements, reports, and other information required by the NSPS conditions of this permit recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(P60-GGG3) GOOD AIR POLLUTION CONTROL PRACTICE [WAQSR Ch 5, Sec 2 (i)(iv)]

At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the #2 Sulfur Recovery Unit, the #3 Hydrodesulfurization Unit, and the Hydrocracker Unit including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

WAQSR CHAPTER 5, SECTION 2 NEW SOURCE PERFORMANCE STANDARDS (NSPS) AND 40 CFR 60 SUBPART QQQ REQUIREMENTS

(Subpart QQQ is provided in Appendix F)

(P60-QQQ1) SUBPART QQQ REQUIREMENTS

[40 CFR 60 Subpart QQQ; WAQSR Ch 5, Sec 2; and Ch 6, Sec 2 Permit MD-410]

The permittee shall meet all requirements of 40 CFR 60 Subpart QQQ and WAQSR Ch 5, Sec 2 as they apply to the new oily water collection system, sewer, and separator tank (the hydrocracker drain system, the hydrocracker unit lift station, the desalter discharge for the 581 and 582 Crude Units, and Tanks 38 and 39). Equipment subject to Subpart QQQ is listed in Appendix G.

(a) The permittee shall meet all standards specified in §60.692 or §60.693.

(b) The permittee shall meet all monitoring requirements specified in §60.695.

(c) The permittee shall meet all testing requirements and compliance provisions specified in §60.696.

(d) The permittee shall meet all recordkeeping requirements specified in §60.697.

(e) The permittee shall meet all reporting requirements specified in §60.698. The reports shall be submitted to the Division in accordance with condition G4 of this permit by January 31 and July 31 each year.

(P60-QQQ2) RECORDKEEPING [WAQSR Ch 5, Sec 2 (g)(ii) and (g)(v)]

(a) The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the new oily water collection system, sewer, and separator tank; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.

(b) The permittee shall maintain records of all measurements, reports, and other information required by the NSPS conditions of this permit recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(P60-QQQ3) GOOD AIR POLLUTION CONTROL PRACTICE [WAQSR Ch 5, Sec 2 (i)(iv)]

At all times, including periods of startup, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the new oily water collection system, sewer, and separator tank including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

40 CFR 61 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) SUBPART A AND SUBPART FF REQUIREMENTS

(Subparts A and FF are provided in Appendix K)

(P61-FF1) SUBPART A REQUIREMENTS [40 CFR 61 Subpart A, General Provisions]

The permittee shall meet all requirements of 40 CFR 61 Subpart A, General Provisions, as they apply to the Oily Water System (unit 45) including, but not limited to, the following:

(a) The permittee shall not fail to report, revise reports, or report source test results as required under 40 CFR 61. [§61.05(d)]

(b) Any change in the information provided under §61.10(a) shall be provided to the Administrator within 30 days after the change. [§61.10(c)]

(c) The permittee shall operate and maintain the Oily Water System (unit 45), including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. [§61.12(c)]

(P61-FF2) SUBPART FF REQUIREMENTS [40 CFR 61 Subpart FF, Benzene Waste Operations]

The permittee shall meet all requirements of 40 CFR 61 Subpart FF, National Emission Standard for Benzene Waste Operations, as they apply to the Oily Water System (unit 45) including, but not limited to, the following:

(a) The permittee shall comply with the recordkeeping requirements of §61.356. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(b) The permittee shall comply with the reporting requirements of §61.357(b). Any reports shall be submitted to the Division and U.S. EPA in accordance with condition G4 of this permit.

WAQSR CHAPTER 5, SECTION 3 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) SUBPART CC REQUIREMENTS

(Subpart CC is provided in Appendix H)

(P63-CC1) SUBPART CC REQUIREMENTS [40 CFR 63 Subpart CC and WAQSR Ch 5, Sec 3]

The permittee shall meet all requirements of 40 CFR 63 Subpart CC and WAQSR Ch 5, Sec 3 as they apply to the affected sources at the Sinclair Refinery. Affected units include process units, wastewater streams, miscellaneous process vents, storage vessels, equipment leaks and gasoline loading racks meeting the requirements of §63.640 (a)(1) and (2). The Subpart CC equipment list submitted by Sinclair Oil is included in Appendix I.

(a) (i) The permittee shall meet all standards specified in Subpart CC §63.643 as they apply to the Group 1 miscellaneous process vents listed in Appendix I.

(ii) The permittee shall meet all standards specified in Subpart CC §63.646 as they apply to the Group 1 and 2 storage vessels listed in Appendix I of this permit.

(iii) The permittee shall meet all standards specified in Subpart CC §63.647 as they apply to the Group 1 wastewater streams listed in Appendix I of this permit.

(iv) The permittee shall meet all standards specified in Subpart CC §63.648 as they apply to fugitive equipment leaks from petroleum refinery process units.

(v) The permittee shall meet all standards specified in Subpart CC §63.650 as they apply to all units meeting the definition of gasoline loading rack. A continuous parameter monitoring system capable of monitoring temperature shall be installed and operated on the thermal oxidation system (Light Oil Rack Flare, unit 43B).

(b) The permittee shall meet all testing requirements specified in Subpart CC §63.645 as they apply to the miscellaneous process vents and as otherwise noted above for other affected sources.

(c) The permittee shall meet all monitoring requirements specified in Subpart CC §63.644 as they apply to the miscellaneous process vents and as otherwise noted above for other affected sources

(d) The permittee shall meet all recordkeeping and reporting requirements specified in Subpart CC §63.654 as they apply to the Group 1 wastewater streams, units meeting the definition of gasoline loading rack, and the equipment leaks requirements and as otherwise noted above for the other affected sources.

(e) The refinery vertical flare (unit 37) and the horizontal ground flare (unit 36A) shall meet the requirements of WAQSR Chapter 5, Section 3(m). Flare testing, monitoring, recordkeeping, and reporting requirements are listed in the facility specific monitoring conditions of this operating permit.

(P63-CC2) OPERATION & MAINTENANCE REQUIREMENTS [WAQSR Ch 5, Sec 3(h)(iv)(A)(I) and (II)]

(a) At all times, including periods of startup, shutdown, and malfunction, the permittee shall operate and maintain all equipment and sources subject to 40 CFR Part 63, Subpart CC, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards.

(b) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in condition P63-CC3 of this permit.

(P63-CC3) STARTUP, SHUTDOWN, & MALFUNCTION PLAN [WAQSR Ch 5, Sec 3(h)(iv)(C)]

(a) The permittee shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the affected sources listed in Appendix I of this permit during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with Subpart CC. The plan is incorporated by reference into this permit.

(b) During periods of startup, shutdown, and malfunction, the permittee shall operate and maintain the affected sources (including associated air pollution control equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed under paragraph (a)

of this condition.

(c) When actions taken by the permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the startup, shutdown, and malfunction plan, the permittee shall keep records for that event that demonstrate the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping, that confirms conformance with the startup, shutdown, and malfunction plan for that event.

(d) If an action taken by the permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the startup, shutdown, and malfunction plan, the permittee shall record the actions taken for that event.

(e) The permittee shall keep the written startup, shutdown, and malfunction plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of each affected source or until the affected source is no longer subject to the provisions of Chapter 5, Section 3. In addition, if the startup, shutdown, and malfunction plan is revised, the permittee shall keep previous (i.e., superseded) versions of the startup, shutdown, and malfunction plan on record, to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.

(f) To satisfy the requirements of this condition to develop a startup, shutdown, and malfunction plan, the permittee may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of Chapter 5, Section 3 and are made available for inspection when requested by the Administrator.

(g) If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the permittee developed the plan, the permittee shall revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control equipment.

(P63-CC4) GENERAL RECORDKEEPING REQUIREMENTS [WAQSR Ch 5, Sec 3(l)(ii)(A) and (B)]

(a) The permittee shall maintain files of all information (including all reports and notifications) required by Chapter 5, Section 3 recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site at the facility. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.

(b) The permittee shall maintain relevant records for each affected source of the following:

(i) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment);

(ii) The occurrence and duration of each malfunction of the air pollution control equipment;

(iii) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the startup, shutdown, and malfunction plan;

(iv) All information necessary to demonstrate conformance with the startup, shutdown, and malfunction plan when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, to minimize the recordkeeping burden for conforming events);

(v) All CMS calibration checks;
(vi) All adjustments and maintenance performed on CMS;

(P63-CC5) NOTIFICATION REQUIREMENTS [WAQSR Ch 5, Sec 3(k)(i)(C) and (k)(viii)(C)]

(a) The permittee shall submit notifications required under Chapter 5, Section 3 to the Administrator and U.S. EPA Region VIII in accordance with condition G4 of this permit.

(b) Each time a notification of compliance status is required under Chapter 5, Section 3, the permittee shall submit the notification of compliance status to the Administrator following completion of the relevant compliance demonstration activity specified in 40 CFR, Part 63, Subpart CC.

(P63-CC6) GENERAL REPORTING REQUIREMENTS [WAQSR Ch 5, Sec 3(l)(i)(C), (l)(iv)(A), and (l)(iv)(E)]

(a) The permittee shall submit reports required under Chapter 5, Section 3 to the Administrator and U.S. EPA Region VIII in accordance with condition G4 of this permit.

(b) The permittee shall submit reports to the Administrator in accordance with the reporting requirements in 40 CFR, Part 63, Subpart CC.

(c) Periodic startup, shutdown, and malfunction reports:
If actions taken by the permittee during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan, the permittee shall state such information in a startup, shutdown, and malfunction report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the responsible official who is certifying its accuracy, that shall be submitted to the Administrator semiannually (or on a more frequent basis if specified otherwise in Subpart CC). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate).

WAQSR CHAPTER 5, SECTION 3 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) SUBPART UUU REQUIREMENTS

(40 CFR 63, Subpart UUU is provided in Appendix J)

(P63-UUU1) SUBPART UUU REQUIREMENTS [40 CFR 63 Subpart UUU and WAQSR Ch 5, Sec 3]

The permittee shall meet all requirements of 40 CFR 63 Subpart UUU and WAQSR Ch 5, Sec 3 as they apply to the fluid catalytic cracking unit, the catalytic reformer, the sulfur recovery units, and any bypass line(s) serving these units.

(a) (i) The permittee shall meet all standards specified in Subpart UUU § 63.1564 and § 63.1565 as they apply to the catalytic cracking unit.

(ii) The permittee shall meet all standards specified in Subpart UUU § 63.1566 and § 63.1567 as they apply to the catalytic reforming unit.

(iii) The permittee shall meet all standards specified in Subpart UUU § 63.1568 as they apply to the sulfur recovery units.

(iv) The permittee shall meet all standards specified in Subpart UUU § 63.1569 as they apply to any bypass line serving the catalytic cracking unit, the catalytic reformer, and the sulfur recovery units.

(b) The permittee shall meet all of the initial performance testing requirements or initial compliance demonstrations as specified in Subpart UUU § 63.1571 as they apply to the fluid catalytic cracking unit, the catalytic reformer, the sulfur recovery units, and any bypass line(s) serving these units.

(c) The permittee shall meet all the monitoring requirements specified in Subpart UUU § 63.1572 or § 63.1573 as they apply to the fluid catalytic cracking unit, the catalytic reformer, the sulfur recovery units, and any bypass line(s) serving these units.

(d) The permittee shall meet all the recordkeeping requirements specified in Subpart UUU § 63.1576 as they apply to the fluid catalytic cracking unit, the catalytic reformer, the sulfur recovery units, and any bypass line(s) serving these units.

(e) The permittee shall meet all the notification and reporting requirements as specified in Subpart UUU § 63.1574 and § 63.1575 as they apply to the fluid catalytic cracking unit, the catalytic reformer, the sulfur recovery units, and any bypass line(s) serving these units.

(P63-UUU2) OPERATION & MAINTENANCE REQUIREMENTS [WAQSR Ch 5, Sec 3(h)(iv)(A)(I) and (II)]

(a) At all times, including periods of startup, shutdown, and malfunction, the permittee shall operate and maintain the affected sources, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 CFR 63, Subpart UUU.

(b) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in condition P63-UUU3 of this permit.

(P63-UUU3) STARTUP, SHUTDOWN, & MALFUNCTION PLAN [WAQSR Ch 5, Sec 3(h)(iv)(C)]

(a) The permittee shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the affected sources during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with 40 CFR 63, Subpart UUU. This plan shall be developed by the permittee by the source's compliance date for Subpart UUU. The plan shall be incorporated by reference into this permit.

(b) During periods of startup, shutdown, and malfunction, the permittee shall operate and maintain the affected sources (including associated air pollution control equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed under paragraph (a) of this condition.

(c) When actions taken by the permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected sources' startup, shutdown, and malfunction plan, the permittee shall keep records for that event that demonstrate the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping, that confirms conformance with the startup, shutdown, and malfunction

plan for that event.

(d) If an action taken by the permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected sources' startup, shutdown, and malfunction plan, the permittee shall record the actions taken for that event.

(e) The permittee shall keep the written startup, shutdown, and malfunction plan on record after it is developed to be made available for inspection, upon request, by the Administrator for the life of the affected sources or until the affected sources are no longer subject to the provisions of Chapter 5, Section 3.

(f) To satisfy the requirements of this condition to develop a startup, shutdown, and malfunction plan, the permittee may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of Chapter 5, Section 3 and are made available for inspection when requested by the Administrator.

(g) If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the permittee developed the plan, the permittee shall revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control equipment.

(P63-UUU4) GENERAL RECORDKEEPING REQUIREMENTS [WAQSR Ch 5, Sec 3(l)(ii)(A) and (B)]

(a) The permittee shall maintain files of all information (including all reports and notifications) required by Chapter 5, Section 3 recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site at the facility. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.

(b) The permittee shall maintain relevant records for the affected sources of the following:

(i) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment);

(ii) The occurrence and duration of each malfunction of the air pollution control equipment;

(iii) All maintenance performed on the air pollution control equipment;

(iv) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan;

(v) All information necessary to demonstrate conformance with the affected source's startup, shutdown, and malfunction plan when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a "checklist," or some other effective form of recordkeeping, to minimize the recordkeeping burden for conforming events);

(vi) Each period during which a continuous monitoring system is malfunctioning or inoperative (including out of control periods);

(vii) All required measurements needed to demonstrate compliance with 40 CFR 63, Subpart UUU;

(viii) All results of performance tests, continuous monitoring system performance evaluations, and opacity and visible emission observations;

(ix) All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;

(x) All continuous monitoring system calibration checks;

(xi) All adjustments and maintenance performed on the continuous monitoring systems;

(xii) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements, if a source has been granted a waiver under Chapter 5, Section 3 (l)(vi);

(xiii) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test, if the source has been granted such permission under Chapter 5, Section 3(j)(iv)(F);

(xiv) All documentation supporting initial notifications and notifications of compliance status under condition P63-UUU5 of this permit.

(P63-UUU5) NOTIFICATION REQUIREMENTS [WAQSR Ch 5, Sec 3(k)(i)(C) and (k)(viii)(C)]

(a) The permittee shall submit notifications required under Chapter 5, Section 3 to the Administrator and U.S. EPA Region VIII in accordance with condition G4 of this permit.

(b) Each time a notification of compliance status is required under Chapter 5, Section 3, the permittee shall submit the notification of compliance status to the Administrator following completion of the relevant compliance demonstration activity specified in 40 CFR 63, Subpart UUU.

(P63-UUU6) GENERAL REPORTING REQUIREMENTS [WAQSR Ch 5, Sec 3(l)(i)(C), (l)(iv)(A), and (l)(iv)(E)]

(a) The permittee shall submit reports required under Chapter 5, Section 3 to the Administrator and U.S. EPA Region VIII in accordance with condition G4 of this permit.

(b) The permittee shall submit reports to the Administrator in accordance with the reporting requirements in 40 CFR 63, Subpart UUU.

(c) Periodic startup, shutdown, and malfunction reports. If actions taken by the permittee during a startup, shutdown, or malfunction of the affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan, the permittee shall state such information in a startup, shutdown, and malfunction report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the responsible official who is certifying its accuracy, that shall be submitted to the Administrator semiannually (or on a more frequent basis if specified otherwise in 40 CFR 63, Subpart UUU). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate).

COMPLIANCE CERTIFICATION AND SCHEDULE

Compliance Certification [WAQSR Ch 6, Sec 3 (h)(iii)(E)]

(C1) (a) The permittee shall submit by January 31 each year a certification addressing compliance with the requirements of this permit. The certification shall be submitted as a stand-alone document separate from any monitoring reports required under this permit.

(b) The permittee shall assess compliance with the following conditions of this permit as specified:

(i) For visible emissions from the following units, the permittee shall assess compliance with condition F2 of this permit by ensuring fuel gas is the sole fuel source for these units as required by condition F13(c): the 780 FCC Heater B2, 780 FCC Heater B3, 780 FCC Heater H2, 781 Naphtha Splitter Heater, #1-HDS Heater, 781 LEF Heater, 781 #1 Reformer Heater, 781 #2 Reformer Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 581 Crude Heater #1, 581 Crude Heater, 583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alkylation (Alky) Heater B15, Alky Heater B16, Alky Heater H1, #10 High Pressure Boiler, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant Heater H-101, and HC Heater H5 (units 1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 50, 51, 52, 53, and 57).

(ii) For visible emissions from the 780 FCC Regenerator (unit 9), the permittee shall assess compliance with condition F2 of this permit by conducting monitoring required by condition F13(a)(i).

(iii) For visible emissions from the following units, the permittee shall assess compliance with condition F2 of this permit by conducting monitoring required by condition F13(a)(ii): the #1 Sulfur Recovery Unit, #2 Sulfur Recovery Unit, #8 High Pressure Boiler, #9 High Pressure Boiler, the Low Pressure Boilers, and the #5 Generator (units 38, 39, 40, 41, 42, and 49).

(iv) For visible emissions from the following units, the permittee shall assess compliance with condition F2 of this permit by conducting monitoring required by condition F13(b): the Tulip Field Flare, Vertical Flare, and Light Oil Rack Flare (units 36, 37, and 43B).

(v) For particulate emissions from the following units, the permittee shall assess compliance with condition F3 of this permit by conducting testing required by condition F10: the 780 FCC Regenerator (unit 9), #8 High Pressure Boiler, and #9 High Pressure Boiler (units 9, 40, and 41).

(vi) For particulate emissions from the Low Pressure Boilers (unit 42), the permittee shall assess compliance with condition F3 of this permit by reviewing records kept in accordance with condition F22.

(vii) For NO_X emissions from the 780 FCC Regenerator (unit 9), the permittee shall assess compliance with condition F4 of this permit by conducting monitoring required by condition F15(a).

(viii) For NO_X emissions from the following units, the permittee shall assess compliance with condition F4 of this permit by conducting testing required by condition F11 and monitoring under condition F15(c): the 780 FCC Heater B2, 781 Naphtha Splitter Heater, 781 #1 Reformer Heater, 781 #2 Reformer Heater, 581 Crude Heater #1, 581 Crude Heater, 583 Vacuum Heater, 582 Crude Heater-F102A, 582 Vacuum Heater-F104, Alky Heater B16, #10 High Pressure Boiler, #8 High Pressure Boiler, #9 High Pressure Boiler, Low Pressure Boilers, HC Heater H3, H_2 Plant H-101 Heater, and the (units 1, 10, 13, 14, 18, 19, 20, 23, 25, 33, 35, 40, 41, 42, 51, and 53).

(ix) For NO_X emissions from the following units, the permittee shall assess compliance with condition F4 of this permit by reviewing records kept in accordance with condition F22: the 780 FCC Heater B3, 780 FCC Heater H2, 781 #1-HDS Heater, 781 LEF Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102B, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alky Heater B15, Alky Heater B16, Alky Heater H1, Sulfur Recovery Unit #1, Sulfur Recovery Unit #2, Light Oil Rack Flare, HC Heater, HC Heater H4, and HC Heater H5 (units 2, 3, 11, 12, 15, 16, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, 34, 38, 39, 43B, 50, 52, and 57).

(x) For SO_2 emissions from the 780 FCC Regenerator (unit 9), the permittee shall assess compliance with condition F4 of this permit by conducting monitoring required by condition F16(a).

(xi) For SO_2 emissions from the #1 and #2 Sulfur Recovery units (units 38 and 39), the permittee shall assess compliance with condition F4 of this permit by conducting monitoring required by condition F16(b). For SO_2 emissions from the Claus sulfur recovery plant the permittee shall assess compliance with condition P60-J1(a) by conducting the monitoring required by P60-J1(b).

(xii) For SO_2 emissions from the #8 High Pressure Boiler, #9 High Pressure Boiler, and Low Pressure Boilers (units 40, 41, and 42), the permittee shall assess compliance with condition F4of this permit by conducting monitoring required by condition F17 and reviewing the reporting required by condition F32.

(xiii) For SO_2 emissions from the following units, the permittee shall assess compliance with condition F4 and F5 of this permit by conducting monitoring required by condition F17: the 780 FCC Heater B2, 780 FCC Heater B3, 780 FCC Heater H2, 781 Naphtha Splitter Heater, #1-HDS Heater, 781 LEF Heater, 781 #1 Reformer Heater, 781 #2 Reformer Heater, 781 #3 Reformer Heater, 781 Stabilizer Heater, 581 Crude Heater #1, 581 Crude Heater, 583 Vacuum Heater, 582 Pre-Flash Heater-F101, 582 Crude Heater-F103, 582 Crude Heater-F102A, 582 Crude Heater-F102B, 582 Vacuum Heater-F104, #2-HDS Heater, #3-HDS Heater, Asphalt Heater #1, Asphalt Heater #2, Asphalt Heater #3, Asphalt Heater #4, Alkylation (Alky) Heater B15, Alky Heater B16, Alky Heater H1, #10 High Pressure Boiler, HC Heater H1/H2, HC Heater H3, HC Heater H4, H_2 Plant Heater H-101, and HC Heater H5 (units 1, 2, 3, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 50, 51, 52, 53, and 57).

(xiv) For sulfur recovery unit operation, the permittee shall assess compliance with condition F6 of this permit by conducting monitoring required by condition F16(c) and reporting required by condition F31.

(xv) For ambient SO_2 and meteorological monitoring, the permittee shall assess compliance with condition F20 of this permit by reviewing records kept in accordance with condition.

(xvi) The permittee shall assess compliance with condition P60-J1(a) of this permit by conducting monitoring required by condition P60-J1(b).

(xvii) The permittee shall assess compliance with the standards in condition P60-GGG1 of this permit by conducting testing and monitoring required by condition P60-GGG1(a).

(xviii) The permittee shall assess compliance with condition P60-Kb1(a) of this permit by conducting monitoring required by P60-Kb1(b) and (d).

(xix) The permittee shall assess compliance with condition P60-QQQ1(a) of this permit by conducting testing and monitoring required by conditions P60-QQQ1(b) and (c).

(xx) The permittee shall assess compliance with condition P61-FF1 of this permit by reviewing the reports required under P61-FF1(a).

(xxi) The permittee shall assess compliance with condition P63-CC1 by conducting monitoring and reviewing records kept in accordance with 40 CFR 60 Subpart CC and conditions P63-CC1 through P63-CC6.

(xxii) The permittee shall assess compliance with condition P63-UUU1 by conducting monitoring and reviewing records kept in accordance with 40 CFR 60 Subpart UUU and conditions P63-UUU1 through P63-UUU6.

(c) The compliance certification shall include:

(i) The permit condition or applicable requirement that is the basis of the certification;

(ii) The current compliance status;

(iii) Whether compliance was continuous or intermittent; and

(iv) The methods used for determining compliance.

(d) For any permit conditions or applicable requirements for which the source is not in compliance, the permittee shall submit with the compliance certification a proposed compliance plan and schedule for Division approval.

(e) The compliance certification shall be submitted to the Division in accordance with condition G4 of this permit and to the Assistant Regional Administrator, Office of Enforcement, Compliance, and Environmental Justice (8ENF-T), U.S. EPA - Region VIII, One Denver Place, 999 18th Street - Suite 300, Denver, CO 80202-2466.

(f) Determinations of compliance or violations of this permit are not restricted to the monitoring requirements listed in paragraph C1(a) of this condition; other credible evidence may be used.

Compliance Schedule [WAQSR Ch 6, Sec 3 (h)(iii)(C) and (D)]

(C2) The permittee shall continue to comply with the applicable requirements with which the permittee has certified that it is already in compliance.

(C3) The permittee shall comply in a timely manner with applicable requirements that become effective during the term of this permit.

(C4) The permittee shall adhere to the following schedule to bring Claus sulfur recovery plant into compliance with applicable requirements of 40 CFR Part 60, Subpart J:

Milestone	**Date**
Complete preliminary engineering for a Tail Gas Treatment System (TGTS)	March 31, 2004
Submit construction permit application revising permit limits for the sulfur recovery plants	March 31, 2004
Complete detailed engineering and begin construction	September 30, 2004
Mechanical completion and system start-up	March 31, 2005
Completion of all testing and normal operation	April 11, 2005

(a) The permittee shall submit quarterly progress reports within 30 days of the end of each calendar quarter. Such progress reports shall be submitted in accordance with condition G4 of this permit and shall contain the following:

(i) Dates for achieving the activities, milestones, or compliance required in the compliance schedule, and dates when such activities, milestones, or compliance were achieved; and

(ii) An explanation of why any dates in the compliance schedule were not or will not be met, and any preventive or corrective measures adopted.

(b) This compliance schedule does not sanction non-compliance with the applicable requirements on which it is based.

GENERAL PERMIT CONDITIONS

Powers of the Administrator: [W.S. 35-11-110]

(G1) (a) The Administrator may require the owner or operator of any point source to complete plans and specifications for any application for a permit required by the Wyoming Environmental Quality Act or regulations made pursuant thereto and require the submission of such reports regarding actual or potential violations of the Wyoming Environmental Quality Act or regulations thereunder.

(b) The Administrator may require the owner or operator of any point source to establish and maintain records; make reports; install, use and maintain monitoring equipment or methods; sample emissions, or provide such other information as may be reasonably required and specified.

Permit Renewal and Expiration: [WAQSR Ch 6, Sec 3 (c)(i)(C), (d)(ii), (d)(iv)(B), and (h)(i)(B)] [W.S. 35-11-206 (f)]

(G2) This permit is issued for a fixed term of five years. Permit expiration terminates the permittee's right to operate unless a timely and complete renewal application is submitted at least six months prior to the date of permit expiration. If the permittee submits a timely and complete application for renewal, the permittee's failure to have an operating permit is not a violation of WAQSR Chapter 6, Section 3 until the Division takes final action on the renewal application. This protection shall cease to apply after a completeness determination if the applicant fails to submit by the deadline specified in writing by the Division any additional information identified as being needed to process the application.

Duty to Supplement: [WAQSR Ch 6, Sec 3 (c)(iii)]

(G3) The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information. The permittee shall also provide additional information as necessary to address any requirements that become applicable to the facility after this permit is issued.

Submissions: [WAQSR Ch 6, Sec 3 (c)(iv)] [W.S. 35-11-206 (c)]

(G4) Any document submitted shall be certified as being true, accurate, and complete by a responsible official.

(a) Submissions to the Division.

(i) Any submissions to the Division including reports, certifications, and emission inventories required under this permit shall be submitted as separate, stand-alone documents and shall be sent to:

Administrator, Air Quality Division
122 West 25th Street
Cheyenne, Wyoming 82002

(ii) A copy of each submission to the Administrator under paragraph (a)(i) of this condition shall be sent to the DEQ Air Quality Contact listed on page 3 of this permit.

(b) Submissions to EPA.

(i) Each certification required under condition C1 of this permit shall also be sent to:

Assistant Regional Administrator
Office of Enforcement, Compliance, and Environmental Justice (8ENF-T)
U.S. EPA - Region VIII
999 18th Street - Suite 300
Denver, CO 80202-2466.

(ii) All other required submissions to EPA shall be sent to:

Office of Partnerships and Regulatory Assistance
Air and Radiation Program (8P-AR)
U.S. EPA - Region VIII
999 18th Street - Suite 300
Denver, CO 80202.

Changes for which No Permit Revision Is Required: [WAQSR Ch 6, Sec 3 (d)(iii)]

(G5) The permittee may change operations without a permit revision provided that:

(a) The change is not a modification under any provision of title I of the Clean Air Act;

(b) The change has met the requirements of Chapter 6, Section 2 of the WAQSR and is not a modification under Chapter 5, Section 2 or Chapter 6, Section 4 of the WAQSR and the changes do not exceed the emissions allowed under the permit (whether expressed therein as a rate of emissions or in terms of total emissions); and

(c) The permittee provides EPA and the Division with written notification at least 14 days in advance of the proposed change. The permittee, EPA, and the Division shall attach such notice to their copy of the relevant permit. For each such change, the written notification required shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield, if one exists for this permit, shall not apply to any such change made.

Transfer of Ownership or Operation: [WAQSR Ch 6, Sec 3 (d)(v)(A)(IV)]

(G6) A change in ownership or operational control of this facility is treated as an administrative permit amendment if no other change in this permit is necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Division.

Reopening for Cause: [WAQSR Ch 6, Sec 3 (d)(vii)] [W.S. 35-11-206 (f)(ii) and (iv)]

(G7) The Division will reopen and revise this permit as necessary to remedy deficiencies in the following circumstances:

(a) Additional applicable requirements under the Clean Air Act or the WAQSR that become applicable to this source if the remaining permit term is three or more years. Such reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended.

(b) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit.

(c) The Division or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

(d) The Division or EPA determines that the permit must be revised or revoked to assure compliance with applicable requirements.

Annual Fee Payment: [WAQSR Ch 6, Sec 3 (f)(i), (ii), and (vi)] [W.S. 35-11-211]

(G8) The permittee shall, as a condition of continued operations, submit an annual fee to the Division as established in Chapter 6, Section 3 (f) of the WAQSR. The Division shall give written notice of the amount of fee to be assessed and the basis for such fee assessment annually. The assessed fee is due on receipt of the notice unless the fee assessment is appealed pursuant to W.S. 35-11-211(d). If any part of the fee assessment is not appealed it shall be paid to the Division on receipt of the written notice. Any remaining fee which may be due after completion of the appeal is immediately due and payable upon issuance of the Council's decision. Failure to pay fees owed the Division is a violation of Chapter 6, Section 3 (f) and W.S. 35-11-203 and may be cause for the revocation of this permit.

Annual Emissions Inventories: [WAQSR Ch 6, Sec 3 (f)(v)(G)]

(G9) The permittee shall submit an annual emission inventory for this facility to the Division for fee assessment and compliance determinations within 60 days following the end of the calendar year. The emissions inventory shall be in a format specified by the Division.

Severability Clause: [WAQSR Ch 6, Sec 3 (h)(i)(E)]

(G10) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Compliance: [WAQSR Ch 6, Sec 3 (h)(i)(F)(I) and (II)] [W.S. 35-11-203 (b)]

(G11) The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Air Act, Article 2 of the Wyoming Environmental Quality Act, and the WAQSR and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Permit Actions: [WAQSR Ch 6, Sec 3 (h)(i)(F)(III)] [W.S. 35-11-206 (f)]

(G12) This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Property Rights: [WAQSR Ch 6, Sec 3 (h)(i)(F)(IV)]

(G13) This permit does not convey any property rights of any sort, or any exclusive privilege.

Duty to Provide Information: [WAQSR Ch 6, Sec 3 (h)(i)(F)(V)]

(G14) The permittee shall furnish to the Division, within a reasonable time, any information that the Division may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Division copies of records required to be kept by the permit, including information claimed and shown to be confidential under W.S. 35-11-1101 (a) of the Wyoming Environmental Quality Act. Upon request by the Division, the permittee shall also furnish confidential information directly to EPA along with a claim of confidentiality.

Emissions Trading: [WAQSR Ch 6, Sec 3 (h)(i)(H)]

(G15) There are no emissions trading provisions in this permit.

Inspection and Entry: [WAQSR Ch 6, Sec 3 (h)(iii)(B)] [W.S. 35-11-206 (c)]

(G16) Authorized representatives of the Division, upon presentation of credentials and other documents as may be required by law, shall be given permission to:

(a) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) have access to and copy at reasonable times any records that must be kept under the conditions of this permit;

(c) inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) sample or monitor any substances or parameters at any location, during operating hours, for the purpose of assuring compliance with this permit or applicable requirements.

Excess Emissions Due to an Emergency: [WAQSR Ch 6, Sec 3 (l)]

(G17) The permittee may seek to establish that noncompliance with a technology-based emission limitation under this permit was due to an emergency, as defined in Ch 6, Sec 3 (l)(i) of the WAQSR. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

(a) an emergency occurred and that the permittee can identify the cause(s) of the emergency;
(b) the permitted facility was, at the time, being properly operated;
(c) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit;
(d) the permittee submitted notice of the emergency to the Division within one working day of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

Carbon Monoxide: [WAQSR Ch 3, Sec 5]

(G18) The emission of carbon monoxide in stack gases from any stationary source shall be limited as may be necessary to prevent ambient standards from being exceeded.

Open Burning Restrictions: [WAQSR Ch 10, Sec 2]

(G19) No person shall dispose of refuse or trade wastes by open burning; conduct, cause or permit a salvage operation by open burning; or cause, suffer, allow or permit open burning except as provided for in WAQSR Chapter 10, Section 2.

Diluting and Concealing Emissions: [WAQSR Ch 1, Sec 4]

(G20) No person shall cause or permit the installation or use of any device, contrivance or operational schedule which, without resulting in reduction of the total amount of air contaminant released to the atmosphere, shall dilute or conceal an emission from a source. This condition shall not apply to the control of odors.

Abnormal Conditions and Equipment Malfunction: [WAQSR Ch 1, Sec 5]

(G21) Emissions in excess of established regulation limits as a direct result of malfunction or abnormal conditions or breakdown of a process, control or related operating equipment beyond the control of the person or firm owning or operating such equipment shall not be deemed to be in violation of such regulations, if the Division is advised of the circumstances within 24 hours of such malfunction and a corrective program acceptable to the Division is furnished.

Asbestos: [WAQSR Ch 3, Sec 8]

(G22) The permittee shall comply with emission standards for asbestos during abatement, demolition, renovation, manufacturing, spraying and fabricating activities.
(a) No owner or operator shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.
(b) All owners and operators conducting an asbestos abatement project, including an abatement project on a residential building, shall be responsible for complying with Federal requirements and State standards for packaging, transportation, and delivery to an approved waste disposal facility as provided in paragraph (m) of Ch 3, Sec 8.
(c) The permittee shall follow State and Federal standards for any demolition and renovation activities conducted at this facility, including:
(i) A thorough inspection of the affected facility or part of the facility where the demolition or renovation activity will occur shall be conducted to determine the presence of asbestos, including Category I and Category II non-friable asbestos containing material. The results of the inspection will determine which notification and asbestos abatement procedures are applicable to the activity.
(ii) The owner or operator shall follow the appropriate notification requirements of Chapter 3, Section 8(i)(ii).

(iii) The owner or operator shall follow the appropriate procedures for asbestos emissions control, as specified in Chapter 3, Section 8(i)(iii).

(d) No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this paragraph do not apply to spray-applied insulating materials regulated under paragraph (j) of Ch 3, Sec 8.

(e) The permittee shall comply with all other requirements of WAQSR Ch 3, Sec 8.

Fugitive Dust: [WAQSR Ch 3, Sec 2(f)]

(G23) The permittee shall minimize fugitive dust in compliance with standards in Ch 3, Sec 2(f) of WAQSR for construction/demolition activities, handling and transportation of materials, and agricultural practices.

Stratospheric Ozone Protection Requirements: [40 CFR Part 82]

(G24) The permittee shall comply with all applicable Stratospheric Ozone Protection Requirements, including but not limited to:

(a) *Standards for Appliances* [40 CFR Part 82, Subpart F]
The permittee shall comply with the standards for recycling and emission reduction pursuant to 40 CFR Part 82, Subpart F - Recycling and Emissions Reduction, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

(i) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.

(ii) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.

(iii) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.

(iv) Persons disposing of small appliances, MVACs and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166. ("MVAC-like appliance" as defined at §82.152.)

(v) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.166.

(vi) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

(vii) The permittee shall comply with all other requirements of Subpart F.

(b) *Standards for Motor Vehicle Air Conditioners* [40 CFR Part 82, Subpart B]
If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant.

STATE ONLY PERMIT CONDITIONS

The conditions listed in this section are State only requirements and are not federally enforceable.

Ambient Standards

(S1) The permittee shall operate the emission units described in this permit such that the following ambient standards are not exceeded:

POLLUTANT	STANDARD	CONDITION	WAQSR CH. 2, SEC.
PM_{10} particulate matter	50 micrograms per cubic meter	annual arithmetic mean	2(a)
	150 micrograms per cubic meter	24-hr avg. concentration with not more than one exceedance per year	
$PM_{2.5}$ particulate matter	15 micrograms per cubic meter	annual arithmetic mean	2(b)
	65 micrograms per cubic meter	98th percentile 24-hour average concentration	
Sulfur oxides	60 micrograms per cubic meter	annual arithmetic mean	4
	260 micrograms per cubic meter	max 24-hr concentration with not more than one exceedance per year	
	1300 micrograms per cubic meter	max 3-hr concentration with not more than one exceedance per year	
Suspended sulfate	0.25 milligrams SO_3 per 100 square centimeters per day	maximum annual average	8
	0.50 milligrams SO_3 per 100 square centimeters per day	maximum 30-day value	
Hydrogen sulfide	70 micrograms per cubic meter	½ hour average not to be exceeded more than two times per year	7
	40 micrograms per cubic meter	½ hour average not to be exceeded more than two times in any five consecutive days	
Ozone	0.08 parts per million	daily maximum 8-hour average	6
Nitrogen dioxide	100 micrograms per cubic meter	annual arithmetic mean	3
Carbon monoxide	10 milligrams per cubic meter	max 8-hr concentration with not more than one exceedance per year	5
	40 milligrams per cubic meter	max 1-hr concentration with not more than one exceedance per year	
Lead and its compounds	1.5 micrograms per cubic meter	maximum arithmetic mean averaged over a calendar quarter	10

Hydrogen Sulfide: [WAQSR Ch 3, Sec 7]

(S2) Any exit process gas stream containing hydrogen sulfide which is discharged to the atmosphere from any source shall be vented, incinerated, flared or otherwise disposed of in such a manner that ambient sulfur dioxide and hydrogen sulfide standards are not exceeded.

Odors: [WAQSR Ch 2, Sec 11]

(S3) Ambient standards for Odors:

(a) The ambient air standard for odors from any source shall be limited to an odor emission at the property line which is undetectable at seven dilutions with odor free air as determined by a scentometer as manufactured by the Barnebey-Cheney Company or any other instrument, device, or technique designated by the Division as producing equivalent results. The occurrence of odors shall be measured so that at least two measurements can be made within a period of one hour, these determinations being separated by at least 15 minutes.

(b) Odor producing materials shall be stored, transported, and handled in a manner that odors produced from such materials are confined and that accumulation of such materials resulting from spillage or other escape is prevented.

SUMMARY OF SOURCE EMISSION LIMITS AND REQUIREMENTS

Source ID#: **1, 10, 13, 14, 18, 19, 20, 23, 25, and 33** Source Description: **Heaters**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limits: See Table I [F2]	WAQSR Ch 3, Sec 2	Test if required [F12]	Monitor type of fuel fired [F13]	None [F21]	Report type of fuel fired [F25] Excess emissions & permit deviation reports [F30]
SO_2	Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5 & P60-J1]	WAQSR Ch 6, Sec 2 Permit MD-410 40 CFR 60 Subpart J	Test if required [F12]	Fuel monitoring [F17 & P60-J1]	Fuel gas monitoring records [F23 & P60-J2]	Quarterly fuel gas monitoring reports [F29 & P60-J3] Excess emissions & permit deviation reports [F30]
NO_X	Emission limits: See Table II [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permit MD-410	Test once during the permit term or conduct annual monitoring [F11] Additional testing if required [F12]	Portable analyzer monitoring annually [F15]	Testing and portable analyzer monitoring records [F21]	Testing and portable analyzer monitoring reports [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **2, 3, 11, 12, 15, 16, 21, 22, 24, 26, 27, 28, 29, 30, 31, 32, & 34** Source Description: **Heaters**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limits: See Table I [F2]	WAQSR Ch 3, Sec 2	Test if required [F12]	Monitor type of fuel fired [F13]	None [F21]	Report type of fuel fired [F25] Excess emissions & permit deviation reports [F30]
SO_2	Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5 & P60-J1]	WAQSR Ch 6, Sec 2 Permit MD-410 40 CFR 60 Subpart J	Test if required [F12]	Fuel monitoring [F17 & P60-J1]	Fuel gas monitoring records [F23 & P60-J2]	Quarterly fuel gas monitoring reports [F29 & P60-J3] Excess emissions & permit deviation reports [F30]
NO_X	Emission limits: See Table II [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Maintain unit per manufacturer's recommendations [F15]	Maintenance records [F20]	Maintenance reports [F26] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **9** Source Description: **780 FCC Regenerator**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 40 percent [F2] Permit limit: 76.0 lb/hr, 332.0 TPY [F3]	WAQSR Ch 3, Sec 2 (b) WAQSR Ch 6, Sec 2 Permit MD-410	Test annually [F10] Additional testing if required [F12]	Daily Method 9 testing for opacity [F13]	Opacity monitoring records [F19] Test records [F21]	Opacity monitoring reports [F25] Test reports [F27] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 451.0 lb/hr, 809.0 TPY [F4] Comply w/ permit CT-1022 limits prior to HC Unit start-up [F4]	WAQSR Ch 6, Sec 2 Permits MD-439 and MD-410	Testing if required [F12]	Continuous emissions monitoring [F16]	Continuous emissions monitoring records [F22]	Excess emissions and monitoring system performance reports [F28] Excess emissions & permit deviation reports [F30]
NO_X	Permit limit: 62.1 lb/hr, 272.0 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-410	Testing if required [F12]	Continuous emissions monitoring [F15]	Continuous emissions monitoring records [F22]	Excess emissions and monitoring system performance reports [F28] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **35** Source Description: **#10 High Pressure Boiler**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 20 percent [F2]	WAQSR Ch 3, Sec 2	Test if required [F12]	Monitor type of fuel fired [F13]	None [F21]	Report type of fuel fired [F25] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 2.3 lb/hr, 10.0 TPY [F4] Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5 & P60-J1]	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Fuel gas monitoring [F17 & P60-J1]	Fuel gas monitoring records [F23 & P60-J2]	Quarterly fuel gas monitoring reports [F29 & P60-J3(a)] Excess emissions & permit deviation reports [F30]
NO_X	WAQSR limit: 0.23 lb/MMBtu. [F4] Permit limit: 23.0 lb/hr, 100.7 TPY [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permit MD-410	Test annually [F11] Additional testing if required [F12]	Portable analyzer monitoring once every calendar half [F15]	Testing and portable analyzer monitoring records [F21]	Testing and portable analyzer monitoring reports [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **38** Source Description: **Sulfur Recovery Unit #1**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 40 percent [F2]	WAQSR Ch 3, Sec 2 (b)	Test if required [F12]	Daily Observations and Quarterly Method 9 testing for opacity [F13]	Opacity monitoring records [F19]	Opacity monitoring reports [F25] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 361.9 lb/hr, 1489.0 TPY [F4] Sulfur input limited to 27.7 LTPD Minimum sulfur production efficiency limit of 93 percent Operate unit near design rate when Sulfur Recovery Unit #2 is out of service	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Continuous emissions monitoring [F16] Maintain/operate acid gas H_2S and flow rate monitors [F16] Measure liquid sulfur level in #1 and #2 sulfur pits [F16]	Continuous emissions monitoring records [F22] Acid gas H_2S and flow rate monitor records [F22] Liquid sulfur level measurement records [F22] Sulfur feed and production rate records [F22] Sulfur recovery efficiency records [F22]	Excess emissions and monitoring system performance reports [F28] Excess emissions & permit deviation reports [F30]
NO_X	Permit limit: 5.1 lb/hr, 22.4 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Maintain per manufacturer's recommendations [F15]	Maintenance records [F20]	Maintenance reports [F26] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **39** Source Description: **Sulfur Recovery Unit #2**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 20 percent [F2]	WAQSR Ch 3, Sec 2 (a)	Test if required [F12]	Daily Observations and Quarterly Method 9 testing for opacity [F13]	Opacity monitoring records [F19]	Opacity monitoring reports [F25] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 186.7 lb/hr, 818.0 TPY [F4] Sulfur input limited to 20.0 LTPD Minimum sulfur production efficiency limit of 95 percent	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Continuous emissions monitoring [F16] Maintain/operate acid gas H_2S and flow rate monitors [F16] Measure liquid sulfur level in #1 and #2 sulfur pits [F16]	Continuous emissions monitoring records [F22] Acid gas H_2S and flow rate monitor records [F22] Liquid sulfur level measurement records [F22] Sulfur feed and production rate records [F22] Sulfur recovery efficiency records [F22]	Excess emissions and monitoring system performance reports [F28] Excess emissions & permit deviation reports [F30]
NO_X	Permit limit: 3.7 lb/hr, 16.2 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Maintain per manufacturer's recommendations [F15]	Maintenance records [F20]	Maintenance reports [F26] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **40 and 41** Source Description: **#8 and #9 High Pressure Boilers**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 40 percent [F2] Permit limit: 14.37 lb/hr, 62.9 TPY [F3]	WAQSR Ch 3, Sec 2 (b) WAQSR Ch 6, Sec 2 Permit MD-410	Test once during permit term [F10] Additional testing if required [F12]	Daily Observations and Quarterly Method 9 testing for opacity [F13]	Opacity monitoring records [F19] Test records [F21]	Opacity monitoring reports [F25] Test reports [F27] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 140.2 lb/hr, 296.0 TPY [F4] Comply w/ permit CT-1022 limits prior to HC Unit start-up [F4] Fuel oil limit: 4.0 percent by weight sulfur concentration in fuel oil [F5] Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5] Fuel oil usage limit: [F5]	WAQSR Ch 6, Sec 2 Permits MD-439 and MD-410	Test if required [F12]	Fuel monitoring [F17]	Fuel monitoring records [F23]	Fuel monitoring reports [F29] Excess emissions & permit deviation reports [F30]
NO_X	WAQSR limit: 0.23 lb/MMBtu for gas and 0.60 lb/MMBtu for fuel oil [F4] Permit limit: 33.7 lb/hr, 147.4 TPY [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permit MD-410	Test annually [F11] Additional testing if required [F12]	Portable analyzer monitoring once every calendar half [F15]	Testing and portable analyzer monitoring records [F21]	Testing and portable analyzer monitoring reports [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **42** Source Description: **Low Pressure Boilers**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 40 percent [F2] Permit limit: 9.58 lb/hr, 42.0 TPY [F3]	WAQSR Ch 3, Sec 2 (b) WAQSR Ch 6, Sec 2 Permit MD-410	Test once during permit term [F10] Additional testing if required [F12]	Daily Observations and Quarterly Method 9 testing for opacity [F13]	Opacity monitoring records [F19] Test records [F21]	Opacity monitoring reports [F25] Test reports [F27] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 86.6 lb/hr, 184.0 TPY [F4] Comply w/ permit CT-1022 limits prior to HC Unit start-up [F4] Fuel oil limit: 4.0 percent by weight sulfur concentration in fuel oil [F5] Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5] Fuel oil usage limit: [F5]	WAQSR Ch 6, Sec 2 Permits MD-439 and MD-410	Test if required [F12]	Fuel monitoring [F17]	Fuel monitoring records [F23]	Fuel monitoring reports [F29] Excess emissions & permit deviation reports [F30]
NO_X	WAQSR limit: 0.23 lb/MMBtu for gas and 0.60 lb/MMBtu for fuel oil [F4] Permit limit: 26.8 lb/hr, 117.2 TPY [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permit MD-410	Test annually [F11] Additional testing if required [F12]	Portable analyzer monitoring once every calendar half [F15]	Testing and portable analyzer monitoring records [F21]	Testing and portable analyzer monitoring reports [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **36 and 37** Source Description: **Tulip Field and Vertical Flares**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: Emissions from the flare shall be smokeless [F2]	40 CFR 63 Subpart CC	Test if required [F12]	Quarterly Method 22 tests [F13]	Method 22 test records [F19]	Semiannual Method 22 summary reports [F25] Excess emissions & permit deviation reports [F30]

Source ID#: **43B** Source Description: **Light Oil Rack Flare**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: Emissions from the flare shall be smokeless [F2]	40 CFR 63 Subpart CC	Test if required [F12]	Quarterly Method 22 tests [F13]	Method 22 test records [F19]	Semiannual Method 22 summary reports [F25] Excess emissions & permit deviation reports [F30]
NO_X	Permit limit: 2.8 lb/hr, 12.3 TPY for unit 43B [F4]	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Maintain per manufacturer's recommendations [F15]	Maintenance records [F20]	Maintenance reports [F26] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **49** Source Description: **#5 Generator**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limit: 30 percent [F2] Permit limit: 4.3 lb/hr, 18.9 TPY [F3]	WAQSR Ch 3, Sec 2 WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	Daily Observations and Quarterly Method 9 tests [F13]	Opacity monitoring records [F19]	Opacity monitoring reports [F25] Excess emissions & permit deviation reports [F30]
SO_2	Permit limit: 7.1 lb/hr, 31.0 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-410	Test if required [F12]	None [F16]	None [F21]	Excess emissions & permit deviation reports [F30]
NO_X	Permit limit: 43.1 lb/hr, 188.8 TPY [F4]	WAQSR Ch 6, Sec 2 Permit MD-410	Test once during permit term [F11] Additional testing if required [F12]	Portable analyzer monitoring once during permit term [F15]	Testing and portable analyzer monitoring records [F21]	Test reports [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **50, & 52** Source Description:**Hydrocracker Heaters**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limits: 20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Additional testing if required [F12]	Monitor type of fuel fired [F13]	Performance test [F21]	Report type of fuel fired [F25] Excess emissions & permit deviation reports [F30]
SO_2	Permit limits: see Table II [F4] Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5 & P60-J1]	WAQSR Ch 6, Sec 2 Permits MD-439 and MD-410 40 CFR 60 Subpart J	Test if required [F12]	Fuel monitoring [F17 & P60-J1]	Fuel gas monitoring records [F23 & P60-J2]	Quarterly fuel gas monitoring reports [F29 & P60-J3] Excess emissions & permit deviation reports [F30]
NO_X	Emission limits: See Table II [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permits MD-439 and MD-410	Conduct performance testing w/i 90 days of achieving maximum firing rate [F9] Additional testing if required [F12]	Maintain unit per manufacturer's recommendations [F15]	Maintenance records [F20] Performance test records [F21]	Maintenance reports [F26] Report performance test results [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

Source ID#: **51, & 53** Source Description: **Hydrocracker Heaters**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Opacity limits: 20 percent opacity [F2]	WAQSR Ch 3, Sec 2	Additional testing if required [F12]	Monitor type of fuel fired [F13]	None [F21]	Report type of fuel fired [F25] Excess emissions & permit deviation reports [F30]
SO_2	Fuel gas limit: 0.10 gr/dscf H_2S concentration in fuel gas [F5 & P60-J1]	WAQSR Ch 6, Sec 2 Permit MD-410 40 CFR 60 Subpart J	Test if required [F12]	Fuel monitoring [F17 & P60-J1]	Fuel gas monitoring records [F23 & P60-J2]	Quarterly fuel gas monitoring reports [F29 & P60-J3] Excess emissions & permit deviation reports [F30]
NO_X	Emission limits: See Table II [F4]	WAQSR Ch 3, Sec 3 WAQSR Ch 6, Sec 2 Permit MD-410	Conduct performance testing w/i 90 days of achieving maximum firing rate [F9] Test once during the permit term or conduct annual monitoring [F11] Additional testing if required [F12]	Portable analyzer monitoring annually [F15]	Testing and portable analyzer monitoring records [F21]	Testing and portable analyzer monitoring reports [F27] Excess emissions & permit deviation reports [F30]

These tables are intended only to highlight and summarize applicable requirements for each source. The corresponding permit conditions, listed in brackets, contain detailed descriptions of the compliance requirements. Compliance with the summary conditions in these tables may not be sufficient to meet permit requirements. These tables may not reflect all emission sources at this facility.

ABBREVIATIONS

AQD	Air Quality Division
BACT	Best available control technology (see Definitions)
Btu	British Thermal Unit
CAA	Clean Air Act
C.F.R.	Code of Federal Regulations
CO	Carbon monoxide
°F	Degrees Fahrenheit
DEQ	Wyoming Department of Environmental Quality
EPA	United States Environmental Protection Agency (see Definitions)
g	Gram(s)
g-cal/hr	Gram-calorie(s) per hour
g/hp-hr	Gram(s) per horsepower hour
gal	Gallon(s)
gr	Grain(s)
H_2S	Hydrogen sulfide
HAP(s)	Hazardous air pollutant(s)
hp	Horsepower
hr	Hour(s)
ID#	Identification number
lb	Pound(s)
M	Thousand
MACT	M2aximum available control technology (see Definitions)
mfr	Manufacturer
mg	Milligram(s)
MM	Million
N/A	Not applicable
NMHC(s)	Non-methane hydrocarbon(s)
NO_X	Oxides of nitrogen
O_2	Oxygen
OPP	Operating Permit Program
PM	Particulate matter
PM_{10}	Particulate matter less than or equal to a nominal diameter of 10 micrometers
ppmv	Parts per million (by volume)
ppmw	Parts per million (by weight)
RVP	Reid Vapor Pressure
SCF	Standard cubic foot (feet)
SCM	Standard cubic meter(s)
SIC	Standard Industrial Classification
SO_2	Sulfur dioxide
SO_3	Sulfur trioxide
SO_X	Oxides of sulfur
TBD	To be determined
TPY	Tons per year
U.S.C.	United States Code
µg	Microgram(s)
VOC(s)	Volatile organic compound(s)
W.S.	Wyoming Statute
WAQSR	Wyoming Air Quality Standards & Regulations (see Definitions)

DEFINITIONS

"Act" means the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.*

"Administrator" means Administrator of the Air Quality Division, Wyoming Department of Environmental Quality.

"Applicable requirement" means all of the following as they apply to emissions units at a source subject to Chapter 6, Section 3 of the WAQSR (including requirements with future effective compliance dates that have been promulgated or approved by the EPA or the State through rulemaking at the time of issuance of the operating permit):

(a) Any standard or other requirement provided for in the Wyoming implementation plan approved or promulgated by EPA under title I of the Act that implements the relevant requirements of the Act, including any revisions to the plan promulgated in 40 C.F.R. Part 52;

(b) Any standards or requirements in the WAQSR which are not a part of the approved Wyoming implementation plan and are not federally enforceable;

(c) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D of the Act and including Chapter 5, Section 2 and Chapter 6, Sections 2 and 4 of the WAQSR;

(d) Any standard or other requirement promulgated under Section 111 of the Act, including Section 111(d) and Chapter 5, Section 2 of the WAQSR;

(e) Any standard or other requirement under Section 112 of the Act, including any requirement concerning accident prevention under Section 112(r)(7) of the Act and including any regulations promulgated by EPA and the State pursuant to Section 112 of the Act;

(f) Any standard or other requirement of the acid rain program under title IV of the Act or the regulations promulgated thereunder;

(g) Any requirements established pursuant to Section 504(b) or Section 114(a)(3) of the Act concerning enhanced monitoring and compliance certifications;

(h) Any standard or other requirement governing solid waste incineration, under Section 129 of the Act;

(i) Any standard or other requirement for consumer and commercial products, under Section 183(e) of the Act (having to do with the release of volatile organic compounds under ozone control requirements);

(j) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under title VI of the Act, unless the EPA has determined that such requirements need not be contained in a title V permit;

(k) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the Act, but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the Act; and

(l) Any state ambient air quality standard or increment or visibility requirement of the WAQSR.

(m) Nothing under paragraphs (A) through (L) above shall be construed as affecting the allowance program and Phase II compliance schedule under the acid rain provision of Title IV of the Act.

"BACT" or "Best available control technology" means an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the WAQSR or regulation

under the Federal Clean Air Act, which would be emitted from or which results for any proposed major emitting facility or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application or production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design, equipment, work practice or operational standard or combination thereof to satisfy the requirement of Best Available Control Technology. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results. Application of BACT shall not result in emissions in excess of those allowed under Chapter 5, Section 2 of the WAQSR and any other new source performance standard or national emission standards for hazardous air pollutants promulgated by EPA but not yet adopted by the state.

"Department" means the Wyoming Department of Environmental Quality or its Director.

"Director" means the Director of the Wyoming Department of Environmental Quality.

"Division" means the Air Quality Division of the Wyoming Department of Environmental Quality or its Administrator.

"Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

"EPA" means the Administrator of the U.S. Environmental Protection Agency or the Administrator's designee.

"Fuel-burning equipment" means any furnace, boiler apparatus, stack, or appurtenances thereto used in the process of burning fuel or other combustible material for the purpose of producing heat or power by indirect heat transfer.

"Fugitive emissions" means those emissions which could not reasonably pass through a stack chimney, vent, or other functionally equivalent opening.

"Insignificant activities" means those activities which are incidental to the facility's primary business activity and which result in emissions of less than one ton per year of a regulated pollutant not included in the Section 112(b) list of hazardous air pollutants or emissions less than 1000 pounds per year of a pollutant regulated pursuant to listing under Section 112(b) of the Act provided, however, such emission levels of hazardous air pollutants do not exceed exemptions based on insignificant emission levels established by EPA through rulemaking for modification under Section 112(g) of the Act.

"MACT" or "Maximum achievable control technology" means the maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory that shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator. Emission standards promulgated for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent, and may be more stringent than:

(a) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emission information), excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate applicable to the source category and prevailing at the time, in the category or subcategory for categories and subcategories with 30 or more sources, or

(b) the average emission limitation achieved by the best performing five sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources.

"Modification" means any physical change in, or change in the method of operation of, an affected facility which increases the amount of any air pollutant (to which any state standards applies) emitted by such facility or which results in the emission of any such air pollutant not previously emitted.

"Permittee" means the person or entity to whom a Chapter 6, Section 3 permit is issued.

"Potential to emit" means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in title IV of the Act or the regulations promulgated thereunder.

"Regulated air pollutant" means the following:

(a) Nitrogen oxides (NO_X) or any volatile organic compound;

(b) Any pollutant for which a national ambient air quality standard has been promulgated;

(c) Any pollutant that is subject to any standard established in Chapter 5, Section 2 of the WAQSR or Section 111 of the Act;

(d) Any Class I or II substance subject to a standard promulgated under or established by title VI of the Act; or

(e) Any pollutant subject to a standard promulgated under Section 112 or other requirements established under Section 112 of the Act, including Sections 112(g), (j), and (r) of the Act, including the following:

    (i) Any pollutant subject to requirements under Section 112(j) of the Act. If EPA fails to promulgate a standard by the date established pursuant to Section 112(e) of the Act, any pollutant for which a subject source would be major shall be considered to be regulated on the date 18 months after the applicable date established pursuant to Section 112(e) of the Act; and

    (ii) Any pollutant for which the requirements of Section 112(g)(2) of the Act have been met, but only with respect to the individual source subject to Section 112(g)(2) requirement.

(f) Pollutants regulated solely under Section 112(r) of the Act are to be regulated only with respect to the requirements of Section 112(r) for permits issued under this Chapter 6, Section 3 of the WAQSR.

"Renewal" means the process by which a permit is reissued at the end of its term.

"Responsible official" means one of the following:

(a) For a corporation:

    (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

    (ii) A duly authorized representative of such person if the representative is responsible for the overall operation

of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

(A) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or

(B) the delegation of authority to such representative is approved in advance by the Division;

(b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

(c) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or

(d) For affected sources:

(i) The designated representative or alternate designated representative in so far as actions, standards, requirements, or prohibitions under title IV of the Act or the regulations promulgated thereunder are concerned; and

(ii) The designated representative, alternate designated representative, or responsible official under Chapter 6, Section 3(b)(xxvi) of the WAQSR for all other purposes under this section.

"WAQSR" means the Wyoming Air Quality Standards and Regulations promulgated under the Wyoming Environmental Quality Act, W.S. §35-11-101, *et seq.*

Appendix A

Portable Analyzer Monitoring Protocol

STATE OF WYOMING AIR QUALITY DIVISION
PORTABLE ANALYZER MONITORING PROTOCOL

Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
122 West 25th Street
Cheyenne, Wyoming 82002

Approved By:

Dan Olson
Administrator

April 21, 1999

TABLE OF CONTENTS

1. APPLICABILITY AND PRINCIPLE . . . . . Page 4
   1.1 Applicability . . . . . Page 4
   1.2 Principle . . . . . Page 4

2. RANGE AND SENSITIVITY . . . . . Page 4
   2.1 Analytical Range . . . . . Page 4

3. DEFINITIONS . . . . . Page 5
   3.1 Measurement System . . . . . Page 5
   3.2 Nominal Range . . . . . Page 6
   3.3 Span Gas . . . . . Page 6
   3.4 Zero Calibration Error . . . . . Page 6
   3.5 Span Calibration Error . . . . . Page 6
   3.6 Response Time . . . . . Page 6
   3.7 Interference Check . . . . . Page 6
   3.8 Linearity Check . . . . . Page 7
   3.9 Stability Check . . . . . Page 7
   3.10 Stability Time . . . . . Page 7
   3.11 Initial NO Cell Temperature . . . . . Page 7
   3.12 Test . . . . . Page 7

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS . . . . . Page 7
   4.1 Zero Calibration Error . . . . . Page 7
   4.2 Span Calibration Error . . . . . Page 7
   4.3 Interference Response . . . . . Page 8
   4.4 Linearity . . . . . Page 8
   4.5 Stability Check Response . . . . . Page 8
   4.6 CO Measurement, H_2 Compensation . . . . . Page 8

5. APPARATUS AND REAGENTS . . . . . Page 8
   5.1 Measurement System . . . . . Page 8
   5.2 Calibration Gases . . . . . Page 11

6. MEASUREMENT SYSTEM PERFORMANCE CHECK PROCEDURES . . . . . Page 11
   6.1 Calibration Gas Concentration Certification . . . . . Page 11
   6.2 Linearity Check . . . . . Page 12
   6.3 Interference Check . . . . . Page 12
   6.4 Stability Check . . . . . Page 13

7. EMISSION TEST PROCEDURE . . . . . Page 14
7.1 Selection of Sampling Site and Sampling Points . . . . . Page 14
7.2 Warm Up Period . . . . . Page 15
7.3 Pretest Calibration Error Check . . . . . Page 15
7.4 NO Cell Temperature Monitoring . . . . . Page 16
7.5 Sample Collection . . . . . Page 16
7.6 Post Test Calibration Error Check . . . . . Page 17
7.7 Interference Check . . . . . Page 17
7.8 Re-Zero . . . . . Page 18

8. DATA COLLECTION . . . . . Page 18
8.1 Linearity Check Data . . . . . Page 19
8.2 Stability Check Data . . . . . Page 19
8.3 Pretest Calibration Error Check Data . . . . . Page 19
8.4 Test Data . . . . . Page 20
8.5 Post Test Calibration Error Check Data . . . . . Page 20
8.6 Corrected Test Results . . . . . Page 20

9. CALIBRATION CORRECTIONS . . . . . Page 21
9.1 Emission Data Corrections . . . . . Page 21

10. EMISSION CALCULATIONS . . . . . Page 21
10.1 Emission Calculations for Reciprocating Engines and Combustion Turbines . . . . . Page 21
10.2 Emission Calculations for Heaters/Boilers . . . . . Page 27

11. REPORTING REQUIREMENTS AND RECORD KEEPING REQUIREMENTS. Page 28

CALIBRATION SYSTEM SCHEMATIC . . . . . Figure 1
LINEARITY CHECK DATA SHEET . . . . . FORM A
STABILITY CHECK DATA SHEET . . . . . FORM B
CALIBRATION ERROR CHECK DATA SHEET . . . . . FORM C
RECIPROCATING ENGINE TEST RESULTS . . . . . FORM D-1
COMBUSTION TURBINE TEST RESULTS . . . . . FORM D-2
HEATER/BOILER TEST RESULTS . . . . . FORM D-3

1. APPLICABILITY AND PRINCIPLE

1.1 Applicability. This method is applicable to the determination of nitrogen oxides (NO and NO_2), carbon monoxide (CO), and oxygen (O_2) concentrations in controlled and uncontrolled emissions from natural gas-fired reciprocating engines, combustion turbines, boilers, and process heaters using portable analyzers with electrochemical cells. The use of reference method equivalent analyzers is acceptable provided the appropriate reference method procedures in 40 CFR 60, Appendix A are used. Due to the inherent cross sensitivities of the electrochemical cells, this method is not applicable to other pollutants.

1.2 Principle. A gas sample is continuously extracted from a stack and conveyed to a portable analyzer for determination of NO, NO_2, CO, and O_2 gas concentrations using electrochemical cells. Analyzer design specifications, performance specifications, and test procedures are provided to ensure reliable data. Additions to or modifications of vendor-supplied analyzers (e.g. heated sample line, flow meters, etc.) may be required to meet the design specifications of this test method.

2. RANGE AND SENSITIVITY

2.1 Analytical Range. The analytical range for each gas component is determined by the electrochemical cell design. A portion of the analytical range is selected to be the nominal range by choosing a span gas concentration near the flue gas concentrations or permitted emission level in accordance with Sections 2.1.1, 2.1.2 and 2.1.3.

2.1.1 CO and NO Span Gases. Choose a span gas concentration such that the average stack gas reading for each test is greater than 25 percent of the span gas concentration. Alternatively, choose the span gas such that it is not greater than 3.33 times the concentration equivalent to the emission standard. If concentration results exceed 125 percent of the span

gas at any time during the test, then the test for that pollutant is invalid.

2.1.2 NO_2 Span Gas. Choose a span gas concentration such that the average stack gas reading for each test is greater than 25 percent of the span gas concentration. Alternatively, choose the span gas concentration such that it is not greater than the ppm concentration value of the NO span gas. The tester should be aware NO_2 cells are generally designed to measure much lower concentrations than NO cells and the span gas should be chosen accordingly. If concentration results exceed 125 percent of the span gas at any time during the test, then the test for that pollutant is invalid.

2.1.3 O_2 Span Gas. The O_2 span gas shall be dry ambient air at 20.9% O_2.

3. DEFINITIONS

3.1 Measurement System. The total equipment required for the determination of gas concentration. The measurement system consists of the following major subsystems:

3.1.1 Sample Interface. That portion of a system used for one or more of the following: sample acquisition, sample transport, sample conditioning, or protection of the electrochemical cells from particulate matter and condensed moisture.

3.1.2 External Interference Gas Scrubber. A tube filled with scrubbing agent used to remove interfering compounds upstream of some electrochemical cells.

3.1.3 Electrochemical (EC) Cell. That portion of the system that senses the gas to be measured and generates an output proportional to its concentration. Any cell that uses diffusion-limited oxidation and reduction reactions to produce an electrical potential between a sensing electrode and a counter electrode.

3.1.4 Data Recorder. It is recommended that the analyzers be equipped with a strip chart recorder, computer, or digital recorder for recording measurement data. However, the operator may record the test results manually in accordance with the requirements of Section 7.5.

3.2 Nominal Range. The range of concentrations over which each cell is operated (25 to 125 percent of span gas value). Several nominal ranges may be used for any given cell as long as the linearity and stability check results remain within specification.

3.3 Span Gas. The high level concentration gas chosen for each nominal range.

3.4 Zero Calibration Error. The absolute value of the difference, expressed as a percent of the span gas, between the gas concentration exhibited by the gas analyzer when a zero level calibration gas is introduced to the analyzer and the known concentration of the zero level calibration gas.

3.5 Span Calibration Error. The absolute value of the difference, expressed as a percent of the span gas, between the gas concentration exhibited by the gas analyzer when a span gas is introduced to the analyzer and the known concentration of the span gas.

3.6 Response Time. The amount of time required for the measurement system to display 95 percent of a step change in the NO or CO gas concentration on the data recorder (90 percent of a step change for NO_2).

3.7 Interference Check. A method of quantifying analytical interferences from components in the stack gas other than the analyte.

3.8 Linearity Check. A method of demonstrating the ability of a gas analyzer to respond consistently over a range of gas concentrations.

3.9 Stability Check. A method of demonstrating an electrochemical cell operated over a given nominal range provides a stable response and is not significantly affected by prolonged exposure to the analyte.

3.10 Stability Time. As determined during the stability check; the elapsed time from the start of the gas injection until a stable reading has been achieved.

3.11 Initial NO Cell Temperature. The temperature of the NO cell during the pretest calibration error check. Since the NO cell can experience significant zero drift with cell temperature changes in some situations, the cell temperature must be monitored if the analyzer does not display negative concentration results. Alternatively, manufacturer's documentation may be submitted showing the analyzer incorporates a NO cell temperature control and temperature exceedance warning system.

3.12 Test. The collection of emissions data from a source for an equal amount of time at each sample point and for a minimum of 21 minutes total.

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS

4.1 Zero Calibration Error. Less than or equal to ± 3 percent of the span gas value for NO, NO_2, and CO channels and less than or equal to ± 0.3 percent O_2 for the O_2 channel.

4.2 Span Calibration Error. Less than or equal to ± 5 percent of the span gas value for NO, NO_2, and CO channels and less than or equal to ± 0.5 percent O_2 for the O_2 channel.

4.3 Interference Response. The CO and NO interference responses must be less than or equal to 5 percent as calculated in accordance with Section 7.7.

4.4 Linearity. For the zero, mid-level, and span gases, the absolute value of the difference, expressed as a percent of the span gas, between the gas value and the analyzer response shall not be greater than 2.5 percent for NO, CO and O_2 cells and not greater than 3.0 percent for NO_2 cells.

4.5 Stability Check Response. The analyzer responses to CO, NO, and NO_2 span gases shall not vary more than 3.0 percent of span gas value over a 30-minute period or more than 2.0 percent of the span gas value over a 15-minute period.

4.6 CO Measurement, Hydrogen (H_2) Compensation. It is recommended that CO measurements be performed using a hydrogen-compensated EC cell since CO-measuring EC cells can experience significant reaction to the presence of H_2 in the gas stream. Sampling systems equipped with a scrubbing agent prior to the CO cell to remove H_2 interferent gases may also be used.

5. APPARATUS AND REAGENTS

5.1 Measurement System. Use any measurement system that meets the performance and design specifications in Sections 4 and 5 of this method. The sampling system shall maintain the gas sample at a temperature above the dew point up to the moisture removal system. The sample conditioning system shall be designed so there are no entrained water droplets in the gas sample when it contacts the electrochemical cells. A schematic of an acceptable measurement system is shown in Figure 1. The essential components of the measurement system are described below:

5.1.1 Sample Probe. Glass, stainless steel, or other nonreactive material, of sufficient length to sample per the requirements of Section 7. If necessary to prevent condensation, the sampling probe shall be heated.

5.1.2 Heated Sample Line. Heated (sufficient to prevent condensation) nonreactive tubing such as teflon, stainless steel, glass, etc. to transport the sample gas to the moisture removal system. (Includes any particulate filters prior to the moisture removal system.)

5.1.3 Sample Transport Lines. Nonreactive tubing such as teflon, stainless steel, glass, etc. to transport the sample from the moisture removal system to the sample pump, sample flow rate control, and electrochemical cells.

5.1.4 Calibration Assembly. A tee fitting to attach to the probe tip or where the probe attaches to the sample line for introducing calibration gases at ambient pressure during the calibration error checks. The vented end of the tee should have a flow indicator to ensure sufficient calibration gas flow. Alternatively use any other method that introduces calibration gases at the probe at atmospheric pressure.

5.1.5 Moisture Removal System. A chilled condenser or similar device (e.g., permeation dryer) to remove condensate continuously from the sample gas while maintaining minimal contact between the condensate and the sample gas.

5.1.6 Particulate Filter. Filters at the probe or the inlet or outlet of the moisture removal system and inlet of the analyzer may be used to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.7 Sample Pump. A leak-free pump to pull the sample gas through the system at a flow

rate sufficient to minimize the response time of the measurement system. The pump may be constructed of any material that is nonreactive to the gas being sampled.

5.1.8 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent during sampling and calibration error checks. The components shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.9 Gas Analyzer. A device containing electrochemical cells to determine the NO, NO_2, CO, and O_2 concentrations in the sample gas stream and, if necessary, to correct for interference effects. The analyzer shall meet the applicable performance specifications of Section 4. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate (e.g., precision rotameter, pressure gauge downstream of all flow controls, etc.) shall be provided at the analyzer. (Note: Housing the analyzer in a clean, thermally-stable, vibration-free environment will minimize drift in the analyzer calibration, but this is not a requirement of the method.)

5.1.10 Data Recorder. A strip chart recorder, computer, or digital recorder, for recording measurement data. The data recorder resolution (i.e., readability) shall be at least 1 ppm for CO, NO, and NO_2; 0.1 percent O_2 for O_2; and one degree (C or F) for temperature.

5.1.11 External Interference Gas Scrubber. Used by some analyzers to remove interfering compounds upstream of a CO electrochemical cell. The scrubbing agent should be visible and should have a means of determining when the agent is exhausted (e.g., color indication).

5.1.12 NO Cell Temperature Indicator. A thermocouple, thermistor, or other device must be used to monitor the temperature of the NO electrochemical cell. The temperature may be monitored at the surface of the cell, within the cell or in the cell compartment. Alternatively,

manufacturer's documentation may be submitted showing the analyzer incorporates a NO cell temperature control and temperature exceedance warning system.

5.1.13 Dilution Systems. The use of dilution systems will be allowed with prior approval of the Air Quality Division.

5.2 Calibration Gases. The CO, NO, and NO_2 calibration gases for the gas analyzer shall be CO in nitrogen or CO in nitrogen and O_2, NO in nitrogen, and NO_2 in air or nitrogen. The mid-level O_2 gas shall be O_2 in nitrogen.

5.2.1 Span Gases. Used for calibration error, linearity, and interference checks of each nominal range of each cell. Select concentrations according to procedures in Section 2.1. Clean dry air may be used as the span gas for the O_2 cell as specified in Section 2.1.3.

5.2.2 Mid-Level Gases. Select concentrations that are 40-60 percent of the span gas concentrations.

5.2.3 Zero Gas. Concentration of less than 0.25 percent of the span gas for each component. Ambient air may be used in a well ventilated area for the CO, NO, and NO_2 zero gases.

6. MEASUREMENT SYSTEM PERFORMANCE CHECK PROCEDURES. Perform the following procedures before the measurement of emissions under Section 7.

6.1 Calibration Gas Concentration Certification. For the mid-level and span cylinder gases, use calibration gases certified according to EPA Protocol 1 procedures. Calibration gases must meet the criteria under 40 CFR 60, Appendix F, Section 5.1.2 (3). Expired Protocol 1 gases may be recertified using the applicable reference methods.

6.2 Linearity Check. Conduct the following procedure once for each nominal range to be used on each electrochemical cell (NO, NO_2, CO, and O_2). After a linearity check is completed, it remains valid for five consecutive calendar days. After the five calendar day period has elapsed, the linearity check must be reaccomplished. Additionally, reaccomplish the linearity check if the cell is replaced. (If the stack NO_2 concentration is less than 5% of the stack NO concentration as determined using the emission test procedures under Section 7, the NO_2 linearity check is not required. However, the NO_2 cell shall be calibrated in accordance with the manufacturer's instructions, the pretest calibration error check and post test calibration calibration error check shall be conducted in accordance with Section 7, and the test results shall be added to the NO test values to obtain a total NO_X concentration.)

6.2.1 Linearity Check Gases. For each cell obtain the following gases: zero (0-0.25 percent of nominal range), mid-level (40-60 percent of span gas concentration), and span gas (selected according to Section 2.1).

6.2.2 Linearity Check Procedure. If the analyzer uses an external interference gas scrubber with a color indicator, using the analyzer manufacturer's recommended procedure, verify the scrubbing agent is not depleted. After calibrating the analyzer with zero and span gases, inject the zero, mid-level, and span gases appropriate for each nominal range to be used on each cell. Gases need not be injected through the entire sample handling system. Purge the analyzer briefly with ambient air between gas injections. For each gas injection, verify the flow rate is constant and the analyzer responses have stabilized before recording the responses on Form A.

6.3 Interference Check. A CO cell response to the NO and NO_2 span gases or an NO cell response to the NO_2 span gas during the linearity check may indicate interferences. If these cell responses are observed during the linearity check, it may be desirable to quantify the CO cell response to the NO and NO_2 span gases and the NO cell response to the NO_2 span gas during the linearity check and use estimated stack gas CO, NO and NO_2 concentrations to

evaluate whether or not the portable analyzer will meet the post test interference check requirements of Section 7.7. This evaluation using the linearity check data is optional. However, the interference checks under Section 7.7 are manditory for each test.

6.4 Stability Check. Conduct the following procedure once for the maximum nominal range to be used on each electrochemical cell (NO, NO_2 and CO). After a stability check is completed, it remains valid for five consecutive calendar days. After the five calendar day period has elapsed, the stability check must be reaccomplished. Additionally, reaccomplish the stability check if the cell is replaced or if a cell is exposed to gas concentrations greater than 125 percent of the highest span gas concentration. (If the stack NO_2 concentration is less than 5% of the stack NO concentration as determined using the emission test procedures under Section 7, the NO_2 stability check is not required. However, the NO_2 cell shall be calibrated in accordance with the manufacturer's instructions, the pretest calibration error check and post test calibration calibration error check shall be conducted in accordance with Section 7, and the test results shall be added to the NO test values to obtain a total NO_X concentration.)

6.4.1 Stability Check Procedure. Inject the span gas for the maximum nonimal range to be used during the emission testing into the analyzer and record the analyzer response at least once per minute until the conclusion of the stability check. One-minute average values may be used instead of instantaneous readings. After the analyzer response has stabilized, continue to flow the span gas for at least a 30-minute stability check period. Make no adjustments to the analyzer during the stability check except to maintain constant flow. Record the stability time as the number of minutes elapsed between the start of the gas injection and the start of the 30-minute stability check period. As an alternative, if the concentration reaches a peak value within five minutes, you may choose to record the data for at least a 15-minute stability check period following the peak.

6.4.2 Stability Check Calculations. Determine the highest and lowest concentrations

recorded during the 30-minute period and record the results on Form B. The absolute value of the difference between the maximum and minimum values recorded during the 30-minute period must be less than 3.0 percent of the span gas concentration. Alternatively, record stability check data in the same manner for the 15-minute period following the peak concentration. The difference between the maximum and minimum values for the 15-minute period must be less than 2.0 percent of the span gas concentration.

7. EMISSION TEST PROCEDURES. Prior to performing the following emission test procedures, calibrate/challenge all electrochemical cells in the analyzer in accordance with the manufacturer's instructions.

7.1 Selection of Sampling Site and Sampling Points.

7.1.1 Reciprocating Engines. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction, or recirculation take-offs) and one half stack diameter upstream of the gas discharge to the atmosphere. Use a sampling location at a single point near the center of the duct.

7.1.2 Combustion Turbines. Select a sampling site and sample points according to the procedures in 40 CFR 60, Appendix A, Method 20. Alternatively, the tester may choose an alternative sampling location and/or sample from a single point in the center of the duct if previous test data demonstrate the stack gas concentrations of CO, NO_X, and O_2 do not vary significantly across the duct diameter.

7.1.3 Boilers/Process Heaters. Select a sampling site located at least two stack diameters downstream of any disturbance and one half stack diameter upstream of the gas discharge to the atmosphere. Use a sampling location at a single point near the center of the duct.

7.2 Warm Up Period. Assemble the sampling system and allow the analyzer and sample interface to warm up and adjust to ambient temperature at the location where the stack measurements will take place.

7.3 Pretest Calibration Error Check. Conduct a zero and span calibration error check before testing each new source. Conduct the calibration error check near the sampling location just prior to the start of an emissions test. Keep the analyzer in the same location until the post test calibration error check is conducted.

7.3.1 Scrubber Inspection. For analyzers that use an external interference gas scrubber tube, inspect the condition of the scrubbing agent and ensure it will not be exhausted during sampling. If scrubbing agents are recommended by the manufacturer, they should be in place during all sampling, calibration and performance checks.

7.3.2 Zero and Span Procedures. Inject the zero and span gases using the calibration assembly. Ensure the calibration gases flow through all parts of the sample interface. During this check, make no adjustments to the system except those necessary to achieve the correct calibration gas flow rate at the analyzer. Set the analyzer flow rate to the value recommended by the analyzer manufacturer. Allow each reading to stabilize before recording the result on Form C. The time allowed for the span gas to stabilize shall be no less than the stability time noted during the stability check. After achieving a stable response, disconnect the gas and briefly purge with ambient air.

7.3.3 Response Time Determination. Determine the NO and CO response times by observing the time required to respond to 95 percent of a step change in the analyzer response for both the zero and span gases. Note the longer of the two times as the response time. For the NO_2 span gas record the time required to respond to 90 percent of a step change.

7.3.4 Failed Pretest Calibration Error Check. If the zero and span calibration error check results are not within the specifications in Section 4, take corrective action and repeat the calibration error check until acceptable performance is achieved.

7.4 NO Cell Temperature Monitoring. Record the initial NO cell temperature during the pretest calibration error check on Form C and monitor and record the temperature regularly (at least once each 7 minutes) during the sample collection period on Form D. If at any time during sampling, the NO cell temperature is 85 degrees F or greater and has increased or decreased by more than 5 degrees F since the pretest calibration, stop sampling immediately and conduct a post test calibration error check per Section 7.6, re-zero the analyzer, and then conduct another pretest calibration error check per Section 7.3 before continuing. (It is recommended that testing be discontinued if the NO cell exceeds 85 degrees F since the design characteristics of the NO cell indicate a significant measurement error can occur as the temperature of the NO cell increases above this temperature. From a review of available data, these errors appear to result in a positive bias of the test results.)

Alternatively, manufacturer's documentation may be submitted showing the analyzer is configured with an automatic temperature control system to maintain the cell temperature below 85 degrees F (30 degrees centigrade) and provides automatic temperature reporting any time this temperature is exceeded. If automatic temperature control/exceedance reporting is used, test data collected when the NO cell temperature exceeds 85 degrees F is invalid.

7.5 Sample Collection. Position the sampling probe at the first sample point and begin sampling at the same rate used during the calibration error check. Maintain constant rate sampling ($\pm$ 10 percent of the analyzer flow rate value used in Section 7.3.2) during the entire test. Sample for an equal period of time at each sample point. Sample the stack gas for at least twice the response time or the period of the stability time, whichever is greater, before collecting test data at each sample point. A 21 minute period shall be considered a test for

each source. When sampling combustion turbines per Section 7.1.2, collect test data as required to meet the requirements of 40 CFR 60, Appendix A, Method 20. Data collection should be performed for an equal amount of time at each sample point and for a minimum of 21 minutes total. The concentration data must be recorded either (1) at least once each minute, or (2) as a block average for the test using values sampled at least once each minute. Do not break any seals in the sample handling system until after the post test calibration error check (this includes opening the moisture removal system to drain condensate).

7.6 Post Test Calibration Error Check. Immediately after the test, conduct a zero and span calibration error check using the procedure in Section 7.3. Conduct the calibration error check at the sampling location. Make no changes to the sampling system or analyzer calibration until all of the calibration error check results have been recorded. If the zero or span calibration error exceeds the specifications in Section 4, then all test data collected since the previous calibration error check are invalid. If the sampling system is disassembled or the analyzer calibration is adjusted, repeat the pretest calibration error check before conducting the next test.

7.7 Interference Check. Use the post test calibration error check results and average emission concentrations for the test to calculate interference responses (I_{NO} and I_{CO}) for the CO and NO cells. If an interference response exceeds 5 percent, all emission test results since the last successful interference test for that compound are invalid.

7.7.1 CO Interference Response.

$$I_{CO}=[(\frac{R_{CO-NO}}{C_{NOG}})(\frac{C_{NOS}}{C_{COS}})+(\frac{R_{CO-NO_2}}{C_{NO_2G}})(\frac{C_{NO_2S}}{C_{COS}})]\times 100$$

where: I_{CO} = CO interference response (percent)

$R_{CO\text{-}NO}$ = CO response to NO span gas (ppm CO)

C_{NOG} = concentration of NO span gas (ppm NO)

C_{NOS} = concentration of NO in stack gas (ppm NO)

C_{COS} = concentration of CO in stack gas (ppm CO)

$R_{CO\text{-}NO2}$ = CO response to NO_2 span gas (ppm CO)

C_{NO2G} = concentration of NO_2 span gas (ppm NO_2)

C_{NO2S} = concentration of NO_2 in stack gas (ppm NO_2)

7.7.2 NO Interference Response.

$$I_{NO} = \left(\frac{R_{NO\text{-}NO_2}}{C_{NO_2G}}\right)\left(\frac{C_{NO_2S}}{C_{NO_XS}}\right) \times 100$$

where:

I_{NO} = NO interference response (percent)

$R_{NO\text{-}NO2}$ = NO response to NO_2 span gas (ppm NO)

C_{NO2G} = concentration of NO_2 span gas (ppm NO_2)

C_{NO2S} = concentration of NO_2 in stack gas (ppm NO_2)

C_{NOxS} = concentration of NO_X in stack gas (ppm NO_X)

7.8 Re-Zero. At least once every three hours, recalibrate the analyzer at the zero level according to the manufacturer's instructions and conduct a pretest calibration error check before resuming sampling. If the analyzer is capable of reporting negative concentration data (at least 5 percent of the span gas below zero), then the tester is not required to re-zero the analyzer.

8. DATA COLLECTION. This section summarizes the data collection requirements for this protocol.

8.1 Linearity Check Data. Using Form A, record the analyzer responses in ppm NO, NO_2, and CO, and percent O_2 for the zero, mid-level, and span gases injected during the linearity check under Section 6.2.2. To evaluate any interferences, record the analyzer responses in ppm CO to the NO and NO_2 span gases and the analyzer response in ppm NO to the NO_2 span gas. Calculate the CO and NO interference responses using the equations under Sections 7.7.1 and 7.7.2, respectively, and estimated stack gas CO, NO and NO_2 concentrations.

8.2 Stability Check Data. Record the analyzer response at least once per minute during the stability check under Section 6.4.1. Use Form B for each pollutant (NO, NO_2, and CO). One-minute average values may be used instead of instantaneous readings. Record the stability time as the number of minutes elapsed between the start of the gas injection and the start of the 30-minute stability check period. If the concentration reaches a peak value within five minutes of the gas injection, you may choose to record the data for at least a 15-minute stability check period following the peak. Use the information recorded to determine the analyzer stability under Section 6.4.2.

8.3 Pretest Calibration Error Check Data. On Form C, record the analyzer responses to the zero and span gases for NO, NO_2, CO, and O_2 injected prior to testing each new source. Record the calibration zero and span gas concentrations for NO, NO_2, CO, and O_2. Record the absolute difference between the analyzer response and the calibration gas concentration, divide by the span gas concentration, and multiply by 100 to obtain the percent of span. Record whether the calibration is valid by comparing the percent of span with the specifications under Section 4.1 for the zero calibrations and Section 4.2 for the span calibrations. Record the response times for the NO, CO, and NO_2 zero and span gases as described under Section 7.3.3. Select the longer of the two times for each pollutant as the response time for that pollutant. Record the NO cell temperature during the pretest calibration.

8.4 Test Data. On Form D-1, D-2, or D-3, record the source operating parameters during the test. Record the test start and end times. Record the NO cell temperature after one third of the test (e.g., after seven minutes) and after two thirds of the test (e.g., after 14 minutes). From the analyzer responses recorded each minute during the test, obtain the average flue gas concentration of each pollutant. These are the uncorrected test results.

8.5 Post Test Calibration Error Check Data. On Form C, record the analyzer responses to the zero and span gases for NO, NO_2, CO, and O_2 injected immediately after the test. To evaluate any interferences, record the analyzer responses in ppm CO to the NO and NO_2 span gases and the analyzer response in ppm NO to the NO_2 span gas. Record the calibration zero and span gas concentrations for NO, NO_2, CO, and O_2. Record the absolute difference between the analyzer response and the calibration gas concentration, divide by the span gas concentration, and multiply by 100 to obtain the percent of span. Record whether the calibration is valid by comparing the percent of span with the specifications under Section 4.1 for the zero calibrations and Section 4.2 for the span calibrations. (If the pretest and post test calibration error check results are not within the limits specified in Sections 4.1 and 4.2, data collected during the test is invalid and the test must be repeated.) Record the NO cell temperature during the post test calibration. Calculate the average of the monitor readings during the pretest and post test calibration error checks for the zero and span gases for NO, NO_2, CO, and O_2. The pretest and post test calibration error check results are used to make the calibration corrections under Section 9.1. Calculate the CO and NO interference responses using the equations under Sections 7.7.1 and 7.7.2, respectively and measured stack gas CO, NO and NO_2 concentrations.

8.6 Corrected Test Results. Correct the test results using the equation under Section 9.1. Add the corrected NO and NO_2 concentrations together to obtain the corrected NO_X concentration. Calculate the emission rates using the equations under Section 10 for comparison with the emission limits. Record the results on Form D-1, D-2, or D-3. Sign the

certification regarding the accuracy and representation of the emissions from the source.

9. CALIBRATION CORRECTIONS

9.1 Emission Data Corrections. Emissions data shall be corrected for a test using the following equation. (Note: If the pretest and post test calibration error check results are not within the limits specified in Sections 4.1 and 4.2, the test results are invalid and the test must be repeated.)

$$C_{Corrected}=(C_R-C_O)\frac{C_{MA}}{C_M-C_O}$$

where:
- $C_{Corrected}$ = corrected flue gas concentration (ppm)
- C_R = flue gas concentration indicated by gas analyzer (ppm)
- C_o = average of pretest and post test analyzer readings during the zero checks (ppm)
- C_M = average of pretest and post test analyzer readings during the span checks (ppm)
- C_{MA} = actual concentration of span gas (ppm)

10. EMISSION CALCULATIONS

10.1 Emission Calculations for Reciprocating Engines and Combustion Turbines. Emissions shall be calculated and reported in units of the allowable emission limit as specified in the permit. The allowable may be stated in pounds per hour (lb/hr), grams per horsepower hour (gm/hp-hr), or both. EPA Reference Method 19 shall be used as the basis for calculating the emissions. As an alternative, EPA Reference Methods 1-4 may be used to obtain a stack volumetric flow rate.

10.1.1 Reciprocating Engines and Combustion Turbines Above 500 Horsepower. All reciprocating engines and combustion turbines above 500 horsepower (site-rated) should be equipped with fuel flow meters for measuring fuel consumption during the portable analyzer test. The fuel meter shall be maintained and calibrated according to the manufacturer's

recommendations. Records of all maintenance and calibrations shall be kept for five years. Reciprocating engines above 500 horsepower which are not equipped with fuel flow meters may use the site-rated horsepower and default specific fuel consumption factors, based on the higher heating value of the fuel, of 9,400 Btu/hp-hr for 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines and 11,000 Btu/hp-hr for 2-cycle uncontrolled (non-lean burn) engines to calculate emission rates. Emissions shall be calculated using the following methods.

10.1.1.1 Reciprocating Engines and Combustion Turbines Equipped with Fuel Meters. EPA Reference Method 19 and heat input per hour (MMBtu/hr) shall be used to calculate a pound per hour emission rate. Heat input per hour shall be based on the average hourly fuel usage rate during the test and the higher heating value of the fuel consumed. The emission rates shall be calculated using the following equations.

$$lb/hr\ NO_X = (ppm\ NO_{X_{corrected}})(1.19\times10^{-7})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9-O_2\%_{corrected}}\right)(Heat\ Input\ Per\ Hour_{Note\ 2})$$

$$lb/hr\ CO = (ppm\ CO_{corrected})(7.27\times10^{-8})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9-O_2\%_{corrected}}\right)(Heat\ Input\ Per\ Hour_{Note\ 2})$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and higher heating value of the fuel.

Note 2 - Heat input per hour (MMBtu/hr) shall be based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed.

If the reciprocating engine or combustion turbine horsepower can be derived from operating conditions during the portable analyzer test, this derived horsepower should be used to calculate a gram per horsepower hour emission rate using the following equations.

Information showing the derivation of the horsepower shall be provided with the test results.

$$gm/hp\text{-}hr\ NO_X = \frac{(lb/hr\ NO_X)(454)}{(Tested\ Horsepower_{Note\ 1})}$$

$$gm/hp\text{-}hr\ CO = \frac{(lb/hr\ CO)(454)}{(Tested\ Horsepower_{Note\ 1})}$$

Note 1 - Horsepower determined during the test.

If the reciprocating engine horsepower during the time of testing cannot determined from the operating data, the operating horsepower for the time of the test shall be calculated based on the heat input per hour during the test and the default values shown below for specific fuel consumption based on the higher heating value of the fuel. Heat input per hour (MMBtu/hr) shall be calculated based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed. For 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines, use a default specific fuel consumption of 9,400 Btu/hp-hr. For 2-cycle uncontrolled (non-lean burn) engines, use a default specific fuel consumption of 11,000 Btu/hp-hr. Calculate the gram per horsepower hour emission rates using the following equations.

$$Engine\ Horsepower = \frac{(Heat\ Input\ Per\ Hour_{Note\ 1})(10^6)}{(Specific\ Fuel\ Consumption_{Note\ 2})}$$

$$gm/hp\text{-}hr\ NO_X = \frac{(lb/hr\ NO_X)(454)}{(Engine\ Horsepower)}$$

$$gm/hp\text{-}hr\ CO = \frac{(lb/hr\ CO)(454)}{(Engine\ Horsepower)}$$

Note 1 - Heat input per hour (MMBtu/hr) shall be based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed.

Note 2 - Default Specific Fuel Consumption (Btu/hp-hr) shall be as defined above for the particular type of engine tested.

If the combustion turbine horsepower cannot be calculated during the testing, the emissions shall be reported in terms of concentration (ppm by volume, dry basis) corrected to 15 percent O_2. Compliance with the concentrations corrected to 15 percent O_2 as submitted in the air quality permit application and/or set as an allowable in the permit will demonstrate compliance with the gm/hp-hr allowable. Use the following equations to correct the concentrations to 15 percent O_2.

$$ppm\ NO_{X_{@\ 15\%\ O_2}} = ppm\ NO_{X_{corrected}} \left(\frac{5.9}{20.9 - O_2\%_{corrected}}\right)$$

$$ppm\ CO_{@\ 15\%\ O_2} = ppm\ CO_{corrected} \left(\frac{5.9}{20.9 - O_2\%_{corrected}}\right)$$

10.1.1.2 Reciprocating Engines Above 500 Horsepower Not Equipped with Fuel Meters. If reciprocating engines above 500 horsepower (site-rated) are not equipped with fuel flow meters during the test, emissions shall be calculated using the site-rated horsepower and default specific fuel consumption factors, based on the higher heating value of the fuel, of 9,400 Btu/hp-hr for 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines and 11,000 Btu/hp-hr for 2-cycle uncontrolled (non-lean burn) engines. The following

equations shall be used to calculate emissions.

$$gm/hp\text{-}hr\ NO_X = (ppm\ NO_{X_{corrected}})(1.19\times10^{-7})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9 - O_2\%_{corrected}}\right)$$
$$(Specific\ Fuel\ Consumption_{Note\ 2})(10^{-6})(454)$$

$$lb/hr\ NO_X = \frac{(gm/hp\text{-}hr\ NO_X)(Engine\ Horsepower_{Note\ 3})}{454}$$

$$gm/hp\text{-}hr\ CO = (ppm\ CO_{corrected})(7.27\times10^{-8})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9 - O_2\%_{corrected}}\right)$$
$$(Specific\ Fuel\ Consumption_{Note\ 2})(10^{-6})(454)$$

$$lb/hr\ CO = \frac{(gm/hp\text{-}hr\ CO)(Engine\ Horsepower_{Note\ 3})}{454}$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and higher heating value of the fuel.

Note 2 - Default Specific Fuel Consumption (Btu/hp-hr) shall be as defined above for the particular type of engine tested.

Note 3 - Site-rated engine horsepower.

10.1.2 Reciprocating Engines Below 500 Horsepower. Reciprocating engines below 500 horsepower may calculate emission rates using the derived horsepower for the operating conditions during the portable analyzer test (either from engine parameter measurements or calculated from compressor operating parameters) and the manufacturer's specific fuel

consumption based on the higher heating value of the fuel consumed during the test. Information showing the derivation of the engine operating horsepower and manufacturer's specific fuel consumption shall be provided with the test results. The following equations shall be used to calculate emission rates.

$$gm/hp\text{-}hr\ NO_X = (ppm\ NO_{X_{corrected}})(1.19\times10^{-7})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9 - O_2\%_{corrected}}\right)$$
$$(Specific\ Fuel\ Consumption_{Note\ 2})(10^{-6})(454)$$

$$gm/hp\text{-}hr\ CO = (ppm\ CO_{corrected})(7.27\times10^{-8})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9 - O_2\%_{corrected}}\right)$$
$$(Specific\ Fuel\ Consumption_{Note\ 2})(10^{-6})(454)$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and the higher heating value of the fuel.

Note 2 - Use manufacturer's specific fuel consumption based on the higher heating value of the fuel and include manufacturer's data with the test results. If the manufacturer reports the specific fuel consumption based on the lower heating value of the fuel, multiply by 1.11 to obtain the specific fuel consumption based on the higher heating value of the fuel.

Pound per hour emission rates shall be calculated using the gram per horsepower hour emission rates and the engine horsepower derived from engine or compressor operating parameter data. If engine horsepower data is not available, site-rated horsepower shall be used to calculate pound per hour emissions. The following equations shall be used to calculate emission rates.

$$lb/hr\ NO_X = \frac{(gm/hp\text{-}hr\ NO_X)(Engine\ Horsepower_{Note\ 1})}{(454)}$$

$$lb/hr\ CO = \frac{(gm/hp\text{-}hr\ CO)(Engine\ Horsepower_{Note\ 1})}{(454)}$$

Note 1 - Use derived operating horsepower and include derivation method/calculations with the test results. If a derived horsepower is not available or cannot be obtained, use site-rated horsepower.

10.2 Emission Calculations for Heaters/Boilers. For heaters and boilers, pound per million Btu (lb/MMBtu) emission rates shall be calculated based on EPA Reference Method 19. The pound per million Btu emission rates shall be converted to pound per hour emission rates using heat input per hour (MMBtu/hr). The heat input per hour shall be calculated using the average hourly fuel usage rate during test and the higher heating value of the fuel consumed or the permitted maximum heat input per hour for the boiler or heater. If a fuel meter is used to obtain heat input per hour data, the fuel meter shall be maintained and calibrated according to the manufacturer's recommendations. Records of all maintenance and calibrations shall be kept for five years. As an alternative, EPA Reference Methods 1-4 may be used to obtain a stack volumetric flow rate. The following equations shall be used to calculate emission rates.

$$lb/MMBtu\ NO_X = (ppm\ NO_{X_{corrected}})(1.19\times10^{-7})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9 - O_2\%_{corrected}}\right)$$

$$lb/MMBtu\ CO = (ppm\ CO_{corrected})(7.27\times10^{-8})(F\ Factor_{Note\ 1})\left(\frac{20.9}{20.9 - O_2\%_{corrected}}\right)$$

$$lb/hr\ NO_X = (lb/MMBtu\ NO_X)(Heat\ Input_{Note\ 2})$$

$$lb/hr\ CO = (lb/MMBtu\ CO)(Heat\ Input_{Note\ 2})$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and the higher heating value of the fuel.

Note 2 - Heat input shall be based on the average hourly fuel usage rate during the test and the higher heating value of the fuel consumed if the boiler/heater is equipped with a fuel meter or the permitted maximum heat input if a fuel meter is not available.

11. REPORTING REQUIREMENTS AND RECORD KEEPING REQUIREMENTS

Test reports shall be submitted to the Air Quality Division within thirty (30) days of completing the test unless a specific reporting schedule is set by a condition of a permit. A separate test report shall be submitted for each emission source tested and, at a minimum, the following information shall be included:

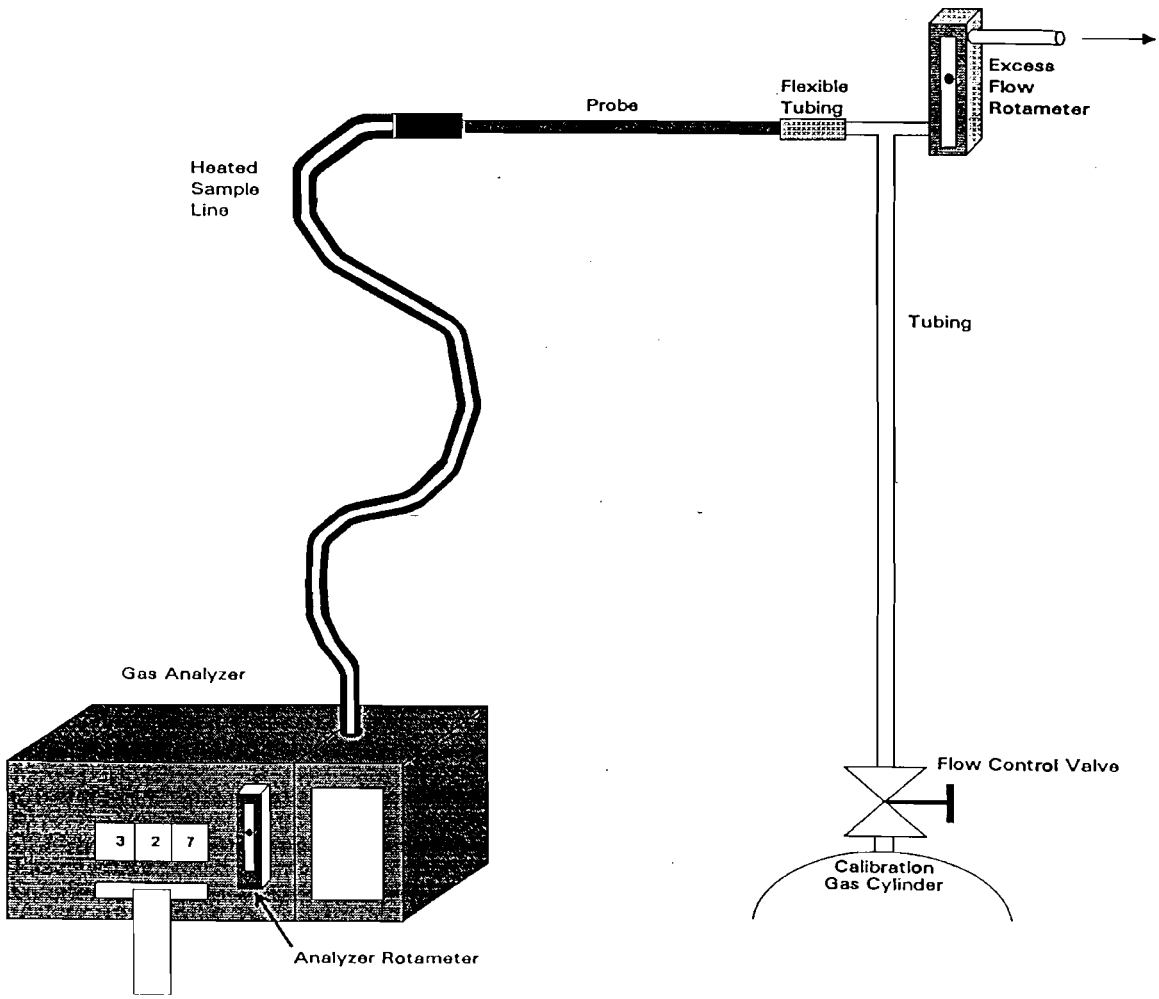
- **Form A, Linearity Check Data Sheet,** Submit the linearity check as required by Section 6.2 for the nominal range tested.
- **Form B, Stability Check Data Sheet,** Submit the stability check as required by Section 6.4 for the nominal range tested.
- **Form C, Calibration Error Check Data Sheet**
- **Form D-1, D-2 or D-3,** Submit the appropriate test results form for type of source tested.
- If the manufacturer's specific fuel consumption is used, documentation from the manufacturer shall be submitted.
- If the horsepower is calculated during the test, information showing the derivation of the horsepower shall be included.

For sources subject to Section 30 of the Wyoming Air Quality Standards and Regulations, the submittal must be certified as truthful, accurate and complete by the facility's responsible official.

Records pertaining to the information above and supporting documentation shall be kept for

five (5) years and made available upon request by this Division. Additionally, if the source is equipped with a fuel meter, records of all maintenance and calibrations of the fuel meter shall be kept for five (5) years from the date of the last maintenance or calibration.

FIGURE 1.
CALIBRATION SYSTEM SCHEMATIC



Form A

Linearity Check Data Sheet

Date:_____

Analyst:_____

Analyzer Manufacturer/Model #:_____

Analyzer Serial #:_____

LINEARITY CHECK									
Pollutant		Calibration Gas Concentration (Indicate Units)	Analyzer Response ppm NO	Analyzer Response ppm NO_2	Analyzer Response ppm CO	Analyzer Response % O_2	Absolute Difference (Indicate Units)	Percent of Span	Linearity Valid (Yes or No)
NO	Zero								
	Mid								
	Span								
NO_2	Zero								
	Mid								
	Span								
CO	Zero								
	Mid								
	Span								
O_2	Zero								
	Mid								
	Span								

Form B
Stability Check Data Sheet

Date:_____ **Analyst:**_____

Analyzer Manufacturer/Model #:_____

Analyzer Serial #:_____

Pollutant: NO, NO_2, CO (Circle One) **Span Gas Concentration (ppm):**_____

STABILITY CHECK					
Elapsed Time (Minutes)	Analyzer Response	Elapsed Time (Continued)	Analyzer Response	Elapsed Time (Continued)	Analyzer Response
1		17		33	
2		18		34	
3		19		35	
4		20		36	
5		21		37	
6		22		38	
7		23		39	
8		24		40	
9		25		41	
10		26		42	
11		27		43	
12		28		44	
13		29		45	
14		30		46	
15		31		47	
16		32		48	

For 30-minute Stability Check Period:

Maximum Concentration (ppm): _____ **Minimum Concentration (ppm):** _____

For 15-minute Stability Check Period:

Maximum Concentration (ppm): _____ **Minimum Concentration (ppm):** _____

Maximum Deviation = 100*(Max. Conc. - Min. Conc.)/Span Gas Conc. = _____ **percent**

Stability Time (minutes): _____

Form C
Calibration Error Check Data Sheet

Company:_____ **Facility:**_____
Source Tested:_____ **Date:**_____
Analyst:_____ **Analyzer Serial #:**_____
Analyzer Manufacturer/Model #:_____

PRETEST CALIBRATION ERROR CHECK								
			A	B	|A-B|	|A-B|/SG*100		
		Pump Flow Rate (Indicate Units)	Analyzer Reading (Indicate Units)	Calibration Gas Concentration (Indicate Units)	Absolute Difference (Indicate Units)	Percent of Span	Calibration Valid (Yes or No)	Response Time (Minutes)
NO	Zero							
	Span							
NO_2	Zero							
	Span							
CO	Zero							
	Span							
O_2	Zero							
	Span							
		Pretest Calibration NO Cell Temperature (°F):						

SG = Span Gas

POST TEST CALIBRATION ERROR CHECK										
			A	B	|A-B|	|A-B|/SG*100			Interference Check	
		Pump Flow Rate (Indicate Units)	Analyzer Reading (Indicate Units)	Calibration Gas Concentration (Indicate Units)	Absolute Difference (Indicate Units)	Percent of Span	Calibration Valid (Yes or No)	Average of Pretest and Post Test Analyzer Readings (Indicate Units)	NO Monitor Response (ppm)	CO Monitor Response (ppm)
NO	Zero									
	Span									
NO_2	Zero									
	Span									
CO	Zero									
	Span									
O_2	Zero									
	Span									
		Post Test Calibration NO Cell Temperature (°F):								
		CO Interference Response (I_{CO}, %):				NO Interference Response (I_{NO}, %):				

SG = Span Gas

Form D-1
Reciprocating Engine Test Results

Company:_____ **Facility:**_____
Source Tested:_____ **Date:**_____
Source Manufacturer/Model #:_____

Site-rated Horsepower:_____ **Source Serial #:**_____
Type of Emission Control:_____

Analyst:_____ **Analyzer Serial #:**_____
Analyzer Manufacturer/Model #:_____

Operating Conditions
Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Suction/ Discharge Pressures (Indicate Units)	Engine RPM	Engine Gas Throughput (Indicate Units)	Engine Fuel Consumption (Indicate Units)	Fuel Heat Content (Btu/cf)	Engine Specific Fuel Consumption (Btu/hp-hr)[1]	Engine Tested Horsepower

[1] As reported by the Manufacturer

Test Results
Test Start Time:_____ NO Cell Temperature (°F) after ⅓ (e.g., 7 minutes) of the test:_____
Test End Time:_____ NO Cell Temperature (°F) after ⅔ (e.g., 14 minutes) of the test:_____

NO_X ($NO + NO_2$)								
Avg. Tested NO ppm	$NO_{corrected}$ ppm	Avg. Tested NO_2 ppm	$NO_{2\ corrected}$ ppm	$NO_{X\ corrected}$ ppm	Tested gm/hp-hr	Tested lb/hr	Allowable gm/hp-hr	Allowable lb/hr

O_2		CO					
Avg. Tested O_2 %	$O_{2\ corrected}$ %	Avg. Tested CO ppm	$CO_{corrected}$ ppm	Tested gm/hp-hr	Tested lb/hr	Allowable gm/hp-hr	Allowable lb/hr

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

_____ _____
Print Name Signature

Form D-2
Combustion Turbine Test Results

Company:_____ **Facility:**_____
Source Tested:_____ **Date:**_____
Source Manufacturer/Model #:_____

Site-rated Horsepower:_____ **Source Serial #:**_____
Type of Emission Control:_____

Analyst:_____ **Analyzer Serial #:**_____
Analyzer Manufacturer/Model #:_____

Operating Conditions
Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Suction/ Discharge Pressures (Indicate Units)	Turbine T_5 Temperature (°F)	Turbine RPM	Turbine Gas Throughput (Indicate Units)	Turbine Fuel Consumption (Indicate Units)	Fuel Heat Content (Btu/cf)	Turbine Specific Fuel Consumption (Btu/hp-hr)[1]	Turbine Tested Horsepower

[1] As reported by the Manufacturer

Test Results
Test Start Time:_____ NO Cell Temperature (°F) after ⅓ (e.g., 7 minutes) of the test:_____
Test End Time:_____ NO Cell Temperature (°F) after ⅔ (e.g., 14 minutes) of the test:_____

NO_X ($NO + NO_2$)										
Avg. Tested NO ppm	$NO_{corrected}$ ppm	Avg. Tested NO_2 ppm	$NO_{2\ corrected}$ ppm	$NO_{X\ corrected}$ ppm	Tested gm/hp-hr	Tested lb/hr	Tested ppm @ 15% O2	Allowable gm/hp-hr	Allowable lb/hr	Allowable ppm @ 15% O2

O_2		CO							
Avg. Tested O_2 %	$O_{2\ corrected}$ %	Avg. Tested CO ppm	$CO_{corrected}$ ppm	Tested gm/hp-hr	Tested lb/hr	Tested ppm @ 15% O2	Allowable gm/hp-hr	Allowable lb/hr	Allowable ppm @ 15% O2

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

_____ _____
Print Name **Signature**

Form D-3
Heater/Boiler Test Results

Company:_____ **Facility:**_____
Source Tested:_____ **Date:**_____
Source Manufacturer/Model #:_____

Design Firing Rate (MMBtu/hr):_____ **Source Serial #:**_____
Type of Emission Control:_____

Analyst:_____ **Analyzer Serial #:**_____
Analyzer Manufacturer/Model #:_____

Operating Conditions
Source operating at 90 percent or greater design firing rate during testing? yes no

Fuel Consumption (cf/hr)	Fuel Heat Content (Btu/cf)	Heater/Boiler Tested Firing Rate (MMBtu/hr)

Test Results
Test Start Time:_____ NO Cell Temperature (°F) after ⅓ (e.g., 7 minutes) of the test:_____
Test End Time:_____ NO Cell Temperature (°F) after ⅔ (e.g., 14 minutes) of the test:_____

NO_X ($NO + NO_2$)								
Avg. Tested NO ppm	$NO_{corrected}$ ppm	Avg. Tested NO_2 ppm	$NO_{2\ corrected}$ ppm	$NO_{X\ corrected}$ ppm	Tested lb/MMBtu	Tested lb/hr	Allowable lb/MMBtu	Allowable lb/hr

O_2		CO					
Avg. Tested O_2 %	$O_{2\ corrected}$ %	Avg. Tested CO ppm	$CO_{corrected}$ ppm	Tested lb/MMBtu	Tested lb/hr	Allowable lb/MMBtu	Allowable lb/hr

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

_____ _____
Print Name Signature

Appendix B

Storage Tanks and Pressure Vessels

PETROLEUM STORAGE TANKS

Tank Number	Size Diameter X Height	Capacity BBLS	Typical Service	Year Built
652	30' X 40'	5,000	FCC Bottoms	1969
544	8' X 12'	100	Asphalt-SBS Asphalt Wetting Tank	1992
543	79' X 41' X 9"	35,000	Asphalt	1991
542	77' X 42' X 1"	35,000	Asphalt	1991
541	69' X 35' X 11"	24,000	Asphalt	1991
540	120' X 40'	80,000	Asphalt	1975
532	134' X 48'	120,000	Diesel #2	1982
531	134' X 48'	119,000	Light Str. Run Gasoline	1983
530	140' X 48'	140,000	Naphtha-Sour	1973
522	134' X 48'	120,000	Crude Oil	1974
521	134' X 48'	120,000	Crude Oil	1957
520	134' X 48'	120,000	Crude Oil	1974
519	134' X 48'	120,000	Crude Oil	1957
518	150' X 40'	150,000	Gasoline	1955
517	144' X 40'	116,000	OS Gasoline	1943
516	120' X 48'	96,000	Gasoline	1943
515	120' X 48'	96,000	Gasoline	1943
514	144' X 40'	116,000	OS Reformate	1943
513	120' X 40'	80,000	FCC Gasoline	1943
512	117' X 41' X 10"	80,000	Asphalt	1941
511	117' X 41' X 10"	80,000	Resid-Sweet	1941
510	115' X 30'	55,000	Jet Fuel-Kerosene	1923
509	115' X 30'	55,000	Medium Distillate	1923
507	120' X 40'	80,000	LSR Gasoline	1975
506	115' X 30'	55,000	Asphalt	1923
505	115' X 30'	55,000	Gas Oil	1923
504	115' X 30'	55,000	Asphalt	1923
503	115' X 30'	55,000	Asphalt	1923

PETROLEUM STORAGE TANKS (CONTINUED)

Tank Number	Size Diameter X Height	Capacity BBLS	Typical Service	Year Built
502	115' X 30'	55,000	Asphalt	1923
501	115' X 30'	55,000	Resid-Sweet pr Gasoil	1923
500	115' X 30'	55,000	FCC Bottoms or Vacuum Tower Bottom	1975
499	120' X 40'	80,000	Asphalt	1978
498	120' X 40'	80,000	Asphalt	1978
409	67' X 40'	25,000	Gasoline	1992
408	120' X 48'	96,000	Gasoline	1992
407	67' X 40'	25,000	Gasoline	1992
406	119' X 47' X 2"	93,000	Gas Oil	1992
405	77'-3" X 41'-11"	35,000	Diesel #240	1992
404	77' X 41'-3"	34,000	Light Cycle Oil	1991
403	85' X 40'	55,000	Recid-Sweet	1974
402	115' X 30'	55,000	Asphalt	1974
401	115' X 30'	55,000	Recid-Sweet	1973
315	110' X 40'	67,000	Light Distillate	1978
314	120' X 40'	80,000	Diesel #2	1975
313	60' X 40'	20,000	Diesel #240	1957
312	60' X 40'	20,000	Sour Water	1957
311	60' X 40'	20,000	Light Distillate	1957
310	70' X 48'	30,000	Reformer Feed (Naphtha)	1955
309	60' X 40'	20,000	Diesel #1 or Diesel #2	1952
308	60' X 40'	20,000	Gasoline	1952
307	60' X 40'-6"	20,000	Reformer Feed (Naphtha)	1952
306	73'-4" X 40'	30,000	Alkylate and Toluene	1952
305	80' X 32'	28,500	Asphalt	1949
304	80' X 30'	25,000	Diesel #240	1985
303	80' X 30'	27,000	Gasoline	1923
302	80' X 30'	27,000	OS Gasoline	1923

PETROLEUM STORAGE TANKS (CONTINUED)

Tank Number	Size Diameter X Height	Capacity BBLS	Typical Service	Year Built
301	80' X 30'	27,000	Diesel #2	1923
230	50' X 30'	10,000	FCC Bottoms-Resid	1974 (mvd)
209	50' X 30'	10,000	Gasoline	1943
208	41'-6" X 40'	10,000	Diesel #2	1941
207	50' X 40'	10,000	Desalter Water	1925
206	50' X 40'	13,000	OS Naphtha Sweet	1953
205	50' X 30'	10,000	FCC Bottoms or Vacuum Tower Bottom	1923
203	50' X 30'	10,000	OS Gasoline	1923
202	50' X 30'	10,000	OS Diesel #1 or Diesel #2	1923
201	50' X 30'	10,000	OS Diesel #1 or Diesel #2	1923
120	26' X 32'	3,000	Cutter Stock-Distillate	1963
119	26 X 32'	3,000	Cutter Stock-Distillate	1963
118	26' X 32'	3,000	Cutter Stock-Distillate	1963
117	21'-3" X 32'	2,000	Diesel RR	1957
116	21'-3" X 32'	2,000	Asphalt	1957
115	40' X 10'	2,200	Asphalt	1923
114	30' X 40'	5,000	Asphalt	1950
113	30' X 40'	5,000	Asphalt	1950
112	30' X 40'	5,000	Asphalt	1941
111	30' X 40'	5,000	Asphalt	1941
109	33' X 6" X 32'	5,000	Recovered Oil	1940
108	45' X 20'	5,500	OS Leaded Slop	1923
107	45' X 20'	5,500	Out of Service	1923
106	15' X 30'	900	Resid-Slop	1923
105	45' X 20'	5,500	Out of Service	1923
104	45' X 20'	5,500	OS Leaded Slop	1923
103	45' X 30'	8,500	OS Diesel #1	1923
102	45' X 30'	8,500	Diesel Fuel	1923

PETROLEUM STORAGE TANKS (CONTINUED)

Tank Number	Size Diameter X Height	Capacity BBLS	Typical Service	Year Built
101	15' X 30'	900	Resid-Slop	1923
94	6' X 28'	145	Methanol	1956
93	15' X 12'	360	Asphalt-No Strip	1950
88	25' X 18'	1,500	Crude Oil/Recovered Oil	1943
87	25' X 18'	1,500	Crude Oil/Recovered Oil	1943
71	38' X 25'	5,000	Methanol	1923
69	50' X 30'	10,000	Diesel Fuel	1924
64	25' X 24'	2,000	Asphalt	1950
63	25' X 24'	2,000	Asphalt	1946
62	25' X 24'	2,000	Asphalt	1946
61	25' X 24'	2,000	Asphalt	1946
60	25' X 24'	2,000	Asphalt	1941
59	25' X 24'	2,000	Asphalt	1941
58	25' X 24'	2,000	Asphalt	1941
41	26'-5" X 35'-5"	3,400	Recid-Plant Fuel Oil	1993 (mvd)
40	30' X 40'	5,000	Recid-Plant Fuel Oil	1969
36	10'-6" X 18'	382	Asphalt-Rubberized	1923
33	20' X 18'	1,000	Slop Oil Recovery	1955
32	20' X 18'	1,000	Slop Oil Recovery	1955
30	20' X 18'	1,000	Cutter Stock-Light Cycle Oil	1955
8	30' X 10'	1,200	Cutter Stock-Distillate	1923
4	30' X 10'	1,200	Cutter Stock Distillate	1923

PETROLEUM STORAGE PRESSURE VESSELS

Vessel Number	Size Diameter X Height	Capacity BBLS	Typical Service	Year Built
668	74'-8" X 56'-8"	30,000	Butane	1939
671	54'-9" Diam.	15,000	Olifin	1943
672	38' Diam.	5,000	Isobutane-Butane	1943
673	32' Diam.	3,000	Olifin	1943
674	65' Diam.	25,000	Butane	1966
675	43'-6" Diam.	7,500	Isobutane	1957
676	43'-6" Diam.	7,500	Isobutane	1957
1001	120" ID X 53'-3"	714	Propane	1973
1002	120" ID X 53'-3"	714	Propane	1973
1003	120" ID X 53'-3"	714	Propane	1973
1004	110" ID X 82'	952	Butane-Mixed	1977
1005	130" ID X 57'-11"	952	Butane-Mixed	1977
1006	130" ID X 57'-11"	952	Butane-Mixed	1977
1007	130" ID X 61'-9"	1071	Butane-Mixed	1977
1008	130" ID X 61'-9"	1071	Butane-Mixed	1977
1009	144" ID X 57'-11"	952	Butane-Mixed	1977
1010	144" ID X 57'-11"	952	Butane-Mixed	1977
1011	144" ID X 57'-11"	952	Butane-Mixed	1977
1012	144" ID X 57'-11"	952	Butane-Mixed	1977
1013	144" ID X 57'-11"	952	Butane-Mixed	1977
1020	10'-5" ID X 72'	1109	Propane	1959
1021	10'-5" ID X 72'	1109	Propane	1959

Appendix C

40 CFR 60 Subpart J

Subpart J-Standards of Performance for Petroleum Refineries

§ 60.100 Applicability, designation of affected facility, and reconstruction.

(a) The provisions of this subpart are applicable to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants of 20 long tons per day (LTD) or less. The Claus sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery.

(b) Any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device under paragraph (a) of this section which commences construction or modification after June 11, 1973, or any Claus sulfur recovery plant under paragraph (a) of this section which commences construction or modification after October 4, 1976, is subject to the requirements of this subpart except as provided under paragraphs (c) and (d) of this section.

(c) Any fluid catalytic cracking unit catalyst regenerator under paragraph (b) of this section which commences construction or modification on or before January 17, 1984, is exempted from §60.104(b).

(d) Any fluid catalytic cracking unit in which a contact material reacts with petroleum derivatives to improve feedstock quality and in which the contact material is regenerated by burning off coke and/or other deposits and that commences construction or modification on or before January 17, 1984, is exempt from this subpart.

(e) For purposes of this subpart, under §60.15, the "fixed capital cost of the new components" includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following January 17, 1984. For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

[43 FR 10868, Mar. 15, 1978, as amended at 44 FR 61543, Oct. 25, 1979; 54 FR 34026, Aug. 17, 1989]

§ 60.101 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A.

(a) *Petroleum refinery* means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(b) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(c) *Process gas* means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(d) *Fuel gas* means any gas which is generated at a petroleum refinery and which is combusted. Fuel gas also includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Fuel gas does not include gases generated by catalytic cracking unit catalyst regenerators and fluid coking burners.

(e) *Process upset gas* means any gas generated by a petroleum refinery process unit as a result of start-up, shut-down, upset or malfunction.

(f) *Refinery process unit* means any segment of the petroleum refinery in which a specific processing operation is conducted.

(g) *Fuel gas combustion device* means any equipment, such as process heaters, boilers and flares used to combust fuel gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid.

(h) *Coke burn-off* means the coke removed from the surface of the fluid catalytic cracking unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in §60.106.

(i) *Claus sulfur recovery plant* means a process unit which recovers sulfur from hydrogen sulfide by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

(j) *Oxidation control system* means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide.

(k) *Reduction control system* means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to hydrogen sulfide.

(l) *Reduced sulfur compounds* means hydrogen sulfide (H_2S), carbonyl sulfide (COS) and carbon disulfide (CS_2).

(m) *Fluid catalytic cracking unit* means a refinery process unit in which petroleum derivatives are continuously charged; hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing; and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery.

(n) *Fluid catalytic cracking unit catalyst regenerator* means one or more regenerators (multiple regenerators) which comprise that portion of the fluid catalytic cracking unit in which coke burn-off and catalyst or contact material regeneration occurs, and includes the regenerator combustion air blower(s).

(o) *Fresh feed* means any petroleum derivative feedstock stream charged directly into the riser or reactor of a fluid catalytic cracking unit except for petroleum derivatives recycled within the fluid catalytic cracking unit, fractionator, or gas recovery unit.

(p) *Contact material* means any substance formulated to remove metals, sulfur, nitrogen, or any other contaminant from petroleum derivatives.

(q) *Valid day* means a 24-hour period in which at least 18 valid hours of data are obtained. A "valid hour" is one in which at least 2 valid data points are obtained.

[39 FR 9315, Mar. 8, 1974, as amended at 43 FR 10868, Mar. 15, 1978; 44 FR 13481, Mar. 12, 1979; 45 FR 79453, Dec. 1, 1980; 54 FR 34027, Aug. 17, 1989]

§ 60.102 Standard for particulate matter.

Each owner or operator of any fluid catalytic cracking unit catalyst regenerator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the fluid catalytic cracking unit catalyst regenerator will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator:

(1) Particulate matter in excess of 1.0 kg/Mg (2.0 lb/ton) of coke burn-off in the catalyst regenerator.

(2) Gases exhibiting greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period.

(b) Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator or waste heat boiler in which auxiliary or supplemental liquid or solid fossil fuel is burned, particulate matter in excess of that permitted by paragraph (a)(1) of this section may be emitted to the

atmosphere, except that the incremental rate of particulate matter emissions shall not exceed 43.0 g/MJ (0.10 lb/million Btu) of heat input attributable to such liquid or solid fossil fuel.

[39 FR 9315, Mar. 8, 1974, as amended at 42 FR 32427, June 24, 1977; 42FR 39389, Aug. 4, 1977; 43 FR 10868, Feb. 15, 1978; 54 FR 34027, Aug. 17, 1989; 65 FR 61753, Oct. 17, 2000]

§ 60.103 Standard for carbon monoxide.

Each owner or operator of any fluid catalytic cracking unit catalyst regenerator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by §60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the fluid catalytic cracking unit catalyst regenerator will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator any gases that contain carbon monoxide (CO) in excess of 500 ppm by volume (dry basis).

[54 FR 34027, Aug. 17, 1989, as amended at 55 FR 40175, Oct. 2, 1990]

§ 60.104 Standards for sulfur oxides.

Each owner or operator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall:

(1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dsem (0.10 gr/dscf). The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this paragraph.

(2) Discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of:

(i) For an oxidation control system or a reduction control system followed by incineration, 250 ppm by volume (dry basis) of sulfur dioxide (SO_2) at zero percent excess air.

(ii) For a reduction control system not followed by incineration, 300 ppm by volume of reduced sulfur compounds and 10 ppm by volume of hydrogen sulfide (H_2S), each calculated as ppm SO_2 by volume (dry basis) at zero percent excess air.

(b) Each owner or operator that is subject to the provisions of this subpart shall comply with one of the following conditions for each affected fluid catalytic cracking unit catalyst regenerator:

(1) With an add-on control device, reduce sulfur dioxide emissions to the atmosphere by 90 percent or maintain sulfur dioxide emissions to the atmosphere less than or equal to 50 ppm by volume (vppm), whichever is less stringent; or

(2) Without the use of an add-on control device, maintain sulfur oxides emissions calculated as sulfur dioxide to the atmosphere less than or equal to 9.8 kg/Mg (20 lb/ton) coke burn-off; or

(3) Process in the fluid catalytic cracking unit fresh feed that has a total sulfur content no greater than 0.30 percent by weight.

(c) Compliance with paragraph (b)(1), (b)(2), or (b)(3) of this section is determined daily on a 7-day rolling average basis using the appropriate procedures outlined in § 60.106.

(d) A minimum of 22 valid days of data shall be obtained every 30 rolling successive calendar days when complying with paragraph (b)(1) of this section.

[43 FR 10869, Mar. 15, 1978, as amended at 54 FR 34027, Aug. 17, 1989; 55 FR 40175, Oct. 2, 1990; 65 FR 61754, Oct. 17, 2000]

§ 60.105 Monitoring of emissions and operations.

(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart as follows:

(1) For fluid catalytic cracking unit catalyst regenerators subject to § 60.102(a)(2), an instrument for continuously monitoring and recording the opacity of emissions into the atmosphere. The instrument shall be spanned at 60, 70, or 80 percent opacity.

(2) For fluid catalytic cracking unit catalyst regenerators subject to § 60.103(a), an instrument for continuously monitoring and recording the concentration by volume (dry basis) of CO emissions into the atmosphere, except as provided in paragraph (a)(2) (ii) of this section.

(i) The span value for this instrument is 1,000 ppm CO.

(ii) A CO continuous monitoring system need not be installed if the owner or operator demonstrates that the average CO emissions are less than 50 ppm (dry basis) and also files a written request for exemption to the Administrator and receives such an exemption. The demonstration shall consist of continuously monitoring CO emissions for 30 days using an instrument that shall meet the requirements of Performance Specification 4 of Appendix B of this part. The span value shall be 100 ppm CO instead of 1,000 ppm, and the relative accuracy limit shall be 10 percent of the average CO emissions or 5 ppm CO, whichever is greater. For instruments that are identical to Method 10 and employ the sample conditioning system of Method 10A, the alternative relative accuracy test procedure in § 10.1 of Performance Specification 2 may be used in place of the relative accuracy test.

(3) For fuel gas combustion devices subject to § 60.104(a)(1), an instrument for continuously monitoring and recording the concentration by volume (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere (except where an H_2S monitor is installed under paragraph (a)(4) of this section). The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are 50 ppm SO_2 and 25 percent oxygen (O_2).

(ii) The SO_2 monitoring level equivalent to the H_2S standard under § 60.104(a)(1) shall be 20 ppm (dry basis, zero percent excess air).

(iii) The performance evaluations for this SO_2 monitor under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations. Method 6 samples shall be taken at a flow rate of approximately 2 liters/min for at least 30 minutes. The relative accuracy limit shall be 20 percent or 4 ppm, whichever is greater, and the calibration drift limit shall be 5 percent of the established span value.

(iv) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location (i.e., after one of the combustion devices), if monitoring at this location accurately represents the S_2 emissions into the atmosphere from each of the combustion devices.

(4) In place of the SO_2 monitor in paragraph (a)(3) of this section, an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device.

(i) The span value for this instrument is 425 mg/dscm H_2S.

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.

(iii) The performance evaluations for this H_2S monitor under § 60.13(c) shall use Performance Specification 7. Method 11, 15, 15A, or 16 shall be used for conducting the relative accuracy evaluations.

(5) For Claus sulfur recovery plants with oxidation control systems or reduction control

systems followed by incineration subject to § 60.104(a)(2)(i), an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are 500 ppm SO_2 and 25 percent O_2.

(ii) The performance evaluations for this SO_2 monitor under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(6) For Claus sulfur recovery plants with reduction control systems not followed by incineration subject to § 60.104(a)(2)(ii), an instrument for continuously monitoring and recording the concentration of reduced sulfur and O_2 emissions into the atmosphere. The reduced sulfur emissions shall be calculated as SO_2 (dry basis, zero percent excess air).

(i) The span values for this monitor are 450 ppm reduced sulfur and 25 percent O_2.

(ii) The performance evaluations for this reduced sulfur (and O_2) monitor under § 60.13(c) shall use Performance Specification 5 of Appendix B of this Part (and Performance Specification 3 of Appendix B of this Part for the O_2 analyzer). Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations. If Method 3 yields O_2 concentrations below 0.25 percent during the performance specification test, the O_2 concentration may be assumed to be zero and the reduced sulfur CEMS need not include an O_2 monitor.

(7) In place of the reduced sulfur monitor under paragraph (a)(6) of this section, an instrument using an air or O_2 dilution and oxidation system to convert the reduced sulfur to SO_2 for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of the resultant SO_2 The monitor shall include an oxygen monitor for correcting the data for excess oxygen.

(i) The span values for this monitor are 375 ppm SO_2 and 25 percent O_2.

(ii) For reporting purposes, the SO_2 exceedance level for this monitor is 250 ppm (dry basis, zero percent excess air).

(iii) The performance evaluations for this SO_2 (and O_2) monitor under § 60.13(c) shall use Performance Specification 5. Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations.

(8) An instrument for continuously monitoring and recording concentrations of SO_2 in the gases at both the inlet and outlet of the SO_2 control device from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104 (b)(1).

(i) The span value of the inlet monitor shall be set 125 percent of the maximum estimated hourly potential SO_2 emission concentration entering the control device, and the span value of the outlet monitor shall be set at 50 percent of the maximum estimated hourly potential sulfur dioxide emission concentration entering the control device.

(ii) The performance evaluations for these SO_2 monitors under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(9) An instrument for continuously monitoring and recording concentrations of SO_2 in the gases discharged into the atmosphere from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply specifically with the 50 ppmv emission limit under § 60.104 (b)(1).

(i) The span value of the monitor shall be set at 50 percent of the maximum hourly potential SO_2 emission concentration of the control device.

(ii) The performance evaluations for this SO_2 monitor under § 60.13 (c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(10) An instrument for continuously monitoring and recording concentrations of oxygen (O_2) in the gases at both the inlet and outlet of the sulfur dioxide control device (or the outlet only if specifically complying with the 50 ppmv standard) from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator has elected to comply with § 60.104(b)(1). The span of this continuous monitoring system shall be set at 10 percent.

(11) The continuous monitoring systems under paragraphs (a)(8), (a)(9), and (a)(10) of this section are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, or malfunction, except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments.

(12) The owner or operator shall use the following procedures to evaluate the continuous monitoring systems under paragraphs (a)(8), (a)(9), and (a)(10) of this section.

(i) Method 3 or 3A and Method 6 or 6C for the relative accuracy evaluations under the § 60.13(e) performance evaluation.

(ii) Appendix F, Procedure 1, including quarterly accuracy determinations and daily calibration drift tests.

(13) When seeking to comply with § 60.104(b)(1), when emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using one of the following methods to provide emission data for a minimum of 18 hours per day in at least 22 out of 30 rolling successive calendar days.

(i) The test methods as described in § 60.106(k);

(ii) A spare continuous monitoring system; or

(iii) Other monitoring systems as approved by the Administrator.

(b) [Reserved]

(c) The average coke burn-off rate (Mg (tons) per hour) and hours of operation shall be recorded daily for any fluid catalytic cracking unit catalyst regenerator subject to § 60.102, § 60.103, or § 60.104(b)(2).

(d) For any fluid catalytic cracking unit catalyst regenerator under § 60.102 that uses an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the rate of combustion of liquid or solid fossil-fuels and the hours of operation during which liquid or solid fossil-fuels are combusted in the incinerator-waste heat boiler.

(e) For the purpose of reports under § 60.7(c), periods of excess emissions that shall be determined and reported are defined as follows:

Note: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

(1) *Opacity*. All 1-hour periods that contain two or more 6-minute periods during which the average opacity as measured by the continuous monitoring system under § 60.105(a)(1) exceeds 30 percent.

(2) *Carbon monoxide*. All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system under § 60.105(a)(2) exceeds 500 ppm.

(3) *Sulfur dioxide from fuel gas combustion*. (i) All rolling 3-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(3) exceeds 20 ppm (dry basis, zero percent excess air); or

(ii) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system under § 60.105(a)(4) exceeds 230 mg/dscm (0.10 gr/dscf).

(4) *Sulfur dioxide from Claus sulfur recovery plants*. (i) All 12- hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(5) exceeds 250 ppm (dry basis, zero percent excess air); or

(ii) All 12-hour periods during which the average concentration of reduced sulfur (as SO_2) as measured by the reduced sulfur continuous monitoring system under

§60.105(a)(6) exceeds 300 ppm; or

(iii) All 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(7) exceeds 250 ppm (dry basis, zero percent excess air).

[39 FR 9315, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975; 42 FR 32427, June 24, 1977; 42 FR 39389, Aug. 4, 1977; 43 FR 10869, Mar. 15, 1978; 48 FR 23611, May 25, 1983; 50 FR 31701, Aug. 5, 1985; 54 FR 34028, Aug. 17, 1989; 55 FR 40175, Oct. 2, 1990; 65 FR 61754, Oct. 17, 2000]

§ 60.106 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter (PM) standards in § 60.102(a) as follows:

(1) The emission rate (E) of PM shall be computed for each run using the following equation:

$$E = \frac{c_s Q_{sd}}{K R_c}$$

Where:

E = Emission rate of PM, kg/Mg (lb/ton) of coke burn-off.

c_s = Concentration of PM, g/dscm (gr/dscf).

Q_{sd} = Volumetric flow rate of effluent gas, dscm/hr (dscf/ hr).

R_c = Coke burn-off rate, Mg/hr (ton/hr) coke.

K=Conversion factor, 1,000 g/kg (7,000 gr/lb).

(2) Method 5B or 5F is to be used to determine particulate matter emissions and associated moisture content from affected facilities without wet FGD systems; only Method 5B is to be used after wet FGD systems. The sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times may be approved by the Administrator when process variables or other factors preclude sampling for at least 60 minutes.

(3) The coke burn-off rate (R_c) shall be computed for each run using the following equation:

$$R_c = K_1 Q_r (\%CO_2 + \%CO) - (K_2 Q_a - K_3 Q_r)\left[\left(\frac{\%CO}{2}\right) + (\%CO_2 + \%O_2)\right]$$

Where:

R_c= Coke burn-off rate, Mg/hr (ton/hr).

Q_r = Volumetric flow rate of exhaust gas from catalyst regenerator before entering the emission control system, dscm/ min (dscf/min).

Q_a = Volumetric flow rate of air to FCCU regenerator, as determined from the fluid catalytic cracking unit control room instrumentation, dscm/min (dscf/min).

$\%CO_2$ = Carbon dioxide concentration, percent by volume (dry basis).

%CO = Carbon monoxide concentration, percent by volume (dry basis).

$\%O_2$= Oxygen concentration, percent by volume (dry basis).

K_1 = Material balance and conversion factor, 2.982×10^{-4} (Mg-min)/(hr-dscm-%) [9.31×10^{-6} (ton-min)/(hr-dscf-%)].

K2= Material balance and conversion factor, 2.088×10^{-3} (Mg-min)/(hr-dscm-%) [6.52×10^{-5} (ton-min)/(hr-dscf-%)].

K_3 = Material balance and conversion factor, 9.94×10^{-5} (Mg-min)/(hr-dscm-%) [3.1×10^{-6} (ton-min)/(hr-dscf-%)].

(i) Method 2 shall be used to determine the volumetric flow rate (Q_r).

(ii) The emission correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine CO_2, CO, and O_2 concentrations.

(4) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(c) If auxiliary liquid or solid fossil-fuels are burned in an incinerator-waste heat boiler, the owner or operator shall determine the emission rate of PM permitted in § 60.102(b) as follows:

(1) The allowable emission rate (E_s) of PM shall be computed for each run using the following equation:

$$E_s = F + A\left(\frac{H}{R_c}\right)$$

Where:

E_s = Emission rate of PM allowed, kg/Mg (lb/ton) of coke burn-off in catalyst regenerator.

F=Emission standard, 1.0 kg/Mg (2.0 lb/ton) of coke burn-off in catalyst regenerator.

A = Allowable incremental rate of PM emissions, 7.5×10^{-4} kg/million J (0.10 lb/million Btu).

H = Heat input rate from solid or liquid fossil fuel, million J/hr (million Btu/hr).

R_c = Coke burn-off rate, Mg coke/hr (ton coke/hr).

(2) Procedures subject to the approval of the Administrator shall be used to determine the heat input rate.

(3) The procedure in paragraph (b)(3) of this section shall be used to determine the coke burn-off rate (R_c).

(d) The owner or operator shall determine compliance with the CO standard in § 60.103(a) by using the integrated sampling technique of Method 10 to determine the CO concentration (dry basis). The sampling time for each run shall be 60 minutes.

(e)(1) The owner or operator shall determine compliance with the H_2S standard in § 60.104(a)(1) as follows: Method 11, 15, 15A, or 16 shall be used to determine the H_2S concentration. The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line.

(i) For Method 11, the sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times shall be taken at about 1-hour intervals. The arithmetic average of these two samples shall constitute a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H_2S may necessitate sampling for longer periods of time.

(ii) For Method 15 or 16, at least three injects

over a 1-hour period shall constitute a run.

(iii) For Method 15A, a 1-hour sample shall constitute a run.

(2) Where emissions are monitored by § 60.105(a)(3), compliance with § 60.105(a)(1) shall be determined using Method 6 or 6C and Method 3 or 3A. A 1-hour sample shall constitute a run. Method 6 samples shall be taken at a rate of approximately 2 liters/min. The ppm correction factor (Method 6) and the sampling location in paragraph (f)(1) of this section apply. Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 6 or 6C.

(f) The owner or operator shall determine compliance with the SO_2 and the H_2S and reduced sulfur standards in § 60.104(a)(2) as follows:

(1) Method 6 shall be used to determine the SO_2 concentration. The concentration in mg/dscm obtained by Method 6 or 6C is multiplied by 0.3754 to obtain the concentration in ppm. The sampling point in the duct shall be the centroid of the cross section if the cross-sectional area is less than 5.00 m^2 (53.8 ft^2) or at a point no closer to the walls than 1.00 m (39.4 in.) if the cross-sectional area is 5.00 m^2 or more and the centroid is more than 1 m from the wall. The sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf) for each sample. Eight samples of equal sampling times shall be taken at about 30-minute intervals. The arithmetic average of these eight samples shall constitute a run. For Method 6C, a run shall consist of the arithmetic average of four 1-hour samples. Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 6 or 6C. The sampling time for each sample shall be equal to the time it takes for two Method 6 samples. The moisture content from this sample shall be used to correct the corresponding Method 6 samples for moisture. For documenting the oxidation efficiency of the control device for reduced sulfur compounds, Method 15 shall be used following the procedures of paragraph (f)(2) of this section.

(2) Method 15 shall be used to determine the reduced sulfur and H_2S concentrations. Each run shall consist of 16 samples taken over a minimum of 3 hours. The sampling point shall be the same as that described for Method 6 in paragraph (f)(1) of this section. To ensure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3.0 lpm (0.10 cfm). The SO_2 equivalent for each run shall be calculated after being corrected for moisture and oxygen as the arithmetic average of the SO_2 equivalent for each sample during the run. Method 4 shall be used to determine the moisture content of the gases as the paragraph (f)(1) of this section. The sampling time for each sample shall be equal to the time it takes for four Method 15 samples.

(3) The oxygen concentration used to correct the emission rate for excess air shall be obtained by the integrated sampling and analysis procedure of Method 3 or 3A. The samples shall be taken simultaneously with the SO_2, reduced sulfur and H_2S, or moisture samples. The SO_2, reduced sulfur, and H_2S samples shall be corrected to zero percent excess air using the equation in paragraph (h)(6) of this section.

(g) Each performance test conducted for the purpose of determining compliance under § 60.104(b) shall consist of all testing performed over a 7-day period using Method 6 or 6C and Method 3 or 3A. To determine compliance, the arithmetic mean of the results of all the tests shall be compared with the applicable standard.

(h) For the purpose of determining compliance with § 60.104(b)(1), the following calculation procedures shall be used:

(1) Calculate each 1-hour average concentration (dry, zero percent oxygen, ppmv) of sulfur dioxide at both the inlet and the outlet to the add-on control device as specified in § 60.13(h). These calculations are made using the emission data collected under § 60.105(a).

(2) Calculate a 7-day average (arithmetic mean) concentration of sulfur dioxide for the inlet and for the outlet to the add-on control device using all of the 1-hour average concentration values obtained during seven successive 24-hour periods.

(3) Calculate the 7-day average percent reduction using the following equation:

$$R_{SO_2} = 100\frac{C_{SO_2(i)} - C_{SO_2(o)}}{C_{SO_2(i)}}$$

where:

Rso_2 = 7-day average sulfur dioxide emission reduction, percent

$Cso_2(i)$ = sulfur dioxide emission concentration determined in § 60.106(h)(2) at the inlet to the add-on control device, ppmv

$Cso_2(o)$ = sulfur dioxide emission concentration determined in § 60.106(h)(2) at the outlet to the add-on control device, ppmv

100 = conversion factor, decimal to percent

(4) Outlet concentrations of sulfur dioxide from the add-on control device for compliance with the 50 ppmv standard, reported on a dry, O_2-free basis, shall be calculated using the procedures outlined in § 60.106(h)(1) and (2) above, but for the outlet monitor only.

(5) If supplemental sampling data are used for determining the 7-day averages under paragraph (h) of this section and such data are not hourly averages, then the value obtained for each supplemental sample shall be assumed to represent the hourly average for each hour over which the sample was obtained.

(6) For the purpose of adjusting pollutant concentrations to zero percent oxygen, the following equation shall be used:

$$C_{adj} = C_{meas}\frac{20.9_c}{20.9 - \%O_2}$$

where:

C_{adj} = pollutant concentration adjusted to zero percent oxygen, ppm or g/dscm

C_{meas} = pollutant concentration measured on a dry basis, ppm or g/dscm

20.9_c = 20.9 percent oxygen-0.0 percent oxygen (defined oxygen correction basis), percent

20.9 = oxygen concentration in air, percent

$\%O_2$ = oxygen concentration measured on a dry basis, percent

(i) For the purpose of determining compliance with § 60.104(b)(2), the following reference methods and calculation procedures shall be used except as provided in paragraph (i)(12) of this section:

(1) One 3-hour test shall be performed each day.

(2) For gases released to the atmosphere from the fluid catalytic cracking unit catalyst regenerator:

(i) Method 8 as modified in § 60.106(i)(3) for moisture content and for the concentration of sulfur oxides calculated as sulfur dioxide,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 calculation procedures (data obtained from Methods 3 and 8) for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(3) Method 8 shall be modified by the insertion of a heated glass fiber filter between the probe and first impinger. The probe liner and glass fiber filter temperature shall be maintained above 160 °C (320 °F). The isopropanol impinger shall be eliminated. Sample recovery procedures described in Method 8 for container No. 1 shall be eliminated. The heated glass fiber filter also shall be excluded; however, rinsing of all connecting glassware after the heated glass fiber filter shall be retained and included in container No. 2. Sampled volume shall be at least 1 dscm.

(4) For Method 3, the integrated sampling

technique shall be used.

(5) Sampling time for each run shall be at least 3 hours.

(6) All testing shall be performed at the same location. Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator-waste heat boiler in which auxiliary or supplemental gaseous, liquid, or solid fossil fuel is burned, testing shall be conducted at a point between the regenerator outlet and the incinerator-waste heat boiler. An alternative sampling location after the waste heat boiler may be used if alternative coke burn-off rate equations, and, if requested, auxiliary/supplemental fuel SO_X credits, have been submitted to and approved by the Administrator prior to sampling.

(7) Coke burn-off rate shall be determined using the procedures specified under paragraph (b)(3) of this section, unless paragraph (i)(6) of this section applies. (8) Calculate the concentration of sulfur oxides as sulfur dioxide using equation 8-3 in Section 6.5 of Method 8 to calculate and report the total concentration of sulfur oxides as sulfur dioxide (C_{SO_x}).

(9) Sulfur oxides emission rate calculated as sulfur dioxide shall be determined for each test run by the following equation:

$$E_{SO_X} = \frac{C_{SO_X} Q_{sd}}{K}$$

Where:

E_{SO_X} = sulfur oxides emission rate calculated as sulfur dioxide, kg/hr (lb/hr)

C_{SO_X} = sulfur oxides emission concentration calculated as sulfur dioxide, g/dscm (gr/dscf)

Q_{sd} = dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr)

K=1,000 g/kg (7,000 gr/lb)

(10) Sulfur oxides emissions calculated as sulfur dioxide shall be determined for each test run by the following equation:

$$R_{SO_X} = \frac{E_{SO_X}}{R_c}$$

Where:

R_{SO_X} = Sulfur oxides emissions calculated as kg sulfur dioxide per Mg (lb/ton) coke burn-off.

E_{SO_X} = Sulfur oxides emission rate calculated as sulfur dioxide, kg/hr (lb/hr).

R_c= Coke burn-off rate, Mg/hr (ton/hr).

(11) Calculate the 7-day average sulfur oxides emission rate as sulfur dioxide per Mg (ton) of coke burn-off by dividing the sum of the individual daily rates by the number of daily rates summed.

(12) An owner or operator may, upon approval by the Administrator, use an alternative method for determining compliance with § 60.104(b)(2), as provided in § 60.8(b). Any requests for approval must include data to demonstrate to the Administrator that the alternative method would produce results adequate for the determination of compliance.

(j) For the purpose of determining compliance with § 60.104(b)(3), the following analytical methods and calculation procedures shall be used:

(1) One fresh feed sample shall be collected once per 8-hour period.

(2) Fresh feed samples shall be analyzed separately by using any one of the following applicable analytical test methods: ASTM D129-64, 78, or 95, ASTM D1552-83 or 95, ASTM D2622-87, 94, or 98, or ASTM D1266-87, 91, or 98. (These methods are incorporated by reference: see § 60.17.) The applicable range of some of these ASTM methods is not adequate to measure the levels of sulfur in some fresh feed samples. Dilution of samples prior to analysis with verification of the dilution ratio is acceptable upon prior approval of the Administrator.

(3) If a fresh feed sample cannot be collected at a single location, then the fresh feed sulfur content shall be determined as follows:

(i) Individual samples shall be collected once per 8-hour period for each separate fresh feed stream charged directly into the riser or reactor of the fluid catalytic cracking unit. For each sample location the fresh feed volumetric flow rate at the time of collecting the fresh feed sample shall be measured and recorded. The same method for measuring volumetric flow rate shall be used at all locations.

(ii) Each fresh feed sample shall be analyzed separately using the methods specified under paragraph (j)(2) of this section.

(iii) Fresh feed sulfur content shall be calculated for each 8-hour period using the following equation:

$$S_f = \sum_{i=1}^{n} \frac{S_i Q_i}{Q_f}$$

where:

S_f = fresh feed sulfur content expressed in percent by weight of fresh feed.

n = number of separate fresh feed streams charged directly to the riser or reactor of the fluid catalytic cracking unit.

Q_f = total volumetric flow rate of fresh feed charged to the fluid catalytic cracking unit.

S_i = fresh feed sulfur content expressed in percent by weight of fresh feed for the "ith" sampling location.

Q_i = volumetric flow rate of fresh feed stream for the "ith" sampling location.

(4) Calculate a 7-day average (arithmetic mean) sulfur content of the fresh feed using all of the fresh feed sulfur content values obtained during seven successive 24-hour periods.

(k) The test methods used to supplement continuous monitoring system data to meet the minimum data requirements in § 60.104(d) will be used as described below or as otherwise approved by the Administrator.

(1) Methods 6, 6B, or 8 are used. The sampling location(s) are the same as those specified for the monitor.

(2) For Method 6, the minimum sampling time is 20 minutes and the minimum sampling volume is 0.02 dscm (0.71 dscf) for each sample. Samples are taken at approximately 60-minute intervals. Each sample represents a 1-hour average. A minimum of 18 valid samples is required to obtain one valid day of data.

(3) For Method 6B, collection of a sample representing a minimum of 18 hours is required to obtain one valid day of data.

(4) For Method 8, the procedures as outlined in this section are used. The equivalent of 16 hours of sampling is required to obtain one valid day of data.

[39 FR 9315, Mar. 8, 1974, as amended at 43 FR 10869, Mar. 15, 1978; 51 FR 42842, Nov. 26, 1986; 52 FR 20392, June 1, 1987; 53 FR 41333, Oct. 21, 1988; 54 FR 34028, Aug. 17, 1989; 55 FR 40176, Oct. 2, 1990; 56 FR 4176, Feb. 4, 1991; 65 FR 61754, Oct. 17, 2000]

§ 60.107 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.104(b) shall notify the Administrator of the specific provisions of § 60.104(b) with which the owner or operator seeks to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to comply with an alternative provision of § 60.104(b), then the Administrator shall be notified by the owner or operator in the report described in paragraph (c) of this section.

(b) Each owner or operator subject to § 60.104(b) shall record and maintain the following information:

(1) If subject to § 60.104(b)(1),

(i) All data and calibrations from continuous monitoring systems located at the inlet and outlet to the control device, including the results of the daily drift tests and quarterly accuracy assessments required under appendix

F, Procedure 1;

(ii) Measurements obtained by supplemental sampling (refer to § 60.105(a)(13) and § 60.106(k)) for meeting minimum data requirements; and

(iii) The written procedures for the quality control program required by appendix F, Procedure 1.

(2) If subject to § 60.104(b)(2), measurements obtained in the daily Method 8 testing, or those obtained by alternative measurement methods, if § 60.106(i)(12) applies.

(3) If subject to § 60.104(b)(3), data obtained from the daily feed sulfur tests.

(4) Each 7-day rolling average compliance determination.

(c) Each owner or operator subject to § 60.104(b) shall submit a report except as provided by paragraph (d) of this section. The following information shall be contained in the report:

(1) Any 7-day period during which:

(i) The average percent reduction and average concentration of sulfur dioxide on a dry, O_2-free basis in the gases discharged to the atmosphere from any fluid cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104(b)(1) is below 90 percent and above 50 vppm, as measured by the continuous monitoring system prescribed under § 60.105(a)(8), or above 50 vppm, as measured by the outlet continuous monitoring system prescribed under § 60.105(a)(9). The average percent reduction and average sulfur dioxide concentration shall be determined using the procedures specified under § 60.106(h);

(ii) The average emission rate of sulfur dioxide in the gases discharged to the atmosphere from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104(b)(2) exceeds 9.8 kg SO_X per 1,000 kg coke burn-off, as measured by the daily testing prescribed under § 60.106(i). The average emission rate shall be determined using the procedures specified under § 60.106(i); and

(iii) The average sulfur content of the fresh feed for which the owner or operator seeks to comply with § 60.104(b)(3) exceeds 0.30 percent by weight. The fresh feed sulfur content, a 7-day rolling average, shall be determined using the procedures specified under § 60.106(j).

(2) Any 30-day period in which the minimum data requirements specified in § 60.104(d) are not obtained.

(3) For each 7-day period during which an exceedance has occurred as defined in paragraphs (c)(1)(i) through (c)(1)(iii) and (c)(2) of this section:

(i) The date that the exceedance occurred;

(ii) An explanation of the exceedance;

(iii) Whether the exceedance was concurrent with a startup, shutdown, or malfunction of the fluid catalytic cracking unit or control system; and

(iv) A description of the corrective action taken, if any.

(4) If subject to § 60.104(b)(1),

(i) The dates for which and brief explanations as to why fewer than 18 valid hours of data were obtained for the inlet continuous monitoring system;

(ii) The dates for which and brief explanations as to why fewer than 18 valid hours of data were obtained for the outlet continuous monitoring system;

(iii) Identification of times when hourly averages have been obtained based on manual sampling methods;

(iv) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system; and

(v) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specifications 2 or 3.

(vi) Results of daily drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(5) If subject to § 60.104(b)(2), for each day in which a Method 8 sample result required by § 60.106(i) was not obtained, the date for which and brief explanation as to why a Method 8 sample result was not obtained, for approval by the Administrator.

(6) If subject to § 60.104(b)(3), for each 8-hour period in which a feed sulfur measurement required by § 60.106(j) was not obtained, the date for which and brief explanation as to why a feed sulfur measurement was not obtained, for approval by the Administrator.

(d) For any periods for which sulfur dioxide or oxides emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(e) The owner or operator of an affected facility shall submit the reports required under this subpart to the Administrator semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

(f) The owner or operator of the affected facility shall submit a signed statement certifying the accuracy and completeness of the information contained in the report.

[54 FR 34029, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990; 64 FR 7465, Feb. 12, 1999; 65 FR 61755, Oct. 17, 2000]

§ 60.108 Performance test and compliance provisions.

(a) Section 60.8(d) shall apply to the initial performance test specified under paragraph (c) of this section, but not to the daily performance tests required thereafter as specified in § 60.108(d). Section 60.8(f) does not apply when determining compliance with the standards specified under § 60.104(b). Performance tests conducted for the purpose of determining compliance under § 60.104(b) shall be conducted according to the applicable procedures specified under § 60.106.

(b) Owners or operators who seek to comply with § 60.104(b)(3) shall meet that standard at all times, including periods of startup, shutdown, and malfunctions.

(c) The initial performance test shall consist of the initial 7-day average calculated for compliance with § 60.104(b)(1), (b)(2), or (b)(3).

(d) After conducting the initial performance test prescribed under § 60.8, the owner or operator of a fluid catalytic cracking unit catalyst regenerator subject to § 60.104(b) shall conduct a performance test for each successive 24-hour period thereafter. The daily performance tests shall be conducted according to the appropriate procedures specified under § 60.106. In the event that a sample collected under § 60.106(i) or (j) is accidentally lost or conditions occur in which one of the samples must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operators' control, compliance may be determined using available data for the 7-day period.

(e) Each owner or operator subject to § 60.104(b) who has demonstrated compliance with one of the provisions of § 60.104(b) but a later date seeks to comply with another of the provisions of § 60.104(b) shall begin conducting daily performance tests as specified under paragraph (d) of this section immediately upon electing to become subject to one of the other provisions of § 60.104(b). The owner or operator shall furnish the Administrator with a written notification of the change in the semiannual report required by § 60.107(e).

[54 FR 34030, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990; 64 FR 7466, Feb. 12, 1999]

§ 60.109 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which shall not be delegated to States:

(1) Section 60.105(a)(13)(iii),

(2) Section 60.106(i)(12).

[54 FR 34031, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990]

Appendix D

40 CFR 60 Subpart Kb

Subpart Kb-Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Source: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, that affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) Alternative means of compliance-(1) Option to comply with part 65. Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§ 60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of § 60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) Part 60, subpart A. Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) Internal floating roof report. If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) External floating roof report. If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

§ 60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest-calendar month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature , as determined:

(1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference--see § 60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879-83, 96, or 97 (incorporated by reference--see § 60.17);

(4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except

liquified petroleum gases, as determined by ASTM D323-82 or 94 (incorporated by reference-see § 60.17).

Storage vessel means each tank, reservoir or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are nor directly involved in the containment of liquids or vapors;

(2) Subsurface caverns or porous rock reservoirs; or

(3) Process tanks.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid- filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in § 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in § 60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, § 60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the

control device, it shall meet the specifications described in the general control device requirements (§ 60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in § 60.114b of this subpart.

(c) Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia. This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of § 60.112b.

(a) After installing the control equipment required to meet § 60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in § 60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet § 60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the

storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of § 60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.112b (a)(3) or (b)(2) (other than a flare) is exempt from § 60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, § 60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.114b Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in § 60.112b, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the

Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112b.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by § 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with § 60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with § 60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with § 60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by § 60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by § 60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under § 60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§ 60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in § 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar- month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference-see § 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference-see § 60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in § 60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879-83, 96, or 97 (incorporated by reference-see § 60.17); or

(ii) ASTM D323-82 or 94 (incorporated by reference-see § 60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of § 60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000, 68 FR 59333, Oct. 15, 2003]

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§ 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

Appendix E

40 CFR 60 Subparts GGG and VV

Subpart GGG-Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

Source: 49 FR 22606, May 30, 1984, unless otherwise noted.

§ 60.590 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in petroleum refineries.

(2) A compressor is an affected facility.

(3) The group of all the equipment (defined in §60.591) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 4, 1983, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in §60.591) for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities subject to subpart VV or subpart KKK of 40 CFR part 60 are excluded from this subpart.

§ 60.591 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the act, in subpart A of part 60, or in subpart VV of part 60, and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square mile area extending from the Brooks Range to the Arctic Ocean.

Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.

In hydrogen service means that a compressor contains a process fluid that meets the conditions specified in §60.593(b).

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.593(c).

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

Process unit means components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

§ 60.592 Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §60.482-1 to 60.482-10 as soon as practicable, but no later than 180 days after initial startup.

(b) An owner or operator may elect to comply with the requirements of §60.483-1 and 60.483-2.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of §60.484.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §60.485 except as provided in §60.593.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §60.486 and 60.487.

§ 60.593 Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VV.

(b)(1) Compressors in hydrogen service are exempt from the requirements of § 60.592 if an owner or operator demonstrates that a compressor is in hydrogen service.

(2) Each compressor is presumed not be be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E260-73, 91, or 96, E168-67, 77, or 92, or E169-63, 77, or 93 (incorporated by reference as specified in § 60.17) shall be used.

(3)(i) An owner or operator may use engineering judgment rather than procedures in paragraph (b)(2) of this section to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph (b)(2) shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures in paragraph (b)(2).

(c) Any existing reciprocating compressor that becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482 (a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of § 60.482 (a), (b), (c), (d), (e), and (h).

(d) An owner or operator may use the following provision in addition to § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150°C as determined by ASTM Method D86-78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.18).

(e) Pumps in light liquid service and valves in gas/vapor and light liquid service within a procesic compounds of usually high molecular weight that consist of many repeated links, each link being a relatively light and simple molecule.

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

Source: 48 FR 48335, Oct. 18, 1983, unless otherwise noted.

§ 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in §60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) is exempt from §60.482.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §60.482.

(4) Any affected facility that produces beverage alcohol is exempt from §60.482.

(5) Any affected facility that has no equipment in VOC service is exempt from §60.482.

(e) *Alternative means of compliance* --

(1) *Option to comply with part 65.* Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §60.485(d), (e), and (f), and §60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§§§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR part 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation:
P = R x A, where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$$A = Y \times (B + 100);$$

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable for B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5
DDD	12.5
GGG	7.0
KKK	4.5

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007-2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 49 FR 26738, June 29, 1984; 60 FR 43258, Aug. 18, 1995; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482-1 through 60.482-10 or §60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§60.482-1 to 60.482-10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, and 60.482-10 as provided in §60.484.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, or 60.482-10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of§§60.482-2 to 60.482-10 if it is identified as required in §60.486(e)(5).

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 78276, Dec. 14, 2000]

§ 60.482-2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482-1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), provided the following requirements are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §§60.482-10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6)(i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.

(iii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in §§60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §§60.482-10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482-1(c) and paragraph (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482-10; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482-10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in §§60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)-(h) if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in §60.485(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of §60.14 or §60.15 is exempt from §§60.482(a), (b), (c), (d), (e), and (h), provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482-4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482-9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482-10 is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482-9.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482-5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in §60.482-1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482-10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[60 FR 43258, Aug. 18, 1995, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482-6 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 60.482-1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 78277, Dec. 14, 2000]

§ 60.482-7 Standards: Valves in gas/vapor service in light liquid service.

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), §60.483-1, 2, and §60.482-1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either becomes an affected facility through §60.14 or §60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61762, Oct. 17, 2000]

§ 60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under §60.482-7(e).

[48 CFR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 60.482-9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482-10.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 60.482-10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual inspections according to the procedures in §60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent

system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in §60.486(c).

(4) For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

§60.483-1 Alternative standards for valves-allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487(b).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with §60.482-7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.483-2 Alternative standards for valves-skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(b).

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482-7.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482-7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.

(6) An owner or operator must keep a record of
the percent of valves found leaking during each leak detection period.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.484 Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalance for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).

(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the *Federal Register* and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the *Federal Register.*

(3) Any equivalent means of emission limitations approved under this section.shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.485 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicates by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC series, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference -- see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference -- see §60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units)
= 28.56 ft/sec (English units)

K_2 = 0.7084 m^4/(MJ-sec) (metric units)
= 0.087 ft^4/(Btu-sec) (English units)

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^7 (g-mole)(MJ)/ (ppm-scm-kcal) (metric units)
= 4.674×10^8 [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = concentration of sample component "i," ppm.

H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference -- see §60.17) shall be used to determine the concentration of sample component "i."

(6) ASTM D2382-76 or 88 or D4809-95 (incorporated by reference -- see §60.17) shall be used to determine the net heat of combustion of component "i" if published

values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

[54 FR 6678, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61763, Oct. 17, 2000]

§ 60.486 Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in §§60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482-7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) "Above 10,000" if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdown that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482-10 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in §60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in §§60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482-2, 60.482-3, 60.482-4, and 60.482-5.

(e) The following information pertaining to all equipment subject to the requirements in §§60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482-2(e), 60.482-3(i) and 60.482-7(f).

(ii) The designation of equipment as subject to the requirements of §60.482-2(e), §60.482-3(i), or §60.482-7(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482-4.

(4)(i) The dates of each compliance test as required in §§60.482-2(e), 60.482-3(i), 60.482-4, and 60.482-7(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of §60.482-7(g) and (h) and to all pumps subject to the requirements of §60.482-2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with §60.483-2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of §60.7 (b) and (d) do not apply to affected facilities subject to this

subpart.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of §60.482-7, excluding those valves designated for no detectable emissions under the provisions of §60.482-7(f).

(3) Number of pumps subject to the requirements of §60.482-2, excluding those pumps designated for no detectable emissions under the provisions of §60.482-2(e) and those pumps complying with §60.482-2(f).

(4) Number of compressors subject to the requirements of §60.482-3, excluding those compressors designated for no detectable emissions under the provisions of §60.482-3(i) and those compressors complying with §60.482-3(h).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in §60.482(7)(b) or §60.483-2,

(ii) Number of valves for which leaks were not repaired as required in §60.482-7(d)(1),

(iii) Number of pumps for which leaks were detected as described in §60.482-2(b) and (d)(6)(i),

(iv) Number of pumps for which leaks were not repaired as required in §60.482-2(c)(1) and (d)(6)(ii),

(v) Number of compressors for which leaks were detected as described in §60.482-3(f),

(vi) Number of compressors for which leaks were not repaired as required in §60.482-3(g)(1), and

(vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or opertor electing to comply with the provisions of §§60.483-1 and 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61763, Oct. 17, 2000]

§ 60.488 Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable new facility" under §60.15: pump seals, nuts and bolts, rupture disks, and packings.

(b) Under §60.15, the "fixed capital cost of new components" includes the fixed capital cost of all depreciable components (except components specified in §60.488 (a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the "Applicability and designation of affected facility" section of the appropriate subpart.) For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

[49 FR 22608, May 30, 1984]

§ 60.489 List of chemicals produced by affected facilities.

(a) The following chemicals are produced, as intermediates or final products, by process units covered under this subpart. The applicability date for process units producing one or more of these chemicals is January 5, 1981.

CAS No. (a)	Chemical
105 - 57 - 7	Acetal.
75 - 07 - 0	Acetaldehyde.
107 - 89 - 1	Acetaldol.
60 - 35 - 5	Acetamide.
103 - 84 - 4	Acetanilide.
64 - 19 - 7	Acetic acid.
108 - 24 - 7	Acetic anhydride.
67 - 64 - 1	Acetone.
75 - 86 - 5	Acetone cyanohydrin.
75 - 05 - 8	Acetonitrile.
98 - 86 - 2	Acetophenone.
75 - 36 - 5	Acetyl chloride.
74 - 86 - 2	Acetylene.
107 - 02 - 8	Acrolein.
79 - 06 - 1	Acrylamide.
79 - 10 - 7	Acrylic acid.
107 - 13 - 1	Acrylonitrile.
124 - 04 - 9	Adipic acid.
111 - 69 - 3	Adiponitrile.
(b).....	Alkyl naphthalenes.
107 - 18 - 6	Allyl alcohol.
107 - 05 - 1	Allyl chloride.
1321 - 11 - 5	Aminobenzoic acid.
111 - 41 - 1	Aminoethylethanolamine.
123 - 30 - 8	p-Aminophenol.
628 - 63 - 7, 123 - 92 - 2.	Amyl acetates.
71 - 41 - 0(c)	Amyl alcohols.
110 - 58 - 7	Amyl amine.
543 - 59 - 9	Amyl chloride.
110-66-7(c)	Amyl mercaptans.
1322 - 06 - 1	Amyl phenol.
62 - 53 - 3	Aniline.
142 - 04 - 1	Aniline hydrochloride.
29191-52-4	Anisidine.
100 - 66 - 3	Anisole.
118 - 92 - 3	Anthranilic acid.
84 - 65 - 1	Anthraquinone.
100 - 52 - 7	Benzaldehyde.
55 - 21 - 0	Benzamide.
71 - 43 - 2	Benzene.
98 - 48 - 6	Benzenedisulfonic acid.
98 - 11 - 3	Benzenesulfonic acid.
134 - 81 - 6	Benzil.
76 - 93 - 7	Benzilic acid.
65 - 85 - 0	Benzoic acid.

119 - 53 - 9 Benzoin.
100 - 47 - 0 Benzonitrile.
119 - 61 - 9 Benzophenone.
98 - 07 - 7 Benzotrichloride.
98 - 88 - 4 Benzoyl chloride.
100 - 51 - 6 Benzyl alcohol.
100 - 46 - 9 Benzylamine.
120 - 51 - 4 Benzyl benzoate.
100 - 44 - 7 Benzyl chloride.
98 - 87 - 3 Benzyl dichloride.
92 - 52 - 4 Biphenyl.
80 - 05 - 7 Bisphenol A.
10 - 86 - 1 Bromobenzene.
27497-51-4 Bromonaphthalene.
106 - 99 - 0 Butadiene.
106 - 98 - 9 1-butene.
123 - 86 - 4 n-butyl acetate.
141 - 32 - 2 n-butyl acrylate.
71 - 36 - 3 n-butyl alcohol.
78 - 92 - 2 s-butyl alcohol.
75 - 65 - 0 t-butyl alcohol.
109 - 73 - 9 n-butylamine.
13952-84-6 s-butylamine.
75 - 64 - 9 t-butylamine.
98 - 73 - 7 p-tert-butyl benzoic acid.
107 - 88 - 0 1,3-butylene glycol.
123 - 72 - 8 n-butyraldehyde.
107 - 92 - 6 Butyric acid.
106 - 31 - 0 Butyric anhydride.
109 - 74 - 0 Butyronitrile.
105 - 60 - 2 Caprolactam.
75 - 1 - 50 Carbon disulfide.
558 - 13 - 4 Carbon tetrabromide.
56 - 23 - 5 Carbon tetrachloride.
9004 - 35 - 7 Cellulose acetate.
79 - 11 - 8 Chloroacetic acid.
108 - 42 - 9 m-chloroaniline.
95 - 51 - 2 o-chloroaniline.
106 - 47 - 8 p-chloroaniline.
35913-09-8 Chlorobenzaldehyde.
108 - 90 - 7 Chlorobenzene.
118 - 91 - 2, Chlorobenzoic acid.
535 - 80 - 8, 74 - 11 - 3(c).
2136 - 81 - 4, Chlorobenzotrichloride.
2136 - 89 - 2, 5216 - 25 - 1(c).
1321 - 03 - 5 Chlorbenzoyl chloride.
25497-29-4 Chlorodifluoromethane.
75 - 45 - 6 Chlorodifluoroethane.
67 - 66 - 3 Chloroform.
25586-43-0 Chloronapthalene.
88 - 73 - 3 o-chloronitrobenzene.
100 - 00 - 5 p-chloronitrobenzene.
25167-80-0 Chlorophenols.
126 - 99 - 8 Chloroprene.
7790 - 94 - 5 Chlorosulfonic acid.
108 - 41 - 8 m-chlorotoluene.
95 - 49 - 8 o-chlorotoluene.
106 - 43 - 4 p-chlorotoluene.
75 - 72 - 9 Chlorotrifluoromethane.
108 - 39 - 4 m-cresol.
95 - 48 - 7 o-cresol.
106 - 44 - 5 p-cresol.
1319 - 77 - 3 Mixed cresols.
1319 - 77 - 3 Cresylic acid.
4170 - 30 - 0 Crotonaldehyde.
3724 - 65 - 0 Crotonic acid.
98 - 82 - 8 Cumene.
80 - 15 - 9 Cumene hydroperoxide.
372 - 09 - 8 Cyanoacetic acid.
506 - 77 - 4 Cyanogen chloride.
108 - 80 - 5 Cyanuric acid.
108 - 77 - 0 Cyanuric chloride.
110 - 82 - 7 Cyclohexane.
108 - 93 - 0 Cyclohexanol.
108 - 94 - 1 Cyclohexanone.
110 - 83 - 8 Cyclohexene.
108 - 91 - 8 Cyclohexylamine.
111 - 78 - 4 Cyclooctadiene.
112 - 30 - 1 Decanol.
123 - 42 - 2 Diacetone alcohol.
27576-04-1 Diaminobenzoic acid.
95 - 76 - 1, Dichloroaniline.
95 - 82 - 9,
554 - 00 - 7,
608 - 27 - 5,
608 - 31 - 1,
626 - 43 - 7,
27134 - 27 - 6,
57311 - 92 - 9(c).
541 - 73 - 1 m-dichlorobenzene.
95 - 50 - 1 o-dichlorobenzene.
106 - 46 - 7 p-dichlorobenzene.
75 - 71 - 8 Dichlorodifluoromethane.
111 - 44 - 4 Dichloroethyl ether.
107 - 06 - 2 1,2-dichloroethane (EDC).
96 - 23 - 1 Dichlorohydrin.
26952-23-8 Dichloropropene.
101 - 83 - 7 Dicyclohexylamine.
109 - 89 - 7 Diethylamine.
111 - 46 - 6 Diethylene glycol.
112 - 36 - 7 Diethylene glycol dicthyl ether.
111 - 96 - 6 Diethylene glycol dimethyl ether.
112 - 34 - 5 Diethylene glycol monobutyl ether.
124 - 17 - 7 Diethylene glycol monobutyl ether acetate.
111 - 90 - 0 Diethylene glycol monoethyl ether.
112 - 15 - 2 Diethylene glycol monoethyl ether acetate.
111 - 77 - 3 Diethylene glycol monomethyl ether.
64 - 67 - 5 Diethyl sulfate.
75 - 37 - 6 Difluoroethane.
25167-70-8 Diisobutylene.
26761-40-0 Diisodecyl phthalate.
27554-26-3 Diisooctyl phthalate.
674 - 82 - 8 Diketene.
124 - 40 - 3 Dimethylamine.
121 - 69 - 7 N,N-dimethylaniline.
115 - 10 - 6 N,N-dimethyl ether.
68 - 12 - 2 N,N-dimethylformamide.
57 - 14 - 7 Dimethylhydrazine.
77 - 78 - 1 Dimethyl sulfate.
75 - 18 - 3 Dimethyl sulfide.
67 - 68 - 5 Dimethyl sulfoxide.
120 - 61 - 6 Dimethyl terephthalate.
99 - 34 - 3 3,5-dinitrobenzoic acid.
51 - 28 - 5 Dinitrophenol.
25321-14-6 Dinitrotoluene.
123 - 91 - 1 Dioxane.
646 - 06 - 0 Dioxilane.
122 - 39 - 4 Diphenylamine.
101 - 84 - 8 Diphenyl oxide.
102 - 08 - 9 Diphenyl thiourea.
25265-71-8 Dipropylene glycol.
25378-22-7 Dodecene.
28675-17-4 Dodecylaniline.
27193-86-8 Dodecylphenol.
106 - 89 - 8 Epichlorohydrin.
64 - 17 - 5 Ethanol.
141-43-5(c) Ethanolamines.
141 - 78 - 6 Ethyl acetate.
141 - 97 - 9 Ethyl acetoacetate.
140 - 88 - 5 Ethyl acrylate.
75 - 04 - 7 Ethylamine.
100 - 41 - 4 Ethylbenzene.
74 - 96 - 4 Ethyl bromide.
9004 - 57 - 3 Ethylcellulose.
75 - 00 - 3 Ethyl chloride.
105 - 39 - 5 Ethyl chloroacetate.
105 - 56 - 6 Ethylcyanoacetate.
74 - 85 - 1 Ethylene.
96 - 49 - 1 Ethylne carbonate.
107 - 07 - 3 Ethylene chlorohydrin.
107 - 15 - 3 Ethylenediamine.
106 - 93 - 4 Ethylene dibromide.
107 - 21 - 1 Ethylene glycol.
111 - 55 - 7 Ethylene glycol diacetate.
110 - 71 - 4 Ethylene glycol dimethyl ether.
111 - 76 - 2 Ethylene glycol monobutyl ether.
112 - 07 - 2 Ethylene glycol monobutyl ether acetate.
110 - 80 - 5 Ethylene glycol monoethy ether.
111 - 15 - 9 Ethylene glycol monethyl ether acetate.
109 - 86 - 4 Ethylene glycol monomethyl ether.
110 - 49 - 6 Ethylene glycol monomethyl ether acetate.
122 - 99 - 6 Ethylene glycol monophenyl ether.
2807 - 30 - 9 Ethylene glycol monopropyl ether.
75 - 21 - 8 Ethylene oxide.
60 - 29 - 7 Ethyl ether
104 - 76 - 7 2-ethylhexanol.
122 - 51 - 0 Ethyl orthoformate.
95 - 92 - 1 Ethyl oxalate.
41892-71-1 Ethyl sodium oxalacetate.
50 - 00 - 0 Formaldehyde.
75 - 12 - 7 Formamide.
64 - 18 - 6 Formic acid.
110 - 17 - 8 Fumaric acid.
98 - 01 - 1 Furfural.
56 - 81 - 5 Glycerol.
26545-73-7 Glycerol dichlorohydrin.
25791-96-2 Glycerol tricther.
56 - 40 - 6 Glycine.
107 - 22 - 2 Glyoxal.

118 - 74 - 1	Hexachlorobenzene.
67 - 72 - 1	Hexachloroethane.
36653-82-4	Hexadecyl alcohol.
124 - 09 - 4	Hexamethylenediamine.
629 - 11 - 8	Hexamethylene glycol.
100 - 97 - 0	Hexamethylenetetramine.
74 - 90 - 8	Hydrogen cyanide.
123 - 31 - 9	Hydroquinone.
99 - 96 - 7	p-hydroxybenzoic acid.
26760-64-5	Isoamylene.
78 - 83 - 1	Isobutanol.
110 - 19 - 0	Isobutyl acetate.
115 - 11 - 7	Isobutylene.
78 - 84 - 2	Isobutyraldehyde.
79 - 31 - 2	Isobutyric acid.
25339-17-7	Isodecanol.
26952-21-6	Isooctyl alcohol.
78 - 78 - 4	Isopentane.
78 - 59 - 1	Isophorone.
121 - 91 - 5	Isophthalic acid.
78 - 79 - 5	Isoprene.
67 - 63 - 0	Isopropanol.
108 - 21 - 4	Isopropyl acetate.
75 - 31 - 0	Isopropylamine.
75 - 29 - 6	Isopropyl chloride.
25168 - 06 - 3	Isopropylphenol.
463 - 51 - 4	Ketene.
(b).....	Linear alkyl sulfonate.
123 - 01 - 3	Linear alkylbenzene (linear dodecylbenzene).
110 - 16 - 7	Maleic acid.
108 - 31 - 6	Maleic anhydride.
6915 - 15 - 7	Malic acid.
141 - 79 - 7	Mesityl oxide.
121 - 47 - 1	Metanilic acid.
79 - 41 - 4	Methacrylic acid.
563 - 47 - 3	Methallyl chloride.
67 - 56 - 1	Methanol.
79 - 20 - 9	Methyl acetate.
105 - 45 - 3	Methyl acetoacetate.
74 - 89 - 5	Methylamine.
100 - 61 - 8	n-methylaniline.
74 - 83 - 9	Methyl bromide.
37365-71-2	Methyl butynol.
74 - 87 - 3	Methyl chloride.
108 - 87 - 2	Methylcyclohexane.
1331 - 22 - 2	Methylcyclohexanone.
75 - 09 - 2	Methylene chloride.
101 - 77 - 9	Methylene dianiline.
101 - 68 - 8	Methylene diphenyl diisocyanate.
78 - 93 - 3	Methyl ethyl ketone.
107 - 31 - 3	Methyl formate.
108 - 11 - 2	Methyl isobutyl carbinol.
108 - 10 - 1	Methyl isobutyl ketone.
80 - 62 - 6	Methyl methacrylate.
77 - 75 - 8	Methylpentynol.
98 - 83 - 9	a-methylstyrene.
110 - 91 - 8	Morpholine.
85 - 47 - 2	a-naphthalene sulfonic acid.
120 - 18 - 3	b-naphthalene sulfonic acid.
90 - 15 - 3	a-naphthol.
135 - 19 - 3	b-naphthol.
75 - 98 - 9	Neopentanoic acid.
88 - 74 - 4	o-nitroaniline.
100 - 01 - 6	p-nitroaniline.
91 - 23 - 6	o-nitroanisole.
100 - 17 - 4	p-nitroanisole.
98 - 95 - 3	Nitrobenzene.
27178-83-2(c)	Nitrobenzoic acid (o, m, and p).
79 - 24 - 3	Nitroethane.
75 - 52 - 5	Nitromethane.
88 - 75 - 5	2-Nitrophenol.
25322-01-4	Nitropropane.
1321 - 12 - 6	Nitrotoluene.
27215-95-8	Nonene.
25154-52-3	Nonylphenol.
27193-28-8	Octylphenol.
123 - 63 - 7	Paraldehyde.
115 - 77 - 5	Pentaerythritol.
109 - 66 - 0	n-pentane.
109 - 67 - 1	1-pentene
127 - 18 - 4	Perchloroethylene.
594 - 42 - 3	Perchloromethyl mercaptan.
94 - 70 - 2	o-phenetidine.
156 - 43 - 4	p-phenetidine.
108 - 95 - 2	Phenol.
98 - 67 - 9, 585 - 38 - 6, 609 - 46 - 1, 1333 - 39 - 7(c).	Phenolsulfonic acids.
91 - 40 - 7	Phenyl anthranilic acid.
(b).....	Phenylenediamine.
75 - 44 - 5	Phosgene.
85 - 44 - 9	Phthalic anhydride.
85 - 41 - 6	Phthalimide.
108 - 99 - 6	b-picoline.
110 - 85 - 0	Piperazine.
9003 - 29 - 6, 25036-29-7(c).	Polybutenes.
25322-68-3	Polyethylene glycol.
25322-69-4	Polypropylene glycol.
123 - 38 - 6	Propional dehyde.
79 - 09 - 4	Propionic acid.
71 - 23 - 8	n-propyl alcohol.
107 - 10 - 8	Propylamine.
540 - 54 - 5	Propyl chloride.
115 - 07 - 1	Propylene.
127 - 00 - 4	Propylene chlorohydrin.
78 - 87 - 5	Propylene dichloride.
57 - 55 - 6	Propylene glycol.
75 - 56 - 9	Propylene oxide.
110 - 86 - 1	Pyridine.
106 - 51 - 4	Quinone.
108 - 46 - 3	Resorcinol.
27138-57-4	Resorcylic acid.
69 - 72 - 7	Salicylic acid.
127 - 09 - 3	Sodium acetate.
532 - 32 - 1	Sodium benzoate.
9004 - 32 - 4	Sodium carboxymethyl cellulose.
3926 - 62 - 3	Sodium chloroacetate.
141 - 53 - 7	Sodium formate.
139 - 02 - 6	Sodium phenate.
110 - 44 - 1	Sorbic acid.
100 - 42 - 5	Styrene.
110 - 15 - 6	Succinic acid.
110 - 61 - 2	Succinonitrile.
121 - 57 - 3	Sulfanilic acid.
126 - 33 - 0	Sulfolane.
1401 - 55 - 4	Tannic acid.
100 - 21 - 0	Terephthalic acid.
79 - 34 - 5(c)	Tetrachloroethanes.
117 - 08 - 8	Tetrachlorophthalic anhydride.
78 - 00 - 2	Tetraethyl lead.
119 - 64 - 2	Tetrahydronapthalene.
85 - 43 - 8	Tetrahydrophthalic anhydride.
75 - 74 - 1	Tetramethyl lead.
110 - 60 - 1	Tetramethylenediamine.
110 - 18 - 9	Tetramethylethylenediamine.
108 - 88 - 3	Toluene.
95 - 80 - 7	Toluene-2,4-diamine.
584 - 84 - 9	Toluene-2,4-diisocyanate.
26471-62-5	Toluene diisocyanates (mixture).
1333 - 07 - 9	Toluenesulfonamide.
104-15-4(c)	Toluenesulfonic acids.
98 - 59 - 9	Toluenesulfonyl chloride.
26915-12-8	Toluidines.
87 - 61- 6, 108 - 70 - 3, 120 - 82 - 1(c).	Trichlorobenzenes.
71 - 55 - 6	1,1,1-trichloroethane.
79 - 00 - 5	1,1,2-trichloroethane.
79 - 01 - 6	Trichloroethylene.
75 - 69 - 4	Trichlorofluoromethane.
96 - 18 - 4	1,2,3-trichloropropane.
76-13-1	1,1,2-trichloro-1,2,2-trifluoroethane.
121 - 44 - 8	Triethylamine.
112 - 27 - 6	Triethylene glycol.
112 - 49 - 2	Triethylene glycol dimethyl ether.
7756 - 94 - 7	Triisobutylene.
75 - 50 - 3	Trimethylamine.
57 - 13 - 6	Urea.
108 - 05 - 4	Vinyl acetate.
75 - 01 - 4	Vinyl chloride.
75 - 35 - 4	Vinylidene chloride.
25013-15-4	Vinyl toluene.
1330 - 20 - 7	Xylenes (mixed).
95 - 47 - 6	o-xylene.
106 - 42 - 3	p-xylene.
1300 - 71 - 6	Xylenol.
1300 - 73 - 8	Xylidine.

(a) CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

(b) No CAS number(s) have been assigned to this chemical, its isomers, or mixtures containing these chemicals.

(c) CAS numbers for some of the isomers are listed; the standards apply to all of the isomers and mixtures, even if CAS numbers have not been assigned.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

Appendix F

40 CFR 60 Subpart QQQ

Subpart QQQ-Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

Source: 53 FR 47623, Nov. 23, 1988, unless otherwise noted.

§ 60.690 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987.

(2) An individual drain system is a separate affected facility.

(3) An oil-water separator is a separate affected facility.

(4) An aggregate facility is a separate affected facility.

(b) Notwithstanding the provisions of 40 CFR 60.14(e)(2), the construction or installation of a new individual drain system shall constitute a modification to an affected facility described in §60.690(a)(4). For purposes of this paragraph, a new individual drain system shall be limited to all process drains and the first common junction box.

§ 60.691 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of 40 CFR part 60, and the following terms shall have the specific meanings given them.

Active service means that a drain is receiving refinery wastewater from a process unit that will continuously maintain a water seal.

Aggregate facility means an individual drain system together with ancillary downstream sewer lines and oil-water separators, down to and including the secondary oil-water separator, as applicable.

Catch basin means an open basin which serves as a single collection point for stormwater runoff received directly from refinery surfaces and for refinery wastewater from process drains.

Closed vent system means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission source to a control device. If gas or vapor from regulated equipment are routed to a process (e.g., to a petroleum refinery fuel gas system), the process shall not be considered a closed vent system and is not subject to the closed vent system standards.

Completely closed drain system means an individual drain system that is not open to the atmosphere and is equipped and operated with a closed vent system and control device complying with the requirements of § 60.692-5.

Control device means an enclosed combustion device, vapor recovery system or flare.

Fixed roof means a cover that is mounted to a tank or chamber in a stationary manner and which does not move with fluctuations in wastewater levels.

Floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface.

Gas-tight means operated with no detectable emissions.

Individual drain system means all process drains connected to the first common downstream junction box. The term includes all such drains and common junction box, together with their associated sewer lines and other junction boxes, down to the receiving oil-water separator.

Junction box means a manhole or access point to a wastewater sewer system line.

No detectable emissions means less than 500 ppm above background levels, as measured by a detection instrument in accordance with Method 21 in appendix A of 40 CFR part 60.

Non-contact cooling water system means a once-through drain, collection and treatment system designed and operated for collecting cooling water which does not come into contact with hydrocarbons or oily wastewater and which is not recirculated through a cooling tower.

Oil-water separator means wastewater treatment equipment used to separate oil from water consisting of a separation tank, which also includes the forebay and other separator basins, skimmers, weirs, grit chambers, and sludge hoppers. Slop oil facilities, including tanks, are included in this term along with storage vessels and auxiliary equipment located between individual drain systems and the oil-water separator. This term does not include storage vessels or auxiliary equipment which do not come in contact with or store oily wastewater.

Oily wastewater means wastewater generated during the refinery process which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation of petroleum, cracking, or reforming unfinished petroleum derivatives.

Sewer line means a lateral, trunk line, branch line, ditch, channel, or other conduit used to convey refinery wastewater to downstream components of a refinery wastewater treatment system. This term does not include buried, below-grade sewer lines.

Slop oil means the floating oil and solids that accumulate on the surface of an oil-water separator.

Storage vessel means any tank, reservoir, or container used for the storage of petroleum liquids, including oily wastewater.

Stormwater sewer system means a drain and collection system designed and operated for the sole purpose of collecting stormwater and which is segregated from the process wastewater collection system.

Wastewater system means any component, piece of equipment, or installation that receives, treats, or processes oily wastewater from petroleum refinery process units.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water that has a design capability to create a water barrier between the sewer and the atmosphere.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995]

§ 60.692-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §60.692-1 to 60.692-5 and with §60.693-1 and 60.693-2, except during periods of startup, shutdown, or malfunction.

(b) Compliance with §60.692-1 to 60.692-5 and with §60.693-1 and 60.693-2 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.696.

(c) Permission to use alternative means of emission limitation to meet the requirements of §60.692-2 through 60.692-4 may be granted as provided in §60.694.

(d)(1) Stormwater sewer systems are not subject to the requirements of this subpart.

(2) Ancillary equipment, which is physically separate from the wastewater system and does not come in contact with or store oily wastewater, is not subject to the requirements of this subpart.

(3) Non-contact cooling water systems are not subject to the requirements of this subpart.

(4) An owner or operator shall demonstrate compliance with the exclusions in paragraphs (d)(1), (2), and (3) of this section as provided in §60.697 (h), (i), and (j).

§ 60.692-2 Standards: Individual drain systems.

(a)(1) Each drain shall be equipped with water seal controls.

(2) Each drain in active service shall be checked by visual or physical inspection

initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

(3) Except as provided in paragraph (a)(4) of this section, each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions.

(4) As an alternative to the requirements in paragraph (a)(3) of this section, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed.

(5) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in §60.692-6.

(b)(1) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(2) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(3) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(4) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in §60.692-6.

(c)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in §60.692-6.

(d) Except as provided in paragraph (e) of this section, each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section.

(e) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin.

§ 60.692-3 Standards: Oil-water separators.

(a) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart shall be equipped and operated with a fixed roof, which meets the following specifications, except as provided in paragraph (d) of this section or in § 60.693-2.

(1) The fixed roof shall be installed to completely cover the separator tank, slop oil tank, storage vessel, or other auxiliary equipment with no separation between the roof and the wall.

(2) The vapor space under a fixed roof shall not be purged unless the vapor is directed to a control device.

(3) If the roof has access doors or openings, such doors or openings shall be gasketed, latched, and kept closed at all times during operation of the separator system, except during inspection and maintenance.

(4) Roof seals, access doors, and other openings shall be checked by visual inspection initially and semiannually thereafter to ensure that no cracks or gaps occur between the roof and wall and that access doors and other openings are closed and gasketed properly.

(5) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after it is identified, except as provided in § 60.692-6.

(b) Each oil-water separator tank or auxiliary equipment with a design capacity to treat more than 16 liters per second (250 gallons per minute (gpm)) of refinery wastewater shall, in addition to the requirements in paragraph (a) of this section, be equipped and operated with a closed vent system and control device, which meet the requirements of § 60.692-5, except as provided in paragraph (c) of this section or in § 60.693-2.

(c)(1) Each modified or reconstructed oil-water separator tank with a maximum design capacity to treat less than 38 liters per second (600 gpm) of refinery wastewater which was equipped and operated with a fixed roof covering the entire separator tank or a portion of the separator tank prior to May 4, 1987 shall be exempt from the requirements of paragraph (b) of this section, but shall meet the requirements of paragraph (a) of this section, or may elect to comply with paragraph (c)(2) of this section.

(2) The owner or operator may elect to comply with the requirements of paragraph (a) of this section for the existing fixed roof covering a portion of the separator tank and comply with the requirements for floating roofs in § 60.693-2 for the remainder of the separator tank.

(d) Storage vessels, including slop oil tanks and other auxiliary tanks that are subject to the standards in §§ 60.112, 60.112a, and 60.112b and associated requirements, 40 CFR part 60, subparts K, Ka, or Kb are not subject to the requirements of this section.

(e) Slop oil from an oil-water separator tank and oily wastewater from slop oil handling equipment shall be collected, stored, transported, recycled, reused, or disposed of in an enclosed system. Once slop oil is returned to the process unit or is disposed of, it is no longer within the scope of this subpart. Equipment used in handling slop oil shall be equipped with a fixed roof meeting the requirements of paragraph (a) of this section.

(f) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment that is required to comply with paragraph (a) of this section, and not paragraph (b) of this section, may be equipped with a pressure control valve as necessary for proper system operation. The pressure control valve shall be set at the maximum pressure necessary for proper system operation, but such that the value will not vent continuously.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.692-4 Standards: Aggregate facility.

A new, modified, or reconstructed aggregate facility shall comply with the requirements of §60.692-2 and 60.692-3.

§ 60.692-5 Standards: Closed vent systems and control devices.

(a) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C (1,500°F).

(b) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater.

(c) Flares used to comply with this subpart shall comply with the requirements of 40 CFR 60.18.

(d) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(e)(1) Closed vent systems shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined during the initial and semiannual inspections by the methods specified in §60.696.

(2) Closed vent systems shall be purged to direct vapor to the control device.

(3) A flow indicator shall be installed on a vent

stream to a control device to ensure that the vapors are being routed to the device.

(4) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(5) When emissions from a closed system are detected, first efforts at repair to eliminate the emissions shall be made as soon as practicable, but not later than 30 calendar days from the date the emissions are detected, except as provided in §60.692-6.

§ 60.692-6 Standards: Delay of repair.

(a) Delay of repair of facilities that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial refinery or process unit shutdown.

(b) Repair of such equipment shall occur before the end of the next refinery or process unit shutdown.

§ 60.692-7 Standards: Delay of compliance.

(a) Delay of compliance of modified individual drain systems with ancillary downstream treatment components will be allowed if compliance with the provisions of this subpart cannot be achieved without a refinery or process unit shutdown.

(b) Installation of equipment necessary to comply with the provisions of this subpart shall occur no later than the next scheduled refinery or process unit shutdown.

§ 60.693-1 Alternative standards for individual drain systems.

(a) An owner or operator may elect to construct and operate a completely closed drain system.

(b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device complying with the requirements of §60.692-5.

(c) An owner or operator must notify the Administrator in the report required in 40 CFR part 60.7 that the owner or operator has elected to construct and operate a completely closed drain system.

(d) If an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §60.692-2 or §60.694.

(e)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in §60.692-6.

§ 60.693-2 Alternative standards for oil-water separators.

(a) An owner or operator may elect to construct and operate a floating roof on an oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart which meets the following specifications.

(1) Each floating roof shall be equipped with a closure device between the wall of the separator and the roof edge. The closure device is to consist of a primary seal and a secondary seal.

(i) The primary seal shall be a liquid-mounted seal or a mechanical shoe seal.

(A) A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the separator and the floating roof. A mechanical shoe seal means a metal sheet held vertically against the wall of the separator by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(B) The gap width between the primary seal and the separator wall shall not exceed 3.8 cm (1.5 in.) at any point.

(C) The total gap area between the primary seal and the separator wall shall not exceed 67 cm^2/m (3.2 $in.^2/ft$) of separator wall perimeter.

(ii) The secondary seal shall be above the primary seal and cover the annular space between the floating roof and the wall of the separator.

(A) The gap width between the secondary seal and the separator wall shall not exceed 1.3 cm (0.5 in.) at any point.

(B) The total gap area between the secondary seal and the separator wall shall not exceed 6.7 cm^2/m (0.32 $in.in.^2/ft$) of separator wall perimeter.

(iii) The maximum gap width and total gap area shall be determined by the methods and procedures specified in § 60.696(d).

(A) Measurement of primary seal gaps shall be performed within 60 calendar days after initial installation of the floating roof and introduction of refinery wastewater and once every 5 years thereafter.

(B) Measurement of secondary seal gaps shall be performed within 60 calendar days of initial introduction of refinery wastewater and once every year thereafter.

(iv) The owner or operator shall make necessary repairs within 30 calendar days of identification of seals not meeting the requirements listed in paragraphs (a)(1)(i) and (ii) of this section.

(2) Except as provided in paragraph (a)(4) of this section, each opening in the roof shall be equipped with a gasketed cover, seal, or lid, which shall be maintained in a closed position at all times, except during inspection and maintenance.

(3) The roof shall be floating on the liquid (i.e., off the roof supports) at all times except during abnormal conditions (i.e., low flow rate).

(4) The floating roof may be equipped with one or more emergency roof drains for removal of stormwater. Each emergency roof drain shall be fitted with a slotted membrane fabric cover that covers at least 90 percent of the drain opening area or a flexible fabric sleeve seal.

(5)(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions.

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in § 60.692-6.

(b) An owner or operator must notify the Administrator in the report required by 40 CFR 60.7 that the owner or operator has elected to construct and operate a floating roof under paragraph (a) of this section.

(c) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of § 60.692-3(a) shall be installed.

(d) Except as provided in paragraph (c) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692-3 or 60.694 applicable to the same facilities.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995]

§ 60.694 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved by the applicable requirement in §60.692, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

§ 60.695 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator.

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder shall be used to measure the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of ±1 percent of the temperature being measured, expressed in °C, or ±0.5 °C (0.9 °F), whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder shall be used to measure the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of ±1 percent of the temperature being measured, expressed in °C, or ±0.5 °C (0.9 °F), whichever is greater.

(3) Where a carbon adsorber is used for VOC emissions reduction, a monitoring device that continuously indicates and records the VOC concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(i) For a carbon adsorption system that regenerates the carbon bed directly onsite, a monitoring device that continuously indicates and records the volatile organic compound concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(ii) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device (e.g., a carbon canister), the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater. As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system.

(4) Where a flare is used for VOC emission reduction, the owner or operator shall comply with the monitoring requirements of 40 CFR 60.18(f)(2).

(b) Where a VOC recovery device other than a carbon adsorber is used to meet the requirements specified in § 60.692-5(a), the owner or operator shall provide to the Administrator information describing the operation of the control device and the process parameter(s) that would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

(c) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.696 Performance test methods and procedures and compliance provisions.

(a) Before using any equipment installed in compliance with the requirements of §60.692-2, §60.692-3, §60.692-4, §60.692-5, or §60.693, the owner or operator shall inspect such equipment for indications of potential emissions, defects, or other problems that may cause the requirements of this subpart not to be met. Points of inspection shall include, but are not limited to, seals, flanges, joints, gaskets, hatches, caps, and plugs.

(b) The owner or operator of each source that is equipped with a closed vent system and control device as required in §60.692-5 (other than a flare) is exempt from §60.8 of the General Provisions and shall use Method 21 to measure the emission concentrations, using 500 ppm as the no detectable emission limit. The instrument shall be calibrated each day before using. The calibration gases shall be:

(1) Zero air (less than 10 ppm of hydrocarbon in air), and

(2) A mixture of either methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall conduct a performance test initially, and at other times as requested by the Administrator, using the test methods and procedures in §60.18(f) to determine compliance of flares.

(d) After installing the control equipment required to meet §60.693-2(a) or whenever sources that have ceased to treat refinery wastewater for a period of 1 year or more are placed back into service, the owner or operator shall determine compliance with the standards in §60.693-2(a) as follows:

(1) The maximum gap widths and maximum gap areas between the primary seal and the separator wall and between the secondary seal and the separator wall shall be determined individually within 60 calendar days of the initial installation of the floating roof and introduction of refinery wastewater or 60 calendar days after the equipment is placed back into service using the following procedure when the separator is filled to the design operating level and when the roof is floating off the roof supports.

(i) Measure seal gaps around the entire perimeter of the separator in each place where a 0.32 cm (0.125 in.) diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the separator and measure the gap width and perimetrical distance of each such location.

(ii) The total surface area of each gap described in (d)(1)(i) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the wall to the seal and multiplying each such width by its respective perimetrical distance.

(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually, divide the sum for each seal by the nominal perimeter of the separator basin and compare each to the maximum gap area as specified in §60.693-2.

(2) The gap widths and total gap area shall be determined using the procedure in paragraph (d)(1) of this section according to the following frequency:

(i) For primary seals, once every 5 years.

(ii) For secondary seals, once every year.

§ 60.697 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. All records shall be retained for a period of 2 years after being recorded unless otherwise noted.

(b)(1) For individual drain systems subject to § 60.692-2, the location, date, and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plug is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

(2) For junction boxes subject to § 60.692-2, the location, date, and corrective action shall be recorded for inspections required by § 60.692-2(b) when a broken seal, gap, or other problem is identified that could result in VOC

emissions.

(3) For sewer lines subject to §§ 60.692-2 and 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by §§ 60.692-2(c) and 60.693-1(e) when a problem is identified that could result in VOC emissions.

(c) For oil-water separators subject to § 60.692-3, the location, date, and corrective action shall be recorded for inspections required by by § 60.692-3(a) when a problem is identified that could result in VOC emissions.

(d) For closed vent systems subject to § 60.692-5 and completely closed drain systems subject to § 60.693-1, the location, date, and corrective action shall be recorded for inspections required by § 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions.

(e)(1) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded.

(2) The reason for the delay as specified in § 60.692-6 shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time.

(3) The signature of the owner or operator (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded.

(4) The date of successful repair or corrective action shall be recorded.

(f)(1) A copy of the design specifications for all equipment used to comply with the provisions of this subpart shall be kept for the life of the source in a readily accessible location.

(2) The following information pertaining to the design specifications shall be kept.

(i) Detailed schematics, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(3) The following information pertaining to the operation and maintenance of closed drain systems and closed vent systems shall be kept in a readily accessible location.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions shall be kept for the life of the facility. This documentation is to include a general description of the gas streams that enter the control device, including flow and volatile organic compound content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C (1,500 °F) is used to meet the 95-percent requirement, documentation that those conditions exist is sufficient to meet the requirements of this paragraph.

(ii) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device such as a carbon canister, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(iii) Periods when the closed vent systems and control devices required in § 60.692 are not operated as designed, including periods when a flare pilot does not have a flame shall be recorded and kept for 2 years after the information is recorded.

(iv) Dates of startup and shutdown of the closed vent system and control devices required in § 60.692 shall be recorded and kept for 2 years after the information is recorded.

(v) The dates of each measurement of detectable emissions required in §§ 60.692, 60.693, or 60.692-5 shall be recorded and kept for 2 years after the information is recorded.

(vi) The background level measured during each detectable emissions measurement shall be recorded and kept for 2 years after the information is recorded.

(vii) The maximum instrument reading measured during each detectable emission measurement shall be recorded and kept for 2 years after the information is recorded.

(viii) Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28 °C (50 °F) below the design combustion zone temperature, and shall keep such records for 2 years after the information is recorded.

(ix) Each owner or operator of an affected facility that uses a catalytic incinerator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28 °C (50 °F) below the design gas stream temperature, and records of all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference, and shall keep such records for 2 years after the information is recorded.

(x) Each owner or operator of an affected facility that uses a carbon adsorber shall maintain continuous records of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(A) Each owner or operator of an affected facility that uses a carbon adsorber which is regenerated directly onsite shall maintain continuous records of the volatile organic compound concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average volatile organic compound concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(B) If a carbon adsorber that is not regenerated directly onsite in the control device is used, then the owner or operator shall maintain records of dates and times when the control device is monitored, when breakthrough is measured, and shall record the date and time that the existing carbon in the control device is replaced with fresh carbon.

(g) If an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of active service, the owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains.

(h) For stormwater sewer systems subject to the exclusion in § 60.692-1(d)(1), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that no wastewater from any process units or equipment is directly discharged to the stormwater sewer system.

(i) For ancillary equipment subject to the exclusion in § 60.692- 1(d)(2), an owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which demonsrate that the ancillary equipment does not come in contact with or store oily wastewater.

(j) For non-contact cooling water systems subject to the exclusion in § 60.692-1(d)(3), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or

specifications which demonstrate that the cooling water does not contact hydrocarbons or oily wastewater and is not recirculated through a cooling tower.

(k) For oil-water separators subject to § 60.693-2, the location, date, and corrective action shall be recorded for inspections required by §§ 60.693-2(a)(1)(iii)(A) and (B), and shall be maintained for the time period specified in paragraphs (k)(1) and (2) of this section.

(1) For inspections required by § 60.693-2(a)(1)(iii)(A), ten years after the information is recorded.

(2) For inspections required by § 60.693-2(a)(1)(iii)(B), two years after the information is recorded.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.698 Reporting requirements.

(a) An owner or operator electing to comply with the provisions of § 60.693 shall notify the Administrator of the alternative standard selected in the report required in § 60.7.

(b)(1) Each owner or operator of a facility subject to this subpart shall submit to the Administrator within 60 days after initial startup a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests of process drains, sewer lines, junction boxes, oil-water separators, and closed vent systems and control devices have been carried out in accordance with these standards. Thereafter, the owner or operator shall submit to the Administrator semiannually a certification that all of the required inspections have been carried out in accordance with these standards.

(2) Each owner or operator of an affected facility that uses a flare shall submit to the Administrator within 60 days after initial startup, as required under § 60.8(a), a report of the results of the performance test required in § 60.696(c).

(c) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted initially and semiannually thereafter to the Administrator.

(d) As applicable, a report shall be submitted semiannually to the Administrator that indicates:

(1) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature,

(2) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference, or,

(3) Each 3-hour period of operation during which the average VOC concentration level or reading of organics in the exhaust gases from a carbon adsorber is more than 20 percent greater than the design exhaust gas concentration level or reading.

(i) Each 3-hour period of operation during which the average volatile organic compound concentration level or reading of organics in the exhaust gases from a carbon adsorber which is regenerated directly onsite is more than 20 percent greater than the design exhaust gas concentration level or reading.

(ii) Each occurrence when the carbon in a carbon adsorber system that is not regenerated directly onsite in the control device is not replaced at the predetermined interval specified in § 60.695(a)(3)(ii).

(e) If compliance with the provisions of this subpart is delayed pursuant to § 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43260, Aug. 18, 1995]

§ 60.699 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 60.694 Permission to use alternative means of emission limitations.

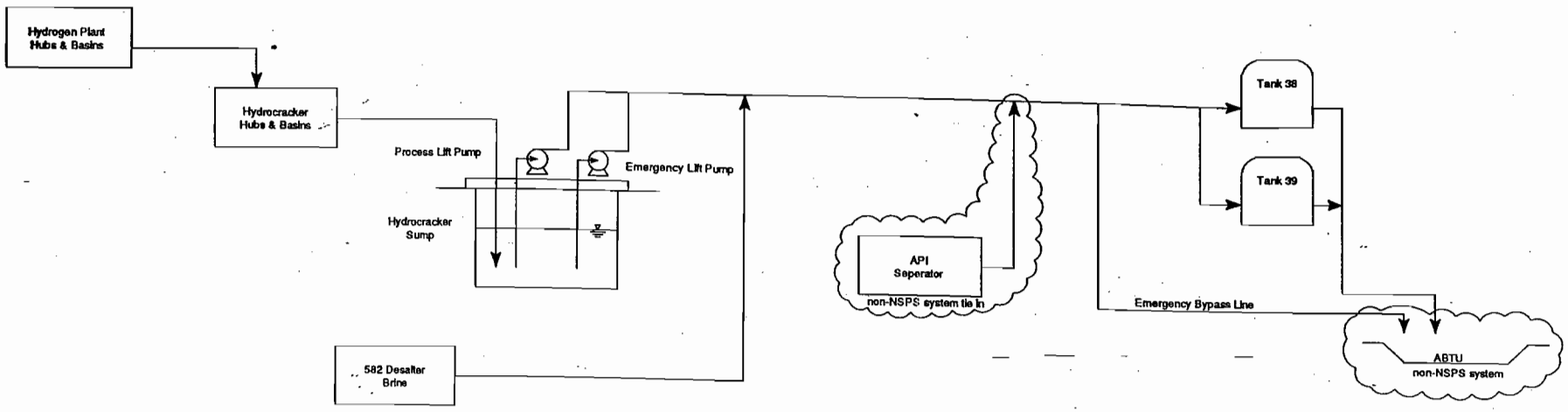
[53 FR 47623, Nov. 23, 1985]

§ 60.694 Permission to use alternative means of emission limitations.

[FR Doc. 88-26939 Filed 11-22-88; 8:45 am]

Appendix G

40 CFR 60, Subpart QQQ Equipment List



NSPS 'QQQ' Equipment Inventory
Hydrogen Plant hubs and catch basins
Hydrocracker hubs, catch basins, and vaults
Hydrocracker collection sump
Hydrocracker process lift pump
Hydrocracker emergency lift pump
582 Desalter brine rundown line
Tank 38 - Floating Roof Oil/Water Seperator Tank
Tank 39 - Floating Roof Oil/Water Seperator Tank

REFERENCE DRAWINGS

DRAWING NO.	DRAWING TITLE

REVISIONS

NO.	DATE	REVISION DESCRIPTION	BY	APPROVED	CK/DWN
0					

Sinclair Oil Corp.
SINCLAIR, WYOMING

QQQ Sewer System

Process Flow Diagram

DATE 7-21-01 | SCALE NONE | REV 0

Appendix H

40 CFR 63 Subpart CC

40 CFR citation	Requirement	Applies to subpart BB	Comment
63.13	Addresses	Yes.	
63.14	Incorporation by Reference	Yes.	
63.15	Information Availability/ Confidentiality.	Yes.	

[64 FR 31382, June 10, 1999, as amended at 67 FR 65078, Dec. 17, 2002]

Subpart CC—National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

SOURCE: 60 FR 43260, Aug. 18, 1995, unless otherwise noted.

§63.640 Applicability and designation of affected source.

(a) This subpart applies to petroleum refining process units and to related emission points that are specified in paragraphs (c)(5) through (c)(7) of this section that are located at a plant site that meet the criteria in paragraphs (a)(1) and (a)(2) of this section;

(1) Are located at a plant site that is a major source as defined in section 112(a) of the Clean Air Act; and

(2) Emit or have equipment containing or contacting one or more of the hazardous air pollutants listed in table 1 of this subpart.

(b)(1) If the predominant use of the flexible operation unit, as described in paragraphs (b)(1)(i) and (ii) of this section, is as a petroleum refining process unit, as defined in §63.641, then the flexible operation unit shall be subject to the provisions of this subpart.

(i) Except as provided in paragraph (b)(1)(ii) of this section, the predominant use of the flexible operation unit shall be the use representing the greatest annual operating time.

(ii) If the flexible operation unit is used as a petroleum refining process unit and for another purpose equally based on operating time, then the predominant use of the flexible operation unit shall be the use that produces the greatest annual production on a mass basis.

(2) The determination of applicability of this subpart to petroleum refining process units that are designed and operated as flexible operation units shall be reported as specified in §63.654(h)(6)(i).

(c) For the purpose of this subpart, the affected source shall comprise all emission points, in combination, listed in paragraphs (c)(1) through (c)(7) of this section that are located at a single refinery plant site.

(1) All miscellaneous process vents from petroleum refining process units meeting the criteria in paragraph (a) of this section;

(2) All storage vessels associated with petroleum refining process units meeting the criteria in paragraph (a) of this section;

(3) All wastewater streams and treatment operations associated with petroleum refining process units meeting the criteria in paragraph (a) of this section;

(4) All equipment leaks from petroleum refining process units meeting the criteria in paragraph (a) of this section;

(5) All gasoline loading racks classified under Standard Industrial Classification code 2911 meeting the criteria in paragraph (a) of this section;

(6) All marine vessel loading operations located at a petroleum refinery meeting the criteria in paragraph (a) of this section and the applicability criteria of subpart Y, §63.560; and

(7) All storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery meeting the criteria in paragraph (a) of this section.

(d) The affected source subject to this subpart does not include the emission points listed in paragraphs (d)(1) through (d)(5) of this section.

(1) Stormwater from segregated stormwater sewers;

(2) Spills;

(3) Any pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system that is intended to operate in organic hazardous air pollutant service, as defined in § 63.641 of this subpart, for less than 300 hours during the calendar year;

(4) Catalytic cracking unit and catalytic reformer catalyst regeneration vents, and sulfur plant vents; and

(5) Emission points routed to a fuel gas system, as defined in § 63.641 of this subpart. No testing, monitoring, recordkeeping, or reporting is required for refinery fuel gas systems or emission points routed to refinery fuel gas systems.

(e) The owner or operator shall follow the procedures specified in paragraphs (e)(1) and (e)(2) of this section to determine whether a storage vessel is part of a source to which this subpart applies.

(1) Where a storage vessel is used exclusively by a process unit, the storage vessel shall be considered part of that process unit.

(i) If the process unit is a petroleum refining process unit subject to this subpart, then the storage vessel is part of the affected source to which this subpart applies.

(ii) If the process unit is not subject to this subpart, then the storage vessel is not part of the affected source to which this subpart applies.

(2) If a storage vessel is not dedicated to a single process unit, then the applicability of this subpart shall be determined according to the provisions in paragraphs (e)(2)(i) through (e)(2)(iii) of this section.

(i) If a storage vessel is shared among process units and one of the process units has the predominant use, as determined by paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section, then the storage vessel is part of that process unit.

(A) If the greatest input on a volume basis into the storage vessel is from a process unit that is located on the same plant site, then that process unit has the predominant use.

(B) If the greatest input on a volume basis into the storage vessel is provided from a process unit that is not located on the same plant site, then the predominant use shall be the process unit that receives the greatest amount of material on a volume basis from the storage vessel at the same plant site.

(ii) If a storage vessel is shared among process units so that there is no single predominant use, and at least one of those process units is a petroleum refining process unit subject to this subpart, the storage vessel shall be considered to be part of the petroleum refining process unit that is subject to this subpart. If more than one petroleum refining process unit is subject to this subpart, the owner or operator may assign the storage vessel to any of the petroleum refining process units subject to this subpart.

(iii) If the predominant use of a storage vessel varies from year to year, then the applicability of this subpart shall be determined based on the utilization of that storage vessel during the year preceding promulgation of this subpart. This determination shall be reported as specified in § 63.654(h)(6)(ii) of this subpart.

(f) The owner or operator shall follow the procedures specified in paragraphs (f)(1) through (f)(5) of this section to determine whether a miscellaneous process vent from a distillation unit is part of a source to which this subpart applies.

(1) If the greatest input to the distillation unit is from a process unit located on the same plant site, then the distillation unit shall be assigned to that process unit.

(2) If the greatest input to the distillation unit is provided from a process unit that is not located on the same plant site, then the distillation unit shall be assigned to the process unit located at the same plant site that receives the greatest amount of material from the distillation unit.

(3) If a distillation unit is shared among process units so that there is no single predominant use, as described in paragraphs (f)(1) and (f)(2) of this section, and at least one of those process units is a petroleum refining process unit subject to this subpart, the distillation unit shall be assigned to the petroleum refining process unit that is subject to this subpart. If more than one petroleum refining process unit is subject to this subpart, the owner or

operator may assign the distillation unit to any of the petroleum refining process units subject to this rule.

(4) If the process unit to which the distillation unit is assigned is a petroleum refining process unit subject to this subpart and the vent stream contains greater than 20 parts per million by volume total organic hazardous air pollutants, then the vent from the distillation unit is considered a miscellaneous process vent (as defined in §63.641 of this subpart) and is part of the source to which this subpart applies.

(5) If the predominant use of a distillation unit varies from year to year, then the applicability of this subpart shall be determined based on the utilization of that distillation unit during the year preceding promulgation of this subpart. This determination shall be reported as specified in §63.654(h)(6)(iii).

(g) The provisions of this subpart do not apply to the processes specified in paragraphs (g)(1) through (g)(7) of this section.

(1) Research and development facilities, regardless of whether the facilities are located at the same plant site as a petroleum refining process unit that is subject to the provisions of this subpart;

(2) Equipment that does not contain any of the hazardous air pollutants listed in table 1 of this subpart that is located within a petroleum refining process unit that is subject to this subpart;

(3) Units processing natural gas liquids;

(4) Units that are used specifically for recycling discarded oil;

(5) Shale oil extraction units;

(6) Ethylene processes; and

(7) Process units and emission points subject to subparts F, G, H, and I of this part.

(h) Except as provided in paragraphs (k), (l), or (m) of this section, sources subject to this subpart are required to achieve compliance on or before the dates specified in paragraphs (h)(1) through (h)(4) of this section.

(1) New sources that commence construction or reconstruction after July 14, 1994 shall be in compliance with this subpart upon initial startup or the date of promulgation of this subpart, whichever is later, as provided in §63.6(b) of subpart A of this part.

(2) Except as provided in paragraphs (h)(3) through (h)(5) of this section, existing sources shall be in compliance with this subpart no later than August 18, 1998, except as provided in §63.6(c) of subpart A of this part, or unless an extension has been granted by the Administrator as provided in §63.6(i) of subpart A of this part.

(3) Marine tank vessels at existing sources shall be in compliance with this subpart no later than August 18, 1999 unless the vessels are included in an emissions average to generate emission credits. Marine tank vessels used to generate credits in an emissions average shall be in compliance with this subpart no later than August 18, 1998 unless an extension has been granted by the Administrator as provided in §63.6(i).

(4) Existing Group 1 floating roof storage vessels shall be in compliance with §63.646 at the first degassing and cleaning activity after August 18, 1998, or within 10 years after promulgation of the rule, whichever is first.

(5) An owner or operator may elect to comply with the provisions of §63.648 (c) through (i) as an alternative to the provisions of §63.648 (a) and (b). In such cases, the owner or operator shall comply no later than the dates specified in paragraphs (h)(5)(i) through (h)(5)(iii) of this section.

(i) Phase I (see table 2 of this subpart), beginning on August 18, 1998;

(ii) Phase II (see table 2 of this subpart), beginning no later than August 18, 1999; and

(iii) Phase III (see table 2 of this subpart), beginning no later than February 18, 2001.

(i) If an additional petroleum refining process unit is added to a plant site that is a major source as defined in section 112(a) of the Clean Air Act, the addition shall be subject to the requirements for a new source if it meets the criteria specified in paragraphs (i)(1) through (i)(3) of this section:

(1) It is an addition that meets the definition of construction in §63.2 of subpart A of this part;

(2) Such construction commenced after July 14, 1994; and

(3) The addition has the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

(j) If any change is made to a petroleum refining process unit subject to this subpart, the change shall be subject to the requirements for a new source if it meets the criteria specified in paragraphs (j)(1) and (j)(2) of this section:

(1) It is a change that meets the definition of reconstruction in § 63.2 of subpart A of this part; and

(2) Such reconstruction commenced after July 14, 1994.

(k) If an additional petroleum refining process unit is added to a plant site or a change is made to a petroleum refining process unit and the addition or change is determined to be subject to the new source requirements according to paragraphs (i) or (j) of this section it must comply with the requirements specified in paragraphs (k)(1) and (k)(2) of this section:

(1) The reconstructed source, addition, or change shall be in compliance with the new source requirements upon initial startup of the reconstructed source or by the date of promulgation of this subpart, whichever is later; and

(2) The owner or operator of the reconstructed source, addition, or change shall comply with the reporting and recordkeeping requirements that are applicable to new sources. The applicable reports include, but are not limited to:

(i) The application for approval of construction or reconstruction shall be submitted as soon as practical before the construction or reconstruction is planned to commence (but it need not be sooner than 90 days after the date of promulgation of this subpart);

(ii) The Notification of Compliance Status report as required by § 63.654(f) for a new source, addition, or change;

(iii) Periodic Reports and Other Reports as required by § 63.654 (g) and (h);

(iv) Reports and notifications required by § 60.487 of subpart VV of part 60 or § 63.182 of subpart H of this part. The requirements for subpart H are summarized in table 3 of this subpart;

(v) Reports required by 40 CFR 61.357 of subpart FF;

(vi) Reports and notifications required by § 63.428 (b), (c), (g)(1), and (h)(1) through (h)(3) of subpart R. These requirements are summarized in table 4 of this subpart; and

(vii) Reports and notifications required by §§ 63.565 and 63.567 of subpart Y of this part. These requirements are summarized in table 5 of this subpart.

(l) If an additional petroleum refining process unit is added to a plant site or if a miscellaneous process vent, storage vessel, gasoline loading rack, or marine tank vessel loading operation that meets the criteria in paragraphs (c)(1) through (c)(7) of this section is added to an existing petroleum refinery or if another deliberate operational process change creating an additional Group 1 emission point(s) (as defined in § 63.641) is made to an existing petroleum refining process unit, and if the addition or process change is not subject to the new source requirements as determined according to paragraphs (i) or (j) of this section, the requirements in paragraphs (l)(1) through (l)(3) of this section shall apply. Examples of process changes include, but are not limited to, changes in production capacity, or feed or raw material where the change requires construction or physical alteration of the existing equipment or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph and paragraph (m) of this section, process changes do not include: Process upsets, unintentional temporary process changes, and changes that are within the equipment configuration and operating conditions documented in the Notification of Compliance Status report required by § 63.654(f).

(1) The added emission point(s) and any emission point(s) within the added or changed petroleum refining process unit are subject to the requirements for an existing source.

(2) The added emission point(s) and any emission point(s) within the added or changed petroleum refining process unit shall be in compliance with this subpart by the dates specified in paragraphs (l)(2)(i) or (l)(2)(ii) of this section, as applicable.

(i) If a petroleum refining process unit is added to a plant site or an emission point(s) is added to any existing petroleum refining process unit, the added emission point(s) shall be in compliance upon initial startup of any added petroleum refining process unit or emission point(s) or by 3 years after the date of promulgation of this subpart, whichever is later.

(ii) If a deliberate operational process change to an existing petroleum refining process unit causes a Group 2 emission point to become a Group 1 emission point (as defined in §63.641), the owner or operator shall be in compliance upon initial startup or by 3 years after the date of promulgation of this subpart, whichever is later, unless the owner or operator demonstrates to the Administrator that achieving compliance will take longer than making the change. If this demonstration is made to the Administrator's satisfaction, the owner or operator shall follow the procedures in paragraphs (m)(1) through (m)(3) of this section to establish a compliance date.

(3) The owner or operator of a petroleum refining process unit or of a storage vessel, miscellaneous process vent, wastewater stream, gasoline loading rack, or marine tank vessel loading operation meeting the criteria in paragraphs (c)(1) through (c)(7) of this section that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements that are applicable to existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (l)(3)(vii) of this section. A process change to an existing petroleum refining process unit shall be subject to the reporting requirements for existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (l)(3)(vii) of this section. The applicable reports include, but are not limited to:

(i) The Notification of Compliance Status report as required by §63.654(f) for the emission points that were added or changed;

(ii) Periodic Reports and other reports as required by §63.654 (g) and (h);

(iii) Reports and notifications required by sections of subpart A of this part that are applicable to this subpart, as identified in table 6 of this subpart.

(iv) Reports and notifications required by §63.182, or 40 CFR 60.487. The requirements of subpart H of this part are summarized in table 3 of this subpart;

(v) Reports required by §61.357 of subpart FF;

(vi) Reports and notifications required by §63.428 (b), (c), (g)(1), and (h)(1) through (h)(3) of subpart R of this part. These requirements are summarized in table 4 of this subpart; and

(vii) Reports and notifications required by §63.567 of subpart Y of this part. These requirements are summarized in table 5 of this subpart.

(4) If pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, or instrumentation systems are added to an existing source, they are subject to the equipment leak standards for existing sources in §63.648. A notification of compliance status report shall not be required for such added equipment.

(m) If a change that does not meet the criteria in paragraph (l) of this section is made to a petroleum refining process unit subject to this subpart, and the change causes a Group 2 emission point to become a Group 1 emission point (as defined in §63.641), then the owner or operator shall comply with the requirements of this subpart for existing sources for the Group 1 emission point as expeditiously as practicable, but in no event later than 3 years after the emission point becomes Group 1.

(1) The owner or operator shall submit to the Administrator for approval a compliance schedule, along with a justification for the schedule.

(2) The compliance schedule shall be submitted within 180 days after the change is made, unless the compliance schedule has been previously submitted to the permitting authority. If it is not possible to determine until after the change is implemented whether the emission point has become Group 1, the compliance schedule shall be submitted within 180 days of the date when the affect of the change is known to the source. The compliance schedule may

be submitted in the next Periodic Report if the change is made after the date the Notification of Compliance Status report is due.

(3) The Administrator shall approve or deny the compliance schedule or request changes within 120 calendar days of receipt of the compliance schedule and justification. Approval is automatic if not received from the Administrator within 120 calendar days of receipt.

(n) Overlap of subpart CC with other regulations for storage vessels.

(1) After the compliance dates specified in paragraph (h) of this section, a Group 1 or Group 2 storage vessel that is part of an existing source and is also subject to the provisions of 40 CFR part 60, subpart Kb, is required to comply only with the requirements of 40 CFR part 60, subpart Kb, except as provided in paragraph (n)(8) of this section.

(2) After the compliance dates specified in paragraph (h) of this section a Group 1 storage vessel that is part of a new source and is subject to 40 CFR part 60, subpart Kb is required to comply only with this subpart.

(3) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is part of a new source and is subject to the control requirements in §60.112b of 40 CFR part 60, subpart Kb is required to comply only with 40 CFR part 60, subpart Kb except as provided in paragraph (n)(8) of this section.

(4) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is part of a new source and is subject to 40 CFR 60.110b, but is not required to apply controls by 40 CFR 60.110b or 60.112b is required to comply only with this subpart.

(5) After the compliance dates specified in paragraph (h) of this section a Group 1 storage vessel that is also subject to the provisions of 40 CFR part 60, subparts K or Ka is required to only comply with the provisions of this subpart.

(6) After compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is subject to the control requirements of 40 CFR part 60, subparts K or Ka is required to comply only with the provisions of 40 CFR part 60, subparts K or Ka except as provided for in paragraph (n)(9) of this section.

(7) After the compliance dates specified in paragraph (h) of this section, a Group 2 storage vessel that is subject to 40 CFR part 60, subparts K or Ka, but not to the control requirements of 40 CFR part 60, subparts K or Ka, is required to comply only with this subpart.

(8) Storage vessels described by paragraphs (n)(1) and (n)(3) of this section are to comply with 40 CFR part 60, subpart Kb except as provided for in paragraphs (n)(8)(i) through (n)(8)(vi) of this section.

(i) Storage vessels that are to comply with §60.112b(a)(2) of subpart Kb are exempt from the secondary seal requirements of §60.112b(a)(2)(i)(B) during the gap measurements for the primary seal required by §60.113b(b) of subpart Kb.

(ii) If the owner or operator determines that it is unsafe to perform the seal gap measurements required in §60.113b(b) of subpart Kb or to inspect the vessel to determine compliance with §60.113b(a) of subpart Kb because the roof appears to be structurally unsound and poses an imminent danger to inspecting personnel, the owner or operator shall comply with the requirements in either §63.120(b)(7)(i) or §63.120(b)(7)(ii) of subpart G.

(iii) If a failure is detected during the inspections required by §60.113b(a)(2) or during the seal gap measurements required by §60.113b(b)(1), and the vessel cannot be repaired within 45 days and the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two extensions of up to 30 additional calendar days each. The owner or operator is not required to provide a request for the extension to the Administrator.

(iv) If an extension is utilized in accordance with paragraph (n)(8)(iii) of this section, the owner or operator shall, in the next periodic report, identify the vessel, provide the information listed in §60.113b(a)(2) or §60.113b(b)(4)(iii), and describe the nature and date of the repair made or provide the date the storage vessel was emptied.

(v) Owners and operators of storage vessels complying with subpart Kb of

part 60 may submit the inspection reports required by §§60.115b(a)(3), (a)(4), and (b)(4) of subpart Kb as part of the periodic reports required by this subpart, rather than within the 30-day period specified in §§60.115b(a)(3), (a)(4), and (b)(4) of subpart Kb.

(vi) The reports of rim seal inspections specified in §60.115b(b)(2) are not required if none of the measured gaps or calculated gap areas exceed the limitations specified in §60.113b(b)(4). Documentation of the inspections shall be recorded as specified in §60.115b(b)(3).

(9) Storage vessels described by paragraph (n)(6) of this section that are to comply with 40 CFR part 60, subpart Ka, are to comply with only subpart Ka except as provided for in paragraphs (n)(9)(i) through (n)(9)(iv) of this section.

(i) If the owner or operator determines that it is unsafe to perform the seal gap measurements required in §60.113a(a)(1) of subpart Ka because the floating roof appears to be structurally unsound and poses an imminent danger to inspecting personnel, the owner or operator shall comply with the requirements in either §63.120(b)(7)(i) or §63.120(b)(7)(ii) of subpart G.

(ii) If a failure is detected during the seal gap measurements required by §60.113a(a)(1) of subpart Ka, and the vessel cannot be repaired within 45 days and the vessel cannot be emptied within 45 days, the owner or operator may utilize up to 2 extensions of up to 30 additional calendar days each.

(iii) If an extension is utilized in accordance with paragraph (n)(9)(ii) of this section, the owner or operator shall, in the next periodic report, identify the vessel, describe the nature and date of the repair made or provide the date the storage vessel was emptied. The owner or operator shall also provide documentation of the decision to utilize an extension including a description of the failure, documentation that alternate storage capacity is unavailable, and a schedule of actions that will ensure that the control equipment will be repaired or the vessel emptied as soon as possible.

(iv) Owners and operators of storage vessels complying with subpart Ka of part 60 may submit the inspection reports required by §60.113a(a)(1)(i)(E) of subpart Ka as part of the periodic reports required by this subpart, rather than within the 60-day period specified in §60.113a(a)(1)(i)(E) of subpart Ka.

(o) Overlap of this subpart CC with other regulations for wastewater.

(1) After the compliance dates specified in paragraph (h) of this section a Group 1 wastewater stream managed in a piece of equipment that is also subject to the provisions of 40 CFR part 60, subpart QQQ is required to comply only with this subpart.

(2) After the compliance dates specified in paragraph (h) of this section a Group 1 or Group 2 wastewater stream that is conveyed, stored, or treated in a wastewater stream management unit that also receives streams subject to the provisions of §§63.133 through 63.147 of subpart G wastewater provisions of this part shall comply as specified in paragraph (o)(2)(i) or (o)(2)(ii) of this section. Compliance with the provisions of paragraph (o)(2) of this section shall constitute compliance with the requirements of this subpart for that wastewater stream.

(i) Comply with paragraphs (o)(2)(i)(A) through (o)(2)(i)(C) of this section.

(A) The provisions in §§63.133 through 63.140 of subpart G for all equipment used in the storage and conveyance of the Group 1 or Group 2 wastewater stream.

(B) The provisions in both 40 CFR part 61, subpart FF and in §§63.138 and 63.139 of subpart G for the treatment and control of the Group 1 or Group 2 wastewater stream.

(C) The provisions in §§63.143 through 63.148 of subpart G for monitoring and inspections of equipment and for recordkeeping and reporting requirements. The owner or operator is not required to comply with the monitoring, recordkeeping, and reporting requirements associated with the treatment and control requirements in 40 CFR part 61, subpart FF, §§61.355 through 61.357.

(ii) Comply with paragraphs (o)(2)(ii)(A) and (o)(2)(ii)(B) of this section.

(A) Comply with the provisions of §§63.133 through 63.148 and §§63.151 and 63.152 of subpart G.

(B) For any Group 2 wastewater stream or organic stream whose benzene emissions are subject to control through the use of one or more treatment processes or waste management units under the provisions of 40 CFR part 61, subpart FF on or after December 31, 1992, comply with the requirements of § 63.133 through § 63.147 of subpart G for Group 1 wastewater streams.

(p) Overlap of subpart CC with other regulations for equipment leaks. After the compliance dates specified in paragraph (h) of this section equipment leaks that are also subject to the provisions of 40 CFR parts 60 and 61 are required to comply only with the provisions specified in this subpart.

(q) For overlap of subpart CC with local or State regulations, the permitting authority for the affected source may allow consolidation of the monitoring, recordkeeping, and reporting requirements under this subpart with the monitoring, recordkeeping, and reporting requirements under other applicable requirements in 40 CFR parts 60, 61, or 63, and in any 40 CFR part 52 approved State implementation plan provided the implementation plan allows for approval of alternative monitoring, reporting, or recordkeeping requirements and provided that the permit contains an equivalent degree of compliance and control.

(r) Overlap of subpart CC with other regulations for gasoline loading racks. After the compliance dates specified in paragraph (h) of this section, a Group 1 gasoline loading rack that is part of a source subject to subpart CC and also is subject to the provisions of 40 CFR part 60, subpart XX is required to comply only with this subpart.

[60 FR 43260, Aug. 18, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29878, June 12, 1996; 63 FR 44140, Aug. 18, 1998; 66 FR 28841, May 25, 2001]

§ 63.641 Definitions.

All terms used in this subpart shall have the meaning given them in the Clean Air Act, subpart A of this part, and in this section. If the same term is defined in subpart A and in this section, it shall have the meaning given in this section for purposes of this subpart.

Affected source means the collection of emission points to which this subpart applies as determined by the criteria in § 63.640.

Aliphatic means open-chained structure consisting of paraffin, olefin and acetylene hydrocarbons and derivatives.

Annual average true vapor pressure means the equilibrium partial pressure exerted by the stored liquid at the temperature equal to the annual average of the liquid storage temperature for liquids stored above or below the ambient temperature or at the local annual average temperature reported by the National Weather Service for liquids stored at the ambient temperature, as determined:

(1) In accordance with methods specified in § 63.111 of subpart G of this part;

(2) From standard reference texts; or

(3) By any other method approved by the Administrator.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

By compound means by individual stream components, not by carbon equivalents.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Closed vent system means a system that is not open to the atmosphere and is configured of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device or back into the process. If gas or vapor from regulated equipment is routed to a process (e.g., to a petroleum refinery fuel gas system), the process shall not be considered a closed vent system and is not subject to closed vent system standards.

Combustion device means an individual unit of equipment such as a flare, incinerator, process heater, or boiler used for the combustion of organic hazardous air pollutant vapors.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a

flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are accessible.

Continuous record means documentation, either in hard copy or computer readable form, of data values measured at least once every hour and recorded at the frequency specified in §63.654(i).

Continuous recorder means a data recording device recording an instantaneous data value or an average data value at least once every hour.

Control device means any equipment used for recovering, removing, or oxidizing organic hazardous air pollutants. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For miscellaneous process vents (as defined in this section), recovery devices (as defined in this section) are not considered control devices.

Delayed coker vent means a vent that is typically intermittent in nature, and usually occurs only during the initiation of the depressuring cycle of the decoking operation when vapor from the coke drums cannot be sent to the fractionator column for product recovery, but instead is routed to the atmosphere through a closed blowdown system or directly to the atmosphere in an open blowdown system. The emissions from the decoking phases of delayed coker operations, which include coke drum deheading, draining, or decoking (coke cutting), are not considered to be delayed coker vents.

Distillate receiver means overhead receivers, overhead accumulators, reflux drums, and condenser(s) including ejector-condenser(s) associated with a distillation unit.

Distillation unit means a device or vessel in which one or more feed streams are separated into two or more exit streams, each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and the vapor phases by vaporization and condensation as they approach equilibrium within the distillation unit. Distillation unit includes the distillate receiver, reboiler, and any associated vacuum pump or steam jet.

Emission point means an individual miscellaneous process vent, storage vessel, wastewater stream, or equipment leak associated with a petroleum refining process unit; an individual storage vessel or equipment leak associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification code 2911; a gasoline loading rack classified under Standard Industrial Classification code 2911; or a marine tank vessel loading operation located at a petroleum refinery.

Equipment leak means emissions of organic hazardous air pollutants from a pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system "in organic hazardous air pollutant service" as defined in this section. Vents from wastewater collection and conveyance systems (including, but not limited to wastewater drains, sewer vents, and sump drains), tank mixers, and sample valves on storage tanks are not equipment leaks.

Flame zone means the portion of a combustion chamber of a boiler or process heater occupied by the flame envelope created by the primary fuel.

Flexible operation unit means a process unit that manufactures different products periodically by alternating raw materials or operating conditions. These units are also referred to as campaign plants or blocked operations.

Flow indicator means a device that indicates whether gas is flowing, or whether the valve position would allow gas to flow, in a line.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous streams generated by refinery operations, may blend them with sources of gas, if available, and transports the blended gaseous fuel at suitable pressures for use as fuel in heaters, furnaces, boilers, incinerators, gas turbines, and other combustion devices located within or outside of the refinery. The fuel is piped directly to each individual combustion device, and the system typically operates at pressures over atmospheric. The gaseous

streams can contain a mixture of methane, light hydrocarbons, hydrogen and other miscellaneous species.

Gasoline means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater that is used as a fuel for internal combustion engines.

Gasoline loading rack means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill gasoline cargo tanks.

Group 1 gasoline loading rack means any gasoline loading rack classified under Standard Industrial Classification code 2911 that is located within a bulk gasoline terminal that has a gasoline throughput greater than 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput for the terminal as may be limited by compliance with enforceable conditions under Federal, State, or local law and discovered by the Administrator and any other person.

Group 1 marine tank vessel means a vessel at an existing source loaded at any land- or sea-based terminal or structure that loads liquid commodities with vapor pressures greater than or equal to 10.3 kilopascals in bulk onto marine tank vessels, that emits greater than 9.1 megagrams of any individual HAP or 22.7 megagrams of any combination of HAP annually after August 18, 1999, or a vessel at a new source loaded at any land- or sea-based terminal or structure that loads liquid commodities with vapor pressures greater than or equal to 10.3 kilopascals onto marine tank vessels.

Group 1 miscellaneous process vent means a miscellaneous process vent for which the total organic HAP concentration is greater than or equal to 20 parts per million by volume, and the total volatile organic compound emissions are greater than or equal to 33 kilograms per day for existing sources and 6.8 kilograms per day for new sources at the outlet of the final recovery device (if any) and prior to any control device and prior to discharge to the atmosphere.

Group 1 storage vessel means a storage vessel at an existing source that has a design capacity greater than or equal to 177 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 10.4 kilopascals and stored-liquid annual average true vapor pressure greater than or equal to 8.3 kilopascals and annual average HAP liquid concentration greater than 4 percent by weight total organic HAP; a storage vessel at a new source that has a design storage capacity greater than or equal to 151 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 3.4 kilopascals and annual average HAP liquid concentration greater than 2 percent by weight total organic HAP; or a storage vessel at a new source that has a design storage capacity greater than or equal to 76 cubic meters and less than 151 cubic meters and stored-liquid maximum true vapor pressure greater than or equal to 77 kilopascals and annual average HAP liquid concentration greater than 2 percent by weight total organic HAP.

Group 1 wastewater stream means a wastewater stream at a petroleum refinery with a total annual benzene loading of 10 megagrams per year or greater as calculated according to the procedures in 40 CFR 61.342 of subpart FF of part 61 that has a flow rate of 0.02 liters per minute or greater, a benzene concentration of 10 parts per million by weight or greater, and is not exempt from control requirements under the provisions of 40 CFR part 61, subpart FF.

Group 2 gasoline loading rack means a gasoline loading rack classified under Standard Industrial Classification code 2911 that does not meet the definition of a Group 1 gasoline loading rack.

Group 2 marine tank vessel means a marine tank vessel that does not meet the definition of a Group 1 marine tank vessel.

Group 2 miscellaneous process vent means a miscellaneous process vent that does not meet the definition of a Group 1 miscellaneous process vent.

Group 2 storage vessel means a storage vessel that does not meet the definition of a Group 1 storage vessel.

Group 2 wastewater stream means a wastewater stream that does not meet the definition of Group 1 wastewater stream.

Hazardous air pollutant or *HAP* means one of the chemicals listed in section 112(b) of the Clean Air Act.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into one manufactured or assembled unit with the combustion section; rather, the energy recovery section is a separate section following the combustion section and the two are joined by ducts or connections carrying flue gas.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.593(d) of part 60, subpart GGG.

In organic hazardous air pollutant service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of §63.180(d) of subpart H of this part and table 1 of this subpart. The provisions of §63.180(d) of subpart H also specify how to determine that a piece of equipment is not in organic HAP service.

Leakless valve means a valve that has no external actuating mechanism.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the stored liquid at the temperature equal to the highest calendar-month average of the liquid storage temperature for liquids stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored at the ambient temperature, as determined:

(1) In accordance with methods specified in §63.111 of subpart G of this part;

(2) From standard reference texts; or

(3) By any other method approved by the Administrator.

Miscellaneous process vent means a gas stream containing greater than 20 parts per million by volume organic HAP that is continuously or periodically discharged during normal operation of a petroleum refining process unit meeting the criteria specified in §63.640(a). Miscellaneous process vents include gas streams that are discharged directly to the atmosphere, gas streams that are routed to a control device prior to discharge to the atmosphere, or gas streams that are diverted through a product recovery device prior to control or discharge to the atmosphere. Miscellaneous process vents include vent streams from: caustic wash accumulators, distillation tower condensers/accumulators, flash/knockout drums, reactor vessels, scrubber overheads, stripper overheads, vacuum (steam) ejectors, wash tower overheads, water wash accumulators, blowdown condensers/accumulators, and delayed coker vents. Miscellaneous process vents do not include:

(1) Gaseous streams routed to a fuel gas system;

(2) Relief valve discharges;

(3) Leaks from equipment regulated under §63.648;

(4) Episodic or nonroutine releases such as those associated with startup, shutdown, malfunction, maintenance, depressuring, and catalyst transfer operations;

(5) In situ sampling systems (onstream analyzers);

(6) Catalytic cracking unit catalyst regeneration vents;

(7) Catalytic reformer regeneration vents;

(8) Sulfur plant vents;

(9) Vents from control devices such as scrubbers, boilers, incinerators, and electrostatic precipitators applied to catalytic cracking unit catalyst regeneration vents, catalytic reformer regeneration vents, and sulfur plant vents;

(10) Vents from any stripping operations applied to comply with the wastewater provisions of this subpart, subpart G of this part, or 40 CFR part 61, subpart FF;

(11) Coking unit vents associated with coke drum depressuring at or below a coke drum outlet pressure of 15 pounds per square inch gauge, deheading, draining, or decoking (coke cutting) or pressure testing after decoking;

(12) Vents from storage vessels;

(13) Emissions from wastewater collection and conveyance systems including, but not limited to, wastewater drains, sewer vents, and sump drains; and

(14) Hydrogen production plant vents through which carbon dioxide is removed from process streams or through which steam condensate produced or treated within the hydrogen plant is degassed or deaerated.

Operating permit means a permit required by 40 CFR parts 70 or 71.

Organic hazardous air pollutant or *organic HAP* in this subpart, means any of the organic chemicals listed in table 1 of this subpart.

Petroleum-based solvents means mixtures of aliphatic hydrocarbons or mixtures of one and two ring aromatic hydrocarbons.

Periodically discharged means discharges that are intermittent and associated with routine operations. Discharges associated with maintenance activities or process upsets are not considered periodically discharged miscellaneous process vents and are therefore not regulated by the petroleum refinery miscellaneous process vent provisions.

Petroleum refining process unit means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911), and used primarily for the following:

(1) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants;

(2) Separating petroleum; or

(3) Separating, cracking, reacting, or reforming intermediate petroleum streams.

(4) Examples of such units include, but are not limited to, petroleum-based solvent units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Petroleum refining process units also include sulfur plants.

Plant site means all contiguous or adjoining property that is under common control including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Primary fuel means the fuel that provides the principal heat input (i.e., more than 50 percent) to the device. To be considered primary, the fuel must be able to sustain operation without the addition of other fuels.

Process heater means an enclosed combustion device that primarily transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process unit means the equipment assembled and connected by pipes or ducts to process raw and/or intermediate materials and to manufacture an intended product. A process unit includes any associated storage vessels. For the purpose of this subpart, process unit includes, but is not limited to, chemical manufacturing process units and petroleum refining process units.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not considered a process unit shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, or would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown is not considered a process unit shutdown. The use of spare equipment and

technically feasible bypassing of equipment without stopping production are not considered process unit shutdowns.

Recovery device means an individual unit of equipment capable of and used for the purpose of recovering chemicals for use, reuse, or sale. Recovery devices include, but are not limited to, absorbers, carbon adsorbers, and condensers.

Reference control technology for gasoline loading racks means a vapor collection and processing system used to reduce emissions due to the loading of gasoline cargo tanks to 10 milligrams of total organic compounds per liter of gasoline loaded or less.

Reference control technology for marine vessels means a vapor collection system and a control device that reduces captured HAP emissions by 97 percent.

Reference control technology for miscellaneous process vents means a combustion device used to reduce organic HAP emissions by 98 percent, or to an outlet concentration of 20 parts per million by volume.

Reference control technology for storage vessels means either:

(1) An internal floating roof meeting the specifications of §63.119(b) of subpart G except for §63.119 (b)(5) and (b)(6);

(2) An external floating roof meeting the specifications of §63.119(c) of subpart G except for §63.119(c)(2);

(3) An external floating roof converted to an internal floating roof meeting the specifications of §63.119(d) of subpart G except for §63.119(d)(2); or

(4) A closed-vent system to a control device that reduces organic HAP emissions by 95-percent, or to an outlet concentration of 20 parts per million by volume.

(5) For purposes of emissions averaging, these four technologies are considered equivalent.

Reference control technology for wastewater means the use of:

(1) Controls specified in §§61.343 through 61.347 of subpart FF of part 61;

(2) A treatment process that achieves the emission reductions specified in table 7 of this subpart for each individual HAP present in the wastewater stream or is a steam stripper that meets the specifications in §63.138(g) of subpart G of this part; and

(3) A control device to reduce by 95 percent (or to an outlet concentration of 20 parts per million by volume for combustion devices) the organic HAP emissions in the vapor streams vented from treatment processes (including the steam stripper described in paragraph (2) of this definition) managing wastewater.

Refinery fuel gas means a gaseous mixture of methane, light hydrocarbons, hydrogen, and other miscellaneous species (nitrogen, carbon dioxide, hydrogen sulfide, etc.) that is produced in the refining of crude oil and/or petrochemical processes and that is separated for use as a fuel in boilers and process heaters throughout the refinery.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge can result from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

Research and development facility means laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

Shutdown means the cessation of a petroleum refining process unit or a unit operation (including, but not limited to, a distillation unit or reactor) within a petroleum refining process unit for purposes including, but not limited to, periodic maintenance, replacement of equipment, or repair.

Startup means the setting into operation of a petroleum refining process unit for purposes of production. Startup does not include operation solely for purposes of testing equipment. Startup does not include changes in product for flexible operation units.

Storage vessel means a tank or other vessel that is used to store organic liquids. Storage vessel does not include:

(1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;

(3) Vessels with capacities smaller than 40 cubic meters;

(4) Bottoms receiver tanks; or

(5) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions.

Temperature monitoring device means a unit of equipment used to monitor temperature and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

Total annual benzene means the total amount of benzene in waste streams at a facility on an annual basis as determined in §61.342 of 40 CFR part 61, subpart FF.

Total organic compounds or *TOC,* as used in this subpart, means those compounds excluding methane and ethane measured according to the procedures of Method 18 of 40 CFR part 60, appendix A. Method 25A may be used alone or in combination with Method 18 to measure TOC as provided in §63.645 of this subpart.

Wastewater means water or wastewater that, during production or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product and is discharged into any individual drain system. Examples are feed tank drawdown; water formed during a chemical reaction or used as a reactant; water used to wash impurities from organic products or reactants; water used to cool or quench organic vapor streams through direct contact; and condensed steam from jet ejector systems pulling vacuum on vessels containing organics.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29879, June 12, 1996; 62 FR 7938, Feb. 21, 1997; 63 FR 31361, June 9, 1998; 63 FR 44141, Aug. 18, 1998]

§ 63.642 General standards.

(a) Each owner or operator of a source subject to this subpart is required to apply for a part 70 or part 71 operating permit from the appropriate permitting authority. If the EPA has approved a State operating permit program under part 70, the permit shall be obtained from the State authority. If the State operating permit program has not been approved, the source shall apply to the EPA Regional Office pursuant to part 71.

(b) [Reserved]

(c) Table 6 of this subpart specifies the provisions of subpart A of this part that apply and those that do not apply to owners and operators of sources subject to this subpart.

(d) Initial performance tests and initial compliance determinations shall be required only as specified in this subpart.

(1) Performance tests and compliance determinations shall be conducted according to the schedule and procedures specified in this subpart.

(2) The owner or operator shall notify the Administrator of the intention to conduct a performance test at least 30 days before the performance test is scheduled.

(3) Performance tests shall be conducted according to the provisions of §63.7(e) except that performance tests shall be conducted at maximum representative operating capacity for the process. During the performance test, an owner or operator shall operate the control device at either maximum or minimum representative operating conditions for monitored control device parameters, whichever results in lower emission reduction.

(4) Data shall be reduced in accordance with the EPA-approved methods specified in the applicable section or, if other test methods are used, the data and methods shall be validated according to the protocol in Method 301 of appendix A of this part.

(e) Each owner or operator of a source subject to this subpart shall keep copies of all applicable reports and records required by this subpart for at least 5 years except as otherwise specified in this subpart. All applicable records shall be maintained in such a manner that they can be readily accessed within 24 hours. Records may be maintained in hard copy or computer-readable form including, but not

limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.

(f) All reports required under this subpart shall be sent to the Administrator at the addresses listed in §63.13 of subpart A of this part. If acceptable to both the Administrator and the owner or operator of a source, reports may be submitted on electronic media.

(g) The owner or operator of an existing source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the following equation:

$$E_A = 0.02\Sigma\ EPV_1 + \Sigma\ EPV_2 + 0.05\Sigma\ ES_1 + \Sigma\ ES_2 + \Sigma\ EGLR_{1C} + \Sigma\ EGLR_2 + (R)\ \Sigma\ EMV_1 + \Sigma\ EMV_2 + \Sigma\ EWW_{1C} + \Sigma\ EWW_2$$

where:

E_A = Emission rate, megagrams per year, allowed for the source.

$0.02\Sigma\ EPV_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 miscellaneous process vents, as defined in §63.641.

$\Sigma\ EPV_2$ = Sum of the emissions, megagrams per year, from all Group 2 process vents, as defined in §63.641.

$0.05\Sigma\ ES_1$ = Sum of the residual emissions, megagrams per year, from all Group 1 storage vessels, as defined in §63.641.

$\Sigma\ ES_2$ = Sum of the emissions, megagrams per year, from all Group 2 storage vessels, as defined in §63.641.

$\Sigma\ EGLR_{1C}$ = Sum of the residual emissions, megagrams per year, from all Group 1 gasoline loading racks, as defined in §63.641.

$\Sigma\ EGLR_2$ = Sum of the emissions, megagrams per year, from all Group 2 gasoline loading racks, as defined in §63.641.

$(R)\Sigma\ EMV_1$ = Sum of the residual emissions megagrams per year, from all Group 1 marine tank vessels, as defined in §63.641.

R = 0.03 for existing sources, 0.02 for new sources.

$\Sigma\ EMV_2$ = Sum of the emissions, megagrams per year from all Group 2 marine tank vessels, as defined in §63.641.

$\Sigma\ EWW_{1C}$ = Sum of the residual emissions from all Group 1 wastewater streams, as defined in §63.641. This term is calculated for each Group 1 stream according to the equation for EWW_{ic} in §63.652(h)(6).

$\Sigma\ EWW_2$ = Sum of emissions from all Group 2 wastewater streams, as defined in §63.641.

The emissions level represented by this equation is dependent on the collection of emission points in the source. The level is not fixed and can change as the emissions from each emission point change or as the number of emission points in the source changes.

(h) The owner or operator of a new source subject to the requirements of this subpart shall control emissions of organic HAP's to the level represented by the equation in paragraph (g) of this section.

(i) The owner or operator of an existing source shall demonstrate compliance with the emission standard in paragraph (g) of this section by following the procedures specified in paragraph (k) of this section for all emission points, or by following the emissions averaging compliance approach specified in paragraph (l) of this section for specified emission points and the procedures specified in paragraph (k) of this section for all other emission points within the source.

(j) The owner or operator of a new source shall demonstrate compliance with the emission standard in paragraph (h) of this section only by following the procedures in paragraph (k) of this section. The owner or operator of a new source may not use the emissions averaging compliance approach.

(k) The owner or operator of an existing source may comply, and the owner or operator of a new source shall comply, with the miscellaneous process vent provisions in §§63.643 through 63.645, the storage vessel provisions in §63.646, the wastewater provisions in §63.647, the gasoline loading rack provisions in §63.650, and the marine tank vessel loading operation provisions in §63.651 of this subpart.

(1) The owner or operator using this compliance approach shall also comply with the requirements of §63.654 as applicable.

(2) The owner or operator using this compliance approach is not required to calculate the annual emission rate specified in paragraph (g) of this section.

(l) The owner or operator of an existing source may elect to control some of the emission points within the source to different levels than specified under §§63.643 through 63.647, §§63.650 and 63.651 by using an emissions averaging compliance approach as long as the overall emissions for the source do not exceed the emission level specified in paragraph (g) of this section. The owner or operator using emissions averaging shall meet the requirements

in paragraphs (l)(1) and (l)(2) of this section.

(1) Calculate emission debits and credits for those emission points involved in the emissions average according to the procedures specified in § 63.652; and

(2) Comply with the requirements of §§ 63.652, 63.653, and 63.654, as applicable.

(m) A State may restrict the owner or operator of an existing source to using only the procedures in paragraph (k) of this section to comply with the emission standard in paragraph (g) of this section. Such a restriction would preclude the source from using an emissions averaging compliance approach.

[60 FR 43260, Aug. 18, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29879, June 12, 1996]

§ 63.643 Miscellaneous process vent provisions.

(a) The owner or operator of a Group 1 miscellaneous process vent as defined in § 63.641 shall comply with the requirements of either paragraphs (a)(1) or (a)(2) of this section.

(1) Reduce emissions of organic HAP's using a flare that meets the requirements of § 63.11(b) of subpart A of this part.

(2) Reduce emissions of organic HAP's, using a control device, by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. Compliance can be determined by measuring either organic HAP's or TOC's using the procedures in § 63.645.

(b) If a boiler or process heater is used to comply with the percentage of reduction requirement or concentration limit specified in paragraph (a)(2) of this section, then the vent stream shall be introduced into the flame zone of such a device, or in a location such that the required percent reduction or concentration is achieved. Testing and monitoring is required only as specified in § 63.644(a) and § 63.645 of this subpart.

§ 63.644 Monitoring provisions for miscellaneous process vents.

(a) Except as provided in paragraph (b) of this section, each owner or operator of a Group 1 miscellaneous process vent that uses a combustion device to comply with the requirements in § 63.643(a) shall install the monitoring equipment specified in paragraph (a)(1), (a)(2), (a)(3), or (a)(4) of this section, depending on the type of combustion device used. All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment will monitor accurately.

(1) Where an incinerator is used, a temperature monitoring device equipped with a continuous recorder is required.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Where a flare is used, a device (including but not limited to a thermocouple, an ultraviolet beam sensor, or an infrared sensor) capable of continuously detecting the presence of a pilot flame is required.

(3) Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from monitoring.

(4) Any boiler or process heater less than 44 megawatts design heat capacity where the vent stream is not introduced into the flame zone is required to use a temperature monitoring device in the firebox equipped with a continuous recorder.

(b) An owner or operator of a Group 1 miscellaneous process vent may request approval to monitor parameters other than those listed in paragraph (a) of this section. The request shall be submitted according to the procedures specified in § 63.654(h). Approval shall be requested if the owner or operator:

(1) Uses a control device other than an incinerator, boiler, process heater, or flare; or

(2) Uses one of the control devices listed in paragraph (a) of this section, but seeks to monitor a parameter other than those specified in paragraph (a) of this section.

(c) The owner or operator of a Group 1 miscellaneous process vent using a vent system that contains bypass lines that could divert a vent stream away from the control device used to comply with paragraph (a) of this section shall comply with either paragraph (c)(1) or (c)(2) of this section. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, pressure relief valves needed for safety reasons, and equipment subject to §63.648 are not subject to this paragraph.

(1) Install, calibrate, maintain, and operate a flow indicator that determines whether a vent stream flow is present at least once every hour. Records shall be generated as specified in §63.654(h) and (i). The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere; or

(2) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(d) The owner or operator shall establish a range that ensures compliance with the emissions standard for each parameter monitored under paragraphs (a) and (b) of this section. In order to establish the range, the information required in §63.654(f)(3) shall be submitted in the Notification of Compliance Status report.

(e) Each owner or operator of a control device subject to the monitoring provisions of this section shall operate the control device in a manner consistent with the minimum and/or maximum operating parameter value or procedure required to be monitored under paragraphs (a) and (b) of this section. Operation of the control device in a manner that constitutes a period of excess emissions, as defined in §63.654(g)(6), or failure to perform procedures required by this section shall constitute a violation of the applicable emission standard of this subpart.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996; 63 FR 44141, Aug. 18, 1998]

§63.645 Test methods and procedures for miscellaneous process vents.

(a) To demonstrate compliance with §63.643, an owner or operator shall follow §63.116 except for §63.116 (a)(1), (d) and (e) of subpart G of this part except as provided in paragraphs (b) through (d) and paragraph (i) of this section.

(b) All references to §63.113(a)(1) or (a)(2) in §63.116 of subpart G of this part shall be replaced with §63.643(a)(1) or (a)(2), respectively.

(c) In §63.116(c)(4)(ii)(C) of subpart G of this part, organic HAP's in the list of HAP's in table 1 of this subpart shall be considered instead of the organic HAP's in table 2 of subpart F of this part.

(d) All references to §63.116(b)(1) or (b)(2) shall be replaced with paragraphs (d)(1) and (d)(2) of this section, respectively.

(1) Any boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(2) Any boiler or process heater in which all vent streams are introduced into the flame zone.

(e) For purposes of determining the TOC emission rate, as specified under paragraph (f) of this section, the sampling site shall be after the last product recovery device (as defined in §63.641 of this subpart) (if any recovery devices are present) but prior to the inlet of any control device (as defined in §63.641 of this subpart) that is present, prior to any dilution of the process vent stream, and prior to release to the atmosphere.

(1) Methods 1 or 1A of 40 CFR part 60, appendix A, as appropriate, shall be used for selection of the sampling site.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(f) Except as provided in paragraph (g) of this section, an owner or operator seeking to demonstrate that a process vent TOC mass flow rate is less than 33 kilograms per day for an existing source or less than 6.8 kilograms

per day for a new source in accordance with the Group 2 process vent definition of this subpart shall determine the TOC mass flow rate by the following procedures:

(1) The sampling site shall be selected as specified in paragraph (e) of this section.

(2) The gas volumetric flow rate shall be determined using Methods 2, 2A, 2C, or 2D of 40 CFR part 60, appendix A, as appropriate.

(3) Method 18 or Method 25A of 40 CFR part 60, appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used. If Method 25A is used, and the TOC mass flow rate calculated from the Method 25A measurement is greater than or equal to 33 kilograms per day for an existing source or 6.8 kilograms per day for a new source, Method 18 may be used to determine any non-VOC hydrocarbons that may be deducted to calculate the TOC (minus non-VOC hydrocarbons) concentration and mass flow rate. The following procedures shall be used to calculate parts per million by volume concentration:

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) The TOC concentration (C_{TOC}) is the sum of the concentrations of the individual components and shall be computed for each run using the following equation if Method 18 is used:

$$C_{TOC} = \frac{\sum_{i=1}^{x}\left(\sum_{j=1}^{n} C_{ji}\right)}{X}$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

C_{ji}=Concentration of sample component j of the sample i, dry basis, parts per million by volume.

n=Number of components in the sample.

x=Number of samples in the sample run.

(4) The emission rate of TOC (minus methane and ethane) (E_{TOC}) shall be calculated using the following equation if Method 18 is used:

$$E = K_2\left[\sum_{j=1}^{n} C_j M_j\right] Q_s$$

where:

E=Emission rate of TOC (minus methane and ethane) in the sample, kilograms per day.

K_2 = Constant, 5.986×10^{-5} (parts per million)$^{-1}$ (gram-mole per standard cubic meter) (kilogram per gram) (minute per day), where the standard temperature (standard cubic meter) is at 20 °C.

C_j=Concentration on a dry basis of organic compound j in parts per million as measured by Method 18 of 40 CFR part 60, appendix A, as indicated in paragraph (f)(3) of this section. C_j includes all organic compounds measured minus methane and ethane.

M_j=Molecular weight of organic compound j, gram per gram-mole.

Q_s=Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 °C.

(5) If Method 25A is used, the emission rate of TOC (E_{TOC}) shall be calculated using the following equation: –

$$E_{TOC}=K_2C_{TOC}MQ_s$$

where:

E_{TOC}=Emission rate of TOC (minus methane and ethane) in the sample, kilograms per day.

K_2=Constant, 5.986×10^{-5} (parts per million)$^{-1}$ (gram-mole per standard cubic meter) (kilogram per gram)(minute per day), where the standard temperature (standard cubic meter) is at 20 °C.

C_{TOC}=Concentration of TOC on a dry basis in parts per million volume as measured by Method 25A of 40 CFR part 60, appendix A, as indicated in paragraph (f)(3) of this section.

M=Molecular weight of organic compound used to express units of C_{TOC}, gram per gram-mole.

Q_s=Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 °C.

(g) Engineering assessment may be used to determine the TOC emission rate for the representative operating condition expected to yield the highest daily emission rate.

(1) Engineering assessment includes, but is not limited to, the following:

(i) Previous test results provided the tests are representative of current operating practices at the process unit.

(ii) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(iii) TOC emission rate specified or implied within a permit limit applicable to the process vent.

(iv) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(A) Use of material balances based on process stoichiometry to estimate maximum TOC concentrations;

(B) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities; and

(C) Estimation of TOC concentrations based on saturation conditions.

(v) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(h) The owner or operator of a Group 2 process vent shall recalculate the TOC emission rate for each process vent, as necessary, whenever process changes are made to determine whether the vent is in Group 1 or Group 2. Examples of process changes include, but are not limited to, changes in production capacity, production rate, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: process upsets; unintentional, temporary process changes; and changes that are within the range on which the original calculation was based.

(1) The TOC emission rate shall be recalculated based on measurements of vent stream flow rate and TOC as specified in paragraphs (e) and (f) of this section, as applicable, or on best engineering assessment of the effects of the change. Engineering assessments shall meet the specifications in paragraph (g) of this section.

(2) Where the recalculated TOC emission rate is greater than 33 kilograms per day for an existing source or greater than 6.8 kilograms per day for a new source, the owner or operator shall submit a report as specified in §63.654 (f), (g), or (h) and shall comply with the appropriate provisions in §63.643 by the dates specified in §63.640.

(i) A compliance determination for visible emissions shall be conducted within 150 days of the compliance date using Method 22 of 40 CFR part 60, appendix A, to determine visible emissions.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996; 63 FR 44141, Aug. 18, 1998]

§63.646 Storage vessel provisions.

(a) Each owner or operator of a Group 1 storage vessel subject to this subpart shall comply with the requirements of §§63.119 through 63.121 except as provided in paragraphs (b) through (l) of this section.

(b) As used in this section, all terms not defined in §63.641 shall have the meaning given them in 40 CFR part 63, subparts A or G. The Group 1 storage vessel definition presented in §63.641 shall apply in lieu of the Group 1 storage vessel definitions presented in tables 5 and 6 of §63.119 of subpart G of this part.

(1) An owner or operator may use good engineering judgement or test results to determine the stored liquid weight percent total organic HAP for purposes of group determination. Data, assumptions, and procedures used in the determination shall be documented.

(2) When an owner or operator and the Administrator do not agree on whether the annual average weight percent organic HAP in the stored liquid is above or below 4 percent for a storage vessel at an existing source or above or below 2 percent for a storage vessel at a new source, Method 18 of 40 CFR part 60, appendix A shall be used.

(c) The following paragraphs do not apply to storage vessels at existing sources subject to this subpart: §63.119 (b)(5), (b)(6), (c)(2), and (d)(2).

(d) References shall apply as specified in paragraphs (d)(1) through (d)(10) of this section.

(1) All references to §63.100(k) of subpart F of this part (or the schedule provisions and the compliance date) shall be replaced with §63.640(h).

(2) All references to April 22, 1994 shall be replaced with August 18, 1995.

(3) All references to December 31, 1992 shall be replaced with July 15, 1994.

(4) All references to the compliance dates specified in § 63.100 of subpart F shall be replaced with § 63.640 (h) through (m).

(5) All references to § 63.150 in § 63.119 of subpart G of this part shall be replaced with § 63.652.

(6) All references to § 63.113(a)(2) of subpart G shall be replaced with § 63.643(a)(2) of this subpart.

(7) All references to § 63.126(b)(1) of subpart G shall be replaced with § 63.422(b) of subpart R of this part.

(8) All references to § 63.128(a) of subpart G shall be replaced with § 63.425, paragraphs (a) through (c) and (e) through (h) of subpart R of this part.

(9) All references to § 63.139(d)(1) in § 63.120(d)(1)(ii) of subpart G are not applicable. For sources subject to this subpart, such references shall mean that 40 CFR 61.355 is applicable.

(10) All references to § 63.139(c) in § 63.120(d)(1)(ii) of subpart G are not applicable. For sources subject to this subpart, such references shall mean that § 63.647 of this subpart is applicable.

(e) When complying with the inspection requirements of § 63.120 of subpart G of this part, owners and operators of storage vessels at existing sources subject to this subpart are not required to comply with the provisions for gaskets, slotted membranes, and sleeve seals.

(f) The following paragraphs (f)(1), (f)(2), and (f)(3) of this section apply to Group 1 storage vessels at existing sources:

(1) If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access.

(2) Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(3) Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(g) Failure to perform inspections and monitoring required by this section shall constitute a violation of the applicable standard of this subpart.

(h) References in §§ 63.119 through 63.121 to § 63.122(g)(1), § 63.151, and references to initial notification requirements do not apply.

(i) References to the Implementation Plan in § 63.120, paragraphs (d)(2) and (d)(3)(i) shall be replaced with the Notification of Compliance Status report.

(j) References to the Notification of Compliance Status report in § 63.152(b) shall be replaced with § 63.654(f).

(k) References to the Periodic Reports in § 63.152(c) shall be replaced with § 63.654(g).

(l) The State or local permitting authority can waive the notification requirements of §§ 63.120(a)(5), 63.120(a)(6), 63.120(b)(10)(ii), and 63.120(b)(10)(iii) for all or some storage vessels at petroleum refineries subject to this subpart. The State or local permitting authority may also grant permission to refill storage vessels sooner than 30 days after submitting the notifications in §§ 63.120(a)(6) or 63.120(b)(10)(iii) for all storage vessels at a refinery or for individual storage vessels on a case-by-case basis.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996; 62 FR 7939, Feb. 21, 1997]

§ 63.647 Wastewater provisions.

(a) Except as provided in paragraph (b) of this section, each owner or operator of a Group 1 wastewater stream shall comply with the requirements of §§ 61.340 through 61.355 of 40 CFR part 61, subpart FF for each process wastewater stream that meets the definition in § 63.641.

(b) As used in this section, all terms not defined in § 63.641 shall have the meaning given them in the Clean Air Act or in 40 CFR part 61, subpart FF, § 61.341.

(c) Each owner or operator required under subpart FF of 40 CFR part 61 to perform periodic measurement of benzene concentration in wastewater, or to monitor process or control device operating parameters shall operate in a manner consistent with the minimum or maximum (as appropriate) permitted concentration or operating parameter values. Operation of the process, treatment unit, or control device

resulting in a measured concentration or operating parameter value outside the permitted limits shall constitute a violation of the emission standards. Failure to perform required leak monitoring for closed vent systems and control devices or failure to repair leaks within the time period specified in subpart FF of 40 CFR part 61 shall constitute a violation of the standard.

§63.648 Equipment leak standards.

(a) Each owner or operator of an existing source subject to the provisions of this subpart shall comply with the provisions of 40 CFR part 60 subpart VV and paragraph (b) of this section except as provided in paragraphs (a)(1), (a)(2), and (c) through (i) of this section. Each owner or operator of a new source subject to the provisions of this subpart shall comply with subpart H of this part except as provided in paragraphs (c) through (i) of this section.

(1) For purposes of compliance with this section, the provisions of 40 CFR part 60, subpart VV apply only to equipment in organic HAP service, as defined in §63.641 of this subpart.

(2) Calculation of percentage leaking equipment components for subpart VV of 40 CFR part 60 may be done on a process unit basis or a sourcewide basis. Once the owner or operator has decided, all subsequent calculations shall be on the same basis unless a permit change is made.

(b) The use of monitoring data generated before August 18, 1995 to qualify for less frequent monitoring of valves and pumps as provided under 40 CFR part 60 subpart VV or subpart H of this part and paragraph (c) of this section (i.e., quarterly or semiannually) is governed by the requirements of paragraphs (b)(1) and (b)(2) of this section.

(1) Monitoring data must meet the test methods and procedures specified in §60.485(b) of 40 CFR part 60, subpart VV or §63.180(b)(1) through (b)(5) of subpart H of this part except for minor departures.

(2) Departures from the criteria specified in §60.485(b) of 40 CFR part 60 subpart VV or §63.180(b)(1) through (b)(5) of subpart H of this part or from the monitoring frequency specified in subpart VV or in paragraph (c) of this section (such as every 6 weeks instead of monthly or quarterly) are minor and do not significantly affect the quality of the data. An example of a minor departure is monitoring at a slightly different frequency (such as every 6 weeks instead of monthly or quarterly). Failure to use a calibrated instrument is not considered a minor departure.

(c) In lieu of complying with the existing source provisions of paragraph (a) in this section, an owner or operator may elect to comply with the requirements of §§63.161 through 63.169, 63.171, 63.172, 63.175, 63.176, 63.177, 63.179, and 63.180 of subpart H of this part except as provided in paragraphs (c)(1) through (c)(10) and (e) through (i) of this section.

(1) The instrument readings that define a leak for light liquid pumps subject to §63.163 of subpart H of this part and gas/vapor and light liquid valves subject to §63.168 of subpart H of this part are specified in table 2 of this subpart.

(2) In phase III of the valve standard, the owner or operator may monitor valves for leaks as specified in paragraphs (c)(2)(i) or (c)(2)(ii) of this section.

(i) If the owner or operator does not elect to monitor connectors, then the owner or operator shall monitor valves according to the frequency specified in table 8 of this subpart.

(ii) If an owner or operator elects to monitor connectors according to the provisions of §63.649, paragraphs (b), (c), or (d), then the owner or operator shall monitor valves at the frequencies specified in table 9 of this subpart.

(3) The owner or operator shall decide no later than the first required monitoring period after the phase I compliance date specified in §63.640(h) whether to calculate the percentage leaking valves on a process unit basis or on a sourcewide basis. Once the owner or operator has decided, all subsequent calculations shall be on the same basis unless a permit change is made.

(4) The owner or operator shall decide no later than the first monitoring period after the phase III compliance date specified in §63.640(h) whether to monitor connectors according to the provisions in §63.649, paragraphs (b), (c), or (d).

(5) Connectors in gas/vapor service or light liquid service are subject to the requirements for connectors in heavy liquid service in § 63.169 of subpart H of this part (except for the agitator provisions). The leak definition for valves, connectors, and instrumentation systems subject to § 63.169 is 1,000 parts per million.

(6) In phase III of the pump standard, except as provided in paragraph (c)(7) of this section, owners or operators that achieve less than 10 percent of light liquid pumps leaking or three light liquid pumps leaking, whichever is greater, shall monitor light liquid pumps monthly.

(7) Owners or operators that achieve less than 3 percent of light liquid pumps leaking or one light liquid pump leaking, whichever is greater, shall monitor light liquid pumps quarterly.

(8) An owner or operator may make the election described in paragraphs (c)(3) and (c)(4) of this section at any time except that any election to change after the initial election shall be treated as a permit modification according to the terms of part 70 of this chapter.

(9) When complying with the requirements of § 63.168(e)(3)(i), non-repairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and non-repairable. Otherwise, a number of non-repairable valves up to a maximum of 1 percent per year of the total number of valves in organic HAP service up to a maximum of 3 percent may be excluded from calculation of percent leaking valves for subsequent monitoring periods. When the number of non-repairable valves exceeds 3 percent of the total number of valves in organic HAP service, the number of non-repairable valves exceeding 3 percent of the total number shall be included in the calculation of percent leaking valves.

(10) If in phase III of the valve standard any valve is designated as being leakless, the owner or operator has the option of following the provisions of 40 CFR 60.482-7(f). If an owner or operator chooses to comply with the provisions of 40 CFR 60.482-7(f), the valve is exempt from the valve monitoring provisions of § 63.168 of subpart H of this part.

(d) Upon startup of new sources, the owner or operator shall comply with § 63.163(a)(1)(ii) of subpart H of this part for light liquid pumps and § 63.168(a)(1)(ii) of subpart H of this part for gas/vapor and light liquid valves.

(e) For reciprocating pumps in heavy liquid service and agitators in heavy liquid service, owners and operators are not required to comply with the requirements in § 63.169 of subpart H of this part.

(f) Reciprocating pumps in light liquid service are exempt from §§ 63.163 and 60.482 if recasting the distance piece or reciprocating pump replacement is required.

(g) Compressors in hydrogen service are exempt from the requirements of paragraphs (a) and (c) of this section if an owner or operator demonstrates that a compressor is in hydrogen service.

(1) Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service.

(2) For a piece of equipment to be considered in hydrogen service, it must be determined that the percentage hydrogen content can be reasonably expected always to exceed 50 percent by volume.

(i) For purposes of determining the percentage hydrogen content in the process fluid that is contained in or contacts a compressor, the owner or operator shall use either:

(A) Procedures that conform to those specified in § 60.593(b)(2) of 40 part 60, subpart GGG.

(B) Engineering judgment to demonstrate that the percentage content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume.

(*1*) When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, the procedures in paragraph (g)(2)(i)(A) of this section shall be used to resolve the disagreement.

(*2*) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination

can be revised only by following the procedures in paragraph (g)(2)(i)(A) of this section.

(h) Each owner or operator of a source subject to the provisions of this subpart must maintain all records for a minimum of 5 years.

(i) Reciprocating compressors are exempt from seal requirements if recasting the distance piece or compressor replacement is required.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996; 63 FR 44141, Aug. 18, 1998]

§63.649 Alternative means of emission limitation: Connectors in gas/vapor service and light liquid service.

(a) If an owner or operator elects to monitor valves according to the provisions of §63.648(c)(2)(ii), the owner or operator shall implement one of the connector monitoring programs specified in paragraphs (b), (c), or (d) of this section.

(b) *Random 200 connector alternative.* The owner or operator shall implement a random sampling program for accessible connectors of 2.0 inches nominal diameter or greater. The program does not apply to inaccessible or unsafe-to-monitor connectors, as defined in §63.174 of subpart H. The sampling program shall be implemented source-wide.

(1) Within the first 12 months after the phase III compliance date specified in §63.640(h), a sample of 200 connectors shall be randomly selected and monitored using Method 21 of 40 CFR part 60, appendix A.

(2) The instrument reading that defines a leak is 1,000 parts per million.

(3) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected except as provided in paragraph (e) of this section. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(4) If a leak is detected, the connector shall be monitored for leaks within the first 3 months after its repair.

(5) After conducting the initial survey required in paragraph (b)(1) of this section, the owner or operator shall conduct subsequent monitoring of connectors at the frequencies specified in paragraphs (b)(5)(i) through (b)(5)(iv) of this section.

(i) If the percentage leaking connectors is 2.0 percent or greater, the owner or operator shall survey a random sample of 200 connectors once every 6 months.

(ii) If the percentage leaking connectors is 1.0 percent or greater but less than 2.0 percent, the owner or operator shall survey a random sample of 200 connectors once per year.

(iii) If the percentage leaking connectors is 0.5 percent or greater but less than 1.0 percent, the owner or operator shall survey a random sample of 200 connectors once every 2 years.

(iv) If the percentage leaking connectors is less than 0.5 percent, the owner or operator shall survey a random sample of 200 connectors once every 4 years.

(6) Physical tagging of the connectors to indicate that they are subject to the monitoring provisions is not required. Connectors may be identified by the area or length of pipe and need not be individually identified.

(c) *Connector inspection alternative.* The owner or operator shall implement a program to monitor all accessible connectors in gas/vapor service that are 2.0 inches (nominal diameter) or greater and inspect all accessible connectors in light liquid service that are 2 inches (nominal diameter) or greater as described in paragraphs (c)(1) through (c)(7) of this section. The program does not apply to inaccessible or unsafe-to-monitor connectors.

(1) Within 12 months after the phase III compliance date specified in §63.640(h), all connectors in gas/vapor service shall be monitored using Method 21 of 40 CFR part 60 appendix A. The instrument reading that defines a leak is 1,000 parts per million.

(2) All connectors in light liquid service shall be inspected for leaks. A leak is detected if liquids are observed to be dripping at a rate greater than three drops per minute.

(3) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected except as provided in paragraph (e) of this section. A first attempt at repair shall be made no later

than 5 calendar days after the leak is detected.

(4) If a leak is detected, connectors in gas/vapor service shall be monitored for leaks within the first 3 months after repair. Connectors in light liquid service shall be inspected for indications of leaks within the first 3 months after repair. A leak is detected if liquids are observed to be dripping at a rate greater than three drops per minute.

(5) After conducting the initial survey required in paragraphs (c)(1) and (c)(2) of this section, the owner or operator shall conduct subsequent monitoring at the frequencies specified in paragraphs (c)(5)(i) through (c)(5)(iii) of this section.

(i) If the percentage leaking connectors is 2.0 percent or greater, the owner or operator shall monitor or inspect, as applicable, the connectors once per year.

(ii) If the percentage leaking connectors is 1.0 percent or greater but less than 2.0 percent, the owner or operator shall monitor or inspect, as applicable, the connectors once every 2 years.

(iii) If the percentage leaking connectors is less than 1.0 percent, the owner or operator shall monitor or inspect, as applicable, the connectors once every 4 years.

(6) The percentage leaking connectors shall be calculated for connectors in gas/vapor service and for connectors in light liquid service. The data for the two groups of connectors shall not be pooled for the purpose of determining the percentage leaking connectors.

(i) The percentage leaking connectors shall be calculated as follows:

$$\% C_L=[(C_L-C_{AN})/C_t+C_c)]\times 100$$

where:

$\% C_L$=Percentage leaking connectors.

C_L=Number of connectors including nonrepairables, measured at 1,000 parts per million or greater, by Method 21 of 40 CFR part 60, Appendix A.

C_{AN}=Number of allowable nonrepairable connectors, as determined by monitoring, not to exceed 3 percent of the total connector population, C_t.

C_t=Total number of monitored connectors, including nonrepairables, in the process unit.

C_c=Optional credit for removed connectors=0.67×net number (i.e., the total number of connectors removed minus the total added) of connectors in organic HAP service removed from the process unit after the applicability date set forth in §63.640(h)(4)(iii) for existing process units, and after the date of start-up for new process units. If credits are not taken, then C_c=0.

(ii) Nonrepairable connectors shall be included in the calculation of percentage leaking connectors the first time the connector is identified as leaking and nonrepairable. Otherwise, a number of nonrepairable connectors up to a maximum of 1 percent per year of the total number of connectors in organic HAP service up to a maximum of 3 percent may be excluded from calculation of percentage leaking connectors for subsequent monitoring periods.

(iii) If the number of nonrepairable connectors exceeds 3 percent of the total number of connectors in organic HAP service, the number of nonrepairable connectors exceeding 3 percent of the total number shall be included in the calculation of the percentage leaking connectors.

(7) Physical tagging of the connectors to indicate that they are subject to the monitoring provisions is not required. Connectors may be identified by the area or length of pipe and need not be individually identified.

(d) *Subpart H program.* The owner or operator shall implement a program to comply with the provisions in §63.174 of this part.

(e) Delay of repair of connectors for which leaks have been detected is allowed if repair is not technically feasible by normal repair techniques without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

(1) Delay of repair is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

(2) Delay of repair for connectors is also allowed if:

(i) The owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

(ii) When repair procedures are accomplished, the purged material would be collected and destroyed or recovered in a control device.

(f) Any connector that is designated as an unsafe-to-repair connector is exempt from the requirements of paragraphs (b)(3) and (b)(4), (c)(3) and (c)(4), or (d) of this section if:

(1) The owner or operator determines that repair personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (b)(3) and (b)(4), (c)(3) and (c)(4), of this section; or

(2) The connector will be repaired before the end of the next scheduled process unit shutdown.

(g) The owner or operator shall maintain records to document that the connector monitoring or inspections have been conducted as required and to document repair of leaking connectors as applicable.

§63.650 Gasoline loading rack provisions.

(a) Except as provided in paragraphs (b) through (c) of this section, each owner or operator of a gasoline loading rack classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a petroleum refinery shall comply with subpart R, §§63.421, 63.422 (a) through (c), 63.425 (a) through (c), 63.425 (e) through (h), 63.427 (a) and (b), and 63.428 (b), (c), (g)(1), and (h)(1) through (h)(3).

(b) As used in this section, all terms not defined in §63.641 shall have the meaning given them in subpart A or in 40 CFR part 63, subpart R. The §63.641 definition of "affected source" applies under this section.

(c) Gasoline loading racks regulated under this subpart are subject to the compliance dates specified in §63.640(h).

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§63.651 Marine tank vessel loading operation provisions.

(a) Except as provided in paragraphs (b) through (d) of this section, each owner or operator of a marine tank vessel loading operation located at a petroleum refinery shall comply with the requirements of §§63.560 through 63.567.

(b) As used in this section, all terms not defined in §63.641 shall have the meaning given them in subpart A or in 40 CFR part 63, subpart Y. The §63.641 definition of "affected source" applies under this section.

(c) The Initial Notification Report under §63.567(b) is not required.

(d) The compliance time of 4 years after promulgation of 40 CFR part 63, subpart Y does not apply. The compliance time is specified in §63.640(h)(3).

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29880, June 12, 1996]

§63.652 Emissions averaging provisions.

(a) This section applies to owners or operators of existing sources who seek to comply with the emission standard in §63.642(g) by using emissions averaging according to §63.642(l) rather than following the provisions of §§63.643 through 63.647, and §§63.650 and 63.651. Existing marine tank vessel loading operations unable to comply with the standard by using emissions averaging are those marine tank vessels subject to 40 CFR 63.562(e) of this part and the Valdez Marine Terminal source.

(b) The owner or operator shall develop and submit for approval an Implementation Plan containing all of the information required in §63.653(d) for all points to be included in an emissions average. The Implementation Plan shall identify all emission points to be included in the emissions average. This must include any Group 1 emission points to which the reference control technology (defined in §63.641) is not applied and all other emission points being controlled as part of the average.

(c) The following emission points can be used to generate emissions averaging credits if control was applied after November 15, 1990 and if sufficient information is available to determine the appropriate value of credits for the emission point:

(1) Group 2 emission points;

(2) Group 1 storage vessels, Group 1 wastewater streams, Group 1 gasoline loading racks, Group 1 marine tank vessels, and Group 1 miscellaneous process vents that are controlled by a technology that the Administrator or permitting authority agrees has a

higher nominal efficiency than the reference control technology. Information on the nominal efficiencies for such technologies must be submitted and approved as provided in paragraph (i) of this section; and

(3) Emission points from which emissions are reduced by pollution prevention measures. Percentages of reduction for pollution prevention measures shall be determined as specified in paragraph (j) of this section.

(i) For a Group 1 emission point, the pollution prevention measure must reduce emissions more than the reference control technology would have had the reference control technology been applied to the emission point instead of the pollution prevention measure except as provided in paragraph (c)(3)(ii) of this section.

(ii) If a pollution prevention measure is used in conjunction with other controls for a Group 1 emission point, the pollution prevention measure alone does not have to reduce emissions more than the reference control technology, but the combination of the pollution prevention measure and other controls must reduce emissions more than the reference control technology would have had it been applied instead.

(d) The following emission points cannot be used to generate emissions averaging credits:

(1) Emission points already controlled on or before November 15, 1990 unless the level of control is increased after November 15, 1990, in which case credit will be allowed only for the increase in control after November 15, 1990;

(2) Group 1 emission points that are controlled by a reference control technology unless the reference control technology has been approved for use in a different manner and a higher nominal efficiency has been assigned according to the procedures in paragraph (i) of this section. For example, it is not allowable to claim that an internal floating roof meeting only the specifications stated in the reference control technology definition in § 63.641 (i.e., that meets the specifications of § 63.119(b) of subpart G but does not have controlled fittings per § 63.119 (b)(5) and (b)(6) of subpart G) applied to a storage vessel is achieving greater than 95 percent control;

(3) Emission points on shutdown process units. Process units that are shut down cannot be used to generate credits or debits;

(4) Wastewater that is not process wastewater or wastewater streams treated in biological treatment units. These two types of wastewater cannot be used to generate credits or debits. Group 1 wastewater streams cannot be left undercontrolled or uncontrolled to generate debits. For the purposes of this section, the terms "wastewater" and "wastewater stream" are used to mean process wastewater; and

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(e) For all points included in an emissions average, the owner or operator shall:

(1) Calculate and record monthly debits for all Group 1 emission points that are controlled to a level less stringent than the reference control technology for those emission points. Equations in paragraph (g) of this section shall be used to calculate debits.

(2) Calculate and record monthly credits for all Group 1 or Group 2 emission points that are overcontrolled to compensate for the debits. Equations in paragraph (h) of this section shall be used to calculate credits. Emission points and controls that meet the criteria of paragraph (c) of this section may be included in the credit calculation, whereas those described in paragraph (d) of this section shall not be included.

(3) Demonstrate that annual credits calculated according to paragraph (h)

of this section are greater than or equal to debits calculated for the same annual compliance period according to paragraph (g) of this section.

(i) The initial demonstration in the Implementation Plan that credit-generating emission points will be capable of generating sufficient credits to offset the debits from the debit-generating emission points must be made under representative operating conditions.

(ii) After the compliance date, actual operating data will be used for all debit and credit calculations.

(4) Demonstrate that debits calculated for a quarterly (3-month) period according to paragraph (g) of this section are not more than 1.30 times the credits for the same period calculated according to paragraph (h) of this section. Compliance for the quarter shall be determined based on the ratio of credits and debits from that quarter, with 30 percent more debits than credits allowed on a quarterly basis.

(5) Record and report quarterly and annual credits and debits in the Periodic Reports as specified in §63.654(g)(8). Every fourth Periodic Report shall include a certification of compliance with the emissions averaging provisions as required by §63.654(g)(8)(iii).

(f) Debits and credits shall be calculated in accordance with the methods and procedures specified in paragraphs (g) and (h) of this section, respectively, and shall not include emissions from the following:

(1) More than 20 individual emission points. Where pollution prevention measures (as specified in paragraph (j)(1) of this section) are used to control emission points to be included in an emissions average, no more than 25 emission points may be included in the average. For example, if two emission points to be included in an emissions average are controlled by pollution prevention measures, the average may include up to 22 emission points.

(2) Periods of startup, shutdown, and malfunction as described in the source's startup, shutdown, and malfunction plan required by §63.6(e)(3) of subpart A of this part.

(3) For emission points for which continuous monitors are used, periods of excess emissions as defined in §63.654(g)(6)(i). For these periods, the calculation of monthly credits and debits shall be adjusted as specified in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) No credits would be assigned to the credit-generating emission point.

(ii) Maximum debits would be assigned to the debit-generating emission point.

(iii) The owner or operator may use the procedures in paragraph (l) of this section to demonstrate to the Administrator that full or partial credits or debits should be assigned.

(g) Debits are generated by the difference between the actual emissions from a Group 1 emission point that is uncontrolled or is controlled to a level less stringent, than the reference control technology, and the emissions allowed for Group 1 emission point. Debits shall be calculated as follows:

(1) The overall equation for calculating sourcewide debits is:

$$\text{Debits} = \sum_{i=1}^{n}\left(EPV_{iACTUAL} - (0.02)EPV_{iu}\right) + \sum_{i=1}^{n}\left(ES_{iACTUAL} - (0.05)ES_{iu}\right) + \sum_{i=1}^{n}\left(EGLR_{iACTUAL} - EGLR_{iC}\right) + \sum_{i=1}^{n}\left(EMV_{iACTUAL} - (0.03)EMViu\right)$$

where:

Debits and all terms of the equation are in units of megagrams per month, and

$EPV_{iACTUAL}$=Emissions from each Group 1 miscellaneous process vent i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(2) of this section.

(0.02) EPV_{iu}=Emissions from each Group 1 miscellaneous process vent i if the reference control technology had been applied

to the uncontrolled emissions, calculated according to paragraph (g)(2) of this section.

$ES_{iACTUAL}$=Emissions from each Group 1 storage vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(3) of this section.

(0.05) ES_{iu}=Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (g)(3) of this section.

$EGLR_{iACTUAL}$=Emissions from each Group 1 gasoline loading rack i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(4) of this section.

$EGLR_{ic}$=Emissions from each Group 1 gasoline loading rack i if the reference control technology had been applied to the uncontrolled emissions. This is calculated according to paragraph (g)(4) of this section.

EMV_{ACTUAL}=Emissions from each Group 1 marine tank vessel i that is uncontrolled or is controlled to a level less stringent than the reference control technology. This is calculated according to paragraph (g)(5) of this section.

(0.03) EMV_{iu}=Emissions from each Group 1 marine tank vessel i if the reference control technology had been applied to the uncontrolled emissions calculated according to paragraph (g)(5) of this section.

n=The number of Group 1 emission points being included in the emissions average. The value of n is not necessarily the same for each kind of emission point.

(2) Emissions from miscellaneous process vents shall be calculated as follows:

(i) For purposes of determining miscellaneous process vent stream flow rate, organic HAP concentrations, and temperature, the sampling site shall be after the final product recovery device, if any recovery devices are present; before any control device (for miscellaneous process vents, recovery devices shall not be considered control devices); and before discharge to the atmosphere. Method 1 or 1A of part 60, appendix A shall be used for selection of the sampling site.

(ii) The following equation shall be used for each miscellaneous process vent i to calculate EPV_{iu}:

$$EPV_{iu} = \left(2.494 \times 10^{-9}\right) Qh \left(\sum_{j=1}^{n} C_j M_j\right)$$

where:

EPV_{iu}=Uncontrolled process vent emission rate from miscellaneous process vent i, megagrams per month.

Q=Vent stream flow rate, dry standard cubic meters per minute, measured using Methods 2, 2A, 2C, or 2D of part 60 appendix A, as appropriate.

h=Monthly hours of operation during which positive flow is present in the vent, hours per month.

C_j=Concentration, parts per million by volume, dry basis, of organic HAP j as measured by Method 18 of part 60 appendix A.

M_j=Molecular weight of organic HAP j, gram per gram-mole.

n=Number of organic HAP's in the miscellaneous process vent stream.

(A) The values of Q, C_j, and M_j shall be determined during a performance test conducted under representative operating conditions. The values of Q, C_j, and M_j shall be established in the Notification of Compliance Status report and must be updated as provided in paragraph (g)(2)(ii)(B) of this section.

(B) If there is a change in capacity utilization other than a change in monthly operating hours, or if any other change is made to the process or product recovery equipment or operation such that the previously measured values of Q, C_j, and M_j are no longer representative, a new performance test shall be conducted to determine new representative values of Q, C_j, and M_j. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following procedures and equations shall be used to calculate $EPV_{iACTUAL}$:

(A) If the vent is not controlled by a control device or pollution prevention measure, $EPV_{iACTUAL}$ = EPV_{iu}, where EPV_{iu} is calculated according to the procedures in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the vent is controlled using a control device or a pollution prevention measure achieving less than 98-percent reduction,

$$EPV_{iACTUAL} = EPV_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

(*1*) The percent reduction shall be measured according to the procedures in §63.116 of subpart G if a combustion control device is used. For a flare meeting the criteria in §63.116(a) of subpart G, or a boiler or process heater meeting the criteria in §63.645(d) of this subpart or §63.116(b) of subpart G, the percentage of reduction shall be 98 percent. If a noncombustion control device is used, percentage of reduction shall be demonstrated by a performance test at the inlet and outlet of the device, or, if testing is not feasible, by a control design evaluation and documented engineering calculations.

(*2*) For determining debits from miscellaneous process vents, product recovery devices shall not be considered control devices and cannot be assigned a percentage of reduction in calculating $EPV_{iACTUAL}$. The sampling site for measurement of uncontrolled emissions is after the final product recovery device.

(*3*) Procedures for calculating the percentage of reduction of pollution prevention measures are specified in paragraph (j) of this section.

(3) Emissions from storage vessels shall be calculated as specified in §63.150(g)(3) of subpart G.

(4) Emissions from gasoline loading racks shall be calculated as follows:

(i) The following equation shall be used for each gasoline loading rack i to calculate $EGLR_{iu}$:

$$EGLR_{iu} = \left(1.20 \times 10^{-7}\right)\frac{SPMG}{T}$$

where:

$EGLR_{iu}$=Uncontrolled transfer HAP emission rate from gasoline loading rack i, megagrams per month

S=Saturation factor, dimensionless (see table 33 of subpart G).

P=Weighted average rack partial pressure of organic HAP's transferred at the rack during the month, kilopascals.

M=Weighted average molecular weight of organic HAP's transferred at the gasoline loading rack during the month, gram per gram-mole.

G=Monthly volume of gasoline transferred from gasoline loading rack, liters per month.

T=Weighted rack bulk liquid loading temperature during the month, degrees kelvin (degrees Celsius °C + 273).

(ii) The following equation shall be used for each gasoline loading rack i to calculate the weighted average rack partial pressure:

$$P = \frac{\sum_{1}^{j=n}(P_j)(G_j)}{G}$$

where:

P_j=Maximum true vapor pressure of individual organic HAP transferred at the rack, kilopascals.

G=Monthly volume of organic HAP transferred, liters per month, and

$$G = \sum_{1}^{j=n} G_j$$

G_j=Monthly volume of individual organic HAP transferred at the gasoline loading rack, liters per month.

n=Number of organic HAP's transferred at the gasoline loading rack.

(iii) The following equation shall be used for each gasoline loading rack i to calculate the weighted average rack molecular weight:

$$M = \frac{\sum_{1}^{j=n}(M_j)(G_j)}{G}$$

where:

M_j=Molecular weight of individual organic HAP transferred at the rack, gram per gram-mole.

G, G_j, and n are as defined in paragraph (g)(4)(ii) of this section.

(iv) The following equation shall be used for each gasoline loading rack i to calculate the monthly weighted rack bulk liquid loading temperature:

$$T = \frac{\sum_{1}^{j=n}(T_j)(G_j)}{G}$$

T_j=Average annual bulk temperature of individual organic HAP loaded at the gasoline loading rack, kelvin (degrees Celsius °C+273).

G, G_j, and n are as defined in paragraph (g)(4)(ii) of this section.

(v) The following equation shall be used to calculate $EGLR_{ic}$:

$$EGLR_{ic} = 1 \times 10^{-8} G$$

G is as defined in paragraph (g)(4)(ii) of this section.

(vi) The following procedures and equations shall be used to calculate $EGLR_{iACTUAL}$:

(A) If the gasoline loading rack is not controlled, $EGLR_{iACTUAL}=EGLR_{iu}$, where $EGLR_{iu}$ is calculated using the equations specified in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the gasoline loading rack is controlled using a control device or a pollution prevention measure not achieving the requirement of less than 10 milligrams of TOC per liter of gasoline loaded,

$$EGLR_{iACTUAL} = EGLR_{iu}\left(\frac{1 - \text{Percent reduction}}{100\%}\right)$$

(*1*) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §63.128(a) of subpart G. If testing is not feasible, the percentage of reduction shall be determined through a design evaluation according to the procedures specified in §63.128(h) of subpart G.

(*2*) Procedures for calculating the percentage of reduction for pollution prevention measures are specified in paragraph (j) of this section.

(5) Emissions from marine tank vessel loading shall be calculated as follows:

(i) The following equation shall be used for each marine tank vessel i to calculate EMV_{iu}:

$$EMV_{iu} = \sum_{i=1}^{m}(Q_i)(F_i)(P_i)$$

where:

EMV_{iu}=Uncontrolled marine tank vessel HAP emission rate from marine tank vessel i, megagrams per month.

Q_i=Quantity of commodity loaded (per vessel type), liters.

F_i=Emission factor, megagrams per liter.

P_i=Percent HAP.

m=Number of combinations of commodities and vessel types loaded.

Emission factors shall be based on test data or emission estimation procedures specified in §63.565(l) of subpart Y.

(ii) The following procedures and equations shall be used to calculate $EMV_{iACTUAL}$:

(A) If the marine tank vessel is not controlled, $EMV_{iACTUAL}=EMV_{iu}$, where EMV_{iu} is calculated using the equations specified in paragraph (g)(5)(i) of this section.

(B) If the marine tank vessel is controlled using a control device or a pollution prevention measure achieving less than 97-percent reduction,

$$EMV_{iACTUAL} = EMV_{iu}\left(\frac{1 - \text{Percent reduction}}{100\%}\right)$$

(*1*) The percent reduction for a control device shall be measured according to the procedures and test methods specified in §63.565(c) of subpart Y. If

testing is not feasible, the percentage of reduction shall be determined through a design evaluation according to the procedures specified in §63.128(h) of subpart G.

(2) Procedures for calculating the percentage of reduction for pollution prevention measures are specified in paragraph (j) of this section.

(h) Credits are generated by the difference between emissions that are allowed for each Group 1 and Group 2 emission point and the actual emissions from a Group 1 or Group 2 emission point that has been controlled after November 15, 1990 to a level more stringent than what is required by this subpart or any other State or Federal rule or statute. Credits shall be calculated as follows:

(1) The overall equation for calculating sourcewide credits is:

$$\begin{aligned}\text{Credits} = {} & D\sum_{i=1}^{n}\left((0.02)\,EPV1_{iu} - EPV1_{iACTUAL}\right) + D\sum_{i=1}^{m}\left(EPV2_{iBASE} - EPV2_{iACTUAL}\right) + \\ & D\sum_{i=1}^{n}\left((0.05)\,ES1_{iu} - ES1_{iACTUAL}\right) + D\sum_{i=1}^{m}\left(ES2_{iBASE} - ES2_{iACTUAL}\right) + \\ & D\sum_{i=1}^{n}\left(EGLR_{ic} - EGLR1_{iACTUAL}\right) + D\sum_{i=1}^{m}\left(EGLR2_{iBASE} - EGLR2_{iACTUAL}\right) + \\ & D\sum_{i=1}^{n}\left((0.03)\,EMV1_{iu} - EMV1_{iACTUAL}\right) + D\sum_{i=1}^{m}\left(EMV2_{iBASE} - EMV2_{iACTUAL}\right) + \\ & D\sum_{i=1}^{n}\left(EWW1_{ic} - EWW1_{iACTUAL}\right) + D\sum_{i=1}^{m}\left(EWW2_{iBASE} - EWW2_{iACTUAL}\right)\end{aligned}$$

where:

Credits and all terms of the equation are in units of megagrams per month, the baseline date is November 15, 1990, and

D=Discount factor=0.9 for all credit-generating emission points except those controlled by a pollution prevention measure, which will not be discounted.

$EPV1_{iACTUAL}$=Emissions for each Group 1 miscellaneous process vent i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(2) of this section.

(0.02) $EPV1_{iu}$=Emissions from each Group 1 miscellaneous process vent i if the reference control technology had been applied to the uncontrolled emissions. $EPV1_{iu}$ is calculated according to paragraph (h)(2) of this section.

$EPV2_{iBASE}$=Emissions from each Group 2 miscellaneous process vent; at the baseline date, as calculated in paragraph (h)(2) of this section.

$EPV2_{iACTUAL}$=Emissions from each Group 2 miscellaneous process vent that is controlled, calculated according to paragraph (h)(2) of this section.

$ES1_{iACTUAL}$=Emissions from each Group 1 storage vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(3) of this section.

(0.05) $ES1_{iu}$=Emissions from each Group 1 storage vessel i if the reference control technology had been applied to the uncontrolled emissions. $ES1_{iu}$ is calculated according to paragraph (h)(3) of this section.

$ES2_{iACTUAL}$=Emissions from each Group 2 storage vessel i that is controlled, calculated according to paragraph (h)(3) of this section.

$ES2_{iBASE}$=Emissions from each Group 2 storage vessel i at the baseline date, as calculated in paragraph (h)(3) of this section.

$EGLR1_{iACTUAL}$=Emissions from each Group 1 gasoline loading rack i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

$EGLR_{ic}$=Emissions from each Group 1 gasoline loading rack i if the reference control technology had been applied to the uncontrolled emissions. $EGLR_{iu}$ is calculated according to paragraph (h)(4) of this section.

$EGRL2_{iACTUAL}$=Emissions from each Group 2 gasoline loading rack i that is controlled, calculated according to paragraph (h)(4) of this section.

$EGLR2_{iBASE}$=Emissions from each Group 2 gasoline loading rack i at the baseline date, as calculated in paragraph (h)(4) of this section.

$EMV1_{iACTUAL}$=Emissions from each Group 1 marine tank vessel i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(4) of this section.

$(0.03)EMV1_{iu}$=Emissions from each Group 1 marine tank vessel i if the reference control technology had been applied to the uncontrolled emissions. $EMV1_{iu}$ is calculated according to paragraph (h)(5) of this section.

$EMV2_{iACTUAL}$=Emissions from each Group 2 marine tank vessel i that is controlled, calculated according to paragraph (h)(5) of this section.

$EMV2_{iBASE}$=Emissions from each Group 2 marine tank vessel i at the baseline date, as calculated in paragraph (h)(5) of this section.

$EWW1_{iACTUAL}$=Emissions from each Group 1 wastewater stream i that is controlled to a level more stringent than the reference control technology, calculated according to paragraph (h)(6) of this section.

$EWW1_{iu}$=Emissions from each Group 1 wastewater stream i if the reference control technology had been applied to the uncontrolled emissions, calculated according to paragraph (h)(6) of this section.

$EWW2_{iACTUAL}$=Emissions from each Group 2 wastewater stream i that is controlled, calculated according to paragraph (h)(6) of this section.

$EWW2_{iBASE}$=Emissions from each Group 2 wastewater stream i at the baseline date, calculated according to paragraph (h)(6) of this section.

n=Number of Group 1 emission points included in the emissions average. The value of n is not necessarily the same for each kind of emission point.

m=Number of Group 2 emission points included in the emissions average. The value of m is not necessarily the same for each kind of emission point.

(i) For an emission point controlled using a reference control technology, the percentage of reduction for calculating credits shall be no greater than the nominal efficiency associated with the reference control technology, unless a higher nominal efficiency is assigned as specified in paragraph (h)(1)(ii) of this section.

(ii) For an emission point controlled to a level more stringent than the reference control technology, the nominal efficiency for calculating credits shall be assigned as described in paragraph (i) of this section. A reference control technology may be approved for use in a different manner and assigned a higher nominal efficiency according to the procedures in paragraph (i) of this section.

(iii) For an emission point controlled using a pollution prevention measure, the nominal efficiency for calculating credits shall be determined as described in paragraph (j) of this section.

(2) Emissions from process vents shall be determined as follows:

(i) Uncontrolled emissions from miscellaneous process vents, $EPV1_{iu}$, shall be calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(ii) Actual emissions from miscellaneous process vents controlled using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than 98 percent emission reduction, $EPV1_{iACTUAL}$, shall be calculated according to the following equation:

$$EPV1_{iACTUAL} = EPV1_{iu}\left(1 - \frac{\text{Nominal efficiency}\%}{100\%}\right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 process vents, $EPV2_{iACTUAL}$:

(A) For a Group 2 process vent controlled by a control device, a recovery device applied as a pollution prevention project, or a pollution prevention measure, if the control achieves a percentage of reduction less than or equal to a 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu} \times \left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

(*1*) $EPV2_{iu}$ shall be calculated according to the equations and procedures for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section except as provided in paragraph (h)(2)(iii)(A)(*3*) of this section.

(*2*) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(2)(iii)(B)(*1*) through (g)(2)(iii)(B)(*3*) of this section except as provided in paragraph (h)(2)(iii)(A)(*4*) of this section.

(*3*) If a recovery device was added as part of a pollution prevention project, $EPV2_{iu}$ shall be calculated prior to that recovery device. The equation for EPV_{iu} in paragraph (g)(2)(ii) of this section shall be used to calculate $EPV2_{iu}$; however, the sampling site for measurement of vent stream flow rate and organic HAP concentration shall be at the inlet of the recovery device.

(*4*) If a recovery device was added as part of a pollution prevention project, the percentage of reduction shall be demonstrated by conducting a performance test at the inlet and outlet of that recovery device.

(B) For a Group 2 process vent controlled using a technology with an approved nominal efficiency greater than a 98 percent or a pollution prevention measure achieving greater than 98 percent reduction,

$$EPV2_{iACTUAL} = EPV2_{iu}\left(1 - \frac{\text{Nominal efficiency}\%}{100\%}\right)$$

(iv) Emissions from Group 2 process vents at baseline, $EPV2_{iBASE}$, shall be calculated as follows:

(A) If the process vent was uncontrolled on November 15, 1990, $EPV2_{iBASE}=EPV2_{iu}$, and shall be calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section.

(B) If the process vent was controlled on November 15, 1990,

$$EPV2_{BASE} = EPV2_{iu}\left(1 - \frac{\text{Percent reduction}\%}{100\%}\right)$$

where $EPV2_{iu}$ is calculated according to the procedures and equation for EPV_{iu} in paragraphs (g)(2)(i) and (g)(2)(ii) of this section. The percentage of reduction shall be calculated according to the procedures specified in paragraphs (g)(2)(iii)(B)(*1*) through (g)(2)(iii)(B)(*3*) of this section.

(C) If a recovery device was added to a process vent as part of a pollution prevention project initiated after November 15, 1990, $EPV2_{iBASE}=EPV2_{iu}$, where $EPV2_{iu}$ is calculated according to paragraph (h)(2)(iii)(A)(*3*) of this section.

(3) Emissions from storage vessels shall be determined as specified in §63.150(h)(3) of subpart G, except as follows:

(i) All references to §63.119(b) in §63.150(h)(3) of subpart G shall be replaced with: §63.119 (b) or §63.119(b) except for §63.119(b)(5) and (b)(6).

(ii) All references to §63.119(c) in §63.150(h)(3) of subpart G shall be replaced with: §63.119(c) or §63.119(c) except for §63.119(c)(2).

(iii) All references to §63.119(d) in §63.150(h)(3) of subpart G shall be replaced with: §63.119(d) or §63.119(d) except for §63.119(d)(2).

(4) Emissions from gasoline loading racks shall be determined as follows:

(i) Uncontrolled emissions from Group 1 gasoline loading racks, $EGLR1_{iu}$, shall be calculated according to the procedures and equations for $EGLR_{iu}$ as described in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(ii) Emissions from Group 1 gasoline loading racks if the reference control technology had been applied, $EGLR_{ic}$, shall be calculated according to the procedures and equations in paragraph (g)(4)(v) of this section.

(iii) Actual emissions from Group 1 gasoline loading racks controlled to less than 10 milligrams of TOC per liter of gasoline loaded; $EGLR_{iACTUAL}$, shall be calculated according to the following equation:

$$EGLR1_{iACTUAL} = EGLR1_{iu}\left(1 - \frac{\text{Nominal efficiency}}{100\%}\right)$$

(iv) The following procedures shall be used to calculate actual emissions from Group 2 gasoline loading racks, $EGLR2_{iACTUAL}$:

(A) For a Group 2 gasoline loading rack controlled by a control device or a pollution prevention measure achieving emissions reduction but where emissions are greater than the 10 milligrams of TOC per liter of gasoline loaded requirement,

$$EGLR2_{iACTUAL} = EGLR2_{iu}\left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

(*1*) $EGLR2_{iu}$ shall be calculated according to the equations and procedures for $EGLR_{iu}$ in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(*2*) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(4)(vi)(B)(*1*) and (g)(4)(vi)(B)(*2*) of this section.

(B) For a Group 2 gasoline loading rack controlled by using a technology with an approved nominal efficiency greater than 98 percent or a pollution prevention measure achieving greater than a 98-percent reduction,

$$EGLR2_{iACTUAL} = EGLR2_{iu}\left(1 - \frac{\text{Nominal efficiency}}{100\%}\right)$$

(v) Emissions from Group 2 gasoline loading racks at baseline, $EGLR2_{iBASE}$, shall be calculated as follows:

(A) If the gasoline loading rack was uncontrolled on November 15, 1990, $EGLR2_{iBASE}=EGLR2_{iu}$, and shall be calculated according to the procedures and equations for $EGLR_{iu}$ in paragraphs (g)(4)(i) through (g)(4)(iv) of this section.

(B) If the gasoline loading rack was controlled on November 15, 1990,

$$EGLR2_{iBASE} = EGLR2_{iu}\left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

where $EGLR2_{iu}$ is calculated according to the procedures and equations for $EGLR_{iu}$ in paragraphs (g)(4)(i) through (g)(4)(iv) of this section. Percentage of reduction shall be calculated according to the procedures in paragraphs (g)(4)(vi)(B)(*1*) and (g)(4)(vi)(B)(*2*) of this section.

(5) Emissions from marine tank vessels shall be determined as follows:

(i) Uncontrolled emissions from Group 1 marine tank vessels, $EMV1_{iu}$, shall be calculated according to the procedures and equations for EMV_{iu} as described in paragraph (g)(5)(i) of this section.

(ii) Actual emissions from Group 1 marine tank vessels controlled using a technology or pollution prevention measure with an approved nominal efficiency greater than 97 percent, $EMV_{iACTUAL}$, shall be calculated according to the following equation:

$$EMV1_{iACTUAL} = EMV1_{iu}\left(1 - \frac{\text{Nominal efficiency}}{100\%}\right)$$

(iii) The following procedures shall be used to calculate actual emissions from Group 2 marine tank vessels, $EMV2_{iACTUAL}$:

(A) For a Group 2 marine tank vessel controlled by a control device or a pollution prevention measure achieving a percentage of reduction less than or equal to 97 percent reduction,

$$EMV2_{iACTUAL} = EMV2_{iu}\left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

(*1*) $EMV2_{iu}$ shall be calculated according to the equations and procedures for EMV_{iu} in paragraph (g)(5)(i) of this section.

(*2*) The percentage of reduction shall be calculated according to the procedures in paragraphs (g)(5)(ii)(B)(*1*) and (g)(5)(ii)(B)(*2*) of this section.

(B) For a Group 2 marine tank vessel controlled using a technology or a pollution prevention measure with an approved nominal efficiency greater than 97 percent,

$$EMV2_{iACTUAL} = EMV2_{iu}\left(1 - \frac{\text{Nominal efficiency}}{100\%}\right)$$

(iv) Emissions from Group 2 marine tank vessels at baseline, $EMV2_{iBASE}$, shall be calculated as follows:

(A) If the marine terminal was uncontrolled on November 15, 1990, $EMV2_{iBASE}$ equals $EMV2_{iu}$, and shall be calculated according to the procedures and equations for EMV_{iu} in paragraph (g)(5)(i) of this section.

(B) If the marine tank vessel was controlled on November 15, 1990,

$$EMV2_{iBASE} = EMV2_{iu}\left(1 - \frac{\text{Percent reduction}}{100\%}\right)$$

where $EMV2_{iu}$ is calculated according to the procedures and equations for EMV_{iu} in paragraph (g)(5)(i) of this section. Percentage of reduction shall be calculated according to the procedures in paragraphs (g)(5)(ii)(B)(*1*) and (g)(5)(ii)(B)(*2*) of this section.

(6) Emissions from wastewater shall be determined as follows:

(i) For purposes of paragraphs (h)(4)(ii) through (h)(4)(vi) of this section, the following terms will have the meaning given them in paragraphs (h)(6)(i)(A) through (h)(6)(i)(C) of this section.

(A) *Correctly suppressed* means that a wastewater stream is being managed according to the requirements of §§ 61.343 through 61.347 or § 61.342(c)(1)(iii) of 40 CFR part 61, subpart FF, as applicable, and the emissions from the waste management units subject to those requirements are routed to a control device that reduces HAP emissions by 95 percent or greater.

(B) *Treatment process* has the meaning given in § 61.341 of 40 CFR part 61, subpart FF except that it does not include biological treatment units.

(C) *Vapor control device* means the control device that receives emissions vented from a treatment process or treatment processes.

(ii) The following equation shall be used for each wastewater stream i to calculate EWW_{ic}:

$$EWW_{ic} = \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left(1 - Fr_m\right) Fe_m HAP_{im} + (0.05)\left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left(Fr_m HAP_{im}\right)$$

where:

EWW_{ic} = Monthly wastewater stream emission rate if wastewater stream i were controlled by the reference control technology, megagrams per month.

Q_i = Average flow rate for wastewater stream i, liters per minute.

H_i = Number of hours during the month that wastewater stream i was generated, hours per month.

Fr_m=Fraction removed of organic HAP m in wastewater, from table 7 of this subpart, dimensionless.

Fe_m=Fraction emitted of organic HAP m in wastewater from table 7 of this subpart, dimensionless.

s=Total number of organic HAP's in wastewater stream i.

HAP_{im}=Average concentration of organic HAP m in wastewater stream i, parts per million by weight.

(A) HAP_{im} shall be determined for the point of generation or at a location downstream of the point of generation. Wastewater samples shall be collected using the sampling procedures specified in Method 25D of 40 CFR part 60, appendix A. Where feasible, samples shall be taken from an enclosed pipe prior to the wastewater being exposed to the atmosphere. When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of organic HAP's prior to sampling. The samples collected may be analyzed by either of the following procedures:

(*1*) A test method or results from a test method that measures organic HAP concentrations in the wastewater, and that has been validated pursuant to section 5.1 or 5.3 of Method 301 of appendix A of this part may be used; or

(*2*) Method 305 of appendix A of this part may be used to determine C_{im}, the average volatile organic HAP concentration of organic HAP m in wastewater stream i, and then HAP_{im} may be calculated using the following equation: $HAP_{im}=C_{im}/Fm_m$, where Fm_m for organic HAP m is obtained from table 7 of this subpart.

(B) Values for Q_i, HAP_{im}, and C_{im} shall be determined during a performance

test conducted under representative conditions. The average value obtained from three test runs shall be used. The values of Q_i, HAP_{im}, and C_{im} shall be established in the Notification of Compliance Status report and must be updated as provided in paragraph (h)(6)(i)(C) of this section.

(C) If there is a change to the process or operation such that the previously measured values of Q_i, HAP_{im}, and C_{im} are no longer representative, a new performance test shall be conducted to determine new representative values of Q_i, HAP_{im}, and C_{im}. These new values shall be used to calculate debits and credits from the time of the change forward, and the new values shall be reported in the next Periodic Report.

(iii) The following equations shall be used to calculate $EWWI_{iACTUAL}$ for each Group 1 wastewater stream i that is correctly suppressed and is treated to a level more stringent than the reference control technology.

(A) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated HAP that is greater than that specified in table 7 of this subpart, and the vapor control device achieves a percentage of reduction equal to 95 percent, the following equation shall be used:

$$EWWI_{iACTUAL} = \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[Fe_m HAP_{im} \left(1 - PR_{im}\right)\right] + 0.05\left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[HAP_{im} PR_{im}\right]$$

Where:

$EWW_{iACTUAL}$=Monthly wastewater stream emission rate if wastewater stream i is treated to a level more stringent than the reference control technology, megagrams per month.

PR_{im}=The efficiency of the treatment process, or series of treatment processes, that treat wastewater stream i in reducing the emission potential of organic HAP m in wastewater, dimensionless, as calculated by:

$$PR_{im} = \frac{HAP_{im\text{-}in} - HAP_{im\text{-}out}}{HAP_{im\text{-}in}}$$

Where:

$HAP_{im\text{-}in}$=Average concentration of organic HAP m, parts per million by weight, as defined and determined according to paragraph (h)(6)(ii)(A) of this section, in the wastewater entering the first treatment process in the series.

$HAP_{im\text{-}out}$=Average concentration of organic HAP m, parts per million by weight, as defined and determined according to paragraph (h)(6)(ii)(A) of this section, in the wastewater exiting the last treatment process in the series.

All other terms are as defined and determined in paragraph (h)(6)(ii) of this section.

(B) If the Group 1 wastewater stream i is not controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated HAP that is greater than that specified in table 7 of this subpart, but the vapor control device has an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EWWI_{iACTUAL} = \left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[Fe_m HAP_{im} \left(1 - A_m\right)\right] + \left(1 - \frac{\text{Nominal efficiency \%}}{100}\right)\left(6.0 \cdot 10^{-8}\right) Q_i H_i \sum_{m=1}^{s} \left[HAP_{im} A_m\right]$$

Where:

Nominal efficiency=Approved reduction efficiency of the vapor control device, dimensionless, as determined according to the procedures in §63.652(l).

A_m=The efficiency of the treatment process, or series of treatment processes, that treat wastewater stream i in reducing the emission potential of organic HAP m in wastewater, dimensionless.

All other terms are as defined and determined in paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(*1*) If a steam stripper meeting the specifications in the definition of reference control technology for wastewater is used, A_m shall be equal to the value of Fr_m given in table 7 of this subpart.

(*2*) If an alternative control device is used, the percentage of reduction must be determined using the equation and methods specified in paragraph (h)(6)(iii)(A) of this section for determining PR_{im}. If the value of PR_{im} is greater than or equal to the value of Fr_m given in table 7 of this subpart, then A_m equals Fr_m unless a higher nominal efficiency has been approved. If a higher nominal efficiency has been approved for the treatment process, the owner or operator shall determine $EWW1_{iACTUAL}$ according to paragraph (h)(6)(iii)(B) of this section rather than paragraph (h)(6)(iii)(A) of this section. If PR_{im} is less than the value of FR_m given in table 7 of this subpart, emissions averaging shall not be used for this emission point.

(C) If the Group 1 wastewater stream i is controlled using a treatment process or series of treatment processes with an approved nominal reduction efficiency for an individually speciated hazardous air pollutant that is greater than that specified in table 7 of this subpart, and the vapor control device has an approved nominal efficiency greater than 95 percent, the following equation shall be used:

$$EWW1_{iACTUAL} = \left(6.0*10^{-8}\right)Q_i H_i \sum_{m=1}^{s}\left[Fe_m HAP_{im}\left(1-PR_{im}\right)\right] + \left(1-\frac{\text{Nominal efficiency \%}}{100}\right)\left(6.0*10^{-8}\right)Q_i H_i \sum_{m=1}^{s}\left[HAP_{im} PR_{im}\right]$$

where all terms are as defined and determined in paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(iv) The following equation shall be used to calculate $EWW2_{iBASE}$ for each Group 2 wastewater stream i that on November 15, 1990 was not correctly suppressed or was correctly suppressed but not treated:

$$EWW2_{iBASE} = \left(6.0\times10^{-8}\right)Q_i H_i \sum_{m=1}^{s} Fe_m HAP_{im}$$

Where:

$EWW2_{iBASE}$=Monthly wastewater stream emission rate if wastewater stream i is not correctly suppressed, megagrams per month.

Q_i, H_i, s, Fe_m, and HAP_{im} are as defined and determined according to paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(v) The following equation shall be used to calculate $EWW2_{iBASE}$ for each Group 2 wastewater stream i on November 15, 1990 was correctly suppressed. $EWW2_{iBASE}$ shall be calculated as if the control methods being used on November 15, 1990 are in place and any control methods applied after November 15, 1990 are ignored. However, values for the parameters in the equation shall be representative of present production levels and stream properties.

$$EWW2_{iBASE} = \left(6.0*10^{-8}\right)Q_i H_i \sum_{m=1}^{s}\left[Fe_m HAP_{im}\left(1-PR_{im}\right)\right] + \left(1-\frac{R_i}{100\%}\right)\left(6.0*10^{-8}\right)Q_i H_i \sum_{m=1}^{s}\left[HAP_{im} PR_{im}\right]$$

where R_i is calculated according to paragraph (h)(6)(vii) of this section and all other terms are as defined and determined according to paragraphs (h)(6)(ii) and (h)(6)(iii)(A) of this section.

(vi) For Group 2 wastewater streams that are correctly suppressed, $EWW2_{iACTUAL}$ shall be calculated according to the equation for $EWW2_{iBASE}$ in paragraph (h)(6)(v) of this section. $EWW2_{iACTUAL}$ shall be calculated with all control methods in place accounted for.

(vii) The reduction efficiency, R_i, of the vapor control device shall be demonstrated according to the following procedures:

(A) Sampling sites shall be selected using Method 1 or 1A of 40 CFR part 60, appendix A, as appropriate.

(B) The mass flow rate of organic compounds entering and exiting the control device shall be determined as follows:

(*1*) The time period for the test shall not be less than 3 hours during which at least three runs are conducted.

(*2*) A run shall consist of a 1-hour period during the test. For each run:

(*i*) The volume exhausted shall be determined using Methods 2, 2A, 2C, or 2D of 40 CFR part 60 appendix A, as appropriate;

(*ii*) The organic concentration in the vent stream entering and exiting the control device shall be determined using Method 18 of 40 CFR part 60, appendix A. Alternatively, any other test method validated according to the procedures in Method 301 of appendix A of this part may be used.

(*3*) The mass flow rate of organic compounds entering and exiting the control device during each run shall be calculated as follows:

$$E_a = \frac{0.0416}{10^6 \times m}\left[\sum_{p=1}^{m} V_{ap}\left(\sum_{p=1}^{n} C_{aip} MW_i\right)\right]$$

$$E_b = \frac{0.0416}{10^6 \times m}\left[\sum_{p=1}^{m} V_{bp}\left(\sum_{p=1}^{n} C_{bip} MW_i\right)\right]$$

Where:

E_a=Mass flow rate of organic compounds exiting the control device, kilograms per hour.

E_b=Mass flow rate of organic compounds entering the control device, kilograms per hour.

V_{ap}=Average volumetric flow rate of vent stream exiting the control device during run p at standards conditions, cubic meters per hour.

V_{bp} = Average volumetric flow rate of vent stream entering the control device during run p at standards conditions, cubic meters per hour.

p = Run.

m = Number of runs.

C_{aip} = Concentration of organic compound i measured in the vent stream exiting the control device during run p as determined by Method 18 of 40 CFR part 60 appendix A, parts per million by volume on a dry basis.

C_{bip} = Concentration of organic compound i measured in the vent stream entering the control device during run p as determined by Method 18 of 40 CFR part 60, appendix A, parts per million by volume on a dry basis.

MW_i = Molecular weight of organic compound i in the vent stream, kilograms per kilogram-mole.

n = Number of organic compounds in the vent stream.

0.0416 = Conversion factor for molar volume, kilograms-mole per cubic meter at 293 kelvin and 760 millimeters mercury absolute.

(C) The organic reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R = Total organic reduction efficiency for the control device, percentage.

E_b = Mass flow rate of organic compounds entering the control device, kilograms per hour.

E_a = Mass flow rate of organic compounds exiting the control device, kilograms per hour.

(i) The following procedures shall be followed to establish nominal efficiencies. The procedures in paragraphs (i)(1) through (i)(6) of this section shall be followed for control technologies that are different in use or design from the reference control technologies and achieve greater percentages of reduction than the percentages of efficiency assigned to the reference control technologies in §63.641.

(1) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology, and the different control technology will be used in more than three applications at

a single plant site, the owner or operator shall submit the information specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section to the Administrator in writing:

(i) Emission stream characteristics of each emission point to which the control technology is or will be applied including the kind of emission point, flow, organic HAP concentration, and all other stream characteristics necessary to design the control technology or determine its performance;

(ii) Description of the control technology including design specifications;

(iii) Documentation demonstrating to the Administrator's satisfaction the control efficiency of the control technology. This may include performance test data collected using an appropriate EPA method or any other method validated according to Method 301 of appendix A of this part. If it is infeasible to obtain test data, documentation may include a design evaluation and calculations. The engineering basis of the calculation procedures and all inputs and assumptions made in the calculations shall be documented; and

(iv) A description of the parameter or parameters to be monitored to ensure that the control technology will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) The Administrator shall determine within 120 calendar days whether an application presents sufficient information to determine nominal efficiency. The Administrator reserves the right to request specific data in addition to the items listed in paragraph (i)(1) of this section.

(3) The Administrator shall determine within 120 calendar days of the submittal of sufficient data whether a control technology shall have a nominal efficiency and the level of that nominal efficiency. If, in the Administrator's judgment, the control technology achieves a level of emission reduction greater than the reference control technology for a particular kind of emission point, the Administrator will publish a FEDERAL REGISTER notice establishing a nominal efficiency for the control technology.

(4) The Administrator may grant conditional permission to take emission credits for use of the control technology on requirements that may be necessary to ensure operation and maintenance to achieve the specified nominal efficiency.

(5) In those cases where the owner or operator is seeking permission to take credit for use of a control technology that is different in use or design from the reference control technology and the different control technology will be used in no more than three applications at a single plant site, the information listed in paragraphs (i)(1)(i) through (i)(1)(iv) of this section can be submitted to the permitting authority for the source for approval instead of the Administrator.

(i) In these instances, use and conditions for use of the control technology can be approved by the permitting authority. The permitting authority shall follow the procedures specified in paragraphs (i)(2) through (i)(4) of this section except that, in these instances, a FEDERAL REGISTER notice is not required to establish the nominal efficiency for the different technology.

(ii) If, in reviewing the submittal, the permitting authority believes the control technology has broad applicability for use by other sources, the permitting authority shall submit the information provided in the application to the Director of the EPA Office of Air Quality Planning and Standards. The Administrator shall review the technology for broad applicability and may publish a FEDERAL REGISTER notice; however, this review shall not affect the permitting authority's approval of the nominal efficiency of the control technology for the specific application.

(6) If, in reviewing an application for a control technology for an emission point, the Administrator or permitting authority determines the control technology is not different in use or design from the reference control technology, the Administrator or permitting authority shall deny the application.

(j) The following procedures shall be used for calculating the efficiency (percentage of reduction) of pollution prevention measures:

(1) A pollution prevention measure is any practice that meets the criteria of

paragraphs (j)(1)(i) and (j)(1)(ii) of this section.

(i) A pollution prevention measure is any practice that results in a lesser quantity of organic HAP emissions per unit of product released to the atmosphere prior to out-of-process recycling, treatment, or control of emissions while the same product is produced.

(ii) Pollution prevention measures may include: Substitution of feedstocks that reduce HAP emissions, alterations to the production process to reduce the volume of materials released to the environment, equipment modifications; housekeeping measures, and in-process recycling that returns waste materials directly to production as raw materials. Production cutbacks do not qualify as pollution prevention.

(2) The emission reduction efficiency of pollution prevention measures implemented after November 15, 1990 can be used in calculating the actual emissions from an emission point in the debit and credit equations in paragraphs (g) and (h) of this section.

(i) For pollution prevention measures, the percentage of reduction used in the equations in paragraphs (g)(2) and (g)(3) of this section and paragraphs (h)(2) through (h)(4) of this section is the difference in percentage between the monthly organic HAP emissions for each emission point after the pollution prevention measure for the most recent month versus monthly emissions from the same emission point before the pollution prevention measure, adjusted by the volume of product produced during the two monthly periods.

(ii) The following equation shall be used to calculate the percentage of reduction of a pollution prevention measure for each emission point.

$$\text{Percent reduction} = \frac{E_B - \dfrac{\left(E_{pp} \times P_B\right)}{P_{pp}}}{E_B} \times 100\%$$

Where:

Percent reduction=Efficiency of pollution prevention measure (percentage of organic HAP reduction).

E_B=Monthly emissions before the pollution prevention measure, megagrams per month, determined as specified in paragraphs (j)(2)(ii)(A), (j)(2)(ii)(B), and (j)(2)(ii)(C) of this section.

E_{pp}=Monthly emissions after the pollution prevention measure, megagrams per month, as determined for the most recent month, determined as specified in paragraphs (j)(2)(ii)(D) or (j)(2)(ii)(E) of this section.

P_B=Monthly production before the pollution prevention measure, megagrams per month, during the same period over which E_B is calculated.

P_{pp}=Monthly production after the pollution prevention measure, megagrams per month, as determined for the most recent month.

(A) The monthly emissions before the pollution prevention measure, E_B, shall be determined in a manner consistent with the equations and procedures in paragraphs (g)(2), (g)(3), (g)(4), and (g)(5) of this section for miscellaneous process vents, storage vessels, gasoline loading racks, and marine tank vessels.

(B) For wastewater, E_B shall be calculated as follows:

$$E_B = \sum_{i=1}^{n} \left[\left(6.0 * 10^{-8}\right) Q_{Bi} H_{Bi} \sum_{m=1}^{s} Fe_m HAP_{Bim} \right]$$

where:

n=Number of wastewater streams.

Q_{Bi}=Average flow rate for wastewater stream i before the pollution prevention measure, liters per minute.

H_{Bi}=Number of hours per month that wastewater stream i was discharged before the pollution prevention measure, hours per month.

s=Total number of organic HAP's in wastewater stream i.

Fe_m=Fraction emitted of organic HAP m in wastewater from table 7 of this subpart, dimensionless.

HAP_{Bim}=Average concentration of organic HAP m in wastewater stream i, defined and determined according to paragraph (h)(6)(ii)(A)(*2*) of this section, before the pollution prevention measure, parts per million by weight, as measured before the implementation of the pollution measure.

(C) If the pollution prevention measure was implemented prior to July 14, 1994, records may be used to determine E_B.

(D) The monthly emissions after the pollution prevention measure, E_{pp}, may be determined during a performance test or by a design evaluation and documented engineering calculations. Once an emissions-to-production ratio has been established, the ratio can be used to estimate monthly emissions from monthly production records.

(E) For wastewater, E_{pp} shall be calculated using the following equation:

$$E_{pp} = \sum_{i=1}^{n} \left[\left(6.0*10^{-8}\right) Q_{ppi} H_{ppi} \sum_{m=1}^{s} Fe_m HAP_{ppim} \right]$$

where n, Q, H, s, Fe_m, and HAP are defined and determined as described in paragraph (j)(2)(ii)(B) of this section except that Q_{ppi}, H_{ppi}, and HAP_{ppim} shall be determined after the pollution prevention measure has been implemented.

(iii) All equations, calculations, test procedures, test results, and other information used to determine the percentage of reduction achieved by a pollution prevention measure for each emission point shall be fully documented.

(iv) The same pollution prevention measure may reduce emissions from multiple emission points. In such cases, the percentage of reduction in emissions for each emission point must be calculated.

(v) For the purposes of the equations in paragraphs (h)(2) through (h)(6) of this section used to calculate credits for emission points controlled more stringently than the reference control technology, the nominal efficiency of a pollution prevention measure is equivalent to the percentage of reduction of the pollution prevention measure. When a pollution prevention measure is used, the owner or operator of a source is not required to apply to the Administrator for a nominal efficiency and is not subject to paragraph (i) of this section.

(k) The owner or operator shall demonstrate that the emissions from the emission points proposed to be included in the average will not result in greater hazard or, at the option of the State or local permitting authority, greater risk to human health or the environment than if the emission points were controlled according to the provisions in §§63.643 through 63.647, and §§63.650 and 63.651.

(1) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the State or local permitting authority.

(i) The State or local permitting authority may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(ii) The demonstration and approval of hazard or risk equivalency may be made according to any guidance that the EPA makes available for use.

(2) Owners and operators shall provide documentation demonstrating the hazard or risk equivalency of their proposed emissions average in their Implementation Plan.

(3) An emissions averaging plan that does not demonstrate an equivalent or lower hazard or risk to the satisfaction

of the State or local permitting authority shall not be approved. The State or local permitting authority may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to §§63.643 through 63.647, and §§63.650 and 63.651.

(4) A hazard or risk equivalency demonstration shall:

(i) Be a quantitative, bona fide chemical hazard or risk assessment;

(ii) Account for differences in chemical hazard or risk to human health or the environment; and

(iii) Meet any requirements set by the State or local permitting authority for such demonstrations.

(l) For periods of excess emissions, an owner or operator may request that the provisions of paragraphs (l)(1) through (l)(4) of this section be followed instead of the procedures in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(1) The owner or operator shall notify the Administrator of excess emissions in the Periodic Reports as required in §63.654(g)(6).

(2) The owner or operator shall demonstrate that other types of monitoring data or engineering calculations are appropriate to establish that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits. This demonstration shall be made to the Administrator's satisfaction, and the Administrator may establish procedures for demonstrating compliance that are acceptable.

(3) The owner or operator shall provide documentation of the period of excess emissions and the other type of monitoring data or engineering calculations to be used to demonstrate that the control device for the emission point was operating in such a fashion to warrant assigning full or partial credits and debits.

(4) The Administrator may assign full or partial credit and debits upon review of the information provided.

[60 FR 43260, Aug. 18, 1995; 60 FR 49976, Sept. 27, 1995; 61 FR 7051, Feb. 23, 1996, as amended at 61 FR 29881, June 12, 1996; 61 FR 33799, June 28, 1996]

§63.653 Monitoring, recordkeeping, and implementation plan for emissions averaging.

(a) For each emission point included in an emissions average, the owner or operator shall perform testing, monitoring, recordkeeping, and reporting equivalent to that required for Group 1 emission points complying with §§63.643 through 63.647, and §§63.650 and 63.651. The specific requirements for miscellaneous process vents, storage vessels, wastewater, gasoline loading racks, and marine tank vessels are identified in paragraphs (a)(1) through (a)(7) of this section.

(1) The source shall implement the following testing, monitoring, recordkeeping, and reporting procedures for each miscellaneous process vent equipped with a flare, incinerator, boiler, or process heater:

(i) Conduct initial performance tests to determine the percentage of reduction as specified in §63.645 of this subpart and §63.116 of subpart G; and

(ii) Monitor the operating parameters specified in §63.644, as appropriate for the specific control device.

(2) The source shall implement the following procedures for each miscellaneous process vent, equipped with a carbon adsorber, absorber, or condenser but not equipped with a control device:

(i) Determine the flow rate and organic HAP concentration using the methods specified in §63.115 (a)(1) and (a)(2), §63.115 (b)(1) and (b)(2), and §63.115(c)(3) of subpart G; and

(ii) Monitor the operating parameters specified in §63.114 of subpart G, as appropriate for the specific recovery device.

(3) The source shall implement the following procedures for each storage vessel controlled with an internal floating roof, external roof, or a closed vent system with a control device, as appropriate to the control technique:

(i) Perform the monitoring or inspection procedures in § 63.646 of this subpart and § 63.120 of subpart G; and

(ii) For closed vent systems with control devices, conduct an initial design evaluation as specified in § 63.646 of this subpart and § 63.120(d) of subpart G.

(4) For each gasoline loading rack that is controlled, perform the testing and monitoring procedures specified in §§ 63.425 and 63.427 of subpart R of this part except § 63.425(d) or § 63.427(c).

(5) For each marine tank vessel that is controlled, perform the compliance, monitoring, and performance testing, procedures specified in §§ 63.563, 63.564, and 63.565 of subpart Y of this part.

(6) The source shall implement the following procedures for wastewater emission points, as appropriate to the control techniques:

(i) For wastewater treatment processes, conduct tests as specified in § 61.355 of subpart FF of part 60;

(ii) Conduct inspections and monitoring as specified in §§ 61.343 through 61.349 and § 61.354 of 40 CFR part 61, subpart FF.

(7) If an emission point in an emissions average is controlled using a pollution prevention measure or a device or technique for which no monitoring parameters or inspection procedures are specified in §§ 63.643 through 63.647 and §§ 63.650 and 63.651, the owner or operator shall establish a site-specific monitoring parameter and shall submit the information specified in § 63.654(h)(4) in the Implementation Plan.

(b) Records of all information required to calculate emission debits and credits and records required by § 63.654 shall be retained for 5 years.

(c) Notifications of Compliance Status report, Periodic Reports, and other reports shall be submitted as required by § 63.654.

(d) Each owner or operator of an existing source who elects to comply with § 63.654 (g) and (h) by using emissions averaging for any emission points shall submit an Implementation Plan.

(1) The Implementation Plan shall be submitted to the Administrator and approved prior to implementing emissions averaging. This information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, in a Notification of Compliance Status Report, in a Periodic Report or in any combination of these documents. If an owner or operator submits the information specified in paragraph (d)(2) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating the previously submitted information.

(2) The Implementation Plan shall include the information specified in paragraphs (d)(2)(i) through (d)(2)(ix) of this section for all points included in the average.

(i) The identification of all emission points in the planned emissions average and notation of whether each emission point is a Group 1 or Group 2 emission point as defined in § 63.641.

(ii) The projected annual emission debits and credits for each emission point and the sum for the emission points involved in the average calculated according to § 63.652. The annual projected credits must be greater than the projected debits, as required under § 63.652(e)(3).

(iii) The specific control technology or pollution prevention measure that will be used for each emission point included in the average and date of application or expected date of application.

(iv) The specific identification of each emission point affected by a pollution prevention measure. To be considered a pollution prevention measure, the criteria in § 63.652(j)(1) must be met. If the same pollution prevention measure reduces or eliminates emissions from multiple emission points in the average, the owner or operator must identify each of these emission points.

(v) A statement that the compliance demonstration, monitoring, inspection, recordkeeping, and reporting provisions in paragraphs (a), (b), and (c) of this section that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(vi) Documentation of the information listed in paragraphs (d)(2)(vi)(A) through (d)(2)(vi)(D) of this section for each emission point included in the average.

(A) The values of the parameters used to determine whether each emission point in the emissions average is Group 1 or Group 2.

(B) The estimated values of all parameters needed for input to the emission debit and credit calculations in §63.652 (g) and (h). These parameter values or, as appropriate, limited ranges for the parameter values, shall be specified in the source's Implementation Plan as enforceable operating conditions. Changes to these parameters must be reported in the next Periodic Report.

(C) The estimated percentage of reduction if a control technology achieving a lower percentage of reduction than the efficiency of the reference control technology, as defined in §63.641, is or will be applied to the emission point.

(D) The anticipated nominal efficiency if a control technology achieving a greater percentage emission reduction than the efficiency of the reference control technology is or will be applied to the emission point. The procedures in §63.652(i) shall be followed to apply for a nominal efficiency.

(vii) The information specified in §63.654(h)(4) for:

(A) Each miscellaneous process vent controlled by a pollution prevention measure or control technique for which monitoring parameters or inspection procedures are not specified in paragraphs (a)(1) or (a)(2) of this section; and

(B) Each storage vessel controlled by a pollution prevention measure or a control technique other than an internal or external floating roof or a closed vent system with a control device.

(viii) Documentation of the information listed in paragraphs (d)(2)(viii)(A) through (d)(2)(viii)(G) of this section for each process wastewater stream included in the average.

(A) The information used to determine whether the wastewater stream is a Group 1 or Group 2 wastewater stream.

(B) The estimated values of all parameters needed for input to the wastewater emission credit and debit calculations in §63.652(h)(6).

(C) The estimated percentage of reduction if the wastewater stream is or will be controlled using a treatment process or series of treatment processes that achieves an emission reduction less than or equal to the emission reduction specified in table 7 of this subpart.

(D) The estimated percentage of reduction if a control technology achieving less than or equal to 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(E) The estimated percentage of reduction if a pollution prevention measure is or will be applied.

(F) The anticipated nominal efficiency if the owner or operator plans to apply for a nominal efficiency under §63.652(i). A nominal efficiency shall be applied for if:

(*1*) A control technology is or will be applied to the wastewater stream and achieves an emission reduction greater than the emission reduction specified in table 7 of this subpart; or

(*2*) A control technology achieving greater than 95 percent emission reduction is or will be applied to the vapor stream(s) vented and collected from the treatment processes.

(G) For each pollution prevention measure, treatment process, or control device used to reduce air emissions of organic HAP's from wastewater and for which no monitoring parameters or inspection procedures are specified in §63.647, the information specified in §63.654(h)(4) shall be included in the Implementation Plan.

(ix) Documentation required in §63.652(k) demonstrating the hazard or risk equivalency of the proposed emissions average.

(3) The Administrator shall determine within 120 calendar days whether the Implementation Plan submitted presents sufficient information. The Administrator shall either approve the Implementation Plan, request changes, or request that the owner or operator submit additional information. Once the Administrator receives sufficient information, the Administrator shall approve, disapprove, or request changes to the plan within 120 calendar days.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, June 12, 1996; 63 FR 31361, June 9, 1998]

§ 63.654 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to the wastewater provisions in § 63.647 shall comply with the recordkeeping and reporting provisions in §§ 61.356 and 61.357 of 40 CFR part 61, subpart FF unless they are complying with the wastewater provisions specified in paragraph (o)(2)(ii) of § 63.640. There are no additional reporting and recordkeeping requirements for wastewater under this subpart unless a wastewater stream is included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(b) Each owner or operator subject to the gasoline loading rack provisions in § 63.650 shall comply with the recordkeeping and reporting provisions in § 63.428 (b) and (c), (g)(1), and (h)(1) through (h)(3) of subpart R of this part. These requirements are summarized in table 4 of this subpart. There are no additional reporting and recordkeeping requirements for gasoline loading racks under this subpart unless a loading rack is included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(c) Each owner or operator subject to the marine tank vessel loading operation standards in § 63.651 shall comply with the recordkeeping and reporting provisions in §§ 63.566 and 63.567(a) and § 63.567 (c) through (i) of subpart Y of this part. These requirements are summarized in table 5 of this subpart. There are no additional reporting and recordkeeping requirements for marine tank vessel loading operations under this subpart unless marine tank vessel loading operations are included in an emissions average. Recordkeeping and reporting for emissions averages are specified in § 63.653 and in paragraphs (f)(5) and (g)(8) of this section.

(d) Each owner or operator subject to the equipment leaks standards in § 63.648 shall comply with the recordkeeping and reporting provisions in paragraphs (d)(1) through (d)(6) of this section.

(1) Sections 60.486 and 60.487 of subpart VV of part 60 except as specified in paragraph (d)(1)(i) of this section; or §§ 63.181 and 63.182 of subpart H of this part except for §§ 63.182(b), (c)(2), and (c)(4).

(i) The signature of the owner or operator (or designate) whose decision it was that a repair could not be effected without a process shutdown is not required to be recorded. Instead, the name of the person whose decision it was that a repair could not be effected without a process shutdown shall be recorded and retained for 2 years.

(ii) [Reserved]

(2) The Notification of Compliance Status report required by § 63.182(c) of subpart H and the initial semiannual report required by § 60.487(b) of 40 CFR part 60, subpart VV shall be submitted within 150 days of the compliance date specified in § 63.640(h); the requirements of subpart H of this part are summarized in table 3 of this subpart.

(3) An owner or operator who determines that a compressor qualifies for the hydrogen service exemption in § 63.648 shall also keep a record of the demonstration required by § 63.648.

(4) An owner or operator must keep a list of identification numbers for valves that are designated as leakless per § 63.648(c)(10).

(5) An owner or operator must identify, either by list or location (area or refining process unit), equipment in organic HAP service less than 300 hours per year within refining process units subject to this subpart.

(6) An owner or operator must keep a list of reciprocating pumps and compressors determined to be exempt from seal requirements as per §§ 63.648 (f) and (i).

(e) Each owner or operator of a source subject to this subpart shall submit the reports listed in paragraphs (e)(1) through (e)(3) of this section except as provided in paragraph (h)(5) of this section, and shall keep records as described in paragraph (i) of this section.

(1) A Notification of Compliance Status report as described in paragraph (f) of this section;

(2) Periodic Reports as described in paragraph (g) of this section; and

(3) Other reports as described in paragraph (h) of this section.

(f) Each owner or operator of a source subject to this subpart shall submit a Notification of Compliance Status report within 150 days after the compliance dates specified in §63.640(h) with the exception of Notification of Compliance Status reports submitted to comply with §63.640(l)(3) and for storage vessels subject to the compliance schedule specified in §63.640(h)(4). Notification of Compliance Status reports required by §63.640(l)(3) and for storage vessels subject to the compliance dates specified in §63.640(h)(4) shall be submitted according to paragraph (f)(6) of this section. This information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination of the three. If the required information has been submitted before the date 150 days after the compliance date specified in §63.640(h), a separate Notification of Compliance Status report is not required within 150 days after the compliance dates specified in §63.640(h). If an owner or operator submits the information specified in paragraphs (f)(1) through (f)(5) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the previously submitted information. Each owner or operator of a gasoline loading rack classified under Standard Industrial Classification Code 2911 located within a contiguous area and under common control with a petroleum refinery subject to the standards of this subpart shall submit the Notification of Compliance Status report required by subpart R of this part within 150 days after the compliance dates specified in §63.640(h) of this subpart.

(1) The Notification of Compliance Status report shall include the information specified in paragraphs (f)(1)(i) through (f)(1)(v) of this section.

(i) For storage vessels, this report shall include the information specified in paragraphs (f)(1)(i)(A) through (f)(1)(i)(D) of this section.

(A) Identification of each storage vessel subject to this subpart, and for each Group 1 storage vessel subject to this subpart, the information specified in paragraphs (f)(1)(i)(A)(*1*) through (f)(1)(i)(A)(*3*) of this section. This information is to be revised each time a Notification of Compliance Status report is submitted for a storage vessel subject to the compliance schedule specified in §63.640(h)(4) or to comply with §63.640(l)(3).

(*1*) For each Group 1 storage vessel complying with §63.646 that is not included in an emissions average, the method of compliance (i.e., internal floating roof, external floating roof, or closed vent system and control device).

(*2*) For storage vessels subject to the compliance schedule specified in §63.640(h)(4) that are not complying with §63.646, the anticipated compliance date.

(*3*) For storage vessels subject to the compliance schedule specified in §63.640(h)(4) that are complying with §63.646 and the Group 1 storage vessels described in §63.640(l), the actual compliance date.

(B) If a closed vent system and a control device other than a flare is used to comply with §63.646 the owner or operator shall submit:

(*1*) A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed; and either

(*2*) The design evaluation documentation specified in §63.120(d)(1)(i) of subpart G, if the owner or operator elects to prepare a design evaluation; or

(*3*) If the owner or operator elects to submit the results of a performance test, identification of the storage vessel and control device for which the performance test will be submitted, and identification of the emission point(s) that share the control device with the storage vessel and for which the performance test will be conducted.

(C) If a closed vent system and control device other than a flare is used, the owner or operator shall submit:

(*1*) The operating range for each monitoring parameter. The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

(*2*) If a performance test is conducted instead of a design evaluation, results of the performance test demonstrating that the control device achieves greater than or equal to the required control efficiency. A performance test conducted prior to the compliance date of this subpart can be used to comply with this requirement, provided that the test was conducted using EPA methods and that the test conditions are representative of current operating practices.

(D) If a closed vent system and a flare is used, the owner or operator shall submit:

(*1*) Flare design (e.g., steam-assisted, air-assisted, or nonassisted);

(*2*) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by §63.120(e) of subpart G of this part; and

(*3*) All periods during the compliance determination when the pilot flame is absent.

(ii) For miscellaneous process vents, identification of each miscellaneous process vent subject to this subpart, whether the process vent is Group 1 or Group 2, and the method of compliance for each Group 1 miscellaneous process vent that is not included in an emissions average (e.g., use of a flare or other control device meeting the requirements of §63.643(a)).

(iii) For miscellaneous process vents controlled by control devices required to be tested under §63.645 of this subpart and §63.116(c) of subpart G of this part, performance test results including the information in paragraphs (f)(1)(iii)(A) and (B) of this section. Results of a performance test conducted prior to the compliance date of this subpart can be used provided that the test was conducted using the methods specified in §63.645 and that the test conditions are representative of current operating conditions.

(A) The percentage of reduction of organic HAP's or TOC, or the outlet concentration of organic HAP's or TOC (parts per million by volume on a dry basis corrected to 3 percent oxygen), determined as specified in §63.116(c) of subpart G of this part; and

(B) The value of the monitored parameters specified in table 10 of this subpart, or a site-specific parameter approved by the permitting authority, averaged over the full period of the performance test,

(iv) For miscellaneous process vents controlled by flares, performance test results including the information in paragraphs (f)(1)(iv)(A) and (B) of this section;

(A) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by §63.645 of this subpart and §63.116(a) of subpart G of this part, and

(B) A statement of whether a flame was present at the pilot light over the full period of the compliance determination.

(v) For equipment leaks complying with §63.648(c) (i.e., complying with the requirements of subpart H of this part), the Notification of Compliance Report Status report information required by §63.182(c) of subpart H and whether the percentage of leaking valves will be reported on a process unit basis or a sourcewide basis.

(2) If initial performance tests are required by §§63.643 through 63.653 of this subpart, the Notification of Compliance Status report shall include one complete test report for each test method used for a particular source.

(i) For additional tests performed using the same method, the results specified in paragraph (f)(1) of this section shall be submitted, but a complete test report is not required.

(ii) A complete test report shall include a sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method.

(iii) Performance tests are required only if specified by §§63.643 through 63.653 of this subpart. Initial performance tests are required for some kinds

of emission points and controls. Periodic testing of the same emission point is not required.

(3) For each monitored parameter for which a range is required to be established under §63.120(d) of subpart G of this part for storage vessels or §63.644 for miscellaneous process vents, the Notification of Compliance Status report shall include the information in paragraphs (f)(3)(i) through (f)(3)(iii) of this section.

(i) The specific range of the monitored parameter(s) for each emission point;

(ii) The rationale for the specific range for each parameter for each emission point, including any data and calculations used to develop the range and a description of why the range ensures compliance with the emission standard.

(A) If a performance test is required by this subpart for a control device, the range shall be based on the parameter values measured during the performance test supplemented by engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of permitted parameter values.

(B) If a performance test is not required by this subpart for a control device, the range may be based solely on engineering assessments and manufacturers' recommendations.

(iii) A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends.

(4) Results of any continuous monitoring system performance evaluations shall be included in the Notification of Compliance Status report.

(5) For emission points included in an emissions average, the Notification of Compliance Status report shall include the values of the parameters needed for input to the emission credit and debit equations in §63.652(g) and (h), calculated or measured according to the procedures in §63.652(g) and (h), and the resulting credits and debits for the first quarter of the year. The first quarter begins on the compliance date specified in §63.640.

(6) Notification of Compliance Status reports required by §63.640(l)(3) and for storage vessels subject to the compliance dates specified in §63.640(h)(4) shall be submitted no later than 60 days after the end of the 6-month period during which the change or addition was made that resulted in the Group 1 emission point or the existing Group 1 storage vessel was brought into compliance, and may be combined with the periodic report. Six-month periods shall be the same 6-month periods specified in paragraph (g) of this section. The Notification of Compliance Status report shall include the information specified in paragraphs (f)(1) through (f)(5) of this section. This information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, as part of the periodic report, or in any combination of these four. If the required information has been submitted before the date 60 days after the end of the 6-month period in which the addition of the Group 1 emission point took place, a separate Notification of Compliance Status report is not required within 60 days after the end of the 6-month period. If an owner or operator submits the information specified in paragraphs (f)(1) through (f)(5) of this section at different times, and/or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the previously submitted information.

(g) The owner or operator of a source subject to this subpart shall submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the compliance exceptions specified in paragraphs (g)(1) through (g)(6) of this section occur. The first 6-month period shall begin on the date the Notification of Compliance Status report is required to be submitted. A Periodic Report is not required if none of the compliance exceptions specified in paragraphs (g)(1) through (g)(6) of this section occurred during the 6-month period unless emissions averaging is utilized. Quarterly reports must be submitted for emission points included in emissions averages, as provided in paragraph (g)(8) of this section. An owner or operator may submit

reports required by other regulations in place of or as part of the Periodic Report required by this paragraph if the reports contain the information required by paragraphs (g)(i) through (g)(8) of this section.

(1) For storage vessels, Periodic Reports shall include the information specified for Periodic Reports in paragraph (g)(2) through (g)(5) of this section except that information related to gaskets, slotted membranes, and sleeve seals is not required for storage vessels that are part of an existing source.

(2) An owner or operator who elects to comply with §63.646 by using a fixed roof and an internal floating roof or by using an external floating roof converted to an internal floating roof shall submit the results of each inspection conducted in accordance with §63.120(a) of subpart G of this part in which a failure is detected in the control equipment.

(i) For vessels for which annual inspections are required under §63.120(a)(2)(i) or (a)(3)(ii) of subpart G of this part, the specifications and requirements listed in paragraphs (g)(2)(i)(A) through (g)(2)(i)(C) of this section apply.

(A) A failure is defined as any time in which the internal floating roof is not resting on the surface of the liquid inside the storage vessel and is not resting on the leg supports; or there is liquid on the floating roof; or the seal is detached from the internal floating roof; or there are holes, tears, or other openings in the seal or seal fabric; or there are visible gaps between the seal and the wall of the storage vessel.

(B) Except as provided in paragraph (g)(2)(i)(C) of this section, each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made or the date the storage vessel was emptied.

(C) If an extension is utilized in accordance with §63.120(a)(4) of subpart G of this part, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in §63.120(a)(4) of subpart G of this part; and describe the date the storage vessel was emptied and the nature of and date the repair was made.

(ii) For vessels for which inspections are required under §63.120(a)(2)(ii), (a)(3)(i), or (a)(3)(iii) of subpart G of this part (i.e., internal inspections), the specifications and requirements listed in paragraphs (g)(2)(ii)(A) and (g)(2)(ii)(B) of this section apply.

(A) A failure is defined as any time in which the internal floating roof has defects; or the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal (if one has been installed) has holes, tears, or other openings in the seal or the seal fabric; or, for a storage vessel that is part of a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than a 10 percent open area.

(B) Each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(3) An owner or operator who elects to comply with §63.646 by using an external floating roof shall meet the periodic reporting requirements specified in paragraphs (g)(3)(i) through (g)(3)(iii) of this section.

(i) The owner or operator shall submit, as part of the Periodic Report, documentation of the results of each seal gap measurement made in accordance with §63.120(b) of subpart G of this part in which the seal and seal gap requirements of §63.120(b)(3), (b)(4), (b)(5), or (b)(6) of subpart G of this part are not met. This documentation shall include the information specified in paragraphs (g)(3)(i)(A) through (g)(3)(i)(D) of this section.

(A) The date of the seal gap measurement.

(B) The raw data obtained in the seal gap measurement and the calculations described in §63.120(b)(3) and (b)(4) of subpart G of this part.

(C) A description of any seal condition specified in §63.120(b)(5) or (b)(6) of subpart G of this part that is not met.

(D) A description of the nature of and date the repair was made, or the date the storage vessel was emptied.

(ii) If an extension is utilized in accordance with §63.120(b)(7)(ii) or (b)(8) of subpart G of this part, the owner or operator shall, in the next Periodic Report, identify the vessel; include the documentation specified in §63.120(b)(7)(ii) or (b)(8) of subpart G of this part, as applicable; and describe the date the vessel was emptied and the nature of and date the repair was made.

(iii) The owner or operator shall submit, as part of the Periodic Report, documentation of any failures that are identified during visual inspections required by §63.120(b)(10) of subpart G of this part. This documentation shall meet the specifications and requirements in paragraphs (g)(3)(iii)(A) and (g)(3)(iii)(B) of this section.

(A) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or, for a storage vessel that is part of a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than 10 percent open area.

(B) Each Periodic Report shall include the date of the inspection, identification of each storage vessel in which a failure was detected, and a description of the failure. The Periodic Report shall also describe the nature of and date the repair was made.

(4) An owner or operator who elects to comply with §63.646 by using an external floating roof converted to an internal floating roof shall comply with the periodic reporting requirements of paragraph (g)(2) of this section.

(5) An owner or operator who elects to comply with §63.646 by installing a closed vent system and control device shall submit, as part of the next Periodic Report, the information specified in paragraphs (g)(5)(i) through (g)(5)(iii) of this section.

(i) The Periodic Report shall include the information specified in paragraphs (g)(5)(i)(A) and (g)(5)(i)(B) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of §63.119(e)(1) or (e)(2) of subpart G of this part, as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6 months. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6 months. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of §63.119 (e)(1) or (e)(2) of subpart G of this part, as applicable, due to planned routine maintenance.

(ii) If a control device other than a flare is used, the Periodic Report shall describe each occurrence when the monitored parameters were outside of the parameter ranges documented in the Notification of Compliance Status report. The description shall include: Identification of the control device for which the measured parameters were outside of the established ranges, and causes for the measured parameters to be outside of the established ranges.

(iii) If a flare is used, the Periodic Report shall describe each occurrence when the flare does not meet the general control device requirements specified in §63.11(b) of subpart A of this part and shall include: Identification of the flare that does not meet the general requirements specified in §63.11(b) of subpart A of this part, and reasons the flare did not meet the general requirements specified in §63.11(b) of subpart A of this part.

(6) For miscellaneous process vents for which continuous parameter monitors are required by this subpart, periods of excess emissions shall be identified in the Periodic Reports and shall be used to determine compliance with the emission standards.

(i) Period of excess emission means any of the following conditions:

(A) An operating day when the daily average value of a monitored parameter, except presence of a flare pilot flame, is outside the range specified in the Notification of Compliance Status report. Monitoring data recorded during periods of monitoring system breakdown, repairs, calibration checks and zero (low-level) and high-level adjustments shall not be used in computing daily average values of monitored parameters.

(B) An operating day when all pilot flames of a flare are absent.

(C) An operating day when monitoring data required to be recorded in paragraphs (i)(3) (i) and (ii) of this section are available for less than 75 percent of the operating hours.

(D) For data compression systems approved under paragraph (h)(5)(iii) of this section, an operating day when the monitor operated for less than 75 percent of the operating hours or a day when less than 18 monitoring values were recorded.

(ii) For miscellaneous process vents, excess emissions shall be reported for the operating parameters specified in table 10 of this subpart unless other site-specific parameter(s) have been approved by the operating permit authority.

(iii) Periods of startup and shutdown that meet the definition of §63.641, and malfunction that meet the definition in §63.2 and periods of performance testing and monitoring system calibration shall not be considered periods of excess emissions. Malfunctions may include process unit, control device, or monitoring system malfunctions.

(7) If a performance test for determination of compliance for a new emission point subject to this subpart or for an emission point that has changed from Group 2 to Group 1 is conducted during the period covered by a Periodic Report, the results of the performance test shall be included in the Periodic Report.

(i) Results of the performance test shall include the percentage of emissions reduction or outlet pollutant concentration reduction (whichever is needed to determine compliance) and the values of the monitored operating parameters.

(ii) The complete test report shall be maintained onsite.

(8) The owner or operator of a source shall submit quarterly reports for all emission points included in an emissions average.

(i) The quarterly reports shall be submitted no later than 60 calendar days after the end of each quarter. The first report shall be submitted with the Notification of Compliance Status report no later than 150 days after the compliance date specified in §63.640.

(ii) The quarterly reports shall include:

(A) The information specified in this paragraph and in paragraphs (g)(2) through (g)(7) of this section for all storage vessels and miscellaneous process vents included in an emissions average;

(B) The information required to be reported by §63.428 (h)(1), (h)(2), and (h)(3) for each gasoline loading rack included in an emissions average, unless this information has already been submitted in a separate report;

(C) The information required to be included in quarterly reports by §§63.567(f) and 63.567(i)(2) of subpart Y of this part for each marine tank vessel loading operation included in an emissions average, unless the information has already been submitted in a separate report;

(D) Any information pertaining to each wastewater stream included in an emissions average that the source is required to report under the Implementation Plan for the source;

(E) The credits and debits calculated each month during the quarter;

(F) A demonstration that debits calculated for the quarter are not more than 1.30 times the credits calculated for the quarter, as required under §§63.652(e)(4);

(G) The values of any inputs to the credit and debit equations in §63.652 (g) and (h) that change from month to month during the quarter or that have changed since the previous quarter; and

(H) Any other information the source is required to report under the Implementation Plan for the source.

(iii) Every fourth quarterly report shall include the following:

(A) A demonstration that annual credits are greater than or equal to annual debits as required by §63.652(e)(3); and

(B) A certification of compliance with all the emissions averaging provisions in §63.652 of this subpart.

(h) Other reports shall be submitted as specified in subpart A of this part and as follows:

(1) Reports of startup, shutdown, and malfunction required by §63.10(d)(5). Records and reports of startup, shutdown, and malfunction are not required if they pertain solely to Group 2 emission points, as defined in §63.641, that are not included in an emissions average. For purposes of this paragraph, startup and shutdown shall have the meaning defined in §63.641, and malfunction shall have the meaning defined in §63.2; and

(2) For storage vessels, notifications of inspections as specified in paragraphs (h)(2)(i) and (h)(2)(ii) of this section;

(i) In order to afford the Administrator the opportunity to have an observer present, the owner or operator shall notify the Administrator of the refilling of each Group 1 storage vessel that has been emptied and degassed.

(A) Except as provided in paragraphs (h)(2)(i) (B) and (C) of this section, the owner or operator shall notify the Administrator in writing at least 30 calendar days prior to filling or refilling of each storage vessel with organic HAP's to afford the Administrator the opportunity to inspect the storage vessel prior to refilling.

(B) Except as provided in paragraph (h)(2)(i)(C) of this section, if the internal inspection required by §§63.120(a)(2), 63.120(a)(3), or 63.120(b)(10) of subpart G of this part is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance of refilling the vessel with organic HAP's, the owner or operator shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel. Notification may be made by telephone and immediately followed by written documentation demonstrating why the inspection was unplanned. This notification, including the written documentation, may also be made in writing and sent so that it is received by the Administrator at least 7 calendar days prior to the refilling.

(C) The State or local permitting authority can waive the notification requirements of paragraphs (h)(2)(i)(A) and/or (h)(2)(i)(B) of this section for all or some storage vessels at petroleum refineries subject to this subpart. The State or local permitting authority may also grant permission to refill storage vessels sooner than 30 days after submitting the notification required by paragraph (h)(2)(i)(A) of this section, or sooner than 7 days after submitting the notification required by paragraph (h)(2)(i)(B) of this section for all storage vessels, or for individual storage vessels on a case-by-case basis.

(ii) In order to afford the Administrator the opportunity to have an observer present, the owner or operator of a storage vessel equipped with an external floating roof shall notify the Administrator of any seal gap measurements. The notification shall be made in writing at least 30 calendar days in advance of any gap measurements required by §63.120 (b)(1) or (b)(2) of subpart G of this part. The State or local permitting authority can waive this notification requirement for all or some storage vessels subject to the rule or can allow less than 30 calendar days' notice.

(3) For owners or operators of sources required to request approval for a nominal control efficiency for use in calculating credits for an emissions average, the information specified in §63.652(h).

(4) The owner or operator who requests approval to monitor a different parameter than those listed in §63.644 for miscellaneous process vents or who is required by §63.653(a)(8) to establish a site-specific monitoring parameter for a point in an emissions average shall submit the information specified in paragraphs (h)(4)(i) through (h)(4)(iii) of this section. For new or reconstructed sources, the information shall be submitted with the application for approval of construction or reconstruction required by §63.5(d) of subpart A and for existing sources, and the information shall be submitted no later than 18 months prior to the compliance

date. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal.

(i) A description of the parameter(s) to be monitored to determine whether excess emissions occur and an explanation of the criteria used to select the parameter(s).

(ii) A description of the methods and procedures that will be used to demonstrate that the parameter can be used to determine excess emissions and the schedule for this demonstration. The owner or operator must certify that they will establish a range for the monitored parameter as part of the Notification of Compliance Status report required in paragraphs (e) and (f) of this section.

(iii) The frequency and content of monitoring, recording, and reporting if: monitoring and recording are not continuous; or if periods of excess emissions, as defined in paragraph (g)(6) of this section, will not be identified in Periodic Reports required under paragraphs (e) and (g) of this section. The rationale for the proposed monitoring, recording, and reporting system shall be included.

(5) An owner or operator may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in paragraph (i) of this section.

(i) Requests shall be submitted with the Application for Approval of Construction or Reconstruction for new sources and no later than 18 months prior to the compliance date for existing sources. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal. Requests shall contain the information specified in paragraphs (h)(5)(iii) through (h)(5)(iv) of this section, as applicable.

(ii) The provisions in § 63.8(f)(5)(i) of subpart A of this part shall govern the review and approval of requests.

(iii) An owner or operator may request approval to use an automated data compression recording system that does not record monitored operating parameter values at a set frequency (for example, once every hour) but records all values that meet set criteria for variation from previously recorded values.

(A) The requested system shall be designed to:

(*1*) Measure the operating parameter value at least once every hour.

(*2*) Record at least 24 values each day during periods of operation.

(*3*) Record the date and time when monitors are turned off or on.

(*4*) Recognize unchanging data that may indicate the monitor is not functioning properly, alert the operator, and record the incident.

(*5*) Compute daily average values of the monitored operating parameter based on recorded data.

(B) The request shall contain a description of the monitoring system and data compression recording system including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all criteria of paragraph (h)(5)(iii)(A) of this section.

(iv) An owner or operator may request approval to use other alternative monitoring systems according to the procedures specified in § 63.8(f) of subpart A of this part.

(6) The owner or operator shall submit the information specified in paragraphs (h)(6)(i) through (h)(6)(iii) of this section, as applicable. For existing sources, this information shall be submitted in the initial Notification of Compliance Status report. For a new source, the information shall be submitted with the application for approval of construction or reconstruction required by § 63.5(d) of subpart A of this part. The information may be submitted in an operating permit application, in an amendment to an operating permit application, or in a separate submittal.

(i) The determination of applicability of this subpart to petroleum refining process units that are designed and operated as flexible operation units.

(ii) The determination of applicability of this subpart to any storage vessel for which use varies from year to year.

(iii) The determination of applicability of this subpart to any distillation unit for which use varies from year to year.

(i) *Recordkeeping.* (1) Each owner or operator subject to the storage vessel provisions in §63.646 shall keep the records specified in §63.123 of subpart G of this part except as specified in paragraphs (i)(1)(i) through (i)(1)(iv) of this section.

(i) Records related to gaskets, slotted membranes, and sleeve seals are not required for storage vessels within existing sources.

(ii) All references to §63.122 in §63.123 of subpart G of this part shall be replaced with §63.654(e).

(iii) All references to §63.150 in §63.123 of subpart G of this part shall be replaced with §63.652.

(iv) If a storage vessel is determined to be Group 2 because the weight percent total organic HAP of the stored liquid is less than or equal to 4 percent for existing sources or 2 percent for new sources, a record of any data, assumptions, and procedures used to make this determination shall be retained.

(2) Each owner or operator required to report the results of performance tests under paragraphs (f) and (g)(7) of this section shall retain a record of all reported results as well as a complete test report, as described in paragraph (f)(2)(ii) of this section for each emission point tested.

(3) Each owner or operator required to continuously monitor operating parameters under §63.644 for miscellaneous process vents or under §§63.652 and 63.653 for emission points in an emissions average shall keep the records specified in paragraphs (i)(3)(i) through (i)(3)(v) of this section unless an alternative recordkeeping system has been requested and approved under paragraph (h) of this section.

(i) The monitoring system shall measure data values at least once every hour.

(ii) The owner or operator shall record either:

(A) Each measured data value; or

(B) Block average values for 1 hour or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values.

(iii) Daily average values of each continuously monitored parameter shall be calculated for each operating day and retained for 5 years except as specified in paragraph (i)(3)(iv) of this section.

(A) The daily average shall be calculated as the average of all values for a monitored parameter recorded during the operating day. The average shall cover a 24-hour period if operation is continuous, or the number of hours of operation per day if operation is not continuous.

(B) The operating day shall be the period defined in the Notification of Compliance Status report. It may be from midnight to midnight or another daily period.

(iv) If all recorded values for a monitored parameter during an operating day are within the range established in the Notification of Compliance Status report, the owner or operator may record that all values were within the range and retain this record for 5 years rather than calculating and recording a daily average for that day. For these days, the records required in paragraph (i)(3)(ii) of this section shall also be retained for 5 years.

(v) Monitoring data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments shall not be included in any average computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating.

(4) All other information required to be reported under paragraphs (a) through (h) of this section shall be retained for 5 years.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, June 12, 1996; 63 FR 44141, Aug. 18, 1998]

§ 63.655 Implementation and enforcement.

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or Tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or Tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of U.S. EPA and cannot be transferred to the State, local, or Tribal agency.

(c) The authorities that cannot be delegated to State, local, or Tribal agencies are as specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to the requirements in §§ 63.640, 63.642(g) through (l), 63.643, and 63.646 through 63.652. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart. Where these standards reference another subpart and modify the requirements, the requirements shall be modified as described in this subpart. Delegation of the modified requirements will also occur according to the delegation provisions of the referenced subpart.

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f), as defined in § 63.90, and as required in this subpart.

(3) Approval of major alternatives to monitoring under § 63.8(f), as defined in § 63.90, and as required in this subpart.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f), as defined in § 63.90, and as required in this subpart.

EFFECTIVE DATE NOTE: At 68 FR 37351, June 23, 2003, § 63.655 was added effective August 22, 2003.

§§ 63.656–63.679 [Reserved]

APPENDIX TO SUBPART CC OF PART 63—TABLES

TABLE 1—HAZARDOUS AIR POLLUTANTS

Chemical name	CAS No.[a]
Benzene	71432
Biphenyl	92524
Butadiene (1,3)	10990
Carbon disulfide	75150
Carbonyl sulfide	463581
Cresol (mixed isomers[b])	1319773
Cresol (m-)	108394
Cresol (o-)	95487
Cresol (p-)	106445
Cumene	98828
Dibromoethane (1,2) (ethylene dibromide)	106934
Dichloroethane (1,2)	107062
Diethanolamine	111422
Ethylbenzene	100414
Ethylene glycol	107211
Hexane	110543
Methanol	67561
Methyl ethyl ketone (2-butanone)	78933
Methyl isobutyl ketone (hexone)	108101
Methyl tert butyl ether	1634044
Naphthalene	91203
Phenol	108952
Toluene	108883
Trimethylpentane (2,2,4)	540841
Xylene (mixed isomers[b])	1330207
xylene (m-)	108383
xylene (o-)	95476
xylene (p-)	106423

[a] CAS number = Chemical Abstract Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

[b] Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

TABLE 2—LEAK DEFINITIONS FOR PUMPS AND VALVES

Standard[a]	Phase	Leak definition (parts per million)
§ 63.163 (pumps)	I	10,000
	II	5,000
	III	2,000
§ 63.168 (valves)	I	10,000
	II	1,000
	III	1,000

[a] Subpart H of this part.

TABLE 3—EQUIPMENT LEAK RECORDKEEPING AND REPORTING REQUIREMENTS FOR SOURCES COMPLYING WITH § 63.648 OF SUBPART CC BY COMPLIANCE WITH SUBPART H OF THIS PART [a]

Reference (section of subpart H of this part)	Description	Comment
63.181(a)	Recordkeeping system requirements	Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).
63.181(b)	Records required for process unit equipment.	Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).
63.181(c)	Visual inspection documentation	Except for §§ 63.181(b)(2)(iii) and 63.181(b)(9).
63.181(d)	Leak detection record requirements	Except for § 63.181(d)(8).
63.181(e)	Compliance requirements for pressure tests for batch product process equipment trains.	This subsection does not apply to subpart CC.
63.181(f)	Compressor compliance test records.	
63.181(g)	Closed-vent systems and control device record requirements.	
63.181(h)	Process unit quality improvement program records.	
63.181(i)	Heavy liquid service determination record.	
63.181(j)	Equipment identification record.	
63.181(k)	Enclosed-vented process unit emission limitation record requirements.	
63.182(a)	Reports.	
63.182(b)	Initial notification report requirements.	Not required.
63.182(c)	Notification of compliance status report	Except in § 63.182(c); change "within 90 days of the compliance dates" to "within 150 days of the compliance dates"; except in §§ 63.182 (c)(2) and (c)(4).
63.182(d)	Periodic report	Except for §§ 63.182 (d)(2)(vii), (d)(2)(viii), and (d)(3).

[a] This table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 4—GASOLINE DISTRIBUTION EMISSION POINT RECORDKEEPING AND REPORTING REQUIREMENTS [a]

Reference (section of subpart R of this part)	Description	Comment
63.428(b)	Records of test results for each gasoline cargo tank loaded at the facility.	
63.428(c)	Continuous monitoring data recordkeeping requirements.	
63.428(g)(1)	Semiannual report loading rack information.	Required to be submitted with the periodic report required under 40 CFR part 63 subpart CC.
63.428 (h)(1) through (h)(3)	Excess emissions report loading rack information.	Required to be submitted with the periodic report required under 40 CFR part 63 subpart CC.

[a] This table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 5—MARINE VESSEL LOADING AND UNLOADING OPERATIONS RECORDKEEPING AND REPORTING REQUIREMENTS [a]

Reference (section of subpart Y of this part)	Description	Comment
63.565(a)	Performance test/site test plan	The information required under this paragraph is to be submitted with the notification of compliance status report required under 40 CFR part 63, subpart CC.
63.565(b)	Performance test data requirements.	
63.567(a)	General Provisions (subpart A) applicability	
63.567(c)	Vent system valve bypass recordkeeping requirements	

TABLE 5—MARINE VESSEL LOADING AND UNLOADING OPERATIONS RECORDKEEPING AND REPORTING REQUIREMENTS [a]—Continued

Reference (section of subpart Y of this part)	Description	Comment
63.567(d)	Continuous equipment monitoring recordkeeping requirements	
63.567(e)	Flare recordkeeping requirements	
63.567(f)	Quarterly report requirements	The information required under this paragraph is to be submitted with the periodic report required under 40 CFR part 63 subpart CC.
63.567(g)	Marine vessel vapor-tightness documentation	
63.567(h)	Documentation file maintenance	
63.567(i)	Emission estimation reporting and recordkeeping procedures	

[a] This table does not include all the requirements delineated under the referenced sections. See referenced sections for specific requirements.

TABLE 6—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC [a]

Reference	Applies to subpart CC	Comment
63.1(a)(1)	Yes	
63.1(a)(2)	Yes	
63.1(a)(3)	Yes	
63.1(a)(4)	No	Subpart CC (this table) specifies applicability of each paragraph in subpart A to subpart CC
63.1(a)(5)–63.1(a)(9)	No	
63.1(a)(10)	No	Subpart CC and other cross-referenced subparts specify calendar or operating day.
63.1(a)(11)	Yes	
63.1(a)(12)	Yes	
63.1(a)(13)	Yes	
63.1(a)(14)	Yes	
63.1(b)(1)	No	Subpart CC specifies its own applicability.
63.1(b)(2)	Yes	
63.1(b)(3)	No	
63.1(c)(1)	No	Subpart CC explicitly specifies requirements that apply.
63.1(c)(2)	No	Area sources are not subject to subpart CC.
63.1(c)(3)	No	
63.1(c)(4)	Yes	
63.1(c)(5)	Yes	Except that sources are not required to submit notifications overridden by this table.
63.1(d)	No	
63.1(e)	No	
63.2	Yes	§63.641 of subpart CC specifies that if the same term is defined in subparts A and CC, it shall have the meaning given in subpart CC.
63.3	No	Units of measure are spelled out in subpart CC.
63.4(a)(1)–63.4(a)(3)	Yes	
63.4(a)(4)	No	Reserved.
63.4(a)(5)	Yes	
63.4(b)	Yes	
63.4(c)	Yes	
63.5(a)(1)	Yes	Except replace term "source" and "stationary source" in §63.5(a)(1) of subpart A with "affected source."
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	
63.5(b)(2)	No	Reserved.
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	Except the cross-reference to §63.9(b) is changed to §63.9(b) (4) and (5). Subpart CC overrides §63.9 (b)(2) and (b)(3).
63.5(b)(5)	Yes	
63.5(b)(6)	Yes	
63.5(c)	No	Reserved.

TABLE 6—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC[a]—Continued

Reference	Applies to subpart CC	Comment
63.5(d)(1)(i)	Yes	Except that the application shall be submitted as soon as practicable before startup but no later than 90 days (rather than 60 days) after the promulgation date of subpart CC if the construction or reconstruction had commenced and initial startup had not occurred before the promulgation of subpart CC.
63.5(d)(1)(ii)	Yes	Except that for affected sources subject to subpart CC, emission estimates specified in § 63.5(d)(1)(ii)(H) are not required.
63.5(d)(1)(iii)	No	Subpart CC requires submittal of the notification of compliance status report in § 63.654(e).
63.5(d)(2)	No	
63.5(d)(3)	Yes	Except § 63.5(d)(3)(ii) does not apply.
63.5(d)(4)	Yes	
63.5(e)	Yes	
63.5(f)(1)	Yes	
63.5(f)(2)	Yes	Except that the "60 days" in the cross-referenced § 63.5(d)(1) is changed to "90 days," and the cross-reference to (b)(2) does not apply.
63.6(a)	Yes	
63.6(b)(1)	No	Subpart CC specifies compliance dates for sources subject to subpart CC.
63.6(b)(2)	No	
63.6(b)(3)	Yes	
63.6(b)(4)	No	May apply when standards are proposed under section 112(f) of the Clean Air Act.
63.6(b)(5)	No	§ 63.654(d) of subpart CC includes notification requirements.
63.6(b)(6)	No	
63.6(b)(7)	No	
63.6(c)(1)	No	§ 63.640 of subpart CC specifies the compliance date.
63.6(c)(2)–63.6(c)(4)	No	
63.6(c)(5)	Yes	
63.6(d)	No	
63.6(e)	Yes	Does not apply to Group 2 emission points.[b] The startup, shutdown, and malfunction plan specified in § 63.6(e)(3) is not required for wastewater operations that are not subject to subpart G of this part.
		Except that actions taken during a startup, shutdown, or malfunction that are not consistent with the startup, shutdown, and malfunction plan do not need to be reported within 2 and 7 days of commencing and completing the action, respectively, but must be included in the next periodic report.
63.6(f)(1)	Yes	
63.6(f)(2)(i)	Yes	
63.6(f)(2)(ii)	Yes	Subpart CC specifies the use of monitoring data in determining compliance with subpart CC.
63.6(f)(2)(iii) (A), (B), and (C)	Yes	
63.6(f)(2)(iii)(D)	No	
63.6(f)(2)(iv)	Yes	
63.6(f)(2)(v)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	
63.6(h) (1) and (2)	Yes	
63.6(h) (4) and (5)	No	Visible emission requirements and timing in subpart CC.
63.6(h)(6)	Yes	
63.6(h) (7) through (9)	No	Subpart CC does not require opacity standards.
63.6(i)	Yes	Except for § 63.6(i)(15), which is reserved.
63.6(j)	Yes	
63.7(a)(1)	No	Subpart CC specifies required testing and compliance demonstration procedures.
63.7(a)(2)	No	Test results must be submitted in the notification of compliance status report due 150 days after compliance date, as specified in § 63.654(d) of subpart CC.

TABLE 6—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC—Continued

Reference	Applies to subpart CC	Comment
63.7(a)(3)	Yes	
63.7(b)	No	
63.7(c)	No	
63.7(d)	Yes	
63.7(e)(1)	Yes	
63.7(e)(2)	Yes	
63.7(e)(3)	No	Subpart CC specifies test methods and procedures.
63.7(e)(4)	Yes	
63.7(f)	No	Subpart CC specifies applicable methods and provides alternatives.
63.7(g)	No	Performance test reporting specified in § 63.654(d).
63.7(h)(1)	Yes	
63.7(h)(2)	Yes	
63.7(h)(3)	Yes	Yes, except site-specific test plans shall not be required, and where § 63.7(g)(3) specifies submittal by the date the site-specific test plan is due, the date shall be 90 days prior to the notification of compliance status report in § 63.654(d).
63.7(h)(4)	No	
63.7(h)(5)	Yes	
63.8(a)	No	
63.8(b)(1)	Yes	
63.8(b)(2)	No	Subpart CC specifies locations to conduct monitoring.
63.8(b)(3)	Yes	
63.8(c)(1)(i)	Yes	
63.8(c)(1)(ii)	No	Addressed by periodic reports in § 63.654(e) of subpart CC.
63.8(c)(1)(iii)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	Except that verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system or other written procedures that provide adequate assurance that the equipment would monitor accurately.
63.8(c)(4)	No	Subpart CC specifies monitoring frequency in § 63.641 and § 63.654(g)(3) of subpart CC.
63.8(c)(5)–63.8(c)(8)	No	
63.8(d)	No	
63.8(e)	No	
63.8(f)(1)	Yes	
63.8(f)(2)	Yes	
63.8(f)(3)	Yes	
63.8(f)(4)(i)	No	Timeframe for submitting request is specified in § 63.654(f)(4) of subpart CC.
63.8(f)(4)(ii)	Yes	
63.8(f)(4)(iii)	No	
63.8(f)(5)(i)	Yes	
63.8(f)(5)(ii)	No	
63.8(f)(5)(iii)	Yes	
63.8(f)(6)	No	Subpart CC does not require continuous emission monitors.
63.8(g)	No	Subpart CC specifies data reduction procedures in § 63.654(h)(3).
63.9(a)	Yes	Except that the owner or operator does not need to send a copy of each notification submitted to the Regional Office of the EPA as stated in § 63.9(a)(4)(ii).
63.9(b)(1)(i)	No	Specified in § 63.654(d)(2) of subpart CC.
63.9(b)(1)(ii)	No	
63.9(b)(2)	No	An initial notification report is not required under subpart CC.
63.9(b)(3)	No	
63.9(b)(4)	Yes	Except that the notification in § 63.9(b)(4)(i) shall be submitted at the time specified in § 63.654(d)(2) of subpart CC.
63.9(b)(5)	Yes	Except that the notification in § 63.9(b)(5) shall be submitted at the time specified in § 63.654(d)(2) of subpart CC.

TABLE 6—GENERAL PROVISIONS APPLICABILITY TO SUBPART CC[a]—Continued

Reference	Applies to subpart CC	Comment
63.9(c)	Yes	
63.9(d)	Yes	
63.9(e)	No	
63.9(f)	No	
63.9(g)	No	
63.9(h)	No	Subpart CC § 63.652(d) specifies notification of compliance status report requirements.
63.9(i)	Yes	
63.9(j)	No	
63.10(a)	Yes	
63.10(b)(1)	No	§ 63.644(d) of subpart CC specifies record retention requirements.
63.10(b)(2)(i)	Yes	
63.10(b)(2)(ii)	Yes	
63.10(b)(2)(iii)	No	
63.10(b)(2)(iv)	Yes	
63.10(b)(2)(v)	Yes	
63.10(b)(2)(vi)–(ix)	No	
63.10(b)(2)(x)	Yes	
63.10(b)(2)(xii)–(xiv)	No	
63.10(b)(3)	No	
63.10(c)	No	
63.10(d)(1)	No	
63.10(d)(2)	No	§ 63.654(d) of subpart CC specifies performance test reporting.
63.10(d)(3)	No	
63.10(d)(4)	Yes	
63.10(d)(5)(i)	Yes[b]	Except that reports required by § 63.10(d)(5)(i) may be submitted at the same time as periodic reports specified in § 63.654(e) of subpart CC.
63.10(d)(5)(ii)	Yes	Except that actions taken during a startup, shutdown, or malfunction that are not consistent with the startup, shutdown, and malfunction plan do not need to be reported within 2 and 7 days of commencing and completing the action, respectively, but must be included in the next periodic report.
63.10(e)	No	
63.10(f)	Yes	
63.11–63.15	Yes	

[a] Wherever subpart A specifies "postmark" dates, submittals may be sent by methods other than the U.S. Mail (e.g., by fax or courier). Submittals shall be sent by the specified dates, but a postmark is not required.
[b] The plan, and any records or reports of startup, shutdown, and malfunction do not apply to Group 2 emission points.

TABLE 7—FRACTION MEASURED (F_m), FRACTION EMITTED (F_c), AND FRACTION REMOVED (FR) FOR HAP COMPOUNDS IN WASTEWATER STREAMS

Chemical name	CAS No.[a]	F_m	F_c	Fr
Benzene	71432	1.00	0.80	0.99
Biphenyl	92524	0.86	0.45	0.99
Butadiene (1,3-)	106990	1.00	0.98	0.99
Carbon disulfide	75150	1.00	0.92	0.99
Cumene	98828	1.00	0.88	0.99
Dichloroethane (1,2-) (Ethylene dichloride)	107062	1.00	0.64	0.99
Ethylbenzene	100414	1.00	0.63	0.99
Hexane	110543	1.00	1.00	0.99
Methanol	87561	0.85	0.17	0.31
Methyl ethyl ketone (2-Butanone)	78933	0.99	0.48	0.95
Methyl isobutyl ketone (Hexone)	108101	0.98	0.53	0.99
Methyl tert-butyl ether	1634044	1.00	0.57	0.99
Naphthalene	91203	0.99	0.51	0.99
Trimethylpentane (2,2,4-)	540841	1.00	1.00	0.99
Xylene (m-)	108383	1.00	0.82	0.99
Xylene (o-)	95478	1.00	0.79	0.99
Xylene (p-)	106423	1.00	0.82	0.99

[a] CAS numbers refer to the Chemical Abstracts Service registry number assigned to specific compounds, isomers, or mixtures of compounds.

TABLE 8—VALVE MONITORING FREQUENCY FOR PHASE III

Performance level Leaking valves [a] (%)	Valve monitoring frequency
≥4	Monthly or QIP.[b]
<4	Quarterly.
<3	Semiannual.
<2	Annual.

[a] Percent leaking valves is calculated as a rolling average of two consecutive monitoring periods.
[b] QIP=Quality improvement program. Specified in § 63.175 of subpart H of this part.

TABLE 9—VALVE MONITORING FREQUENCY FOR ALTERNATIVE

Performance level Leaking valves [a] (%)	Valve monitoring frequency under § 63.649 alternative
≥5	Monthly or QIP.[b]
<5	Quarterly.
<4	Semiannual.
<3	Annual.

[a] Percent leaking valves is calculated as a rolling average of two consecutive monitoring periods.
[b] QIP=Quality improvement program. Specified in § 63.175 of subpart H of this part.

TABLE 10—MISCELLANEOUS PROCESS VENTS—MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME

Control device	Parameters to be monitored [a]	Recordkeeping and reporting requirements for monitored parameters
Thermal incinerator	Firebox temperature [b] (63.644(a)(1)(i)).	1. Continuous records [c]. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS [d]. 3. Record the daily average firebox temperature for each operating day [e]. 4. Report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected [f]—PR [g].
Catalytic incinerator	Temperature upstream and downstream of the catalyst bed (63.644(a)(1)(ii)).	1. Continuous records [c]. 2. Record and report the upstream and downstream temperatures and the temperature difference across the catalyst bed averaged over the full period of the performance test—NCS [d]. 3. Record the daily average upstream temperature and temperature difference across the catalyst bed for each operating day [e]. 4. Report all daily average upstream temperatures that are outside the range established in the NCS or operating permit—PR [g]. 5 Report all daily average temperature differences across the catalyst bed that are outside the range established in the NCS or operating permit—PR [g]. 6. Report all operating days when insufficient monitoring data are collected [f].
Boiler or process heater with a design heat capacity less than 44 megawatts where the vent stream is *not* introduced into the flame zone [h,i].	Firebox temperature [b] (63.644(a)(4)).	1. Continuous records [c]. 2. Record and report the firebox temperature averaged over the full period of the performance test—NCS [d]. 3. Record the daily average firebox temperature for each operating day [e]. 4. Report all daily average firebox temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected [f]—PR [g].

TABLE 10—MISCELLANEOUS PROCESS VENTS—MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS FOR COMPLYING WITH 98 WEIGHT-PERCENT REDUCTION OF TOTAL ORGANIC HAP EMISSIONS OR A LIMIT OF 20 PARTS PER MILLION BY VOLUME—Continued

Control device	Parameters to be monitored[a]	Recordkeeping and reporting requirements for monitored parameters
Flare	Presence of a flame at the pilot light (63.644(a)(2)).	1. Hourly records of whether the monitor was continuously operating and whether a pilot flame was continuously present during each hour. 2. Record and report the presence of a flame at the pilot light over the full period of the compliance determination—NCS[d]. 3. Record the times and durations of all periods when all pilot flames for a flare are absent or the monitor is not operating. 4. Report the times and durations of all periods when all pilot flames for a flare are absent or the monitor is not operating.
All control devices	Presence of flow diverted to the atmosphere from the control device (63.644(c)(1)) or.	1. Hourly records of whether the flow indicator was operating and whether flow was detected at any time during each hour. 2. Record and report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor is not operating—PR[g].
	Monthly inspections of sealed valves [63.644(c)(2)].	1. Records that monthly inspections were performed. 2. Record and report all monthly inspections that show the valves are not closed or the seal has been changed—PR[g].

[a] Regulatory citations are listed in parentheses.
[b] Monitor may be installed in the firebox or in the ductwork immediately downstream of the firebox before any substantial heat exchange is encountered.
[c] "Continuous records" is defined in §63.641.
[d] NCS = Notification of compliance status report described in §63.654.
[e] The daily average is the average of all recorded parameter values for the operating day. If all recorded values during an operating day are within the range established in the NCS or operating permit, a statement to this effect can be recorded instead of the daily average.
[f] When a period of excess emission is caused by insufficient monitoring data, as described in §63.654(g)(6)(i) (C) or (D), the duration of the period when monitoring data were not collected shall be included in the Periodic Report.
[g] PR = Periodic Reports described in §63.654(g).
[h] No monitoring is required for boilers and process heaters with a design heat capacity ≥44 megawatts or for boilers and process heaters where all vent streams are introduced into the flame zone. No recordkeeping or reporting associated with monitoring is required for such boilers and process heaters.
[i] Process vents that are routed to refinery fuel gas systems are not regulated under this subpart. No monitoring, recordkeeping, or reporting is required for boilers and process heaters that combust refinery fuel gas.

[60 FR 43260, Aug. 18, 1995, as amended at 61 FR 29881, 29882, June 12, 1996; 63 FR 44142, 44143, Aug. 18, 1998]

Subpart DD—National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations

SOURCE: 61 FR 34158, July 1, 1996, unless otherwise noted.

§63.680 Applicability and designation of affected sources.

(a) The provisions of this subpart apply to the owner and operator of a plant site for which both of the conditions specified in paragraphs (a)(1) and (a)(2) of this section are applicable. If either one of these conditions does not apply to the plant site, then the owner and operator of the plant site are not subject to the provisions of this subpart.

(1) The plant site is a major source of hazardous air pollutant (HAP) emissions as defined in 40 CFR 63.2.

(2) At the plant site is located one or more of operations that receives off-site materials as specified in paragraph (b) of this section and the operations is one of the following waste management operations or recovery operations as specified in paragraphs (a)(2)(i) through (a)(2)(vi) of this section.

(i) A waste management operation that receives off-site material and the operation is regulated as a hazardous waste treatment, storage, and disposal facility (TSDF) under either 40 CFR part 264 or part 265.

Appendix I

40 CFR 63, Subpart CC Equipment List

Sinclair

RECEIVED
ENGINEERING DEPT.
SEP 19 2000

September 12, 2000

Certified Mail
Return Receipt #7000 0520 0017 1067 2936

Brian Bohlmann
Air Quality Division
Wyoming Department of Environmental Quality
Herschler Building
122 West 25th Street
Cheyenne, WY 82002

Re: MACT 1 Semi-Annual Report

In accordance with 40 CFR 63.654 (g), Periodic Reports, the following information is being provided for the period of January 16, 2000 through July 15, 2000.

- **Storage Vessels**
  As required by 40 CFR 63.654 (g)(1), Table 1 summarizes the status of all storage vessels that have been classified as Group 1 under 40 CFR 63.646. Listed are tank number, compliance method, primary seal test results, secondary seal test results, tank compliance status, seal gap measurement date, seal problems, and anticipated compliance date. At this point, there are twenty-two tanks awaiting maintenance for compliance as allowed by 40 CFR 63.640 (h)(4). Tank 530 and Tank 521 are out of service and currently under maintenance.

- **Group 1 Miscellaneous Process Vents**
  As required by 40 CFR 63.654 (g)(6), Table 2 summarizes the compliance status for process vents. The Loading Rack Incinerator Flare, 582 Vacuum Tower, and 583 Vacuum Tower were not out of compliance at any time during the period. The 581 and 582 Crude Unit Overhead Accumulators were in compliance, although for one 24-hour period, the reporting was unavailable for the Refinery Flare. For all other days during the period, reporting availability exceeded 75%.

  All incidences of startups, shutdowns or malfunctions during the period were outlined in the Startup, Shutdown, Malfunction Plan and all actions taken were consistent with the Plan as required by 40 CFR 63.6 (e)(3)(iii).

- Refinery Flare
  Table 2 also lists the date and duration that the reporting was not available for the control device. There were24 hours attributed to unavailable reporting.

  There were no incidences during the period when the pilot flames of the flare were absent for an operating day. Therefore, the Startup, Shutdown, Malfunction Plan was not implemented and all actions taken were consistent with the Plan as required by 40 CFR 63.6 (e)(3)(iii).

- Group 2 Miscellaneous Process Vent Inventory
  As required by 40 CFR 63.654 (f)(1)(ii), the Group 2 Miscellaneous Process Vents have been identified and are listed as Table 3. As this list will be under continual review and modification, it is being included as part of the Semi-Annual Report.

In conclusion, the tank seal repairs are continuing with current maintenance activities directed at Tanks 530 and 521. All process vents were in compliance throughout the period except for time attributed to a lack of hourly reporting of flare operation. If there are any questions or concerns, please contact Jack Wellman of my staff at (307) 328-3532.

Sincerely,

G. L. Lorimor
Refinery Manager

cc: S. Greene
J. Wellman
A. Connell

Sinclair Oil Corporation

P.O. BOX 277, SINCLAIR, WYOMING 82334
AREA CODE (307) 324-3404

Table 1

Sinclair Oil Corporation - Sinclair Refinery

Refinery Tankage Seal Compliance Status
January 16, 2000 to July 15, 2000

Tank Number	Report Group Class	Roof Type/ Compliance Method	CFR Reference	Primary Seal* Tested	Secondary Seal* Tested	Compliance Status (OUT or IN) as of: 7/15/00	Primary Seal Measurement Date	Secondary Seal Measurement Date	Seal Problems	Anticipated Compliance Date of Tank
203	1	EFR	MACT	Good	None	OUT	7/21/98	7/21/98	Needs secondary	2002
205	1	EFR	MACT	Unk	Unk	OUT			Needs seal inspection and repair	2005
206	1	EFR	MACT	Bad	Bad	OUT	7/20/98	7/20/98	Both-Gaps too wide	2004
208	1	EFR	MACT	Good	None	OUT	7/20/98	7/20/98	Needs secondary	2002
209	1	EFR	MACT	Good	None	OUT	7/20/98	7/20/98	Needs secondary	2000
306	1	EFR	MACT	Bad	None	OUT	7/22/98	7/22/98	Holes & wide gaps/Needs secondary	2004
310	1	EFR	MACT	Bad	Bad	OUT	8/17/98	8/17/98	1 tear in secondary-1 gap @ expansion joint	2001
312	1	EFR	MACT	Bad	Good	OUT	8/17/98	8/17/98	1-4"x4' taper in primary	2001
313	1	EFR	MACT	Good	None	OUT	7/21/98	7/21/98	Needs secondary	2002
406	1	EFR	MACT	Bad	None	OUT	7/22/98	7/22/98	6-2"x1.5'expansion joints/Needs secondary	2003
507	1	EFR	MACT	Bad	None	OUT	7/21/98	7/21/98	Needs new primary seal/Needs secondary	2004
510	1	EFR	MACT	Good	Bad	OUT	7/22/98	7/22/98	Needs small tears fixed in secondary	2001
513	1	EFR	MACT	Bad	None	OUT	7/22/98	7/22/98	Primary condemned from top/Needs secondary	2004
515	1	EFR	MACT	Good	None	OUT	7/22/98	7/22/98	Needs secondary	2003
516	1	EFR	MACT	Bad	Good	OUT	7/20/98	7/20/98	Gaps too wide in primary	2002
518	1	EFR	MACT	Good	None	OUT	7/20/98	7/20/98	Needs secondary	2003
519	1	EFR	MACT	Bad	None	OUT	7/23/98	7/23/98	1-4"x4" hole in fabric/Needs secondary	2003
522	1	EFR	MACT	Good	None	OUT	7/23/98	7/23/98	Needs secondary	2002
531	1	EFR	MACT	Bad	Bad	OUT	7/31/98	7/31/98	Gaps too wide in primary/ tears in secondary	2004
532	1	EFR	MACT	Bad	None	OUT	7/22/98	7/22/98	2-gaps too wide in primary/ Needs secondary	2003
521**	1	EFR	MACT	Bad	None	OUT	7/22/98	7/22/98	Idle	2001
530**	1	EFR	MACT	Bad	Bad	OUT	7/22/98	7/22/98	Idle	2001
302	1	EFR	MACT	Good	Good	IN	7/20/98	8/18/99		
303	1	EFR	MACT	Good	Good	IN	7/22/98	8/18/99		
308	1	IFR	MACT	Good	Good	IN	8/18/99	8/18/99		
407	1	EFR	Kb	Good	Good	IN	8/25/99	8/25/99		
408	1	EFR	Kb	Good	Good	IN	3/16/99	3/15/00		
409	1	EFR	Kb	Good	Good	IN	3/15/00	3/15/00		
514	1	EFR	MACT	Good	Good	IN	7/22/99	8/18/99		
517	1	EFR	MACT	Good	Good	IN	7/20/99	8/18/99		
520	1	EFR	MACT	Good	Good	IN	7/23/98	8/18/99		

* Actual seal gap measurements are on record in the Environmental Air Department

** Tanks 521 and 530 are currently under repair

Table 2

Sinclair Oil Corporation - Sinclair Refinery

Refinery Process Vent Compliance Status
January 16, 2000 to July 15, 2000

Vent	Group	Control Device	Normal Operation/ Compliance	Any Out-of-Compliance	Date	Hours Out-of-Compliance	Description
Light Oil Loading Rack Incinerator Flare*	1	Incinerator Flare	In	No		0	
582 Vacuum Tower**	1	582 Vacuum Heater	In	No		0	
583 Vacuum Tower**	1	583 Vacuum Heater	In	No		0	
581 Crude Unit Overhead Accumulator	1	Refinery Flare	In	Yes	04/14/00	24	missing daily Flare Compliance Log
582 Crude Unit Overhead Accumulator	1	Refinery Flare	In	Yes	04/14/00	24	missing daily Flare Compliance Log

* 63.644(a)(2) Does not need to be monitored because flare has a thermocouple to detect pilot flame.
Loading system must sense a pilot flame to operate.

** 63.644(a)(3) Does not need to be monitored because stream is being introduced into the flame zone.

Table 3

Sinclair Oil Corporation - Sinclair Refinery

Group 2 Miscellaneous Process Vent Inventory

Vent #	Location	Description
1	Tank Farm	Portable Red Dye Tote Vent
2	Tank Farm	PV-125 Corrosion Inhibitor Tank Vent
3	Tank Farm	PV-126 Metal Deactivator Tank Vent
4	Tank Farm	PV-127 Corrosion Inhibitor Tank Vent
5	Tank Farm	PV-129 Purple Dye Tank Vent
6	Tank Farm	PV-128 Bronze Dye Tank Vent
7	Tank Farm	PV-611A Red Dye Tank Vent
8	Tank Farm	Tank 404 LCO Natural Gas Blanketing
9	Light Oil Rack	Red Dye Tank
10	Light Oil Rack	Sinclair Additive Tank
11	Light Oil Rack	Conoco Additive Tank
12	Light Oil Rack	Amoco Additive Tank
13	Light Oil Rack	Exxon Additive Tank
14	Light Oil Rack	Texaco Additive Tank
15	581 Crude Unit	Filmer Tank Vent
16	581 Crude Unit	Neutralizer Tank Vent
17	Boilerhouse	Fuel Gas Vent (PCV and FCV)
18	Boilerhouse	Fire Pump Diesel Fuel Tank Vent & Sight Glass
19	Boilerhouse	Tank 34 Boiler Diesel Fuel Storage Vent
20	River Pump Station	Tank 22 Diesel Fuel Storage
21	Asphalt Plant	Asphalt Wetting Tank
22	Asphalt Plant	Test Tank Vent
23	780 FCC	J1 Blower Oil Reservoir Vent
24	780 FCC	J1A Blower Oil Reservoir Vent
25	780 FCC	Fractionator Reflux Drum OH Vent
26	780 FCC	Compressor KO Drum Vent
27	780 FCC	PV-812 Atmospheric Hydraulic Drum Vent
28	LEF	PV-406 LEF Bottoms Surge Drum PCV
29	Reformer	Compressor Lube Oil Degasser Vent
30	Amine Unit	Amine Tank Vent
31	Amine Unit	Amine Sump Vent
32	582 Crude Unit	Demulsifier Storage Tank Vent
33	582 Crude Unit	Antifoulant Storage Tank Vent
34	582 Crude Unit	Methanol Storage Tank Vent
35	582 Cooling Tower	Spent Sulfuric Acid Tank Vent
36	Alkylation Unit	PV-668 & PV-669 Caustic Surge Drum Vent
37	Alkylation Unit	Refrig Compressor Lube Oil Reservoir Vent
38	Alkylation Unit	PV-2043 Seal Oil Tank Vent
39	Alkylation Unit	PV-2044 Seal Oil Tank Vent
40	Alkylation Unit	PV-2041 Seal Oil Tank Vent
41	Alkylation Unit	PV-2042 Seal Oil Tank Vent
42	Gasoil Hydrotreater	C-101 Compressor Cylinder Vents
43	Gasoil Hydrotreater	C-101 Compressor Cylinder Vents
44	Gasoil Hydrotreater	C-102 Compressor Cylinder Vents
45	Gasoil Hydrotreater	C-102 Compressor Cylinder Vents

Appendix J

40 CFR 63 Subpart UUU

Subpart UUU – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

What This Subpart Covers

63.1560 What is the purpose of this subpart?

63.1561 Am I subject to this subpart?

63.1562 What parts of my plant are covered by this subpart?

63.1563 When do I have to comply with this subpart?

Catalytic Cracking Units, Catalytic Reforming Units, Sulfur Recovery Units, and Bypass Lines

63.1564 What are my requirements for metal HAP emissions from catalytic cracking units?

63.1565 What are my requirements for organic HAP emissions from catalytic cracking units?

63.1566 What are my requirements for organic HAP emissions from catalytic reforming units?

63.1567 What are my requirements for inorganic HAP emissions from catalytic reforming units?

63.1568 What are my requirements for HAP emissions from sulfur recovery units?

63.1569 What are my requirements for HAP emissions from bypass lines?

General Compliance Requirements

63.1570 What are my general requirements for complying with this subpart?

63.1571 How and when must I conduct a performance test or other initial compliance demonstration?

63.1572 What are my monitoring installation, operation, and maintenance requirements?

63.1573 What are my monitoring alternatives?

Notifications, Reports, and Records

63.1574 What notifications must I submit and when?

63.1575 What reports must I submit and when?

63.1576 What records must I keep, in what form, and for how long?

Other Requirements and Information

63.1577 What parts of the General Provisions apply to me?

63.1578 Who implements and enforces this subpart?

63.1579 What definitions apply to this subpart?

Tables

Table 1 to Subpart UUU of Part 63--Metal HAP Emission Limits for Catalytic Cracking Units

Table 2 to Subpart UUU of Part 63– Operating Limits for Metal HAP Emissions from Catalytic Cracking Units

Table 3 to Subpart UUU of Part 63– Continuous Monitoring Systems for Metal HAP Emissions from Catalytic Cracking Units

Table 4 to Subpart UUU of Part 63– Requirements for Performance Tests for Metal HAP Emissions from Catalytic Cracking Units Not Subject to the New Source Performance Standard (NSPS) for Particulate Matter (PM)

Table 5 to Subpart UUU of Part 63– Initial Compliance with Metal HAP Emission Limits for Catalytic Cracking Units

Table 6 to Subpart UUU of Part 63– Continuous Compliance with Metal HAP Emission Limits for Catalytic Cracking Units

Table 7 to Subpart UUU of Part 63– Continuous Compliance with Operating Limits for Metal HAP Emissions from Catalytic Cracking Units

Table 8 to Subpart UUU of Part 63– Organic HAP Emission Limits for Catalytic Cracking Units

Table 9 to Subpart UUU of Part 63– Operating Limits for Organic HAP Emissions from Catalytic Cracking Units

Table 10 to Subpart UUU of Part 63– Continuous Monitoring Systems for Organic HAP Emissions from Catalytic Cracking Units

Table 11 to Subpart UUU of Part 63– Requirements for Performance Tests for Organic HAP Emissions from Catalytic Cracking Units Not Subject to the New Source Performance Standard (NSPS) for Carbon Monoxide (CO)

Table 12 to Subpart UUU of Part 63– Initial Compliance with Organic HAP Emission Limits for Catalytic Cracking Units

Table 13 to Subpart UUU of Part 63– Continuous Compliance with Organic HAP Emission Limits for Catalytic Cracking Units

Table 14 to Subpart UUU of Part 63– Continuous Compliance with Operating Limits for Organic HAP Emissions from Catalytic Cracking Units

Table 15 to Subpart UUU of Part 63– Organic HAP Emission Limits for Catalytic Reforming Units

Table 16 to Subpart UUU of Part 63– Operating Limits for Organic HAP Emissions from Catalytic Reforming Units

Table 17 to Subpart UUU of Part 63– Continuous Monitoring Systems for Organic HAP Emissions from Catalytic Reforming Units

Table 18 to Subpart UUU of Part 63– Requirements for Performance Tests for Organic HAP Emissions from Catalytic Reforming Units

Table 19 to Subpart UUU of Part 63– Initial Compliance with Organic HAP Emission Limits for Catalytic Reforming Units

Table 20 to Subpart UUU of Part 63– Continuous Compliance with Organic HAP Emission Limits for Catalytic Reforming Units

Table 21 to Subpart UUU of Part 63– Continuous Compliance with Operating Limits for Organic HAP Emissions from Catalytic Reforming Units

Table 22 to Subpart UUU of Part 63– Inorganic HAP Emission Limits for Catalytic Reforming Units

Table 23 to Subpart UUU of Part 63– Operating Limits for Inorganic HAP Emission Limitations for Catalytic Reforming Units

Table 24 to Subpart UUU of Part 63– Continuous Monitoring Systems for Inorganic HAP Emissions from Catalytic Reforming Units

Table 25 to Subpart UUU of Part 63– Requirements for Performance Tests for Inorganic HAP Emissions from Catalytic Reforming Units

Table 26 to Subpart UUU of Part 63– Initial Compliance with Inorganic HAP Emission Limits for Catalytic Reforming Units

Table 27 to Subpart UUU of Part 63– Continuous Compliance with Inorganic HAP Emission Limits for Catalytic Reforming Units

Table 28 to Subpart UUU of Part 63– Continuous Compliance with Operating Limits for Inorganic HAP Emissions from Catalytic Reforming Units

Table 29 to Subpart UUU of Part 63– HAP Emission Limits for Sulfur Recovery Units

Table 30 to Subpart UUU of Part 63– Operating Limits for HAP Emissions from Sulfur Recovery Units

Table 31 to Subpart UUU of Part 63– Continuous Monitoring Systems for HAP Emissions from Sulfur Recovery Units

Table 32 to Subpart UUU of Part 63– Requirements for Performance Tests for HAP Emissions from Sulfur Recovery Units Not Subject to the New Source Performance Standards (NSPS) for Sulfur Oxides

Table 33 to Subpart UUU of Part 63– Initial Compliance with HAP Emission Limits for Sulfur Recovery Units

Table 34 to Subpart UUU of Part 63–

Continuous Compliance with HAP Emission Limits for Sulfur Recovery Units

Table 35 to Subpart UUU of Part 63– Continuous Compliance with Operating Limits for HAP Emissions from Sulfur Recovery Units

Table 36 to Subpart UUU of Part 63– Work Practice Standards for HAP Emissions from Bypass Lines

Table 37 to Subpart UUU of Part 63– Requirements for Performance Tests for Bypass Lines

Table 38 to Subpart UUU of Part 63– Initial Compliance with Work Practice Standards for HAP Emissions from Bypass Lines

Table 39 to Subpart UUU of Part 63– Continuous Compliance with Work Practice Standards for HAP Emissions from Bypass Lines

Table 40 to Subpart UUU of Part 63– Requirements for Installation, Operation, and Maintenance of Continuous Opacity Monitoring Systems and Continuous Emission Monitoring Systems

Table 41 to Subpart UUU of Part 63– Requirements for Installation, Operation, and Maintenance of Continuous Parameter Monitoring Systems

Table 42 to Subpart UUU of Part 63– Additional Information for Initial Notification of Compliance Status

Table 43 to Subpart UUU of Part 63– Requirements for Reports

Table 44 to Subpart UUU of Part 63– Applicability of NESHAP General Provisions to Subpart UUU

What This Subpart Covers

§ 63.1560 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (HAP) emitted from petroleum refineries. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

§ 63.1561 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a petroleum refinery that is located at a major source of HAP emissions.

(1) A petroleum refinery is an establishment engaged primarily in petroleum refining as defined in the Standard Industrial Classification (SIC) code 2911 and the North American Industry Classification (NAIC) code 32411, and used mainly for:

(i) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants;

(ii) Separating petroleum; or

(iii) Separating, cracking, reacting, or reforming an intermediate petroleumstream, or recovering a by-product(s) from the intermediate petroleum stream (e.g., sulfur recovery).

(2) A major source of HAP is a plant site that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more per year or any combination of HAP at a rate of 22.68 megagrams (25 tons) or more per year.

(b) [Reserved]

§ 63.1562 What parts of my plant are covered by this subpart?

(a) This subpart applies to each new, reconstructed, or existing affected source at a petroleum refinery.

(b) The affected sources are:

(1) Each catalytic cracking unit that regenerates catalyst.

(2) Each catalytic reforming unit that regenerates catalyst.

(3) Each sulfur recovery unit and the tail gas treatment unit serving it.

(4) Each bypass line serving a new, existing, or reconstructed catalytic cracking unit, catalytic reforming unit, or sulfur recovery unit. This means each vent system that contains a bypass line (e.g., ductwork) that could divert an affected vent stream away from a control device used to comply with the requirements of this subpart.

(c) An affected source is a new affected source if you commence construction of the affected source after September 11, 1998, and you meet the applicability criteria in §63.1561 at the time you commenced construction.

(d) Any affected source is reconstructed if you meet the criteria in §63.2.

(e) An affected source is existing if it is not new or reconstructed.

(f) This subpart does not apply to:

(1) A thermal catalytic cracking unit.

(2) A sulfur recovery unit that does not recover elemental sulfur or where the modified reaction is carried out in a water solution which contains a metal ion capable of oxidizing the sulfide ion to sulfur (e.g., the LO-CAT II process).

(3) A redundant sulfur recovery unit not located at a petroleum refinery and used by the refinery only for emergency or maintenance backup.

(4) Equipment associated with bypass lines such as low leg drains, high point bleed, analyzer vents, open-ended valves or lines, or pressure relief valves needed for safety reasons.

(5) Gaseous streams routed to a fuel gas system.

§ 63.1563 When do I have to comply with this subpart?

(a) If you have a new or reconstructed affected source, you must comply with this subpart according to the requirements in paragraphs (a)(1) and (2) of this section.

(1) If you startup your affected source before April 11, 2002, then you must comply with the emission limitations and work practice standards for new and reconstructed sources in this subpart no later than April 11, 2002.

(2) If you startup your affected source after April 11, 2002, you must comply with the emission limitations and work practice standards for new and reconstructed sources in this subpart upon startup of your affected source.

(b) If you have an existing affected source, you must comply with the emission limitations and work practice standards for existing affected sources in this subpart by no later than April 11, 2005 except as specified in paragraph (c) of this section.

(c) We will grant an extension of compliance for an existing catalytic cracking unit allowing additional time to meet the emission limitations and work practice standards for catalytic cracking units in §§63.1564 and 63.1565 if you commit to hydrotreating the catalytic cracking unit feedstock and to meeting the emission limitations of this subpart on the same date that your facility meets the final Tier 2 gasoline sulfur control standard (40 CFR part 80, subpart J). To obtain an extension, you must submit a written notification to your permitting authority according to the requirements in §63.1574(e). Your notification must include the information in paragraphs (c)(1) and (2) of this section.

(1) Identification of the affected source with a brief description of the controls to be installed (if needed) to comply with the emission limitations for catalytic cracking units in this subpart.

(2) A compliance schedule, including the information in paragraphs (c)(2)(i) through (iv) of this section.

(i) The date by which onsite construction or the process change is to be initiated.

(ii) The date by which onsite construction or the process change is to be completed.

(iii) The date by which your facility will achieve final compliance with both the final Tier 2 gasoline sulfur control standard as specified in §80.195, and the emission limitations and work practice standards for catalytic cracking units in this subpart. In no case will your permitting authority grant an extension beyond the date you are required to meet the Tier 2 gasoline sulfur control standard or December 31, 2009, whichever comes first. If you don't comply with the

emission limitations and work practice standards for existing catalytic cracking units by the specified date, you will be out-of-compliance with the requirements for catalytic cracking units beginning April 11, 2005.

(iv) A brief description of interim emission control measures that will be taken to ensure proper operation and maintenance of the process equipment during the period of the compliance extension.

(d) If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the requirements in paragraphs (d)(1) and (2) of this section apply.

(1) Any portion of the existing facility that is a new affected source or a new reconstructed source must be in compliance with the requirements of this subpart upon startup.

(2) All other parts of the source must be in compliance with the requirements of this subpart by no later than 3 years after it becomes a major source or, if applicable, the extended compliance date granted according to the requirements in paragraph (c) of this section.

(e) You must meet the notification requirements in §63.1574 according to the schedule in §63.1574 and in 40 CFR part 63, subpart A. Some of the notifications must be submitted before the date you are required to comply with the emission limitations and work practice standards in this subpart.

Catalytic Cracking Units, Catalytic Reforming Units, Sulfur Recovery Units, and Bypass Lines

§ 63.1564 What are my requirements for metal HAP emissions from catalytic cracking units?

(a) *What emission limitations and work practice standards must I meet?*

You must:

(1) Meet each emission limitation in Table 1 of this subpart that applies to you. If your catalytic cracking unit is subject to the NSPS for PM in §60.102 of this chapter, you must meet the emission limitations for NSPS units. If your catalytic cracking unit isn't subject to the NSPS for PM, you can choose from the four options in paragraphs (a)(1)(i) through (iv) of this section:

(i) You can elect to comply with the NSPS requirements (Option 1);

(ii) You can elect to comply with the PM emission limit (Option 2);

(iii) You can elect to comply with the Nickel (Ni) lb/hr emission limit (Option 3); or

(iv) You can elect to comply with the Ni lb/1,000 lbs of coke burn-off emission limit (Option 4).

(2) Comply with each operating limit in Table 2 of this subpart that applies to you.

(3) Prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.

(4) The emission limitations and operating limits for metal HAP emissions from catalytic cracking units required in paragraphs (a)(1) and (2) of this section do not apply during periods of planned maintenance preapproved by the applicable permitting authority according to the requirements in §63.1575(j).

(b) How do I demonstrate initial compliance with the emission limitations and work practice standard? You must:

(1) Install, operate, and maintain a continuous monitoring system(s) according to the requirements in §63.1572 and Table 3 of this subpart.

(2) Conduct a performance test for each catalytic cracking unit not subject to the NSPS for PM according to the requirements in §63.1571 and under the conditions specified in Table 4 of this subpart.

(3) Establish each site-specific operating limit in Table 2 of this subpart that applies to you according to the procedures in Table 4 of this subpart.

(4) Use the procedures in paragraphs (b)(4)(i) through (iv) of this section to determine initial compliance with the emission limitations.

(i) If you elect Option 1 in paragraph (a)(1)(i) of ths section, the NSPS requirements, compute the PM emission rate (lb/1,000 lbs of coke burn-off) for each run using Equations 1, 2, and 3 (if applicable) of this section as follows:

$$R_c = K_1 Q_r(\%CO_2 + \%CO) + K_2 Q_a - K_3 Q_r[(\%CO/2) + \%CO_2 + \%O_2] + K_3 Q_{oxy}(\%O_{xy}) \quad \text{(Eq. 1)}$$

Where:

Rc = Coke burn-off rate, kg/hr (lb/hr);

Qr = Volumetric flow rate of exhaust gas from catalyst regenerator before adding air or gas streams. Example: You may measure after an electrostatic precipitator, but you must measure before a carbon monoxide boiler, dscm/min (dscf/min);

Qa = Volumetric flow rate of air to catalytic cracking unit catalyst regenerator, as determined from instruments in the catalytic cracking unit control room, dscm/min (dscf/min);

$\%CO_2$ = Carbon dioxide concentration in regenerator exhaust, percent by volume (dry basis);

%CO = Carbon monoxide concentration in regenerator exhaust, percent by volume (dry basis);

$\%O_2$ = Oxygen concentration in regenerator exhaust, percent by volume (dry basis);

K_1 = Material balance and conversion factor, 0.2982 (kg-min)/(hr-dscm-%) (0.0186 (lb-min)/(hr-dscf-%));

K_2 = Material balance and conversion factor, 2.088 (kg-min)/(hr-dscm) (0.1303 (lb-min)/(hr-dscf));

K_3 = Material balance and conversion factor, 0.0994 (kg-min)/(hr-dscm-%) (0.0062 (lb-min)/(hr-dscf-%));

Q_{oxy} = Volumetric flow rate of oxygen-enriched air stream to regenerator, as determined from instruments in the catalytic cracking unit control room, dscm/min (dscf/min); and

$\%O_{xy}$ = Oxygen concentration in oxygen-enriched air stream, percent by volume (dry basis).

$$E = \frac{K \times C_s \times Q_{sd}}{R_c} \quad \text{(Eq. 2)}$$

Where:

E = Emission rate of PM, kg/1,000 kg (lb/1,000 lb) of coke burn-off;

Cs = Concentration of PM, g/dscm (lb/dscf);

Qsd = Volumetric flow rate of the catalytic cracking unit catalyst regenerator flue gas as measured by Method 2 in appendix A to part 60 of this chapter, dscm/hr (dscf/hr);

Rc = Coke burn-off rate, kg coke/hr (1,000 lb coke/hr); and

K = Conversion factor, 1.0 (kg^2/g)/(1,000 kg) (1,000 lb/(1,000 lb)).

$$E_s = 1.0 + A\left(H/R_c\right)K' \quad \text{(Eq. 3)}$$

Where:

Es = Emission rate of PM allowed, kg/1,000 kg (lb/1,000 lb) of coke burn-off in catalyst regenerator;

1.0 = Emission limitation, kg coke/1,000 kg (lb coke/1,000 lb);

A = Allowable incremental rate of PM emissions, 0.18 g/million cal (0.10 lb/million Btu); and

H = Heat input rate from solid or liquid fossil fuel, million cal/hr (million Btu/hr). Make

sure your permitting authority approves procedures for determining the heat input rate.

Rc = Coke burn-off rate, kg coke/hr (1,000 lb coke/hr) determined using Equation 1 of this section; and

K' = Conversion factor to units to standard, 1.0 (kg^2/g)/(1,000 kg) (10^3 lb/(1,000 lb)).

(ii) If you elect Option 2 in paragraph (a)(1)(ii) of this section, the PM emission limit, compute your PM emission rate (lb/1,000 lbs of coke burn-off) using Equations 1 and 2 of this section and your site-specific opacity operating limit (if you use a continuous opacity monitoring system) using Equation 4 of this section as follows:

$$\textbf{Opacity Limit} = \textbf{Opacity}_{st} \times \left(\frac{\textbf{1lb/klb coke burn}}{\textbf{PMEmR}_{st}} \right) (Eq.4)$$

Where:

Opacity limit = Maximum permissible hourly average opacity, percent, or 10 percent, whichever is greater;

$Opacity_{st}$ = Hourly average opacity measured during the source test runs, percent; and

$PMEmR_{st}$ = PM emission rate measured during the source test, lb/1,000 lbs coke burn.

$$E_{Ni1} = C_{Ni} \times Q_{sd} \quad \text{(Eq. 5)}$$

(iii) If you elect Option 3 in paragraph (a)(1)(iii) of this section, the Ni lb/hr emission limit, compute your Ni emission rate using Equation 5 of this section and your site-specific Ni operating limit (if you use a continuous opacity monitoring system) using Equations 6 and 7 of this section as follows:

Where:

E_{Ni1} = Mass emission rate of Ni, mg/hr (lb/hr); and

C_{Ni} = Ni concentration in the catalytic cracking unit catalyst regenerator flue gas as measured by Method 29 in appendix A to part 60 of this chapter, mg/dscm (lbs/dscf).

$$\text{Opacity}_1 = \frac{13 \text{ g Ni/hr}}{\text{NiEmR1}_{st}} \times \text{Opacity}_{st} \quad \text{(Eq. 6)}$$

Where:

$Opacity_1$ = Opacity value for use in Equation 7 of this section, percent, or 10 percent, whichever is greater; and

$NiEmR1_{st}$ = Average Ni emission rate calculated as the arithmetic average Ni emission rate using Equation 5 of this section for each of the performance test runs, g Ni/hr.

$$\text{Ni Operating Limit}_1 = \text{Opacity}_1 \times Q_{mon,st} \times E - Cat_{st} \quad \text{(Eq.7)}$$

Where:

Ni Operating $Limit_1$ = Maximum permissible hourly average Ni operating limit, percent-acfm-ppmw, i.e., your site-specific Ni operating limit;

$Q_{mon,st}$ = Hourly average actual gas flow rate as measured by the continuous parameter monitoring system during the performance test or using the alternative procedure in §63.1573, acfm; and

$E\text{-}Cat_{st}$ = Ni concentration on equilibrium catalyst measured during source test, ppmw.

(iv) If you elect Option 4 in paragraph (a)(1)(iv) of this section, the Ni lbs/1,000 lbs of coke burn-off emission limit, compute your Ni emission rate using Equations 1 and 8 of this section and your site-specific Ni operating limit (if you use a continuous opacity monitoring system) using Equations 9 and 10 of this section as follows:

$$E_{Ni2} = \frac{C_{Ni} \times Q_{sd}}{R_c} \quad \text{(Eq. 8)}$$

Where:

E_{Ni2} = Normalized mass emission rate of Ni, mg/kg coke (lb/1,000 lbs coke).

$$\text{Opacity}_2 = \frac{1.0 \text{ mg/kg coke}}{\text{NiEmR2}_{st}} \times \text{Opacity}_{st} \quad \text{(Eq. 9)}$$

Where:

$Opacity_2$ = Opacity value for use in Equation 10 of this section, percent, or 10 percent, whichever is greater; and

$NiEmR2_{st}$ = Average Ni emission rate calculated as the arithmetic average Ni emission rate using Equation 8 of this section for each of the performance test runs, mg/kg coke.

$$\text{Ni Operating Limit}_2 = \text{Opacity}_2 \times E - Cat_{st} \times \frac{Q_{mon,st}}{R_{c,st}} \quad \text{(Eq. 10)}$$

Where:

Ni operating $limit_2$ = Maximum permissible hourly average Ni operating limit, percent-ppmw-acfm-hr/kg coke, i.e., your site-specific Ni operating limit; and

$R_{c,st}$ = Coke burn rate from Equation 1 of this section, as measured during the initial performance test, kg coke/hr.

(5) Demonstrate initial compliance with each emission limitation that applies to you according to Table 5 of this subpart.

(6) Demonstrate initial compliance with the work practice standard in paragraph (a)(3) of this section by submitting your operation, maintenance, and monitoring plan to your permitting authority as part of your Notification of Compliance Status.

(7) Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.1574.

(c) How do I demonstrate continuous compliance with the emission limitations and work practice standards? You must:

(1) Demonstrate continuous compliance with each emission limitation in Tables 1 and 2 of this subpart that applies to you according to the methods specified in Tables 6 and 7 of this subpart.

(2) Demonstrate continuous compliance with the work practice standard in paragraph (a)(3) of this section by maintaining records to document conformance with the procedures in your operation, maintenance, and monitoring plan.

(3) If you use a continuous opacity monitoring system and elect to comply with Option 3 in paragraph (a)(1)(iii) of this section, determine continuous compliance with your site-specific Ni operating limit by using Equation 11 of this section as follows:

$$\text{Ni Operating Value}_1 = \text{Opacity} \times Q_{mon} \times \text{E-Cat} \quad \text{(Eq. 11)}$$

Where:

Ni operating value$_1$ = Maximum permissible hourly average Ni standard operating value, %-acfm-ppmw;

Opacity = Hourly average opacity, percent;

Qmon = Hourly average actual gas flow rate as measured by continuous parameter monitoring system or calculated by alternative procedure in §63.1573, acfm; and

E-Cat = Ni concentration on equilibrium catalyst from weekly or more recent measurement, ppmw.

(4) If you use a continuous opacity monitoring system and elect to comply with Option 4 in paragraph (a)(1)(iv) of this section, determine continuous compliance with your site-specific Ni operating limit by using Equation 12 of this section as follows:

$$\text{Ni Operating Value}_2 = \frac{\text{Opacity} \times \text{E-Cat} \times Q_{mon}}{R_c} \quad \text{(Eq. 12)}$$

Where:

Ni Operating Value$_2$ = Maximum permissible hourly average Ni standard operating value, percent-acfm-ppmw-hr/kg coke.

§ 63.1565 What are my requirements for organic HAP emissions from catalytic cracking units?

(a) *What emission limitations and work practice standards must I meet?* You must:

(1) Meet each emission limitation in Table 8 of this subpart that applies to you. If your catalytic cracking unit is subject to the NSPS for carbon monoxide (CO) in §60.103 of this chapter, you must meet the emission limitations for NSPS units. If your catalytic cracking unit isn't subject to the NSPS for CO, you can choose from the two options in paragraphs (a)(1)(i) through (ii) of this section:

(i) You can elect to comply with the NSPS requirements (Option 1); or

(ii) You can elect to comply with the CO emission limit (Option 2).

(2) Comply with each site-specific operating limit in Table 9 of this subpart that applies to you.

(3) Prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.

(4) The emission limitations and operating limits for organic HAP emissions from catalytic cracking units required in paragraphs (a)(1) and (2) of this section do not apply during periods of planned maintenance preapproved by the applicable permitting authority according to the requirements in §63.1575(j).

(b) *How do I demonstrate initial compliance with the emission limitations and work practice standards?* You must:

(1) Install, operate, and maintain a continuous monitoring system according to the requirements in §63.1572 and Table 10 of this subpart. Except:

(i) Whether or not your catalytic cracking unit is subject to the NSPS for CO in §60.103 of this chapter, you don't have to install and operate a continuous emission monitoring system if you show that CO emissions from your vent average less than 50 parts per million (ppm), dry basis. You must get an exemption from your permitting authority, based on your written request. To show that the emissions average is less than 50 ppm (dry basis), you must continuously monitor CO emissions for 30 days using a CO continuous emission monitoring system that meets the requirements in §63.1572.

(ii) If your catalytic cracking unit isn't subject to the NSPS for CO, you don't have to install and operate a continuous emission monitoring system or a continuous parameter monitoring system if you vent emissions to a boiler (including a "CO boiler") or process heater that has a design heat input capacity of at least 44 megawatts (MW).

(iii) If your catalytic cracking unit isn't subject to the NSPS for CO, you don't have to install and operate a continuous emission monitoring system or a continuous parameter monitoring system if you vent emissions to a boiler or process heater in which all vent streams are introduced into the flame zone.

(2) Conduct each performance test for a catalytic cracking unit not subject to the NSPS for CO according to the requirements in §63.1571 and under the conditions specified in Table 11 of this subpart.

(3) Establish each site-specific operating limit in Table 9 of this subpart that applies to you according to the procedures in Table 11 of this subpart.

(4) Demonstrate initial compliance with each emission limitation that applies to you according to Table 12 of this subpart.

(5) Demonstrate initial compliance with the work practice standard in paragraph (a)(3) of this section by submitting the operation, maintenance, and monitoring plan to your permitting authority as part of your Notification of Compliance Status according to §63.1574.

(6) Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.1574.

(c) *How do I demonstrate continuous compliance with the emission limitations and work practice standards?* You must:

(1) Demonstrate continuous compliance with each emission limitation in Tables 8 and 9 of this subpart that applies to you according to the methods specified in Tables 13 and 14 of this subpart.

(2) Demonstrate continuous compliance with the work practice standard in paragraph (a)(3) of this section by complying with the procedures in your operation, maintenance, and monitoring plan.

§ 63.1566 What are my requirements for organic HAP emissions from catalytic reforming units?

(a) *What emission limitations and work practice standards must I meet?* You must:

(1) Meet each emission limitation in Table 15 of this subpart that applies to you. You can choose from the two options in paragraphs (a)(1)(i) through (ii) of this section:

(i) You can elect to vent emissions of total organic compounds (TOC) to a flare that meets the control device requirements in §63.11(b) (Option 1); or

(ii) You can elect to use a control device to meet a TOC percent reduction standard or concentration limit, whichever is less stringent (Option 2).

(2) Comply with each site-specific operating limit in Table 16 of this subpart that applies to you.

(3) The emission limitations in Tables 15 and 16 of this subpart apply to emissions from catalytic reforming unit process vents that occur during depressuring and purging operations. These process vents include those used during unit depressurization, purging, coke burn, catalyst rejuvenation, and reduction or activation purge.

(4) The emission limitations in Tables 15 and 16 of this subpart do not apply to emissions from process vents during depressuring and purging operations when the reactor vent pressure is 5 pounds per square inch gauge (psig) or less.

(5) Prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.

(b) *How do I demonstrate initial compliance with the emission limitations and work practice standard?* You must:

(1) Install, operate, and maintain a continuous monitoring system(s) according to the requirements in §63.1572 and Table 17 of this subpart.

(2) Conduct each performance test for a catalytic reforming unit according to the requirements in §63.1571 and under the conditions specified in Table 18 of this subpart.

(3) Establish each site-specific operating limit in Table 16 of this subpart that applies to you according to the procedures in Table 18 of this subpart.

(4) Use the procedures in paragraph (b)(4)(i) or (ii) of this section to determine initial compliance with the emission limitations.

(i) If you elect the percent reduction standard under Option 2, calculate the emission rate of TOC using Equation 1 of this section (if you use Method 25) or Equation 2 of this section (if you use Method 25A); then calculate the mass emission reduction using Equation 3 of this section as follows:

$$E = K_4 M_c Q_s \quad (Eq. 1)$$

Where:

E = Emission rate of TOC in the vent stream, kilograms-C per hour;

K_4 = Constant, 6.0 x 10-5 (kilograms per milligram)(minutes per hour);

M_c = Mass concentration of total gaseous nonmethane organic as measured and calculated using Method 25 in appendix A to part 60 of this chapter, mg/dscm; and

Q_s = Vent stream flow rate, dscm/min, at a temperature of 20 degrees Celsius (C).

$$E = K_5 \; C_{TOC} \; Q_s \quad (Eq. 2)$$

Where:

E = Emission rate of TOC in the vent stream, kilograms-C per hour;

K_5 = Constant, 9.0 x 10^{-5}(parts per million)$^{-1}$ (gram-mole per standard cubic meter) (gram-C per gram-mole-propane) (kilogram per gram) (minutes per hour), where the standard temperature (standard cubic meter) is at 20 degrees C (uses 36g-C/g-mole propane);

C_{TOC} = Concentration of TOC on a dry basis in ppmv as propane as measured by Method 25A in appendix A to part 60 of this chapter; and

Q_s = Vent stream flow rate, dry standard cubic meters per minute, at a temperature of 20 degrees C.

$$\% \text{ reduction} = \frac{E_i - E_o}{Ei} \times 100\% \quad (Eq. 3)$$

Where:

Ei = Mass emission rate of TOC at control device inlet, kg/hr; and

Eo = Mass emission rate of TOC at control device outlet, kg/hr.

(5) If you elect the 20 parts per million by volume (ppmv) concentration limit, correct the measured TOC concentration for oxygen (O_2) content in the gas stream using Equation 4 of this section as follows:

$$C_{TOC,3\%O_2} = C_{TOC}\left(\frac{17.9\%}{20.9\% - \%O_2}\right) \quad (Eq. 4)$$

(6) You are not required to do a TOC performance test if:

(i) You elect to vent emissions to a flare as provided in paragraph (a)(1)(i) of this section (Option 1); or

(ii) You elect the TOC percent reduction or concentration limit in paragraph (a)(1)(ii) of this section (Option 2), and you use a boiler or process heater with a design heat input capacity of 44 MW or greater or a boiler or process heater in which all vent streams are introduced into the flame zone.

(7) Demonstrate initial compliance with each emission limitation that applies to you according to Table 19 of this subpart.

(8) Demonstrate initial compliance with the work practice standard in paragraph (a)(5) of this section by submitting the operation, maintenance, and monitoring plan to your permitting authority as part of your Notification of Compliance Status.

(9) Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.1574.

(c) *How do I demonstrate continuous compliance with the emission limitations and work practice standards?* You must:

(1) Demonstrate continuous compliance with each emission limitation in Tables 15 and 16 of this subpart that applies to you according to the methods specified in Tables 20 and 21 of this subpart.

(2) Demonstrate continuous compliance with the work practice standards in paragraph (a)(3) of this section by complying with the procedures in your operation, maintenance, and monitoring plan.

§ 63.1567 What are my requirements for inorganic HAP emissions from catalytic reforming units?

(a) *What emission limitations and work practice standards must I meet?* You must:

(1) Meet each emission limitation in Table 22 of this subpart that applies to you. These emission limitations apply during coke burn-off and catalyst rejuvenation. You can choose from the two options in paragraphs (a)(1)(i) through (ii) of this section:

(i) You can elect to use a control device to meet either a percent reduction standard for hydrogen chloride (HCl) emissions (Option 1); or

(ii) You can elect to meet an HCl concentration limit (Option 2).

(2) Meet each site-specific operating limit in Table 23 of this subpart that applies to you.

These operating limits apply during coke burn-off and catalyst rejuvenation.

(3) Prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.

(b) *How do I demonstrate initial compliance with the emission limitations and work practice standard?* You must:

(1) Install, operate, and maintain a continuous monitoring system(s) according to the requirements in §63.1572 and Table 24 of this subpart.

(2) Conduct each performance test for a catalytic reforming unit according to the requirements in §63.1571 and the conditions specified in Table 25 of this subpart.

(3) Establish each site-specific operating limit in Table 23 of this subpart that applies to you according to the procedures in Table 25 of this subpart.

(4) Demonstrate initial compliance with each emission limitation that applies to you according to Table 26 of this subpart.

(5) Demonstrate initial compliance with the work practice standard in paragraph (a)(3) of this section by submitting the operation, maintenance, and monitoring plan to your permitting authority as part of your Notification of Compliance Status.

(6) Submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.1574.

(c) *How do I demonstrate continuous compliance with the emission limitations and work practice standard?* You must:

(1) Demonstrate continuous compliance with each emission limitation in Tables 22 and 23 of this subpart that applies to you according to the methods specified in Tables 27 and 28 of this subpart.

(2) Demonstrate continuous compliance with the work practice standard in paragraph (a)(3) of this section by maintaining records to document conformance with the procedures in your operation, maintenance and monitoring plan.

§ 63.1568 What are my requirements for HAP emissions from sulfur recovery units?

(a) *What emission limitations and work practice standard must I meet?* You must:

(1) Meet each emission limitation in Table 29 of this subpart that applies to you. If your sulfur recovery unit is subject to the NSPS for sulfur oxides in §60.104 of this chapter, you must meet the emission limitations for NSPS units. If your sulfur recovery unit isn't subject to the NSPS for sulfur oxides, you can choose from the options in paragraphs (a)(1)(i) through (ii) of this section:

(i) You can elect to meet the NSPS requirements (Option 1); or

(ii) You can elect to meet the total reduced sulfur (TRS) emission limitation (Option 2).

(2) Meet each operating limit in Table 30 of this subpart that applies to you.

(3) Prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.

(b) *How do I demonstrate initial compliance with the emission limitations and work practice standards?* You must:

(1) Install, operate, and maintain a continuous monitoring system according to the requirements in §63.1572 and Table 31 of this subpart.

(2) Conduct each performance test for a sulfur recovery unit not subject to the NSPS for sulfur oxides according to the requirements in §63.1571 and under the conditions specified in Table 32 of this subpart.

(3) Establish each site-specific operating limit in Table 30 of this subpart that applies to you according to the procedures in Table 32 of this subpart.

(4) Correct the reduced sulfur samples to zero percent excess air using Equation 1 of this section as follows:

$$C_{adj} = C_{meas}\left[20.9_c / \left(20.9 - \%O_2\right)\right] \quad (Eq.\ 1)$$

Where:

C_{adj} = pollutant concentration adjusted to zero percent oxygen, ppm or g/dscm;

C_{meas} = pollutant concentration measured on a dry basis, ppm or g/dscm;

20.9c = 20.9 percent oxygen--0.0 percent oxygen (defined oxygen correction basis), percent;

20.9 = oxygen concentration in air, percent;

$\%O_2$ = oxygen concentration measured on a dry basis, percent.

(5) Demonstrate initial compliance with each emission limitation that applies to you according to Table 33 of this subpart.

(6) Demonstrate initial compliance with the work practice standard in paragraph (a)(3) of this section by submitting the operation, maintenance, and monitoring plan to your permitting authority as part of your notification of compliance status.

(7) Submit the notification of compliance status containing the results of the initial compliance demonstration according to the requirements in §63.1574.

(c) *How do I demonstrate continuous compliance with the emission limitations and work practice standards?* You must:

(1) Demonstrate continuous compliance with each emission limitation in Tables 29 and 30 of this subpart that applies to you according to the methods specified in Tables 34 and 35 of this subpart.

(2) Demonstrate continuous compliance with the work practice standard in paragraph (a)(3) of this section by complying with the procedures in your operation, maintenance, and monitoring plan.

§ 63.1569 What are my requirements for HAP emissions from bypass lines?

(a) *What work practice standards must I meet?*

(1) You must meet each work practice standard in Table 36 of this subpart that applies to you. You can choose from the four options in paragraphs (a)(1)(i) through (iv) of this section:

(i) You can elect to install an automated system (Option 1);

(ii) You can elect to use a manual lock system (Option 2);

(iii) You can elect to seal the line (Option 3); or

(iv) You can elect to vent to a control device (Option 4).

(2) As provided in §63.6(g), we, the EPA, may choose to grant you permission to use an alternative to the work practice standard in paragraph (a)(1) of this section.

(3) You must prepare an operation, maintenance, and monitoring plan according to the requirements in §63.1574(f) and operate at all times according to the procedures in the plan.

(b) *How do I demonstrate initial compliance with the work practice standards?* You must:

(1) If you elect the option in paragraph (a)(1)(i) of this section, conduct each performance test for a bypass line according to the requirements in §63.1571 and under the conditions specified in Table 37 of this subpart.

(2) Demonstrate initial compliance with each work practice standard in Table 36 of this subpart that applies to you according to Table 38 of this subpart.

(3) Demonstrate initial compliance with the work practice standard in paragraph (a)(3) of this section by submitting the operation, maintenance, and monitoring plan to your permitting authority as part of your notification of compliance status.

(4) Submit the notification of compliance status containing the results of the initial compliance demonstration according to the requirements in §63.1574.

(c) *How do I demonstrate continuous compliance with the work practice standards?* You must:

(1) Demonstrate continuous compliance with each work practice standard in Table 36 of this subpart that applies to you according to the requirements in Table 39 of this subpart.

(2) Demonstrate continuous compliance with the work practice standard in paragraph (a)(2) of this section by complying with the procedures in your operation, maintenance, and monitoring plan.

General Compliance Requirements

§ 63.1570 What are my general requirements for complying with this subpart?

(a) You must be in compliance with all of the non-opacity standards in this subpart during the times specified in §63.6(f)(1).

(b) You must be in compliance with the opacity and visible emission limits in this subpart during the times specified in §63.6(h)(1).

(c) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in §63.6(e)(1)(i). During the period between the compliance date specified for your affected source and the date upon which continuous monitoring systems have been installed and validated and any applicable operating limits have been set, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(d) You must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in §63.6(e)(3).

(e) During periods of startup, shutdown, and malfunction, you must operate in accordance with your SSMP.

(f) You must report each instance in which you did not meet each emission limitation and each operating limit in this subpart that applies to you. This includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet the work practice standards in this subpart that apply to you. These instances are deviations from the emission limitations and work practice standards in this subpart. These deviations must be reported according to the requirements in §63.1575.

(g) Consistent with §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the SSMP. The SSMP must require that good air pollution control practices are used during those periods. The plan must also include elements designed to minimize the frequency of such periods (i.e., root cause analysis). The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in §63.6(e) and the contents of the SSMP.

§ 63.1571 How and when do I conduct a performance test or other initial compliance demonstration?

(a) *When must I conduct a performance test?* You must conduct performance tests and report the results by no later than 150 days after the compliance date specified for your source in §63.1563 and according to the provisions in §63.7(a)(2). If you are required to do a performance evaluation or test for a semi-regenerative catalytic reforming unit catalyst regenerator vent, you may do them at the first regeneration cycle after your compliance date and report the results in a followup Notification of Compliance Status report due no later than 50 days after the test.

(1) For each emission limitation or work practice standard where initial compliance is not demonstrated using a performance test, opacity observation, or visible emission observation, you must conduct the initial compliance demonstration within 30 calendar days after the compliance date that is specified for your source in §63.1563.

(2) For each emission limitation where the averaging period is 30 days, the 30-day period for demonstrating initial compliance begins at 12:00 a.m. on the compliance date that is specified for your source in §63.1563 and ends at 11:59 p.m., 30 calendar days after the compliance date that is specified for your source in §63.1563.

(3) If you commenced construction or reconstruction between September 11, 1998 and April 11, 2002, you must demonstrate initial compliance with either the proposed emission limitation or the promulgated emission limitation no later than October 8, 2002 or within 180 calendar days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(4) If you commenced construction or reconstruction between September 11, 1998 and April 11, 2002, and you chose to comply with the proposed emission limitation when demonstrating initial compliance, you must conduct a second compliance demonstration for the promulgated emission limitation by October 10, 2005, or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(b) *What are the general requirements for performance test and performance evaluations?* You must:

(1) Conduct each performance test according to the requirements in §63.7(e)(1).

(2) Except for opacity and visible emission observations, conduct three separate test runs for each performance test as specified in §63.7(e)(3). Each test run must last at least 1 hour.

(3) Conduct each performance evaluation according to the requirements in §63.8(e).

(4) Not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §63.7(e)(1).

(5) Calculate the average emission rate for the performance test by calculating the emission rate for each individual test run in the units of the applicable emission limitation using Equation 2, 5, or 8 of §63.1564, and determining the arithmetic average of the calculated emission rates.

(c) *What procedures must I use for an engineering assessment?* You may choose to use an engineering assessment to calculate the process vent flow rate, net heating value, TOC emission rate, and total organic HAP emission rate expected to yield the highest daily emission rate when determining the emission reduction or outlet concentration for the organic HAP standard for catalytic reforming units. If you use an engineering assessment, you must document all data, assumptions, and procedures to the satisfaction of the applicable permitting authority. An engineering assessment may include the approaches listed in paragraphs (c)(1) through (c)(4) of this section. Other engineering assessments may be used but are subject to review and approval by the applicable permitting authority.

(1) You may use previous test results provided the tests are representative of current operating practices at the process unit, and provided EPA methods or approved alternatives were used;

(2) You may use bench-scale or pilot-scale test data representative of the process under representative operating conditions;

(3) You may use maximum flow rate, TOC emission rate, organic HAP emission rate, or organic HAP or TOC concentration specified or implied within a permit limit applicable to the process vent; or

(4) You may use design analysis based on engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(i) Use of material balances based on process stoichiometry to estimate maximum TOC concentrations;

(ii) Calculation of hourly average maximum flow rate based on physical equipment design such as pump or blower capacities; and

(iii) Calculation of TOC concentrations based on saturation conditions.

(d) *Can I adjust the process or control device measured values when establishing an operating limit?* If you do a performance test to demonstrate compliance, you must base the process or control device operating limits for continuous parameter monitoring systems on the results measured during the performance test. You may adjust the values measured during the performance test according to the criteria in paragraphs (d)(1) through (3) of this section.

(1) If you must meet the HAP metal emission limitations in §63.1564, you elect the option in paragraph (a)(1)(iii) in §63.1564 (Ni lb/hr), and you use continuous parameter monitoring systems, you must establish an operating limit for the equilibrium catalyst Ni concentration based on the laboratory analysis of the equilibrium catalyst Ni concentration from the initial performance test. Section 63.1564(b)(2) allows you to adjust the laboratory measurements of the equilibrium catalyst Ni concentration to the maximum level. You must make this adjustment using Equation 1 of this section as follows:

$$\text{Ecat} - \text{Limit} = \frac{13\text{g Ni / hr}}{\text{NiEmR1}_{st}} \times \text{Ecat}_{st} \quad (Eq.1)$$

Where:

Ecat-Limit = Operating limit for equilibrium catalyst Ni concentration, mg/kg;

NiEmR1_{st} = Average Ni emission rate calculated as the arithmetic average Ni emission rate using Equation 5 of this section for each performance test run, g Ni/hr; and

Ecat_{st} = Average equilibrium Ni concentration from laboratory test results, mg/kg.

(2) If you must meet the HAP metal emission limitations in §63.1564, you elect the option in paragraph (a)(1)(iv) in §63.1564 (Ni lb/1,000 lb of coke burn-off), and you use continuous parameter monitoring systems, you must establish an operating limit for the equilibrium catalyst Ni concentration based on the laboratory analysis of the equilibrium catalyst Ni concentration from the initial performance test. Section 63.1564(b)(2) allows you to adjust the laboratory measurements of the equilibrium catalyst Ni concentration to the maximum level. You must make this adjustment using Equation 2 of this section as follows:

$$\text{Ecat} - \text{Limit} = \frac{1.0\text{ mg / kg coke burn} - \text{off}}{\text{NiEmR2}_{st}} \times \text{Ecat}_{st} \quad (Eq.2)$$

Where:

NiEmR2_{st} = Average Ni emission rate calculated as the arithmetic average Ni emission rate using Equation 8 of §63.1564 for each performance test run, mg/kg coke burn-off.

(3) If you choose to adjust the equilibrium catalyst Ni concentration to the maximum level, you can't adjust any other monitored operating parameter (i.e., gas flow rate, voltage, pressure drop, liquid-to-gas ratio).

(4) Except as specified in paragraph (d)(3) of this section, if you use continuous parameter monitoring systems, you may adjust one of your monitored operating parameters (flow rate, voltage and secondary current, pressure drop, liquid-to-gas ratio) from the average of measured values during the performance test to the maximum value (or minimum value, if applicable) representative of worst-case operating conditions, if necessary. This adjustment of measured values may be done using control device design specifications, manufacturer recommendations, or other applicable information. You must provide supporting documentation and rationale in your Notification of Compliance Status, demonstrating to the satisfaction of your permitting authority, that your affected source complies with the applicable emission limit at the operating limit based on adjusted values.

(e) *Can I change my operating limit?* You may change the established operating limit by meeting the requirements in paragraphs (e)(1) through (3) of this section.

(1) You may change your established operating limit for a continuous parameter monitoring system by doing an additional performance test, a performance test in conjunction with an engineering assessment, or an engineering assessment to verify that, at the new operating limit, you are in compliance with the applicable emission limitation.

(2) You must establish a revised operating limit for your continuous parameter monitoring system if you make any change in process or operating conditions that could affect control system performance or you change designated conditions after the last performance or compliance tests were done. You can establish the revised operating limit as described in paragraph (e)(1) of this section.

(3) You may change your site-specific opacity operating limit or Ni operating limit only by doing a new performance test.

§ 63.1572 What are my monitoring installation, operation, and maintenance requirements?

(a) You must install, operate, and maintain each continuous emission monitoring system according to the requirements in paragraphs (a)(1) through (4) of this section.

(1) You must install, operate, and maintain each continuous emission monitoring system according to the requirements in Table 40 of this subpart.

(2) If you use a continuous emission monitoring system to meet the NSPS CO or SO_2 limit, you must conduct a performance evaluation of each continuous emission monitoring system according to the requirements in §63.8 and Table 40 of this subpart. This requirement does not apply to an affected source subject to the NSPS that has already demonstrated initial compliance with the applicable performance specification.

(3) As specified in §63.8(c)(4)(ii), each continuous emission monitoring system must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(4) Data must be reduced as specified in §63.8(g)(2).

(b) You must install, operate, and maintain each continuous opacity monitoring system according to the requirements in paragraphs (b)(1) through (3) of this section.

(1) Each continuous opacity monitoring system must be installed, operated, and maintained according to the requirements in Table 40 of this subpart.

(2) If you use a continuous opacity monitoring system to meet the NSPS opacity limit, you must conduct a performance evaluation of each continuous opacity monitoring system according to the requirements in §63.8 and Table 40 of this subpart. This requirement does not apply to an affected source subject to the NSPS that has already demonstrated initial compliance with the applicable performance specification.

(3) As specified in §63.8(c)(4)(i), each continuous opacity monitoring system must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(c) You must install, operate, and maintain each continuous parameter monitoring system according to the requirements in paragraphs (c)(1) through (7) of this section.

(1) Each continuous parameter monitoring system must be installed, operated, and maintained according to the requirements in Table 41 of this subpart and in a manner consistent with the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment will monitor accurately.

(2) The continuous parameter monitoring system must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of operation to have a valid hour of data (or at least two if a calibration check is performed during that hour or if the continuous parameter monitoring system is out-of-control).

(3) Each continuous parameter monitoring system must have valid hourly average data from at least 75 percent of the hours during which the process operated.

(4) Each continuous parameter monitoring system must determine and record the hourly average of all recorded readings and if applicable, the daily average of all recorded readings for each operating day. The daily average must cover a 24-hour period if operation is continuous or the number of hours of operation per day if operation is not continuous.

(5) Each continuous parameter monitoring system must record the results of each inspection, calibration, and validation check.

(d) You must monitor and collect data according to the requirements in paragraphs (d)(1) and (2) of this section.

(1) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must conduct all monitoring in continuous operation (or collect data at all required intervals) at all times the affected source is operating.

(2) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities for purposes of this regulation, including data averages and calculations, for fulfilling a minimum data availability requirement, if applicable. You must use all thedata collected during all other periods in assessing the operation of the control device and associated control system.

§ 63.1573 What are my monitoring alternatives?

(a) *What is the approved alternative for monitoring gas flow rate?* You can elect to use this alternative to a continuous parameter monitoring system for the catalytic regenerator exhaust gas flow rate for your catalytic cracking unit if the unit does not introduce any other gas streams into the catalyst regeneration vent (i.e., complete combustion units with no additional combustion devices). If you select this alternative, you must use the same procedure for the performance test and for monitoring after the performance test.

(1) Install and operate a continuous parameter monitoring system to measure and record the hourly average volumetric air flow rate to the catalytic cracking unit regenerator. Or, you can determine and record the hourly average volumetric air flow rate to the catalytic cracking unit regenerator using the catalytic cracking unit control room instrumentation.

(2) Install and operate a continuous parameter monitoring system to measure and record the temperature of the gases entering the control device (or exiting the catalyst regenerator if you do not use an add-on control device).

(3) Calculate and record the hourly average actual exhaust gas flow rate using Equation 1 of this section as follows:

$$Q_{gas} = (1.12\ \text{scfm}/\text{dscfm}) \times \left(Q_{air} + Q_{oxy}\right) \times \left(\frac{\text{Temp}_{gas}}{273^{\circ}\text{K}}\right) \times \left(\frac{P_{vent}}{1\ \text{atm.}}\right) \quad (Eq.\ 1)$$

Where:

Q_{gas} = Hourly average actual gas flow rate, acfm;

1.12 = Default correction factor to convert gas flow from dry standard cubic feet per minute (dscfm) to standard cubic feet per minute (scfm);

Q_{air} = Volumetric flow rate of air to regenerator, as determined from the catalytic cracking unit control room instrumentations, dscfm;

Q_{oxy} = Volumetric flow rate of oxygen-enriched air stream to regenerator, as determined from the catalytic cracking unit control room instrumentations, dscfm;

Temp_{gas} = Temperature of gas stream in vent measured as near as practical to the control device or opacity monitor, deg.K. For wet scrubbers, temperature of gas prior to the wet scrubber; and

P_{vent} = Absolute pressure in the vent measured as near as practical to the control device or opacity monitor, atm. When used in conjunction with opacity in the final vent stack, you can assume P_{vent} = 1 atm.

(b) *What is the approved alternative for monitoring pH levels?* If you use a wet scrubber to control inorganic HAP emissions from your vent on a catalytic reforming unit, you can measure and record the pH of the water (or scrubbing liquid) exiting the scrubber at least once an hour during coke burn-off and catalyst rejuvenation using pH strips as an alternative to a continuous parameter monitoring system. The pH strips must meet the requirements in Table 41 of this subpart.

(c) *Can I use another type of monitoring system?* You may request approval from your permitting authority to use an automated data compression system. An automated data compression system does not record monitored operating parameter values at a set frequency (e.g., once every hour) but records all values that meet set criteria for variation from previously recorded values. Your request must contain a description of the monitoring system and data recording system, including the criteria used to determine which monitored values are recorded and retained, the method for calculating daily averages, and a demonstration that the system meets all of the criteria in paragraphs (c)(1) through (5) of this section:

(1) The system measures the operating parameter value at least once every hour;

(2) The system records at least 24 values each day during periods of operation;

(3) The system records the date and time when monitors are turned off or on;

(4) The system recognizes unchanging data that may indicate the monitor is not functioning properly, alerts the operator, and records the incident; and

(5) The system computes daily average values of the monitored operating parameter based on recorded data.

(d) *Can I monitor other process or control device operating parameters?* You may request approval to monitor parameters other than those required in this subpart. You must request approval if:

(1) You use a control device other than a thermal incinerator, boiler, process heater, flare, electrostatic precipitator, or wet scrubber;

(2) You use a combustion control device (e.g., incinerator, flare, boiler or process heater with a design heat capacity of at least 44

MW, boiler or process heater where the vent stream is introduced into the flame zone), electrostatic precipitator, or scrubber but want to monitor a parameter other than those specified; or

(3) You wish to use another type of continuous emission monitoring system that provides direct measurement of a pollutant (i.e., a PM or multi-metals HAP continuous emission monitoring system, a carbonyl sulfide/carbon disulfide continuous emission monitoring system, a TOC continuous emission monitoring system, or HCl continuous emission monitoring system).

(e) *How do I request to monitor alternative parameters?* You must submit a request for review and approval or disapproval to the Administrator. The request must include the information in paragraphs (e)(1) through (5) of this section.

(1) A description of each affected source and the parameter(s) to be monitored to determine whether the affected source will continuously comply with the emission limitations and an explanation of the criteria used to select the parameter(s).

(2) A description of the methods and procedures that will be used to demonstrate that the parameter can be used to determine whether the affected source will continuously comply with the emission limitations and the schedule for this demonstration. You must certify that you will establish an operating limit for the monitored parameter(s) that represents the conditions in existence when the control device is being properly operated and maintained to meet the emission limitation.

(3) The frequency and content of monitoring, recording, and reporting, if monitoring and recording are not continuous. You also must include the rationale for the proposed monitoring, recording, and reporting requirements.

(4) Supporting calculations.

(5) Averaging time for the alternative operating parameter.

Notifications, Reports, and Records

§ 63.1574 What notifications must I submit and when?

(a) Except as allowed in paragraphs (a)(1) through (3) of this section, you must submit all of the notifications in §§63.6(h), 63.7(b) and (c), 63.8(e), 63.8(f)(4), 63.8(f)(6), and 63.9(b) through (h) that apply to you by the dates specified.

(1) You must submit the notification of your intention to construct or reconstruct according to §63.9(b)(5) unless construction or reconstruction had commenced and initial startup had not occurred before April 11, 2002. In this case, you must submit the notification as soon as practicable before startup but no later than July 10, 2002. This deadline also applies to the application for approval of construction or reconstruction and approval of construction or reconstruction based on State preconstruction review required in §§63.5(d)(1)(i) and 63.5(f)(2).

(2) You must submit the notification of intent to conduct a performance test required in §63.7(b) at least 30 calendar days before the performance test is scheduled to begin (instead of 60 days).

(3) If you are required to conduct a performance test, performance evaluation, design evaluation, opacity observation, visible emission observation, or other initial compliance demonstration, you must submit a notification of compliance status according to §63.9(h)(2)(ii). You can submit this information in an operating permit application, in an amendment to an operating permit application, in a separate submission, or in any combination. In a State with an approved operating permit program where delegation of authority under section 112(l) of the CAA has not been requested or approved, you must provide a duplicate notification to the applicable Regional Administrator. If the required information has been submitted previously, you do not have to provide a separate notification of compliance status. Just refer to the earlier submissions instead of duplicating and resubmitting the previously submitted information.

(i) For each initial compliance demonstration that does not include a performance test, you must submit the Notification of Compliance Status no later than 30 calendar days following completion of the initial compliance demonstration.

(ii) For each initial compliance demonstration that includes a performance test, you must submit the notification of compliance status, including the performance test results, no later than 150 calendar days after the compliance date specified for your affected source in §63.1573.

(b) As specified in §63.9(b)(2), if you startup your new affected source before April 11, 2002, you must submit the initial notification no later than August 9, 2002.

(c) As specified in §63.9(b)(3), if you start your new or reconstructed affected source on or after April 11, 2002, you must submit the initial notification no later than 120 days after you become subject to this subpart.

(d) You also must include the information in Table 42 of this subpart in your notification of compliance status.

(e) If you request an extension of compliance for an existing catalytic cracking unit as allowed in §63.1563(c), you must submit a notification to your permitting authority containing the required information by October 13, 2003.

(f) As required by this subpart, you must prepare and implement an operation, maintenance, and monitoring plan for each affected source, control system, and continuous monitoring system. The purpose of this plan is to detail the operation, maintenance, and monitoring procedures you will follow.

(1) You must submit the plan to your permitting authority for review and approval along with your notification of compliance status. While you do not have to include the entire plan in your part 70 or 71 permit, you must include the duty to prepare and implement the plan as an applicable requirement in your part 70 or 71 operating permit. You must submit any changes to your permitting authority for review and approval and comply with the plan until the change is approved.

(2) Each plan must include, at a minimum, the information specified in paragraphs (f)(2)(i) through (x) of this section.

(i) Process and control device parameters to be monitored for each affected source, along with established operating limits.

(ii) Procedures for monitoring emissions and process and control device operating parameters for each affected source.

(iii) Procedures that you will use to determine the coke burn-rate, the volumetric flow rate (if you use process data rather than direct measurement), and the rate of combustion of liquid or solid fossil fuels if you use an incinerator-waste heat boiler to burn the exhaust gases from a catalyst regenerator.

(iv) Procedures and analytical methods you will use to determine the equilibrium catalyst Ni concentration, the equilibrium catalyst Ni concentration monthly rolling average, and the hourly or hourly average Ni operating value.

(v) Procedures you will use to determine the pH of the water (or scrubbing liquid) exiting a wet scrubber if you use pH strips.

(vi) Procedures you will use to determine the HCl concentration of gases from a semi-regenerative catalytic reforming unit with an internal scrubbing system (i.e., no add-on control device) when you use a colormetric tube sampling system, including procedures for correcting for pressure (if applicable to the sampling equipment).

(vii) Procedures you will use to determine the gas flow rate for a catalytic cracking unit if you use the alternative procedure based on air flow rate and temperature.

(viii) Monitoring schedule, including when you will monitor and when you will not monitor an affected source (e.g., during the coke burn-off, regeneration process).

(ix) Quality control plan for each continuous opacity monitoring system and continuous emission monitoring system you use to meet

an emission limit in this subpart. This plan must include procedures you will use for calibrations, accuracy audits, and adjustments to the system needed to meet applicable requirements for the system.

(x) Maintenance schedule for each affected source, monitoring system, and control device that is generally consistent with the manufacturer's instructions for routine and long-term maintenance.

§ 63.1575 What reports must I submit and when?

(a) You must submit each report in Table 43 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule, you must submit each report by the date in Table 43 of this subpart and according to the requirements in paragraphs (b)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.1563 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your affected source in §63.1563.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in §63.1563.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each affected source that is subject to permitting regulations pursuant to part 70 or 71 of this chapter, and if the permitting authority has established dates for submitting semiannual reports pursuant to §70.6(a)(3)(iii)(A) or §71.6(a)(3)(iii)(A) of this chapter, you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.

(c) The compliance report must contain the information required in paragraphs (c)(1) through (4) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If there are no deviations from any emission limitation that applies to you and there are no deviations from the requirements for work practice standards, a statement that there were no deviations from the emission limitations or work practice standards during the reporting period and that no continuous emission monitoring system or continuous opacity monitoring system was inoperative, inactive, malfunctioning, out-of-control, repaired, or adjusted.

(d) For each deviation from an emission limitation and for each deviation from the requirements for work practice standards that occurs at an affected source where you are not using a continuous opacity monitoring system or a continuous emission monitoring system to comply with the emission limitation or work practice standard in this subpart, the compliance report must contain the information in paragraphs (c)(1) through (3) of this section and the information in paragraphs (d)(1) through (3) of this section.

(1) The total operating time of each affected source during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(3) Information on the number, duration, and cause for monitor downtime incidents (including unknown cause, if applicable, other than downtime associated with zero and span and other daily calibration checks).

(e) For each deviation from an emission limitation occurring at an affected source where you are using a continuous opacity monitoring system or a continuous emission monitoring system to comply with the emission limitation, you must include the information in paragraphs (d)(1) through (3) of this section and the information in paragraphs (e)(1) through (13) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date and time that each continuous opacity monitoring system or continuous emission monitoring system was inoperative, except for zero (low-level) and high-level checks.

(3) The date and time that each continuous opacity monitoring system or continuous emission monitoring system was out-of-control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period (recorded in minutes for opacity and hours for gases and in the averaging period specified in the regulation for other types of emission limitations), and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period and into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of downtime for the continuous opacity monitoring system or continuous emission monitoring system during the reporting period (recorded in minutes for opacity and hours for gases and in the averaging time specified in the regulation for other types of standards), and the total duration of downtime for the continuous opacity monitoring system or continuous emission monitoring system as a percent of the total source operating time during that reporting period.

(8) A breakdown of the total duration of downtime for the continuous opacity monitoring system or continuous emission monitoring system during the reporting period into periods that are due to monitoring equipment malfunctions, non-monitoring equipment malfunctions, quality assurance/quality control calibrations, other known causes, and other unknown causes.

(9) An identification of each HAP that was monitored at the affected source.

(10) A brief description of the process units.

(11) The monitoring equipment manufacturer(s) and model number(s).

(12) The date of the latest certification or audit for the continuous opacity monitoring system or continuous emission monitoring system.

(13) A description of any change in the continuous emission monitoring system or continuous opacity monitoring system, processes, or controls since the last reporting period.

(f) You also must include the information required in paragraphs (f)(1) through (2) of this section in each compliance report, if applicable.

(1) A copy of any performance test done during the reporting period on any affected unit. The report may be included in the next semiannual report. The copy must include a complete report for each test method used for a particular kind of emission point tested. For additional tests performed for a similar emission point using the same method, you must submit the results and any other information required, but a complete test report is not required. A complete test report contains a brief process description; a simplified flow diagram showing affected

processes, control equipment, and sampling point locations; sampling site data; description of sampling and analysis procedures and any modifications to standard procedures; quality assurance procedures; record of operating conditions during the test; record of preparation of standards; record of calibrations; raw data sheets for field sampling; raw data sheets for field and laboratory analyses; documentation of calculations; and any other information required by the test method.

(2) Any requested change in the applicability of an emission standard (e.g., you want to change from the PM standard to the Ni standard for catalytic cracking units or from the HCl concentration standard to percent reduction for catalytic reforming units) in your periodic report. You must include all information and data necessary to demonstrate compliance with the new emission standard selected and any other associated requirements.

(g) You may submit reports required by other regulations in place of or as part of the compliance report if they contain the required information.

(h) The reporting requirements in paragraphs (h)(1) and (2) of this section apply to startups, shutdowns, and malfunctions:

(1) When actions taken to respond are consistent with the plan, you are not required to report these events in the semiannual compliance report and the reporting requirements in §§63.6(e)(3)(iii) and 63.10(d)(5) do not apply.

(2) When actions taken to respond are not consistent with the plan, you must report these events and the response taken in the semiannual compliance report. In this case, the reporting requirements in §§63.6(e)(3)(iv) and 63.10(d)(5) do not apply.

(i) If the applicable permitting authority has approved a period of planned maintenance for your catalytic cracking unit according to the requirements in paragraph (j) of this section, you must include the following information in your compliance report.

(1) In the compliance report due for the 6-month period before the routine planned maintenance is to begin, you must include a full copy of your written request to the applicable permitting authority and written approval received from the applicable permitting authority.

(2) In the compliance report due after the routine planned maintenance is complete, you must include a description of the planned routine maintenance that was performed for the control device during the previous 6-month period, and the total number of hours during those 6 months that the control device did not meet the emission limitations and monitoring requirements as a result of the approved routine planned maintenance.

(j) If you own or operate multiple catalytic cracking units that are served by a single wet scrubber emission control device (e.g., a Venturi scrubber), you may request the applicable permitting authority to approve a period of planned routine maintenance for the control device needed to meet requirements in your operation, maintenance, and monitoring plan. You must present data to the applicable permitting authority demonstrating that the period of planned maintenance results in overall emissions reductions. During this pre-approved time period, the emission control device may be taken out of service while maintenance is performed on the control device and/or one of the process units while the remaining process unit(s) continue to operate. During the period the emission control device is unable to operate, the emission limits, operating limits, and monitoring requirements applicable to the unit that is operating and the wet scrubber emission control device do not apply. The applicable permitting authority may require that you take specified actions to minimize emissions during the period of planned maintenance.

(1) You must submit a written request to the applicable permitting authority at least 6 months before the planned maintenance is scheduled to begin with a copy to the EPA Regional Administrator.

(2) Your written request must contain the information in paragraphs (j)(2)(i) through (v) of this section.

(i) A description of the planned routine maintenance to be performed during the next 6 months and why it is necessary.

(ii) The date the planned maintenance will begin and end.

(iii) A quantified estimate of the HAP and criteria pollutant emissions that will be emitted during the period of planned maintenance.

(iv) An analysis showing the emissions reductions resulting from the planned maintenance as opposed to delaying the maintenance until the next unit turnaround.

(v) Actions you will take to minimize emissions during the period of planned maintenance.

§ 63.1576 What records must I keep, in what form, and for how long?

(a) You must keep the records specified in paragraphs (a)(1) through (3) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or Notification of Compliance Status that you submitted, according to the requirements in §63.10(b)(2)(xiv).

(2) The records in §63.6(e)(1)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests, performance evaluations, and opacity and visible emission observations as required in §63.10(b)(2)(viii).

(b) For each continuous emission monitoring system and continuous opacity monitoring system, you must keep the records required in paragraphs (b)(1) through (5) of this section.

(1) Records described in §63.10(b)(2)(vi) through (xi).

(2) Monitoring data for continuous opacity monitoring systems during a performance evaluation as required in §63.6(h)(7)(i) and (ii).

(3) Previous (i.e., superceded) versions of the performance evaluation plan as required in §63.8(d)(3).

(4) Requests for alternatives to the relative accuracy test for continuous emission monitoring systems as required in §63.8(f)(6)(i).

(5) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records in §63.6(h) for visible emission observations.

(d) You must keep records required by Tables 6, 7, 13, and 14 of this subpart (for catalytic cracking units); Tables 20, 21, 27 and 28 of this subpart (for catalytic reforming units); Tables 34 and 35 of this subpart (for sulfur recovery units); and Table 39 of this subpart (for bypass lines) to show continuous compliance with each emission limitation that applies to you.

(e) You must keep a current copy of your operation, maintenance, and monitoring plan onsite and available for inspection. You also must keep records to show continuous compliance with the procedures in your operation, maintenance, and monitoring plan.

(f) You also must keep the records of any changes that affect emission control system performance including, but not limited to, the location at which the vent stream is introduced into the flame zone for a boiler or process heater.

(g) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1).

(h) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(i) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records offsite for the

remaining 3 years.

Other Requirements and Information

§ 63.1577 What parts of the General Provisions apply to me?

Table 44 of this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

§ 63.1578 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that Agency has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are listed in paragraphs (c)(1) through (5) of this section.

(1) Approval of alternatives to the non-opacity emission limitations and work practice standards in §§63.1564 through 63.1569 under §63.6(g).

(2) Approval of alternative opacity emission limitations in §§63.1564 through 63.1569 under §63.6(h)(9).

(3) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(4) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(5) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

§ 63.1579 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA), in 40 CFR 63.2, the General Provisions of this part (§§63.1 through 63.15), and in this section as listed.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

Catalytic cracking unit means a refinery process unit in which petroleum derivatives are continuously charged; hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing; and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. The unit includes, but is not limited to, the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and equipment used for heat recovery.

Catalytic cracking unit catalyst regenerator means one or more regenerators (multiple regenerators) which comprise that portion of the catalytic cracking unit in which coke burn-off and catalyst or contact material regeneration occurs and includes the regenerator combustion air blower(s).

Catalytic reforming unit means a refinery process unit that reforms or changes the chemical structure of naphtha into higher octane aromatics through the use of a metal catalyst and chemical reactions that include dehydrogenation, isomerization, and hydrogenolysis. The catalytic reforming unit includes the reactor, regenerator (if separate), separators, catalyst isolation and transport vessels (e.g., lock and lift hoppers), recirculation equipment, scrubbers, and other ancillary equipment.

Catalytic reforming unit regenerator means one or more regenerators which comprise that portion of the catalytic reforming unit and ancillary equipment in which the following regeneration steps typically are performed: depressurization, purge, coke burn-off, catalyst rejuvenation with a chloride (or other halogenated) compound(s), and a final purge. The catalytic reforming unit catalyst regeneration process can be done either as a semi-regenerative, cyclic, or continuous regeneration process.

Coke burn-off means the coke removed from the surface of the catalytic cracking unit catalyst or the catalytic reforming unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated using Equation 2 in §63.1564.

Combustion device means an individual unit of equipment such as a flare, incinerator, process heater, or boiler used for the destruction of organic HAP or VOC.

Combustion zone means the space in an enclosed combustion device (e.g., vapor incinerator, boiler, furnace, or process heater) occupied by the organic HAP and any supplemental fuel while burning. The combustion zone includes any flame that is visible or luminous as well as that space outside the flame envelope in which the organic HAP continues to be oxidized to form the combustion products.

Contact material means any substance formulated to remove metals, sulfur, nitrogen, or any other contaminants from petroleum derivatives.

Continuous regeneration reforming means a catalytic reforming process characterized by continuous flow of catalyst material through a reactor where it mixes with feedstock, and a portion of the catalyst is continuously removed and sent to a special regenerator where it is regenerated and continuously recycled back to the reactor.

Control device means any equipment used for recovering, removing, or oxidizing HAP in either gaseous or solid form. Such equipment includes, but is not limited to, condensers, scrubbers, electrostatic precipitators, incinerators, flares, boilers, and process heaters.

Cyclic regeneration reforming means a catalytic reforming process characterized by continual batch regeneration of catalyst in situ in any one of several reactors (e.g., 4 or 5 separate reactors) that can be isolated from and returned to the reforming operation while maintaining continuous reforming process operations (i.e., feedstock continues flowing through the remaining reactors without change in feed rate or product octane).

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limit, operating limit, or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limit, operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

Emission limitation means any emission limit, opacity limit, operating limit, or visible emission limit.

Flame zone means the portion of a combustion chamber of a boiler or process heater occupied by the flame envelope created by the primary fuel.

Flow indicator means a device that indicates whether gas is flowing, or whether the valve position would allow gas to flow, in or through a line.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous streams generated by the source, may blend them with sources of gas, if available, and transports the blended gaseous fuel at suitable pressures for use as fuel in heaters,

furnaces, boilers, incinerators, gas turbines, and other combustion devices located within or outside of the refinery. The fuel is piped directly to each individual combustion device, and the system typically operates at pressures over atmospheric. The gaseous streams can contain a mixture of methane, light hydrocarbons, hydrogen, and other miscellaneous species.

HCl means for the purposes of this subpart, gaseous emissions of hydrogen chloride that serve as a surrogate measure for total emissions of hydrogen chloride and chlorine as measured by Method 26 or 26A in appendix A to part 60 of this chapter or an approved alternative method.

Incinerator means an enclosed combustion device that is used for destroying organic compounds, with or without heat recovery. Auxiliary fuel may be used to heat waste gas to combustion temperatures. An incinerator may use a catalytic combustion process where a substance is introduced into an exhaust stream to burn or oxidize contaminants while the substances itself remains intact, or a thermal process which uses elevated temperatures as a primary means to burn or oxidize contaminants.

Ni means, for the purposes of this subpart, particulate emissions of nickel that serve as a surrogate measure for total emissions of metal HAP, including but not limited to: antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium as measured by Method 29 in appendix A to part 60 of this chapter or by an approved alternative method.

Oxidation control system means an emission control system which reduces emissions from sulfur recovery units by converting these emissions to sulfur dioxide.

PM means, for the purposes of this subpart, emissions of particulate matter that serve as a surrogate measure of the total emissions of particulate matter and metal HAP contained in the particulate matter, including but not limited to: antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium as measured by Methods 5B or 5F in appendix A to part 60 of this chapter or by an approved alternative method.

Process heater means an enclosed combustion device that primarily transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process vent means, for the purposes of this subpart, a gas stream that is continuously or periodically discharged during normal operation of a catalytic cracking unit, catalytic reforming unit, or sulfur recovery unit, including gas streams that are discharged directly to the atmosphere, gas streams that are routed to a control device prior to discharge to the atmosphere, or gas streams that are diverted through a product recovery device line prior to control or discharge to the atmosphere.

Reduced sulfur compounds means hydrogen sulfide, carbonyl sulfide, and carbon disulfide.

Reduction control system means an emission control system which reduces emissions from sulfur recovery units by converting these emissions to hydrogen sulfide.

Responsible official means responsible official as defined in 40 CFR 70.2.

Semi-regenerative reforming means a catalytic reforming process characterized by shutdown of the entire reforming unit (e.g., which may employ three to four separate reactors) at specified intervals or at the owner's or operator's convenience for in situ catalyst regeneration.

Sulfur recovery unit means a process unit that recovers elemental sulfur from gases that contain reduced sulfur compounds and other pollutants, usually by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide. This definition does not include a unit where the modified reaction is carried out in a water solution which contains a metal ion capable of oxidizing the sulfide ion to sulfur, e.g., the LO-CAT II process.

TOC means, for the purposes of this subpart, emissions of total organic compounds, excluding methane and ethane, that serve as a surrogate measure of the total emissions of organic HAP compounds, including but not limited to, acetaldehyde, benzene, hexane, phenol, toluene, and xylenes and non-HAP VOC as measured by Method 25 or 25A in appendix A to part 60 of this chapter or an approved alternative method.

TRS means, for the purposes of this subpart, emissions of total reduced sulfur compounds, expressed as an equivalent sulfur dioxide concentration, that serve as a surrogate measure of the total emissions of sulfide HAP carbonyl sulfide and carbon disulfide as measured by Method 15 in appendix A to part 60 of this chapter or by an approved alternative method.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

Table 1 to Subpart UUU of Part 63 – Metal HAP Emission Limits for Catalytic Cracking Units

[As stated in §63.1564(a)(1), you must meet each emission limitation in the following table that applies to you]

For each new or existing catalytic cracking unit * * *	You must meet the following emission limits for each catalyst regenerator vent * * *
1. Subject to the new source performance standard (NSPS) for PM in 40 CFR 60.102.	PM emissions must not exceed 1.0 kilogram (kg) per 1,000 kg (1.0 lb/ 1,000 lb) of coke burn-off in the catalyst regenerator; if the discharged gases pass through an incinerator or waste heat boiler in which you burn auxiliary or supplemental liquid or solid fossil fuel, you must limit the incremental rate of PM to no more than 43.0 grams per Megajoule (g/ MJ) or 0.10 pounds per million British thermal units (lb/million Btu) of heat input attributable to the liquid or solid fossil fuel; and the opacity of emissions must not exceed 30 percent, except for one 6-minute average opacity reading in any 1-hour period.
2. Option 1: NSPS requirements not subject to the NSPS for PM in 40 CFR 60.102.	PM emissions must not exceed 1.0 kg/1,000 kg (1.0 lb/1,000 lb) of coke burn-off in the catalyst regenerator; if the discharged gases pass throughan incinerator or waste heat boiler in which you burn auxiliary or in supplemental liquid or solid fossil fuel, youmust limit the incremental rate of PM to no more than 43.0 g/MJ or lb/ million Btu of heat input attributable to the liquid or solid fossil fuel; and the opacity of emissions must not exceed 30 percent, except for one 6-minute average opacity reading in any 1-hour period.
3. Option 2: PM limit not subject to the NSPS for PM in 40 CFR 60.102.	PM emissions must not exceed 1.0 kg/ 1,000 kg (1.0 lb/1,000 lbs) of coke burn-off in the catalyst regenerator.
4. Option 3: Ni lb/hr not subject to the NSPS for PM in 40 CFR 60.102.	Nickel (Ni) emissions must not exceed 13,000 milligrams per hour (mg/hr) (0.029 lb/hr).
5. Option 4: Ni Lb/1,000 lbs of coke burn-off not subject to the NSPS for PM in 40 CFR 60.102.	Ni emissions must not exceed 1.0 mg/kg (0.001 lb/1,000 lbs) of coke burn-off in the catalyst regenerator.

Table 2 to Subpart UUU of Part 63 – Operating Limits for Metal HAP Emissions From Catalytic Cracking Units

[As stated in §63.1564(a)(2), you must meet each operating limit in the following table that applies to you]

For each new or existing catalytic cracking unit * * *	For this type of continuous monitoring system * * *	For this type of control device * * *	You must meet this operating limit * * *
1. Subject to the NSPS for PM in 40 CFR 60.102.	Continuous opacity monitoring system.	Not applicable	Not applicable.
2. Option 1: NSPS requirements not subject to the NSPS for PM in 40 CFR 60.102.	Continuous opacity monitoring system.	Not applicable	Not applicable.
3. Option 2: PM limit not subject to the NSPS for PM in 40 CFR 60.102.	a. Continuous opacity monitoring system.	Electrostatic precipitator . . .	Maintain the hourly average opacity of emissions from your catalyst regenerator vent no higher than the site-specific opacity limit established during the performance test.
	b. Continuous parameter monitoring systems.	Electrostatic precipitator . . .	Maintain the daily average gas flow rate no higher than the limit established in the performance test; and maintain the daily average voltage and secondary current (or total power input) above the limit established in the performance test.
	c. Continuous parameter monitoring systems.	Wet scrubber	Maintain the daily average pressure drop above the limit established in the performance test (not applicable to a wet scrubber of the non-venturi jet-ejector design); and maintain the daily average liquid-to-gas ratio above the limit established in the performance test.

For each new or existing catalytic cracking unit * * *	For this type of continuous monitoring system * * *	For this type of control device * * *	You must meet this operating limit * * *
4. Option 3: Ni lb/hr not subject to the NSPS for PM in 40 CFR 60.102	a. Continuous opacity monitoring system	Electrostatic precipitator . .	Maintain the daily average Ni operating value no higher than the limit established during the performance test.
	b. Continuous parameter monitoring systems.	i. Electrostatic precipitator	Maintain the daily average gas flow rate no higher than the limit established during the performance test; maintain the monthly rolling average of the equilibrium catalyst Ni concentration no higher than the limit established during the performance test; and maintain the daily average voltage and secondary current (or total power input) above the established during the performance test.
		ii. Wet scrubber	Maintain the monthly rolling average of the equilibrium catalyst Ni concentration no higher than the limit established during the performance test; maintain the daily average pressure drop above the limit established during the performance test (not applicable to a non-venturi wet scrubber of the jet-ejector design); and maintain the daily average liquid-to-gas ratio above the limit established during the performance test.
5. Option 4: Ni lb/1,000 lbs of coke burn-off not subject to the NSPS for PM in 40 CFR 60.102	a. Continuous opacity monitoring system	Electrostatic precipitator . .	Maintain the daily average Ni operating value no higher than the Ni operating limit established during the performance test.
	b. Continuous parameter monitoring systems	i. Electrostatic precipitator	Maintain the monthly rolling average of the equilibrium catalyst Ni concentration no higher than the limit established during the performance test; and maintain the daily average voltage and secondary current for total power input) above the limit established during the performance test.
		ii. Wet scrubber	Maintain the monthly rolling average of the equilibrium catalyst Ni concentration no higher than the limit established during the performance test; maintain the daily average pressure drop above the limit established during the performance test (not applicable to a non-venturi wet scrubber of the jet-ejector design); and maintain the daily average liquid-to-gas ratio above the limit established during the performance test.

Table 3 to Subpart UUU of Part 63. – Continuous Monitoring Systems for Metal HAP Emissions From Catalytic Cracking Units

[As stated in §63.1564(b)(1), you must meet each requirement in the following table that applies to you]

For each new or existing catalytic cracking unit * * *	If your catalytic cracking unit is * * *	And you use this type of control device for your vent ***	You must install, operate, and maintain a * * *
1. Subject to the NSPS for PM in 40 CFR 60.102.	Any size	Electrostatic precipitator or wet scrubber or no control device.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent.
2. Option 1: NSPS limits not subject to the NSPS for PM in 40 CFR 60.102.	Any size	Electrostatic precipitator or wet scrubber or no control device.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent.
3. Option 2: PM limit not subject to the NSPS for PM in 40 CFR 60.102.	a. Over 20,000 barrels per day fresh feed capacity.	Electrostatic precipitator	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent.
	b. Up to 20,000 barrels per day fresh feed capacity.	Electrostatic precipitator.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent; or continuous parameter monitoring systems to measure and record the gas flow rate to the control device and the voltage and secondary current (or total power input) to the control device.
	c. Any size	i. Wet scrubber	(1) Continuous parameter monitoring system to measure and record the pressure drop across the scrubber, gas flow rate to the scrubber, and total liquid (or scrubbing liquor) flow rate to the scrubber. (2) If you use a wet scrubber of the non-venturi jet-ejector design, you're not required to install and operate a continuous parameter monitoring system for pressure drop.
	d. Any size	No electrostatic precipitator or wet scrubber.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent.
4. Option 3: Ni lb/hr not subject to the NSPS for PM in 40 CFR 60.102.	a. Over 20,000 barrels per day fresh feed capacity.	Electrostatic precipitator	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent and continuous parameter monitoring system to measure and record the gas flow rate.
	b. Up to 20,000 barrels per day fresh feed capacity.	Electrostatic precipitator	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent and continuous parameter monitoring system to measure and record the gas flow rate; or continuous parameter monitoring systems to measure and record the gas flow rate and the voltage and secondary current (or total power input) to the control device.
	c. Any size	Wet scrubber	(1) Continuous parameter monitoring system to measure and record the pressure drop across the scrubber, gas flow rate to the scrubber, and total liquid (or scrubbing liquor) flow rate to the scrubber.

For each new or existing catalytic cracking unit * * *	If your catalytic cracking unit is * * *	And you use this type of control device for your vent ***	You must install, operate, and maintain a * * *
			(2) If you use a wet scrubber of the non-venturi jet-ejector, design, you're not required to install and operate a continuous parameter monitoring system for pressure drop.
	d. Any size	No electrostatic precipitator or wet scrubber.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent and continuous parameter monitoring system to measure and record the gas flow rate.
5. Option 4: Ni lb/1,000 lbs of coke burn-off not subject to the NSPS for PM in 40 CFR 60.102.	a. Over 20,000 barrels per day fresh feed capacity.	Electrostatic precipitator.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent and continuous parameter monitoring system to measure and record the gas flow rate.
	b. Up to 20,000 barrels per day fresh feed capacity.	Electrostatic precipitator.	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent and continuous parameter monitoring system to measure and record the gas flow rate; or continuous parameter monitoring systems to measure and record the gas flow rate and the voltage and secondary current (or total power input) to the control device.
	c. Any size	Wet scrubber	Continuous parameter monitoring system to measure and record the pressure drop across the scrubber, gas flow rate to the scrubber, and total liquid (or scrubbing liquor) flow rate to the scrubber.
	d. Any size.	No electrostatic precipitator or wet scrubber	Continuous opacity monitoring system to measure and record the opacity of emissions from each catalyst regenerator vent and continuous parameter monitoring system to measure and record the gas flow rate.

Table 4 to Subpart UUU of Part 63. – Requirements for Performance Tests for Metal HAP Emissions From Catalytic Cracking Units Not Subject to the New Source Performance Standard (NSPS) for Particulate Matter (PM)

[As stated in §63.1564(b)(2), you must meet each requirement in the following table that applies to you]

For each new or existing catalytic cracking unit catalyst regenerator vent * * *	You must * * *	Using * * *	According to these requirements * * *
1. If you elect Option 1 in item 2 of Table 1, Option 2 in item 3 of Table 1, Option 3 in item 4 of Table 1, or Option 4 in item 5 of Table 1 of this subpart.	a. Select sampling port's location and the number of traverse ports.	Method 1 or 1A in appendix A to part 60 of this chapter.	Sampling sites must be located at the outlet of the control device or the outlet of the regenerator, as applicable, and prior to any releases to the atmosphere.
	b. Determine velocity and volumetric flow rate.	Method 2, 2A, 2C, 2D, 2F, or 2G in appendix A to part 60 of this to part 60 of this chapter, as applicable.	
	c. Conduct gas molecular weight analysis.	Method 3, 3A, or 3B in appendix A to part 60 of this chapter, as applicable.	
	d. Measure moisture content of the stack gas.	Method 4 in appendix A to part 60 of this chapter.	
	e. If you use an electro-static precipitator, record the total number of fields in the control system and how many operated during the applicable performance test.		
	f. If you use a wet scrubber, record the total amount (rate) of water (or scrubbing liquid) and the amount (rate) of make-up liquid to the scrubber during each test run.		
2. Option 1: Elect NSPS	a. Measure PM emissions	Method 5B or 5F (40 CFR part 60, appendix A) to determine PM emissions and associated moisture content for units without wet scrubbers. Method 5B (40 CFR part 60, appendix A) to determine PM emissions and associated moisture content for unit with wet scrubber.	You must maintain a sampling rate of at least 0.15 dry standard cubic meters per minute (dscm/min) (0.53 dry standard cubic feet per minute (dscf/min)).
	b. Compute PM emission rate (lbs/1,000 lbs) of coke burn-off.	Equations 1, 2, and 3 of §63.1564 (if applicable).	
	c. Measure opacity of emissions.	Continuous opacity monitoring system.	You must collect opacity monitoring data every 10 seconds during the entire period of the initial Method 5 performance test and reduce the data to 6-minute averages.
3. Option 2: PM limit	a. Measure PM emissions. . .	See item 2. of this table.	See item 2. of this table.
	b. Compute coke burn-off rate and PM emission rate.	Equations 1 and 2 of §63.1564	

For each new or existing catalytic cracking unit catalyst regenerator vent * * *	You must * * *	Using * * *	According to these requirements * * *
	c. Establish your site-specific opacity operating limit if you use a continuous opacity monitoring system.	Data from the continuous opacity monitoring system.	You must collect opacity monitoring data every 10 seconds during the entire period of the initial Method 5 performance test and reduce the data to 6-minute averages; determine and record the hourly average opacity from all the 6-minute averages; and compute the site-specific limit using Equation 4 of §63.1564.
4. Option 3: Ni lb/hr	a. Measure concentration of Ni and total metal HAP.	Method 29 (40 CFR part 60, appendix A).	You must maintain a sampling rate of at least 0.028 dscm/min (0.74 dscf/min).
	b. Compute Ni emission rate (lb/hr).	Equation 5 of §63.1564.	
	c. Determine the equilibrium catalyst Ni concentration.	EPA Method 6010B or 6020 or EPA Method 7520 or 7521 in SW-846[1]; or, you can use an alternative method satisfactory to the Administrator.	You must obtain 1 sample for each of the 3 runs; determine and record the average equilibrium catalyst Ni concentration for each of the 3 runs; and you may adjust the results for an individual run to the maximum value using Equation 1 of §63.1571.
	d. If you use a continuous opacity monitoring system, establish your site-specific Ni operating limit.	i. Equations 6 and 7 of §63.1564 using data from continuous opacity monitoring system, gas flow rate, results of equilibrium catalyst Ni concentration analysis, and Ni emission rate from Method 29 test.	(1) You must collect opacity monitoring data every 10 seconds during the entire period of the initial Ni performance test; reduce the data to 6-minute averages; and determine and record the hourly average opacity from all the 6-minute averages. (2) You must collect gas flow rate monitoring data every 15 minutes during the entire period of the initial Ni performance test; measure the gas flow as near as practical to the continuous opacity monitoring system; and determine and record the hourly average actual gas flow rate from all the readings.
5. Option 4: Ni lbs/1,000 lbs of coke burn-off.	a. Measure concentration of Ni and total metal HAP.	Method 29 (40 CFR part 60, appendix A).	You must maintain a sampling rate of at least 0.028 dscm/min (0.74 dscf/min).
	b. Compute Ni emission rate (lb/1,000 lbs of coke burn-off).	Equations 1 and 8 of §63.1564.	
	c. Determine the equilibrium catalyst Ni concentration.	EPA Method 6010B or 6020 or EPA Method 7520 or 7521 (SW-846) 1; or, you can use an alternative method satisfactory to the Administrator.	You must obtain 1 sample for each of the 3 runs; determine and record the equilibrium catalyst Ni concentration for each of the 3 samples; and you may adjust the laboratory results to the maximum value using Equation 2 of §63.1571.

For each new or existing catalytic cracking unit catalyst regenerator vent * * *	You must * * *	Using * * *	According to these requirements * * *
	d. If you use a continuous opacity monitoring system, establish your site-specific Ni operating limit.	i. Equations 9 and 10 of §63.1564 with data from continuous opacity monitoring system, coke burn-off rate, gas flow rate, results of equilibrium catalyst Ni concentration analysis, and Ni emission rate from Method 29 test.	(1) You must collect opacity monitoring data every 10 seconds during the entire period of the initial Ni performance test; reduce the data to 6-minute averages; and determine and record the hourly average opacity from all the 6-minute averages.
			(2) You must collect gas flow rate monitoring data every 15 minutes during the entire period of the initial Ni performance test; measure the gas flow rate as near as practical to the continuous opacity monitoring system; and determine and record the hourly average actual gas flow rate from all the readings.
	e. Record the catalyst addition rate for each test and schedule for the 10-day period prior to the test.		
6. If you elect Option 2 in Entry 3 in Table 1, Option 3 in Entry 4 in Table 1, or Option 4 in Entry 5 in Table 1 of this subpart and you use continuous parameter monitoring systems.	a. Establish each operating limit in Table 2 of this subpart that applies to you.	Data from the continuous parameter monitoring systems and applicable performance test methods.	
	b. Electrostatic precipitator or wet scrubber: gas flow rate.	Data from the continuous parameter monitoring systems and applicable performance test methods.	You must collect gas flow rate monitoring data every 15 minutes during the entire period of the initial performance test; and determine and record the maximum hourly average gas flow rate from all the readings.
	c. Electrostatic precipitator: voltage and secondary current (or total power input).	Data from the continuous parameter monitoring systems and applicable performance test methods.	You must collect voltage and secondary current (or total power input) monitoring data every 15 minutes during the entire period of the initial performance test; and determine and record the minimum hourly average voltage and secondary current (or total power input) from all the readings.
	d. Electrostatic precipitator or wet scrubber: equilibrium catalyst Ni concentration.	Results of analysis for equilibrium catalyst Ni concentration.	You must determine and record the average equilibrium catalyst Ni concentration for the 3 runs based on the laboratory results. You may adjust the value using Equation 1 or 2 of §63.1571 as applicable.

For each new or existing catalytic cracking unit catalyst regenerator vent * * *	You must * * *	Using * * *	According to these requirements * * *
	e. Wet scrubber: pressure drop (not applicable to non-venturi scrubber of jet ejector design).	Data from the continuous parameter monitoring systems and applicable performance test methods.	You must collect pressure drop monitoring data every 15 minutes during the entire period of the initial performance test; and determine and record the minimum hourly average pressure drop from all the readings.
	f. Wet scrubber: liquid-to-gas ratio.	Data from the continuous parameter monitoring systems and applicable performance test methods.	You must collect gas flow rate and total water (or scrubbing liquid) flow rate monitoring data every 15 minutes during the entire period of the initial performance test; determine and record the hourly average gas flow rate and total water (or scrubbing liquid) flow rate from all the readings; and determine and record the minimum liquid-to-gas ratio.
	g. Alternative procedure for gas flow rate.	Data from the continuous parameter monitoring systems and applicable performance test methods.	You must collect air flow rate monitoring data or determine the air flow rate using control room instrumentation every 15 minutes during the entire period of the initial performance test; determine and record the hourly average rate of all the readings; and determine and record the maximum gas flow rate using Equation 1 of §63.1573.

[1] EPA Method 6010B, Inductively Coupled Plasma-Atomic Emission Spectrometry, EPA Method 6020, Inductively Coupled Plasma-Mass Spectrometry, EPA Method 7520, Nickel Atomic Absorption, Direct Aspiration, and EPA Method 7521, Nickel Atomic Absorption, Direct Aspiration are included in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Revision 5 (April 1998). The SW-846 and Updates (document number 955-001-00000-1) are available for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512-1800; and from the National Technical Information Services (NTIS), 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650. Copies may be inspected at the Air and Radiation Docket and Information Center, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC; or at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC.

Table 5 to Subpart UUU of Part 63. – Initial Compliance With Metal HAP Emission Limits for Catalytic Cracking Units

[As stated in §63.1564(b)(5), you must meet each requirement in the following table that applies to you]

For each new and existing catalytic cracking unit catalyst regenerator vent * * *	For the following emission limit * * *	You have demonstrated initial compliance if * * *
1. Subject to the NSPS for PM in 40 CFR 60.102.	PM emissions must not exceed 1.0 kg/1,000 kg (1.0 lb/1,000 lb) of coke burn-off in the catalyst regenerator; if the discharged gases pass through an incinerator or waste heat boiler in which you burn auxiliary or supplemental liquid or solid fossil fuel, you must limit the incremental rate of PM to no more than 43.0 grams per Megajoule (g/MJ) or 0.10 pounds per million British thermal units (lb/million Btu) of heat input attributable to the liquid or solid fossil fuel; and the opacity of emissions 30 percent, except for one 6-minute average opacity reading in any 1-hour period.	You have already conducted a performance test to demonstrate initial compliance with the NSPS and the measured PM emission rate is less than or equal to 1.0 kg/1,000 kg (1.0 lb/1,000 lb)of coke burn-off in the catalyst regenerator. As part of the Notification of Compliance Status, you must certify that your vent meets the PM limit. You are not required to do another performance test to demonstrate initial compliance. If applicable, you have already conducted a performance test to demonstrate initial compliance with the NSPS and the measured PM rate is less than or equal to 43.0 g/MJ or 0.010 lb/million Btu of heat attributable to the liquid or solid fossil fuel. As part of the Notification of Compliance Status, you must certify that your vent meets the PM emission limit. You are not required to do another performance test to demonstrate initial compliance. You have already conducted a performance test to demonstrate initial compliance with the NSPS and the average hourly opacity of emissions is no more than 30 percent. Except: one 6-minute average in any 1-hour period canexceed 30 percent. As part of the Notification of Compliance Status, you must certify that your vent meets the opacity limit. You are not required to do another performance test to demonstrate initial compliance. You have already conducted a performance evaluation to demonstrate initial compliance with the applicable performance specification. As part of your Notification of Compliance Status, you certify that your continuous opacity monitoring system meets the requirements in §63.1572. You are not required to do a performance evaluation to demonstrate initial compliance.
2. Option 1: Elect NSPS not subject to the NSPS for PM.	PM emissions must not exceed 1.0 kg/1,000 kg (1.0 lb/1,000 lb) of coke burn-off in the catalyst regenerator; if the discharged gases pass through an incinerator or waste heat boiler in which you burn auxiliary or supplemental liquid or solid fossil fuel, you must limit the incremental rate of PM to no more than 43.0 grams per Megajoule (g/MJ) or 0.10 pounds per million British thermal units (lb/million Btu) of heat input attributable to the liquid or solid fossil fuel; and the opacity of emissions must not exceed 30 percent, except for one 6-minute average opacity reading in any 1-hour period.	The average PM emission rate, measured using EPA method 5 over the period of the initial performance test, is no higher than 1.0 kg/1,000 kg (1.0 lb/1,000 lbs) of coke burn-off in the catalyst regenerator. The PM emission rate is calculated using Equations 1 and 2 of the §63.1564. If applicable, the average PM emission rate, measured using EPA Method 5 over the period of the initial performance test, is no higher than 43.0 g/MJ or 0.010 lb/million Btu of heat input attributable to the liquid or solid fossil fuel. The PM emission rate is calculated using Equation 3 of §63.1564; no more than one 6-minute average measured by the continuous opacity monitoring system exceeds 30 percent opacity in any 1-hour period over the period of the performance test; and your performance evaluation shows the continuous opacity monitoring system meets the applicable requirements in §63.1572.
3. Option 2: not subject to the NSPS for PM.	PM emissions must not exceed 1.0 kg/1,000 kg (1.0 lb/1,000 lb) of coke burn-off in the catalyst regenerator.	The average PM emission rate, measured using EPA Method 5 over the period of the initial performance test, is less than or equal to 1.0 kg/1,000 kg (1.0 lb/1,000 lbs) of coke burn-off in the catalyst regenerator. The PM emission rate is calculated using Equations 1 and 2 of §63.1564; and if you use a continuous opacity monitoring system, yourperformance evaluation shows the system meets the applicable requirements in §63.1572.

For each new and existing catalytic cracking unit catalyst regenerator vent * * *	For the following emission limit * * *	You have demonstrated initial compliance if * * *
4. Option 3: not subject to the NSPS for PM.	Nickel (Ni) emissions from your catalyst regenerator vent must not exceed 13,000 mg/hr (0.029 lb/hr).	The average Ni emission rate, measured using Method 29 over the period of the initial performance test, is not more than 13,000 mg/hr (0.029 lb/hr). The Ni emission rate is calculated using Equation 5 of §63.1564; and if you use a continuous opacity monitoring system, your performance evaluation shows the system meets the applicable requirements in §63.1572.
5. Option 4: Ni lb/1,000 lbs of coke burn-off not subject to the NSPS for PM.	Ni emissions from your catalyst regenerator vent must not exceed 1.0 mg/kg (0.001 lb/ lbs) of coke burn-off in the catalyst regenerator.	The average Ni emission rate, measured using Method 29 over the period of the initial performance test, is not more than 1.0 mg/kg (0.001 lb/1,000 lbs) of coke burn- off in the catalyst regenerator. The Ni emission rate is calculated using Equation 8 of §63.1564; and if you use a continuous opacity monitoring system, your performance evaluation shows the system meets the applicable requirements in §63.1572.

Table 6 to Subpart UUU of Part 63. – Continuous Compliance With Metal HAP Emission Limits for Catalytic Cracking Units

[As stated in §63.1564(c)(1), you must meet each requirement in following table that applies to you]

For each new and existing catalytic cracking unit * * *	Subject to this emission limit for your catalyst regenerator vent * * *	You must demonstrate continuous compliance by * * *
1. Subject to the NSPS for PM in 40 CFR 60.102.	a. PM emissions must not exceed 1.0 lb/1,000 lbs of coke burn-off in the catalyst regenerator; if the discharged gases pass through an incinerator or waste heat boiler in which you burn auxiliary or supplemental liquid or solid fossil fuel, incremental rate of PM can't exceed 43.0 g/MJ (0.10 lb/million Btu) of heat input attributable to the liquid or solid fossil fuel; and opacity of emissions can't exceed 30 percent, except for one 6-minute average opacity reading in any 1-hour period.	i. Determining and recording each day the average coke burn-off rate (thousands of kilograms per hour) using Equation 2 in §63.1564 and the hours of operation for each catalyst regenerator; maintaining PM emission rate below 1.0 kg/1,000 kg (1.0 lb/1,000 lbs) of coke burn-off; if applicable, determining and recording each day the rate of combustion of liquid or solid fossil fuels (liters/hour or kilograms/hour) using Equation 3 of §63.1564 and the hours of operation during which liquid or solid fossil-fuels are combusted in the incinerator-waste heat boiler; if applicable, maintaining PM rate below 43 g/MJ (0.10 lb/million Btu) of heat input attributable to the solid or liquid fossil fuel; collecting the continuous opacity monitoring data for each catalyst regenerator vent according to §63.1572; and maintaining each 6- minute average at or below 30 percent except that one 6-minute average during a 1-hour period can exceed 30 percent.
2. Option 1: Elect NSPS not subject to the NSPS for PM in 40 CFR 60.102.	See item 1.a. of this table.	See item 1.a.i. of this table.
3. Option 2: PM limit not subject to the NSPS for PM.	PM emissions must not exceed 1.0 lb/1000 lbs of coke burn-off in the catalyst regenerator.	Determining and recording each day the average coke burn-off rate (thousands of kilograms per hour) and the hours of operation for each catalyst regenerator by Equation 2 of §63.1564. You can use process data to determine the volumetric flow rate; and maintaining PM emission rate below 1.0 kg/1,000 kg (1.0 lb/1,000 lbs) of coke burn-off.
4. Option 3: Ni lb/hr not subject to the NSPS for PM.	Ni emissions must not exceed 13,000 mg/hr (0.029 lb/hr).	Maintaining Ni emission rate below 13,000 mg/hr (0.029 lb/hr).
5. Option 4: Ni lb/1,000 lbs of coke burn-off not subject to the NSPS for PM.	Ni emissions must not exceed 1.0 mg/kg (0.001 lb/1,000 lbs) of coke burn-in the catalyst regenerator.	Determining and recording each day the average coke burn-off rate (thousands of kilograms per hour) and the hours of operation for each catalyst regenerator by Equation 2 of §63.1564. You can use process data to determine the volumetric flow rate; and maintaining Ni emission rate below 1.0 mg/kg (0.001 lb/1,000 lbs) of coke burn-off in the catalyst regenerator.

Table 7 to Subpart UUU of Part 63. – Continuous Compliance With Operating Limits for Metal HAP Emissions From Catalytic Cracking Units

[As stated in §63.1564(c)(1), you must meet each requirement in the following table that applies to you]

For each new or existing catalytic cracking unit * * *	If you use * * *	For this operating limit * * *	You must demonstrate continuous compliance by * * *
1. Subject to NSPS for PM in 40 CFR 60.102.	Continuous opacity monitoring system.	Not applicable	Complying with Table 6 of this subpart.
2. Option 1: Elect NSPS not subject to the NSPS for PM in 40 CFR 60.102.	Continuous opacity monitoring system.	Not applicable	Complying with Table 6 of this subpart.
3. Option 2: PM limit not subject to the NSPS for PM in 40 CFR 60.102.	a. Continuous opacity monitoring system.	The opacity of emissions from your catalyst regenerator vent must not exceed the site-specific opacity operating limit established during the performance test	Collecting the hourly average continuous opacity monitoring system data according to §63.1572; and maintaining each 6-minute average in each 1-hour period at or below the site-specific limit.
	b. Continuous parameter monitoring systems -- electrostatic precipitator.	i. The daily average gas flow rate to the control device must not exceed the operating limit established during the performance test.	Collecting the hourly and daily average gas flow rate monitoring data according to §63.1572[1]; and maintaining the daily average gas flow rate limit or below the established during the performance test.
		ii. The daily average voltage and secondary current (or total power input) to the control device must not fall below the operating limit established during the performance test.	Collecting the hourly and daily average voltage and secondary current (or total power input) monitoring data according to §63.1572; and maintaining the daily average voltage and secondary current (or power input) at above the limit established during the performance test.
	c. Continuous parameter monitoring systems -- wet scrubber.	i. The daily average pressure drop across the scrubber must not fall below the operating limit established during the performance test.	Collecting the hourly and daily average pressure drop monitoring data according to §63.1572; and maintaining the daily average press drop above the limit established during the performance test.
		ii. The daily average liquid-to-gas ratio must not fall below the operating limit established during the performance test.	Collecting the hourly average gas flow rate and water (or scrubbing liquid) flow monitoring data according to §63.1572[1]; determining and recording the hourly average liquid-to-gas ratio; determining and recording the daily average liquid-to-gas ratio; and maintaining the daily average liquid-to-gas ratio above the limit established during the performance test.

For each new or existing catalytic cracking unit * * *	If you use * * *	For this operating limit * * *	You must demonstrate continuous compliance by * * *
4. Option 3: Ni lb/hr not subject to the NSPS for PM in 40 CFR 60.102.	a. Continuous opacity monitoring system.	The daily average Ni operating value must exceed the site-specific Ni operating limit established during the performance test.	Collecting the hourly average continuous opacity monitoring system data according §63.1572; determining and recording equilibrium catalyst Ni concentration at least once a week collecting the hourly average gas rate monitoring data according to §63.1572[1]; determining and recording the hourly average Ni operating value using Equation 11 of §63.1564; determining and recording the daily average Ni operating value; and maintaining the daily average Ni operating value below the site-specific Ni operating limit established the performance test.
	b. Continuous parameter monitoring systems – electrostatic precipitator.	i. The daily average gas flow rate to the control device must notice exceed the level established in the performance test.	See item 3.b.i. of this table.
		ii. The daily average voltage and secondary current (or total power) must not fall below the level established in the performance test.	See item 3.b.ii. of this table.
		iii. The monthly rolling average of equilibrium catalyst Ni concentration must not exceed the level established during the performance test.	Determining the recording the equilibrium catalyst Ni concentration at least once a week; determining and recording the monthly average of the equilibrium catalyst Ni concentration once each week using the weekly or most recent value; maintaining the monthly rolling average below the limit established in the performance test
	c. Continuous parameter monitoring systems – wet scrubber.	i. The daily average pressure drop must not fall below the operating established in the performance test.	See item 3.c.i. of this table.
		ii. The daily average liquid-to-gas ratio must not fall below the operating limit established during the performance test	See item 3.c.ii. of this table.
		iii. The monthly rolling average equilibrium catalyst Ni concentration must not exceed the level established during the performance test.	Determining and recording the equilibrium catalyst Ni concentration at least once a week; determining and recording the monthly rolling average of equilibrium catalyst Ni concentration once each week using the weekly or most recent value; and maintaining the monthly rolling average below the limit established in the performance test.

For each new or existing catalytic cracking unit * * *	If you use * * *	For this operating limit * * *	You must demonstrate continuous compliance by * * *
5. Option 4: Ni lb/ton of coke burn-off not subject to the NSPS for PM in 40 CFR 60.102	a. Continuous opacity monitoring system.	The daily average Ni operating value must not exceed the site-specific Ni operating limit established during the performance test.	Collecting the hourly average continuous opacity monitoring system data according to §63.1572; collecting the hourly average gas flow rate monitoring data according to §63.1572[1]; determining and recording equilibrium catalyst Ni concentration at least once a week; determining and recording the hourly average Ni operating value using Equation 12 of §63.1564; determining and recording the daily average Ni operating value; and maintaining the daily average Ni operating value below the site-specific Ni operating limit established during the performance test.
	b. Continuous parameter monitoring systems -- electrostatic precipitator.	i. The daily average gas flow rate to the control device must not exceed the level established in the performance test.	See item 3.b.i. of this table.
		ii. The daily average voltage and secondary current (or total power input) must not fall below the level established in the performance test.	See item 3.b.ii. of this table.
		iii. The monthly rolling average equilibrium catalyst Ni concentration must not exceed the level established during the performance test.	See item 4.b.iii. of this table.
	c. Continuous parameter monitoring systems -- wet scrubber.	i. The daily average pressure drop must not fall below the operating limit established in the performance test.	See item 3.c.i. of this table.
		ii. The daily average liquid-to-gas ratio must not fall below the operating limit established during the performance test. See item 3.c.ii. of this table.	
		iii. The monthly rolling average equilibrium catalyst Ni concentration must not exceed the level established during the performance test.	See item 4.c.iii. of this table.

[1]If applicable, you can use the alternative in §63.1573 for gas flow rate instead of a continuous parameter monitoring system if you used the alternative method in the initial performance test. If so, you must continuously monitor and record the air flow rate to the regenerator and the temperature of the gases entering the control device as described in §63.1573. You must determine and record the hourly average gas flow rate using Equation 1 of §63.1573 and the daily average gas flow rate. You must maintain the daily average gas flow rate below the operating limit established during the performance test.

Table 8 to Subpart UUU of Part 63. – Organic HAP Emission Limits for Catalytic Cracking Units

[As stated in §63.1565(a)(1), you must meet each emission limitation in the following table that applies to you]

For each new and existing catalytic cracking unit * * *	You must meet the following emission limit for each catalyst regenerator vent * * *
1. Subject to the NSPS for carbon monoxide (CO) in 40 CFR 60.103.	CO emissions from the catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 parts per million volume (ppmv) (dry basis).
2. Not subject to the NSPS for CO in 40 CFR 60.103	a. CO emissions from the catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 ppmv (dry basis).
	b. If you use a flare to meet the CO limit, the flare must meet the requirements for control devices in §63.11(b): visible emissions must not exceed a total of 5 minutes during any 2 consecutive hours.

Table 9 to Subpart UUU of Part 63. – Operating Limits for Organic HAP Emissions From Catalytic Cracking Units

[As stated in §63.1565(a)(2), you must meet each operating limit in the following table that applies to you]

For each new or existing catalytic cracking unit * * *	For this type of continuous monitoring system * * *	For this type of control device * * *	You must meet this operating limit * * *
1. Subject to the NSPS for carbon monoxide (CO) in 40 CFR 60.103.	Continuous emission monitoring system.	Not applicable	Not applicable.
2. Not subject to the NSPS for CO in 40 CFR 60.103.	a. Continuous emission monitoring system.	Not applicable	Not applicable.
	b. Continuous parameter monitoring systems.	i. Thermal incinerator	Maintain the daily average combustion zone temperature above the limit established during the performance test; and maintain the daily average oxygen concentration in the vent stream (percent, dry basis) above the limit established during the performance test.
		ii. Boiler or process heater with a design heat input capacity under 44 MW or a boiler or process heater in which all vent streams are not introduced into the flame zone.	Maintain the daily average combustion zone temperature above the limit established in the performance test.
		iii. Flare	The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it.

Table 10 to Subpart UUU of Part 63. – Continuous Monitoring Systems for Organic HAP Emissions From Catalytic Cracking Units

[As stated in §63.1565(b)(1), you must meet each requirement in the following table that applies to you]

For each new or existing catalytic cracking unit * * *	And you use this type of control device for your vent * * *	You must install, operate, and maintain this type of continuous monitoring system * * *
1. Subject to the NSPS for carbon monoxide (CO) in 40 CFR 60.103.	Not applicable.	Continuous emission monitoring system to measure and record the concentration by volume (dry basis) of CO emissions from each catalyst regenerator vent.
2. Not subject to the NSPS for CO in 40 CFR 60.103.	a. Thermal incinerator.	Continuous emission monitoring system to measure and record the concentration by volume (dry basis) of CO emissions from each catalyst regenerator vent; or continuous parameter monitoring systems to measure and record the combustion zone temperature and oxygen content (percent, dry basis) in the incinerator vent stream.
	b. Process heater or boiler with a design heat input capacity under 44 MW or process heater or boiler in which all vent streams are not introduced into the flame zone.	Continuous emission monitoring system to measure and record the concentration by volume (dry basis) of CO emissions from each catalyst regenerator vent; or continuous parameter monitoring systems to measure and record the combustion zone temperature.
	c. Flare	Monitoring device such as a thermocouple, an ultraviolet beam sensor, or infrared sensor to continuously detect the presence of a pilot flame.
	d. No control device	Continuous emission monitoring system to measure and record the concentration by volume (dry basis) of CO emissions from each catalyst regenerator vent.

Table 11 to Subpart UUU of Part 63. – Requirements for Performance Tests for Organic HAP Emissions From Catalytic Cracking Units Not Subject to New Source Performance Standard (NSPS) for Carbon Monoxide (CO)

[As stated in §63.1565(b)(2) and (3), you must meet each requirement in the following table that applies to you]

For * * *	You must * * *	Using * * *	According to these requirements * * *
1. Each new or existing catalytic cracking unit catalyst regenerator vent.	a. Select sampling port's location and the number of traverse ports.	Method 1 or 1A in appendix A to part 60 of this chapter.	Sampling sites must be located at the outlet of the control device or the outlet of the regenerator, as applicable, and prior to any releases to the atmosphere.
	b. Determine velocity and volumetric flow rate.	Method 2, 2A, 2D, 2F, or 2G in appendix A to part 60 of this chapter, as applicable.	
	c. Conduct gas molecular weight analysis.	Method 3, 3A, or 3B in appendix A to part 60 of this chapter, as applicable.	
	d. Measure moisture content of the stack gas.	Method 4 in appendix A to part 60 of this chapter.	

For * * *	You must * * *	Using * * *	According to these requirements * * *
2. For each new or existing catalytic cracking unit catalyst regenerator vent if you use a continuous emission monitoring system.	Measure CO emissions.	Data from your continuous emission monitoring system.	Collect CO monitoring data for each vent for 24 consecutive operating hours; and reduce the continuous emission monitoring data to 1-hour averages computed from four or more data points equally spaced over each 1-hour period.
3. Each catalytic cracking unit catalyst regenerator vent if you use continuous parameter monitoring systems.	a. Measure the CO concentration (dry basis) of emissions exiting the control device.	Method 10, 10A, or 10B in appendix A to part 60 of this chapter, as applicable.	
	b. Establish each operating limit in Table 9 of this subpart that applies to you.	Data from the continuous parameter monitoring systems.	
	c. Thermal incinerator combustion zone temperature.	Data from the continuous parameter monitoring systems.	Collect temperature monitoring data every 15 minutes during the entire period of the CO initial performance test; and determine and record the minimum hourly average combustion zone temperature from all the readings.
	d. Thermal incinerator: oxygen, content (percent, dry basis) in the incinerator vent stream.	Data from the continuous parameter monitoring systems.	Collect oxygen concentration (percent, dry basis) monitoring data every 15 minutes during the entire period of the CO initial performance test; and determine and record the minimum hourly average percent excess oxygen concentration from all the readings.
	e. If you use a process heater or boiler with a design heat input capacity under 44 MW or process heater or boiler in which all vent streams are not introduced into the flame zone, establish operating limit for combustion zone temperature.	Data from the continuous parameter monitoring systems.	Collect the temperature monitoring data every 15 minutes during the entire period of the CO initial performance test; and determine and record the minimum hourly average combustion zone temperature from all the readings.
	f. If you use a flare, conduct visible emission observations.	Method 22 (40 CFR part 60, appendix A).	Maintain a 2-hour observation period; and record the presence of a flame at the pilot light over the full period of the test.
	g. If you use a flare, determine that the flare meets the requirements for net heating value of the gas being combusted and exit velocity.	40 CFR 60.11(b)(6)through(8).	

Table 12 to Subpart UUU of Part 63. – Initial Compliance With Organic HAP Emission Limits for Catalytic Cracking Units

[As stated in §63.1565(b)(4), you must meet each requirement in the following table that applies to you]

For each new and existing catalytic cracking unit * * *	For the following emission limit * * *	You have demonstrated initial compliance if * * *
1. Subject to the NSPS for carbon monoxide (CO) in 40 CFR 60.103.	CO emissions from your catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 ppmv (dry basis).	You have already conducted a performance test to demonstrate initial compliance with the NSPS and the measured CO emissions are less than or equal to 500 ppm (dry basis). As part of the Notification of Compliance Status, you must certify that your vent meets the CO limit. You are not required to conduct another performance test to demonstrate initial compliance. You have already conducted a performance evaluation to demonstrate initial compliance with the applicable performance specification. As part of your Notification of Compliance Status, you must certify that your continuous emission monitoring system meets the applicable requirements in §63.1572. You are not required to conduct another performance evaluation to demonstrate initial compliance.
2. Not subject to the NSPS for CO in 40 CFR 60.103.	a. CO emissions from your catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 ppmv (dry basis).	i. If you use a continuous parameter monitoring system, the average CO emissions measured by Method 10 over the period of the initial performance test are less than or equal to 500 ppmv (dry basis). ii. If you use a continuous emission monitoring system, the hourly average CO emissions over the 24-hour period for the initial performance test are not more than 500 ppmv (dry basis); and your performance evaluation shows your continuous emission monitoring system meets the applicable requirements in §63.1572.
	b. If you use a flare, visible emissions must not exceed a total of 5 minutes during any 2 operating hours.	Visible emissions, measured by Method 22 during the 2-hour observation period during the initial performance test, are no higher than 5 minutes.

Table 13 to Subpart UUU of Part 63 – Continuous Compliance With Organic HAP Emission Limits for Catalytic Cracking Units

[As stated in §63.1565(c)(1), you must meet each requirement in the following table that applies to you]

For each new and existing catalytic cracking unit * * *	Subject to this emission limit for your catalyst regenerator vent * * *	If you must * * *	You must demonstrate continuous compliance by * * *
1. Subject to the NSPS for carbon monoxide (CO) in 40 CFR 60.103.	CO emissions from your catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 ppmv (dry basis).	Continuous emission monitoring system.	Collecting the hourly average CO monitoring data according to §63.1572; and maintaining the hourly average CO concentration at or below 500 ppmv (dry basis).
2. Not subject to the NSPS for CO in 40 CFR 60.103.	i. CO emissions from your catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 ppmv (dry basis).	Continuous emission monitoring system.	Same as above.
	ii. CO emissions from your catalyst regenerator vent or CO boiler serving the catalytic cracking unit must not exceed 500 ppmv (dry basis).	Continuous parameter monitoring system.	Maintaining the hourly average CO concentration below 500 ppmv (dry basis).
	iii. Visible emissions from a flare must not exceed a total of 5 minutes during any 2-hour period.	Control device – flare.	Maintaining visible emissions below a total of 5 minutes during any 2-hour operating period.

Table 14 to Subpart UUU of Part 63 – Continuous Compliance With Operating Limits for Organic HAP Emissions From Catalytic Cracking Units

[As stated in §63.1565(c)(1), you must meet each requirement in the following table that applies to you]

For each new existing catalytic cracking unit * * *	If you use * * *	For this operating limit * * *	You must demonstrate continuous compliance by * * *
1. Subject to NSPS for carbon monoxide (CO) in 40 CFR 60.103.	Continuous emission monitoring system.	Not applicable.	Complying with Table 13 of this subpart.
2. Not subject to the NSPS for CO in 40 CFR 60.103.	a. Continuous emission monitoring system.	Not applicable.	Complying with Table 13 of this subpart.
	b. Continuous parameter monitoring systems – thermal incinerator.	i. The daily average combustion zone temperature must not fall below the level established during the performance test.	Collecting the hourly and daily average temperature monitoring data according to §63.1572; and maintaining the daily average combustion zone temperature above the limit established during the performance test.
		ii. The daily average oxygen concentration in the vent stream (percent, dry basis) must not fall below the level established during the performance test.	Collecting the hourly and daily average oxygen concentration monitoring data according to §63.1572; and maintaining the daily average oxygen concentration above the limit established during the performance test.
	c. Continuous parameter monitoring systems -- boiler or process heater with a design heat input capacity under 44 MW or boiler or process heater in which all vent streams are not introduced into the flame zone.	The daily combustion zone temperature must not fall below the level established in the performance test.	Collecting the average hourly and daily temperature monitoring data according to §63.1572; and maintaining the daily average combustion zone temperature above the limit established during the performance test.
	d. Continuous parameter monitoring system -- flare.	The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it.	Collecting the flare monitoring data according to §63.1572; and recording for each 1-hour period whether the monitor was continuously operating and the pilot light was continuously present during each 1-hour period

Table 15 to Subpart UUU of Part 63. – Organic HAP Emission Limits for Catalytic Reforming Units

[As stated in §63.1566(a)(1), you must meet each emission limitation in the following table that applies to you]

For each new or existing catalytic reforming unit * * *	You must meet this emission limit for each process vent during depressuring and purging operation * * *
1. Option 1.....	Vent emissions to a flare that meets the requirements for control devices in §63.11(b). Visible emissions from a flare must not exceed a total of 5 minutes during any 2-hour operating period.
2. Option 2.....	Using a control device, reduce uncontrolled emissions of total organic compounds (TOC) from your process vent by 98 percent by weight or to a concentration of 20 ppmv (dry basis), corrected to 3 percent oxygen, whichever is less stringent. If you vent emissions to a boiler or process heater to comply with the percent reduction or concentration emission limitation, the vent stream must be introduced into the flame zone, or any other location that will achieve the percent reduction or concentration standard.

Table 16 to Subpart UUU of Part 63. – Operating Limits for Organic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1566(a)(2), you must meet each operating limit in the following table that applies to you]

For each new or existing catalytic reforming unit * * *	For this type of control device * * *	You must meet this operating limit during depressuring and purging operations * * *
1. Option 1: vent to flare.....	Flare that meets the requirements for control devices in §63.11(b).	The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it.
2. Option 2: percent reduction or concentration limit.	Thermal incinerator, boiler or process heater with a design heat input capacity under 44 MW, or boiler or process heater in which all vent streams are not introduced into the flame zone.	The daily average combustion zone temperature must not fall below the limit established during the performance test.

Table 17 to Subpart UUU of Part 63. – Continuous Monitoring Systems for Organic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1566(b)(1), you must meet each requirement in following table that applies to you]

For each new or exiting catalytic reforming unit * * *	If you use this type of control device * * *	You must install and operate this type of continuous monitoring system * * *
1. Option 1: vent to a flare	Flare that meets the requirements for control devices in §63.11(b).	Monitoring device such as a thermocouple, an ultraviolet beam sensor, or infrared sensor to continuously detect the presence of a pilot flame.
2. Option 2: percent reduction or concentration limit.	Thermal incinerator, process heater or boiler with a design heat input capacity under 44 MW, or process heater or boiler in which all vent streams are not introduced into the flame zone.	Continuous parameter monitoring systems to measure and record the combustion zone temperature.

Table 18 to Subpart UUU of Part 63. – Requirements for Performance Tests for Organic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1566(b)(2) and (3), you must meet each requirement in the following table that applies to you]

For each new or exiting catalytic reforming unit * * *	You must * * *	Using * * *	According to these requirements * * *
1. Option 1: vent to a flare.	a. Conduct visible emission observations.	Method 22 (40 CFR 60, appendix A).	2-hour observation period. Record the presence of a flame at the pilot light over the full period of the test.
	b. Determine that the flare meets the requirements for net heating value of the gas being combusted and exit velocity.	Not applicable.	40 CFR 60.11(b)(6) through (8).
2. Option 2: percent reduction or concentration limit.	a. Select sampling site.	Method 1 or 1A (40 CFR part 60, appendix A). No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.	Sampling sites must be located at the inlet (if you elect the emission reduction standard) and outlet of the control device and prior to any releases to the atmosphere.
	b. Measure gas volumetric flow rate.	Method 2, 2A, 2C, 2D, 2F, or 2G (40 CFR part 60, appendix A), as applicable.	
	c. Measure TOC concentration (for percent reduction standard).	Method 25 (40 CFR part 60, appendix A) to measure TOC concentration at the inlet and outlet of the control device. If the TOC outlet concentration is expected to be less than 50 ppm, you can use Method 25A to measure TOC concentration at the inlet and the outlet of the control device.	Take either an integrated sample or four grab samples during each run. If you use a grab sampling technique, take the samples at approximately equal intervals in time, such as 15-minute intervals during the run.
	d. Calculate TOC emission rate and mass emission reduction.	Calculate emission rate by Equation 1 of §63.1566 (if you use Method 25) or Equation 2 of §63.1566 (if you use Method 25A). Calculate mass emission reduction by Equation 3 of §63.1566.	
	c. Measure TOC concentration (for concentration standard).	Method 25A (40 CFR part 60, appendix A) to measure TOC concentration at the outlet of the control device.	
	f. Determine oxygen content in the gas stream at the outlet of the control device.	Method 3A or 3B (40 CFR part 60, appendix A),as applicable.	
	g. Correct the measured TOC concentration for oxygen content.	Equation 4 of §63.1566	

For each new or exiting catalytic reforming unit * * *	You must * * *	Using * * *	According to these requirements * * *
	h. Established each operating limit in Table 16 of this subpart that applies to you for a thermal incinerator, or process heater or boiler with a design heat input capacity under 44 MW, or process heater or boiler in which all vent streams are not introduced into the flame zone.	Data from the continuous parameter monitoring systems.	Collect the temperature monitoring data every 15 minutes during the entire period of the initial TOC performance test. Determine and record the minimum hourly average combustion zone temperature.

Table 19 to Subpart UUU of Part 63 – Initial Compliance With Organic HAP Emission Limits for Catalytic Reforming Units

[As stated in §63.1566(b)(7), you must meet each requirement in the following table that applies to you.]

For . . .	For the following emission limit . . .	You have demonstrated initial compliance if
1. Each new and existing catalytic reforming unit.	a. Visible emissions from a flare must not exceed a total of 5 minutes during any 2 consecutive hours.	Visible emissions, measured using Method 22 over the 2-hour observation period of the performance test do not exceed a total of 5 minutes.
	b. Reduce uncontrolled emissions of TOC from your process vent using a control device, by 98 percent by weight or to a concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent.	The mass emission reduction measured using Method 25 over the period of the performance test, is at least 98 percent by weight. The mass emission reduction is calculated using Equations 1 (or 2) and 3 of §63.1566 or the TOC concentration, measured by Method 25A over the period of the performance test, does not exceed 20 ppmv (dry basis), corrected to 3 percent oxygen using Equation 4 of §63.1566.

Table 20 to Subpart UUU of Part 63. – Continuous Compliance With Organic HAP Emission Limits for Catalytic Reforming Units

[As stated in §63.1566(c)(1), you must meet each requirement in the following table that applies to you]

For * * *	For this emission limit * * *	You must demonstrate continuous compliance during depressuring and purging by * * *
1. Option 1: Each new or existing catalytic reforming unit.	Vent emissions from your process vent to a flare that meets the requirements in §63.11(b).	Maintaining visible emissions from a flare below a total of 5 minutes during any 2 consecutive hours.
2. Option 2: Each new or existing catalytic reforming unit.	Using a control device, reduce uncontrolled emissions of TOC from your process vent by 98 percent by weight or to a concentration of 20 ppmv, (dry basis), corrected to 3 percent oxygen, whichever is less stringent.	Maintaining a 98 percent by weight TOC emission reduction; or maintaining a TOC concentration of not more than 20 ppmv (dry basis), corrected to 3 percent oxygen, whichever is less stringent.

Table 21 to Subpart UUU of Part 63. – Continuous Compliance With Operating Limits for Organic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1566(c)(1), you must meet each requirement in the following table that applies to you]

For * * *	If you use * * *	For this operating limit * * *	You must demonstrate continuous compliance during depressuring and purging by * * *
1. Each new or existing catalytic reforming unit.	a. Flare that meets the requirements in §63.11(b).	The flare pilot light must be present at all times and the flare must be operating at all times that emissions may be vented to it.	Collecting flare monitoring data according to §63.1572; and recording for each 1-hour period whether the monitor was continuously operating and the pilot light was continuously present during each 1-hour period.
	b. Thermal incinerator, boiler or process heater with a design input capacity under 44 MW or boiler or process heater in which all vent streams are not introduced into the flame zone.	Maintain the daily average combustion zone temperature above the limit established during the performance test.	Collecting the hourly and daily temperature monitoring data according to §63.1572; and maintaining the daily average combustion zone temperature above the limit established during the performance test.

Table 22 to Subpart UUU of Part 63 – Inorganic HAP Emission Limits for Catalytic Reforming Units

[As stated in §63.1567(a)(1), you must meet each limitation in the following table that applies to you]

For * * *	You must meet this emission limit for your process vent during coke burn-off and catalyst rejuvenation * * *
1. Each existing semi-regenerative catalytic reforming unit.	Reduce uncontrolled emissions of hydrogen chloride (HCl) by 92 percent by weight using a control device or to a concentration of 30 ppmv (dry basis), corrected to 3 percent oxygen.
2. Each existing cyclic or continuous catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 97 percent by weight using a control device or to a concentration of 10 ppmv (dry basis), corrected to 3 percent oxygen.
3. Each new semi-regenerative, cyclic, or continuous catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 97 percent by weight using a control device or to a concentration of 10 ppmv (dry basis), corrected to 3 pereent oxygen.

Table 23 to Subpart UUU of Part 63. – Operating Limits for Inorganic HAP Emission Limitations for Catalytic Reforming Units

[As stated in §63.1567(a)(2), you must meet each operating limit in the following table that applies to you]

For * * *	If you use this type of control device * * *	You must meet this operating limit during coke burn-off and catalyst rejuvenation . . .
1. Each new or existing catalytic reforming unit.	a. Wet scrubber	The daily average pH of the water (or scrubbing liquid) exiting the scrubber must not fall below the limit established during the performance test; and the daily average liquid-to-gas ratio must not fall below the limit established during the performance test.
	b. Internal scrubbing system (i.e., no add-on control device).	The HCl concentration in the catalyst regenerator exhaust gas must not exceed the limit established during the performance test.

Table 24 to Subpart UUU of Part 63. – Continuous Monitoring Systems for Inorganic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1567(b)(1), you must meet each requirement in the following table that applies to you]

If you use this type of control device for your vent * * *	You must install and operate this type of continuous monitoring system * * *
1. Wet scrubber	Continuous parameter monitoring system to measure and record the pH of the water (or scrubbing liquid) exiting the scrubber during coke burn-off and catalyst rejuvenation. If applicable, you can use the alternative in §63.1573 instead of a continuous parameter monitoring system for pH of the water (or scrubbing liquid); and continuous parameter monitoring systems to measure and record the gas flow rate to the scrubber and the total water (or scrubbing liquid) flow rate to the scrubber during coke burn-off and catalyst rejuvenation.
2. Internal scrubbing system (i.e., no add-on control device).	Colormetric tube sampling system to measure the HCl concentration in the catalyst regenerator exhaust gas during coke burn-off and catalyst rejuvenation.

Table 25 to Subpart UUU of Part 63. – Requirements for Performance Tests for Inorganic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1567(b)(2) and (3), you must meet each requirement in the following table that applies to you]

If you use this type of control device or system * * *	You must * * *	Using * * *	According to these requirements * * *
1. Wet scrubber.....	a. Measure the HCl concentration at the outlet of the control device (for the concentration standard) or at the inlet and outlet of the control device (for the percent reduction standard).	i. Method 26A (40 CFR part 60, appendix A).	(1) Sampling rate must be at least 0.014 dscm/min (0.5 dscf/min). You must do the test during the coke burn-off and catalyst rejuvenation cycle, but don't make any test runs during the first hour or the last 6 hours of the cycle. (2) Record the total amount (rate) of scrubbing liquid or solution and the amount (rate) of make-up liquid to the scrubber during each test run.
	b. Establish operating limit for pH level.	.....	(1) Measure and record the pH of the water (or scrubbing liquid) exiting the scrubber every 15 minutes during the entire period of the performance test. Determine and record the hourly average pH level from the recorded values. (2) If you use the alternative method in §63.1573, measure and record the pH of the water (or scrubbing liquid) exiting the scrubber during coke burn-off and catalyst rejuvenation using pH strips at least three times during each run. Determine and record the average pH level.
	c. Establish operating limit for liquid-to-gas ratio.	Data from the continuous parameter monitoring systems.	Measure and record the gas flow rate to the scrubber and the total water (or scrubbing liquid) flow rate to the scrubber every 15 minutes during the entire period of the performance test. Determine and record the hourly average gas flow rate and total water (or scrubbing liquid) flow rate. Determine and record the minimum liquid-to-gas ratio.
2. Internal scrubbing system (i.e., no add-on control device).	a. Measure the concentration of HCl in the catalyst regenerator exhaust gas.	Method 26 (40 CFR part 60, appendix A).	Sampling rate must be at least 0.014 dscm/min (0.5 dscf/min). You must do the test during the coke burn-off and catalyst rejuvenation cycle, but don't make any test runs during the first hour or the last 6 hours of the cycle.
	b. Establish operating limit for HCl concentration.	Measure and record the HCl concentration in the catalyst regenerator exhaust gas using the colorimetric tube sampling system at least three times during each test run. Determine and record the average HCl concentration.	

Table 26 to Subpart UUU of Part 63. – Initial Compliance With Inorganic HAP Emission Limits for Catalytic Reforming Units

[As stated in §63.1567(b)(4), you must meet each requirement in the following table that applies to you]

For* * *	For the following emission limit * * *	You have demonstrated initial compliance if * * *
1. Each existing semi-regenerative catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 92 percent by weight using a control device or to a concentration of 30 ppmv, (dry basis), corrected to 3 percent oxygen.	Average emissions of HCl measured using Method 26 or 26A, as applicable over the period of the performance test, are reduced by 92 percent or to a concentration less than or equal to 30 ppmv (dry basis) corrected to 3 percent oxygen.
2. Each existing cyclic or continuous catalytic reforming unit and each new semi-regenerative, cyclic, or continuous catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 97 percent by weight using a control device, or to a concentration of 10 ppmv (dry basis), corrected to 3 percent oxygen.	Average emissions of HCl measured using Method 26 or 26A, as applicable over the period of the performance test, are reduced by 97 percent or to a concentration less than or equal to 10 ppmv (dry basis) corrected to 3 percent oxygen.

Table 27 to Subpart UUU of Part 63 . – Continuous Compliance Inorganic HAP Emission Limits for Catalytic Reforming Units

[As stated in §63.1567(c)(1), you must meet each requirement in the following table that applies to you]

For * * *	For this emission limit * * *	You must demonstrate continuous compliance during coke burn-off and catalyst rejuvenation by * * *
1. Each existing semi-regenerative catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 92 percent by weight using a control device or to a concentration of 30 ppmv (dry basis), corrected to 3 percent oxygen.	Maintaining a 92 percent HCl emission reduction or an HCl concentration no more than 30 ppmv (dry basis), corrected to 3 percent oxygen.
2. Each existing cyclic or continuous catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 97 percent by weight using a control device, or to a concentration of 10 ppmv (dry basis), corrected to 3 percent oxygen.	Maintaining a 97 percent HCl control efficiency or an HCl concentration no more than 10 ppmv (dry basis), corrected to 3 percent oxygen.
3. Each new semi-regenerative, cyclic, or continuous catalytic reforming unit.	Reduce uncontrolled emissions of HCl by 97 percent by weight using a control device, or to a concentration of 10 ppmv (dry basis), corrected to 3 percent oxygen.	Maintaining a 97 percent HCl control efficiency or an HCl concentration no more than 10 ppmv (dry basis), corrected to 3 percent oxygen.

Table 28 to Subpart UUU of Part 63. – Continuous Compliance With Operating Limits for Inorganic HAP Emissions From Catalytic Reforming Units

[As stated in §63.1567(c)(1), you must meet each requirement in the following table that applies to you]

For * * *	For this operating limit * * *	If you use this type of control device * * *	You must demonstrate continuous compliance during coke burn-off and catalyst rejuvenation by * * *
1. Each new or existing catalytic reforming unit.	a. The daily average pH of the water (or scrubbing and liquid) exiting the scrubber must not fall below the level established during the performance test.	i. Wet scrubber	(1) Collecting the hourly and daily average pH monitoring data according to §63.1572; and maintaining the daily average the pH above the operating limit established during the performance test. (2) If you use the alternative in §63.1573, measuring and recording the pH of the water (or scrubbing liquid) exiting the scrubber every hour according to §63.1572; determining and recording the daily average pH; and maintaining the daily average pH above the operating limit established during the performance test.
	b. The daily average liquid-to-gas ratio must not fall below the level established during the performance test.	Wet scrubber	Collecting the hourly average gas flow rate and total water (or scrubbing liquid) flow rate monitoring data; determining and recording the hourly average liquid-to-gas ratio; determining and recording the daily average liquid-to-gas ratio; and maintaining the daily average liquid-to-gas ratio above the limit established during the performance test.
	c. The HCl concentration in the catalyst regenerator exhaust gas must not exceed the applicable operating limit established during the performance test.	Internal scrubbing system (e.g., no add-on control device).	Measuring and recording the concentration of HCl every 4 hours using a colormetric tube sampling system; and maintaining the HCl concentration below the applicable operating limit.

Table 29 to Subpart UUU of Part 63. – HAP Emission Limits for Sulfur Recovery Units

[As stated in §63.1568(a)(1), you must meet each emission limitation in the following table that applies to you]

For * * *	You must meet this emission limit for each process vent * * *
1. Each new or existing Claus sulfur recovery unit part of a sulfur recovery plant of 20 long tons per day or more and subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	a. 250 ppmv (dry basis) of sulfur dioxide (SO_2) at zero percent excess air if you use an oxidation or reduction control system followed by incineration. b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air if you use a reduction control system without incineration.
2. Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2): Option 1 (Elect NSPS).	a. 250 ppmv (dry basis) of SO_2 at zero percent excess air if you use an oxidation or reduction control system followed by incineration. b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air if you use a reduction control system without incineration.
3. Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in paragraph (a)(2) of 40 CFR 60.104: Option 2 (TRS limit).	300 ppmv of total reduced sulfur (TRS) compounds, expressed as an equivalent SO_2 concentration (dry basis) at zero percent oxygen.

Table 30 to Subpart UUU of Part 63. – Operating Limits for HAP Emissions From Sulfur Recovery Units

[As stated in §63.1568(a)(2), you must meet each operating limit in the following table that applies to you]

For * * *	If use this type of control device	You must meet this operating limit* * *
1. Each new or existing Claus sulfur recovery unit part of a sulfur recovery plant of 20 long tons day or more and subject the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	Not applicable	Not applicable.
2. Each new or existing sulfur recovery unit (or other type, of size) not subject to NSPS for sulfur oxides in 40 CFR 60.104(a)(2): Option 1 (Elect NSPS).	Not applicable	Not applicable.
3. Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2): Option 2 (TRS limit).	Thermal incinerator ..	Maintain the daily average combustion zone temperature above the limit established during the performance test; and maintain the daily average oxygen concentration in the vent stream (percent, dry basis) above the limit established during the performance test.

Table 31 to Subpart UUU of Part 63. – Continuous Monitoring Systems for HAP Emissions From Sulfur Recovery Units

[As stated in §63.1568(b)(1), you must meet each requirement in the following table that applies to you]

For * * *	For this limit * * *	You must install and operate this continuous monitoring system * * *
1. Each new or existing Claus sulfur recovery unit part to a sulfur recovery plant of 20 long tons per day and subject to the NSPS for sulfur oxides in 40 CFR 60.104 (1) (2).	a. 250 ppmv (dry basis) of SO_2 at zero percent excess air if you use an oxidation or reduction control system followed by incineration.	Continuous emission monitoring system to measure and record the hourly average concentration of SO_2 (dry basis) at zero percent excess air for each exhaust stack. This system must include an oxygen monitor for correcting the data for excess air.
	b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air if you use a reduction control system without incineration.	Continuous emission monitoring system to measure and record the hourly average concentration of reduced sulfur and oxygen (O_2) emissions. Calculate the reduced sulfur emissions as SO_2 (dry basis) at zero percent excess air. *Exception*: You can use an instrument having an air or SO_2 dilution and oxidation system to convert the reduced sulfur to SO_2 for continuously monitoring and recording the concentration (dry basis) at zero percent excess air of the resultant SO_2 instead of the reduced sulfur monitor. The monitor must include an oxygen monitor for correcting the data for excess oxygen.
2. Option 1: Elect NSPS. Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in paragraph (a) (2) of 40 CFR 60.104.	a. 250 ppmv (dry basis) of SO_2 at zero percent excess air if you use an oxidation or reduction control system followed by incineration.	Continuous emission monitoring system to measure and record the hourly average concentration of SO_2 (dry basis), at zero percent excess air for each exhaust stack. This system must include an oxygen monitor for correcting the data for excess air.
	b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air if you use a reduction control system without incineration.	Continuous emission monitoring system to measure and record the hourly average concentration of reduced sulfur and O_2 emissions for each exhaust stack. Calculate the reduced sulfur emissions as SO_2 (dry basis), at zero percent excess air. Exception: You can use an instrument having an air or O_2 dilution and oxidation system to convert the reduced sulfur to SO_2 for continuously monitoring and recording the concentration (dry basis) at zero percent excess air of the resultant SO_2 instead of the reduced sulfur monitor. The monitor must include an oxygen monitor for correcting the data for excess oxygen.
3. Option 2: TRS limit Each new or existing sulfur recovery unit (Claus or Other type, regardless or size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104 (a) (2).	300 ppmv of total reduced sulfur (TRS) compounds, expressed as an equivalent SO_2 concentration (dry basis) at zero percent oxygen.	Continuous emission monitoring system to measure and record the hourly average concentration of TRS for each exhaust stack. This monitor must include an oxygen monitor for correcting the data for excess oxygen; or continuous parameter monitoring systems to measure and record the combustion zone temperature of each thermal incinerator and the oxygen content (percent, dry basis) in the vent stream of the incinerator.

Table 32 to Subpart UUU of Part 63. – Requirements for Performance Tests for HAP Emissions From Sulfur Recovery Units Not Subject to the New Source Performance Standards for Sulfur Oxides

[As stated in §63.1568(b)(2) and (3), you must meet each requirement in the following table that applies to you]

For * * *	You must * * *	Using * * *	According to these requirements * * *
1. Each new and existing sulfur recovery unit: Option 1 (Elect NSPS).	Measure SO_2 concentration (for an oxidation or reduction system followed by incineration) or the concentration of reduced sulfur (or SO_2 if you use an instrument to convert the reduced sulfur to SO_2) for a reduction control system without incineration.	Data from continuous emission monitoring system.	Collect SO_2 monitoring data every 15 minutes for 24 consecutive operating hours. Reduce the data to 1-hour averages computed from four or more data points equally spaced over each 1-hour period.
2. Each new and existing sulfur recovery unit: Option 2 (TRS limit).	a. Select sampling port's location and the number of traverse ports.	Method 1 or 1A appendix A to part 60 of this chapter.	Sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere.
	b. Determine velocity and volumetric flow rate.	Method 2, 2A, 2C, 2D, 2F, or 2G in appendix A to part 60 of this chapter, as applicable.	
	c. Conduct gas molecular weight analysis; obtain the oxygen concentration needed to correct the emission rate for excess air.	Method 3, 3A, or 3B in appendix A to part 60 of this chapter, as applicable.	Take the samples simultaneously with reduced sulfur or moisture samples.
	d. Measure moisture content of the stack gas.	Method 4 in appendix A to part 60 of this chapter.	Make your sampling time for each Method 4 sample equal to that for 4 Method 15 samples.
	e. Measure the concentration of TRS.	Method 15 or 15A in appendix A to part 60 of this chapter, as applicable.	If the cross-sectional area of the duct is less than 5 square meters (m^2) or 54 square feet, you must use the centroid of the cross section as the sampling point. If the cross-sectional area is 5 m^2 or more and the centroid is more than 1 meter (m) from the wall, your sampling point may be at a point no closer to the walls than 1 m or 39 inches. Your sampling rate must be at least 3 liters per minute or 0.10 cubic feet per minute to ensure minimum residence time for the sample inside the sample lines.
	f. Calculate the SO_2 equivalent for each run after correcting for moisture and oxygen.	The arithmetic average of the SO_2 equivalent for each sample during the run.	
	g. Correct the reduced sulfur samples to zero percent excess air.sa	Equation 1 of §63.1568.	
	h. Establish each operating limit in Table 30 of this subpart that applies to you.	Data from the continuous parameter monitoring system.	
	i. Measure thermal incinerator: combustion zone temperature.	Data from the continuous parameter monitoring system.	Collect temperature monitoring data every 15 minutes during the entire period of the performance test; and determine and record the minimum hourly average temperature from all the readings.

For * * *	You must * * *	Using * * *	According to these requirements * * *
	j. Measure thermal incinerator: oxygen concentration (percent, dry basis) in the vent stream.	Data from the continuous parameter monitoring system.	Collect oxygen concentration (percent, dry basis) data every 15 minutes during the entire period of the performance test; and determine and record the minimum hourly average percent excess oxygen concentration.
	k. If you use a continuous emission monitoring system, measure TRS concentration.	Data from continuous emission monitoring system.	Collect TRS data every 15 minutes for 24 consecutive operating hours. Reduce the data to 1-hour averages computed from four or more data points equally spaced over each 1-hour period.

Table 33 to Subpart UUU of Part 63 – Initial Compliance With HAP Emission Limits for Sulfur Recovery Units

[As stated in §63.1568(b)(5), you must meet each requirement in the following table that applies to you]

For * * *	For the following emission limit * * *	You have demonstrated initial compliance if * * *
1. Each new or existing Claus sulfur recovery unit part of a sulfur recovery plant of 20 long tons per day and subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	a. 250 ppmv (dry basis) SO_2 at zero percent excess air if you use an oxidation or reduction control system followed by incineration.	You have already conducted a performance test to demonstrate initial compliance with the NSPS and the hourly average SO_2 emissions measured by the continuous emission monitoring system are less than or equal to 250 ppmv (dry basis) at zero percent excess air. As part of the Notification of Compliance Status, you must certify that your vent meets the SO_2 limit. You are not required to do another performance test to demonstrate initial compliance. You have already conducted a performance evaluation to demonstrate initial compliance with the applicable performance specification. As part of your Notification of Compliance Status, you must certify that your continuous emission monitoring system meets the applicable requirements in §63.1572. You are not required to do another performance evaluation to demonstrate initial compliance.
	b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air if you use a reduction control system without incineration.	You have already conducted a performance test to demonstrate initial compliance with the NSPS and the hourly average SO_2 emissions measured by your continuous emission monitoring system are less than or equal to 250 ppmv (dry basis) at zero percent excess air. As part of the Notification of Compliance Status, you must certify that your vent meets the SO_2 limit. You are not required to do another performance test do demonstrate initial compliance. You have already conducted a performance evaluation to demonstrate initial compliance with the applicable performance specification. As part of your Notification of Compliance Status, you must certify that your continuous emission monitoring system meets the applicable requirements in §63.1572. You are not required to do another performance evaluation to demonstrate initial compliance.
2. Option 1: Elect NSPS. Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	a. 250 ppmv (dry basis) of SO_2 at zero percent excess air if you use an oxidation control system followed by incineration.	The hourly average SO_2 emissions measured by the continuous emission monitoring system over the 24-hour period of the initial performance test are not more than 250 ppvm (dry basis) at zero percent excess air; and your performance evaluation shows the monitoring system meets the applicable requirements in §63.1572.
	b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air if you use a reduction control system without incineration.	The hourly average reduced sulfur emissions measured by the continuous emission monitoring system over the 24-hour period of the performance test no more than 300 ppmv, calculated as ppmv SO_2 (dry basis) at zero percent excess air; and your performance evaluation shows the continuous emission monitoring system meets the applicable requirements in §63.1572.
3. Option 2: TRS limit. Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	300 ppmv of TRS compounds expressed as an equivalent SO_2 concentration (dry basis) at zero percent oxygen.	If you do not use a continuous emission monitoring system, the average TRS emissions measured using Method 15 over the period of the initial performance test are less than or equal to 300 ppmv expressed as equivalent SO_2 concentration (dry basis) at zero percent oxygen. If you use a continuous emission monitoring system the hourly average TRS emissions measured by the continuous emission monitoring system over the 24-hour period of the performance test are no more than 300 ppmv expressed as an equivalent SO_2 concentration (dry basis) at zero percent oxygen; and your performance evaluation shows the continuous emission monitoring system meets the applicable requirements in §63.1572.

Table 34 to Subpart UUU of Part 63. – Continuous Compliance With HAP Emission Limits for Sulfur Recovery Units

[As stated in §63.1568(c)(1), you must meet each requirement in the following table that applies to you.]

For * * *	For this emission limit * * *	You must demonstrate continuous compliance by * * *
1. Each new or existing Claus sulfur recovery unit part of a sulfur recovery plant of 20 long tons per or more and subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	a. 250 ppmv (dry basis) SO_2 at zero percent excess air if you use an oxidation or reduction control system followed by incineration.	Collecting the hourly average SO_2 monitoring data (dry basis, percent excess air) according to §63.1572; maintaining the hourly average SO_2 concentration at or below the applicable limit; determining and recording each 12-hour average SO_2 day concentration; and reporting any 12-hour average SO_2concentration greater than the applicable emission limitation in the compliance report required in §63.1575.
	b. 300 ppmv of reduced sulfur compounds calculated as ppmv (dry basis) SO_2 at zero percent excess air if you use a reduction control system without incineration.	Collecting the hourly average reduced sulfur and O_2 data according to §63.1572; and maintaining the hourly average concentration of reduced sulfur at or below the applicable limit; and determining and recording each 12-hour average concentration of reduced sulfur; and reporting any 12-hour average concentration of reduced sulfur greater than the applicable emission limitation in the compliance report required in §63.1575.
2. Option 1: Elect NSPS Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	a. 250 ppmv (dry basis) of SO_2 at zero percent excess air (for oxidation or reduction system followed by incineration).	Collecting the hourly average SO_2 monitoring data (dry basis, percent excess air) according to §63.1572; maintaining the hourly average SO_2 concentration at or below the applicable limit; determining and recording each 12-hour average SO_2 concentration; and reporting any 12-hour average SO_2 concentration greater than the applicable emission limitation in the compliance report required in §63.1575.
	b. 300 ppmv of reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air (for reduction control system without incineration).	Collecting the hourly average reduced sulfur (and air or O_2 dilution and oxidation data) according to §63.1572; maintaining the hourly average SO_2 concentration at or below the applicable limit; reducing the monitoring data to 12-hour averages; and reporting any 12-hour average SO_2 concentration greater than the applicable limit in the compliance report required by §63.1575.
3. Option 2: TRS limit Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2).	300 ppmv of TRS compounds, expressed as an SO_2 concentration (dry basis) at zero percent oxygen or reduced sulfur compounds calculated as ppmv SO_2 (dry basis) at zero percent excess air.	Collecting the hourly average TRS monitoring data according to §63.1572, if you use a continuous emission monitoring system; maintaining the hourly average concentration of TRS at or below the applicable limit; reducing the TRS monitoring data to 12-hour averages; reporting any 12-hour average TRS greater than the applicable limit in the compliance report required by §63.1575; and maintaining the hourly average concentration of TRS below the applicable limit if you use continuous parameter monitoring systems.

Table 35 to Subpart UUU of Part 63. – Continuous Compliance With Operating Limits for HAP Emissions From Sulfur Recovery Units

[As stated in §63.1568(c)(1), you must meet each requirement in the following table that applies to you]

For * * *	For this operating limit * * *	You must demonstrate continuous compliance by * * *
1. Each new or existing Claus sulfur recovery unit part of a sulfur recovery plant of 20 long tons per day or more and subject the NSPS for sulfur in paragraph 40 60.104(a)(2).	Not applicable.	Meeting the requirements of Table 34 of this subpart.
2. Option 1: Elect NSPS Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to NSPS for sulfur oxides 40 CFR 60.104(a)(2).	Not applicable.	Meeting the requirements of Table 34 of this subpart.
3. Option 2: TRS limit Each new or existing sulfur recovery unit (Claus or other type, regardless of size) not subject to the NSPS for sulfur oxides in 40 CFR 60.104(a)(2)	a. Maintain the daily average combustion zone temperature above the level established during the performance test.	Collecting the hourly and daily average temperature monitoring data according to §63.1572; and maintaining the daily average combustion zone temperature at or above the limit established during the performance test.
	b. The daily average oxygen concentration in the vent stream (percent, dry basis) must not fall below the level established during the performance test.	Collecting the hourly and daily average O_2 monitoring data according to §63.1572; and maintaining the average O_2 concentration above the level established during the performance test.

Table 36 to Subpart UUU of Part 63. – Work Practice Standards for HAP Emissions From Bypass Lines

[As stated in §63.1596(a)(1), you must meet each work practice standard in the following table that applies to you]

Option	You must meet one of these equipment standards * * *
1. Option 1	Install and operate a device (including a flow indicator, level recorder, or electronic valve position monitor) to continuously detect, at least every hour, whether flow is present in the bypassline. Install the device at or as near as practical to the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.
2. Option 2	Install a car-seal or lock-and-key device placed on the mechanism by which the bypass device flow position is controlled (e.g., valve handle, damper level) when the bypass device is in the closed position such that the bypass line valve cannot be opened without breaking the seal or removing the device.
3. Option 3	Seal the bypass line by installing a solid blind between piping flanges.
4. Option 4	Vent the bypass line to a control device that meets the appropriate requirements in this subpart.

Table 37 to Subpart UUU of Part 63. – Requirements for Performance Tests for Bypass Lines

[As stated in §63.1596(b)(1), you must meet each work practice standard in the following table that applies to you]

For this standard . . .	You must . . .
1. Option 1: Install and operate a flow indicator, level recorder, or electronic valve position monitor.	Record during the performance test for each type of control device whether the flow indicator, level recorder, or electronic valve position monitor was operating and whether flow was detected at any time during each hour of level the three runs comprising the performance test.

Table 38 to Subpart UUU of Part 63. – Initial Compliance With Work Practice Standards for HAP Emissions from Bypass Lines

[As stated in §63.1569(b)(2), you must meet each requirement in following table that applies to you]

For * * *	For this work practice standard * * *	You have demonstrated initial compliance if * * *
1. Each new or existing bypass line associated with a catalytic cracking unit, catalytic reforming unit, or sulfur recovery unit.	a. Option 1: Install and operate a device (including a flow indicator, level recorder, or electronic valve position monitor) to continuously detect, at least every hour, whether flow is present in the bypass line. Install the device at or as near as practical to the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.	The installed equipment operates properly during each run of the performance test and no flow is present in the line during the test.
	b. Option 2: Install a car-seal or lock-and-key device placed on the mechanism by which the bypass device flow position is controlled (e.g., valve handle, damper level) when the bypass device is in the closed position such that the bypass line valve cannot be opened without breaking the seal or removing the device.	As part of the notification of compliance status, you certify that you installed the equipment, the equipment was operational by your compliance date, and you identify what equipment was installed.
	c. Option 3: Seal the bypass line by installing a solid blind between piping flanges.	See item 1.b. of this table.
	d. Option 4: Vent the bypass line to a control device that meets the appropriate requirements in this subpart.	See item 1.b. of this table.

Table 39 to Subpart UUU of Part 63. – Continuous Compliance With Practice Standards for HAP Emissions From Bypass Lines

[As stated in §63.1569(c)(1), you must meet each requirement in following table that applies to you]

If you elect this standard * * *	You must demonstrate continuous compliance by * * *
1. Option 1: Flow indicator, level recorder, or electronic valve position monitor.	Continuously monitoring and recording whether flow is present in the bypass line; visually inspecting the device at least once every hour if the device is not equipped with a recording system that provides a continuous record; and recording whether the device is operating properly and whether flow is present in the bypass line.
2. Option 2: Car-seal or lock-and-key device.	Visually inspecting the seal or closure mechanism at least once every month; and recording whether the bypass line valve is maintained in the closed position and whether flow is present in the line.
3. Option 3: Solid blind flange	Visually inspecting the blind at least once a month; and recording whether the blind is maintained in the correct position such that the vent stream cannot be diverted through the bypass line.
4. Option 4: Vent to control device. .	Monitoring the control device according to appropriate subpart requirements.
5. Option 1, 2, 3, or 4	Recording and reporting the time and duration of any bypass.

Table 40 to Subpart UUU of Part 63. – Requirements for Installation Operation, and Maintenance of Continuous Opacity Monitoring Systems and Continuous Emission Monitoring Systems

[As stated in §63.1572(a)(1) and (b)(1), you must meet requirement in the following table that applies to you]

This type of continuous opacity or emission monitoring system * * *	Must meet these requirements * * *
1. Continuous opacity monitoring system.	Performance specification 1 (40 CFR part 60, appendix B).
2. CO continuous emission monitoring system.	Performance specification 4 (40 CFR part 60, appendix B); span value of 1,000 ppm; and procedure 1 (40 CFR part 60, appendix F) except relative accuracy test audits are required annually instead of quarterly.
3. CO continuous emission monitoring system used to demonstrate emissions average under 50 ppm (dry basis).	Performance specification 4 (40 CFR part 60, appendix B); and span value of 100 ppm.
4. SO_2 continuous emission monitoring for sulfur recovery unit with oxidation control system or reduction control system; this monitor must include an O_2 monitor for correcting data for excess air.	Performance specification 2 (40 CFR part 60, appendix B); span values of 500 ppm SO_2 and 10 percent O_2; use Methods 6 or 6C and 3A or 3B (40 CFR part 60, appendix A) for certifying O_2 monitor; and procedure 1 (40 CFR part 60, appendix F) except relative accuracy test audits are required annually insteadof quarterly.
5. Reduced sulfur and O_2 continuous emission monitoring system for sulfur recovery unit with reduction control system not followed by incineration; this monitor must include an O_2 monitor for correcting the data for excess air unless exempted.	Performance specification 5 (40 CFR part 60, appendix B), except calibration drift specification is 2.5 percent of the span value instead of 5 percent; 450 ppm reduced sulfur and 10 percent O_2; use Methods 15 or 15A and 3A or 3B (40 CFR part 60, appendix A) for certifying O_2 monitor; if Method 3A or 3B yields O_2 concentrations below 0.25 percent during the performance evaluation, the O_2 concentration can be assumed to be zero and the O_2 monitor is not required; and procedure 1 (40 CFR part 60, appendix F), except relative accuracy test audits, are required annually instead of quarterly.
6. Instrument with an air or dilution and oxidation system to convert reduced sulfur to SO_2 for continuously monitoring the concentration of SO_2 instead of reduced sulfur monitor and O_2 monitor.	Performance specification 5 (40 CFR part 60, appendix B); span value of 375 ppm SO_2 and 10 percent O_2; use Methods 15 or 15A and 3A or 3B for certifying O_2 monitor; and procedure 1 (40 CFR part 60, appendix F), except relative accuracy test audits, are required annually instead of quarterly.
7. TRS continuous emission monitoring system for sulfur recovery unit; this monitor must include an O_2 monitor for correcting the data for excess air.	Performance specification 5 (40 CFR part 60, appendix B).
8. O_2 monitor for oxygen concentration.	If necessary due to interferences, locate the oxygen sensor prior to the introduction of any outside gas stream; performance specification 3 (40 CFR part 60, appendix B; span value for O_2 sensor is 10 percent; and procedure 1 (40 CFR part 60, appendix F), except relative accuracy test audits, are required annually instead of quarterly.

Table 41 to Subpart UUU of Part 63. – Requirements for Installation, Operation, and Maintenance of Continuous Parameter Monitoring Systems

[As stated in §63.1572(c)(1), you must meet each requirement in the following table that applies to you]

If you use a continuous parameter monitoring system to measure and record * * *	You must * * *
1. Voltage and secondary current or total power input.	At least monthly, inspect all components of the continuous parameter monitoring system for integrity and all electrical connections for continuity; and record the results of each inspection.
2. Pressure drop [1]	Locate the pressure sensor(s) in a position that provides a representative measurement of the pressure; minimize or eliminate pulsating pressure, vibration, and internal and external corrosion; use a gauge with an accuracy ± 2 percent over the operating range; check pressure tap for plugs at least once a week; using a manometer, check gauge calibration quarterly and transducer calibration monthly; for a semi-regenerative catalytic reforming unit, you can check the calibration quarterly and monthly or prior to regeneration, whichever is longer; record the results of each calibration; conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor; at least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage; and record the results of each inspection.
3. Air flow rate, gas flow rate, or total water (or scrubbing liquid) flow rate.	Locate the flow sensor(s) and other necessary equipment such as straightening vanes in a position that provides representative flow; use a flow rate sensor with an accuracy within ±5 percent; reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances; conduct a flow sensor calibration check at least semiannually; for a semi-regenerative catalytic reforming unit, you can check the calibration at least semiannually or prior to regeneration, whichever is longer; record the results of each calibration; if you elect to comply with Option 3 (Ni lb/hr) or Option 4 (Ni lb/1,000 lbs of coke burn-off) for the HAP metal emission limitations in §63.1564, install the continuous parameter monitoring system for gas flow rate as close as practical to the continuous opacity monitoring system; and if you don't use a continuous opacity monitoring system, install the continuous parameter monitoring system for gas flow rate as close as practical to the control device.
4. Combustion zone temperature.	Install the temperature sensor in the combustion zone or in the ductwork immediately downstream of the combustion zone before any substantial heat exchange occurs; locate the temperature sensor in a position that provides a representative temperature; use a temperature sensor with an accuracy of ±1 percent of the temperature being measured, expressed in degrees Celsius (C) or ±0.5 degrees C, whichever is greater; shield the temperature sensor system from electromagnetic interference and chemical contaminants; if you use a chart recorder, it must have a sensitivity in the minor division of at least 20 degrees Fahrenheit; perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual; following the electronic calibration, conduct a temperature sensor validation check, in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 16.7 degrees C of the process temperature sensor's reading; record the results of each calibration and validation check; conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range, or install a new temperature sensor; and at least monthly, inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.
5. pH.	Locate the pH sensor in a position that provides a representative measurement of pH; ensure the sample is properly mixed and representative of the fluid to be measured; check the pH meter's calibration on at least two points every 8 hours of process operation; at least monthly, inspect all components for integrity and all electrical components for continuity; record the results of each inspection; and if you use pH strips to measure the pH of the water exiting a wet scrubber as an alternative to a continuous parameter monitoring system, you must use pH strips with an accuracy of 10 percent.
6. HCl concentration	Use a colormetric tube sampling system with a printed numerical scale in ppmv, a standard measurement range of 1 to 10 ppmv (or 1 to 30 ppmv if applicable), and a standard deviation for measured values of no more than ±15 percent. System must include a gas detection pump and hot air probe if needed for the measurement range.

[1] Not applicable to non-venturi wet scrubbers of the jet-ejector design.

Table 42 to Subpart UUU of Part 63. – Additional Information for Initial Notification of Compliance Status

[As stated in §63.1574(d), you must meet each requirement in following table that applies to you]

For * * *	You must provide this additional information * * *
1. Identification of affected sources and emission points.	Nature, size, design, method of operation, operating design capacity of each affected source; identify each emission point for each HAP; identify any affected source or vent associated with an affected source not subject to the requirements of subpart UUU.
2. Initial compliance	Identification of each emission limitation you will meet for each affected source, including any option you select (i.e., NSPS, PM or Ni, flare, percent reduction, concentration, options for bypass lines); if applicable, certification that you have already conducted a performance test to demonstrate initial compliance with the NSPS for an affected source; certification that the vents meet the applicable emission limit and the continuousopacity or that the emission monitoring system meets the applicable performance specification; if applicable, certification that you have installed and verified the operational status of equipment by your compliance date for each bypass line that meets the requirements of Option 2, 3, or 4 in §63.1569 and what equipment you installed; identification of the operating limit for each affected source, including supporting documentation; if your affected source is subject to the NSPS, certification of compliance with NSPS emission limitations and performance specifications; a brief description of performance test conditions (capacity, feed quality, catalyst, etc.); an engineering assessment (if applicable); and if applicable, the flare design (e.g., steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the Method 22 test.
3. Continuous compliance	Each monitoring option you elect; and identification of anyunit or vent for which monitoring is not required; and the definition of "operating day." (This definition, subject to approval by the applicable permitting authority, must specify the times at which a 24-hr operating day begins and ends.)

Table 43 to Subpart UUU of Part 63. – Requirements for Reports

[As stated in §63.1575(a), you must meet each requirement in the following table that applies to you]

You must submit a(n) * * *	The report must contain * * *	You must submit the report * * *
1. Compliance report	If there are not deviations from any emission limitation or work practice standard that applies to you, a statement that there were no deviations from the standards during the reporting period and that no continuous opacity monitoringsystem or continuous emission monitoring system was inoperative, inactive, out-of-control, repaired, or adjusted; and if you have a deviation from any emission limitation or work practice standard during the reporting period, the report must contain the information in §63.1575(d) or (e)	Semiannually according to the requirements in §63.1575(b).

Table 44 to Subpart UUU of Part 63. – Applicability of NESHAP General Provisions to Subpart UUU

[As stated in §63.1577, you must meet each requirement in the following table that applies to you]

Citation	Subject	Applies to subpart UUU	Explanation
§63.1	Applicability	Yes.	Except that subpart UUU specifies calendar or operating day.
§63.2	Definitions	Yes.	
§63.3	Units and Abbreviations.	Yes.	
§63.4	Prohibited Activities	Yes.	
§63.5(a)-(c)	Construction and Reconstruction	Yes	In §63.5(b)(4), replace the reference to §63.9 with §63.9(b)(4) and (5).
§63.5(d)(1)(i)	Application for Approval of Construction or Reconstruction – General Application Requirements.	Yes	Except, subpart UUU specifies the application is submitted as soon as practicable before startup but no later than 90 days (rather than 60) after the promulgation date where construction or reconstruction had commenced and initial startup had not occurred before promulgation.
§63.5(d)(1)(ii)		Yes	Except that emission estimates specified in §63.5(d)(1)(ii)(H) are not required.
§63.5(d)(1)(iii)		No	Subpart UUU specifies submission of notification of compliance status.
§63.5(d)(2)		No.	
§63.5(d)(3)		Yes	Except that §63.5(d)(3)(ii) does not apply.
§63.5(d)(4)		Yes.	
§63.5(e)	Approval of Construction or Reconstruction.		
§63.5(f)(1)	Approval of Construction or Reconstruction Based on State Review.	Yes.	
§63.5(f)(2)		Yes	Except that 60 days is changed to 90 days and cross-reference to §63.9(b)(2) does not apply.
§63.6(a)	Compliance with Standards and Maintenance – Applicability.	Yes.	
§63.6(b)(1)-(4)	Compliance Dates for and Reconstructed Sources.	Yes.	
§63.6(b)(5)		Yes	Except that subpart UUU specifies different compliance dates for sources.
§63.6(b)(6)	[Reserved]	Not applicable.	
§63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major.	Yes.	
§63.6(c)(1)-(2)	Compliance Dates for Existing Sources.	Yes	Except that for subpart UUU specifies different compliance dates for sources subject to Tier II gasoline sulfur control requirements.

Citation	Subject	Applies to subpart UUU	Explanation
§63.6(c)(3)-(4)	[Reserved]	Not applicable.	
§63.6(c)(5) ...	Compliance Dates for Existing Area Sources That Become Major.	Yes.	
§63.6(d)	[Reserved]	Not applicable.	
§63.6(e)(1)-(2)	Operation and Maintenance Requirements.	Yes.	
§63.6(e)(3)(i)-(iii)	Startup, Shutdown, and Malfunction Plan.		
§63.6(e)(3)(iv)	.....		Except that reports of actions not consistent with plan are not required within 2 and 7 days of action but rather must be included in next periodic report.
§63.6(e)(3)(v)-(viii)	.....	Yes.	The owner or operator is only required to keep the latest version of the plan.
§63.6(f)(1)-(2)(iii)(C)	Compliance with Emission Standards.		
§63.6(f)(2)-(iii)(D)	.....	No.	
§63.6(f)(2)(iv)-(v).	.....	Yes.	
§63.6(f)(3) ...			
§63.6(g)	Alternative Standard	Yes.	
§63.6(h)	Opacity/VE Standards		
§63.6(h)(2)(i).	Determining Compliance with Opacity/VE Standards	No	Subpart UUU specifies methods.
§63.6(h)(2)(ii)	[Reserved]	Not applicable.	
§63.6(h)(2)(iii)	.....	Yes.	
§63.6(h)(3) ...	[Reserved]		
§63.6(h)(4) ...	Notification of Opacity/VE Observation Date.		Applies to Method 22 tests.
§63.6(h)(5) ...	Conducting Opacity/VE Observations.	No.	
§63.6(h)(6) ...	Records of Conditions During Opacity/VE Observations.	Yes.	Applies to Method 22 observations.
§63.6(h)(7)(i)	Report COM Monitoring Data from Performance Test.	Yes.	
§63.6(h)(7)(ii)	Using COM Instead of Method 9....	No.	
§63.6(h)(7)(iii)	Averaging Time for COM during Performance Test.	Yes.	
§63.6(h)(7)(iv)	COM Requirements	Yes.	

Citation	Subject	Applies to subpart UUU	Explanation
§63.6(h)(8) . . .	Determining Compliance with Opacity/VE Standards.	Yes.	
§63.6(h)(9) . . .	Adjusted Opacity Standard	Yes.	
§63.6(i)(1)-(14)	Extension of Compliance	Yes.	Not applicable to an affected source with Tier II compliance date. May be applicable to an affected source exempt from Tier II rule.
§63.6(i)(15) . . .	[Reserved]	Not applicable.	
§63.6(i)(16) . . .	. . . . .	Yes.	

[FR Doc. 02-7222 Filed 4-10-02; 8:45 am]
BILLING CODE 6560-50-P

Appendix K

40 CFR 61 Subpart A and Subpart FF

Part 61, Subpart A – General Provisions

§ 61.01 Lists of pollutants and applicability of part 61.

(a) The following list presents the substances that, pursuant to section 112 of the Act, have been designated as hazardous air pollutants. The Federal Register citations and dates refer to the publication in which the listing decision was originally published.

Asbestos (36 FR 5931; Mar. 31, 1971)

Benzene (42 FR 29332; June 8, 1977)

Beryllium (36 FR 5931; Mar. 31, 1971)

Coke Oven Emissions (49 FR 36560; Sept. 18, 1984)

Inorganic Arsenic (45 FR 37886; June 5, 1980)

Mercury (36 FR 5931; Mar. 31, 1971)

Radionuclides (44 FR 76738; Dec. 27, 1979)

Vinyl Chloride (40 FR 59532; Dec. 24, 1975)

(b) The following list presents other substances for which a Federal Register notice has been published that included consideration of the serious health effects, including cancer, from ambient air exposure to the substance.

Acrylonitrile (50 FR 24319; June 10, 1985)

1,3-Butadiene (50 FR 41466; Oct. 10, 1985)

Cadmium (50 FR 42000; Oct. 16, 1985)

Carbon Tetrachloride (50 FR 32621; Aug. 13, 1985)

Chlorinated Benzenes (50 FR 32628; Aug. 13, 1985)

Chlorofluorocarbon-113 (50 FR 24313; June 10, 1985)

Chloroform (50 FR 39626; Sept. 27, 1985)

Chloroprene (50 FR 39632; Sept. 27, 1985)

Chromium (50 FR 24317; June 10, 1985)

Copper (52 FR 5496; Feb. 23, 1987)

Epichlorohydrin (50 FR 24575; June 11, 1985)

Ethylene Dichloride (50 FR 41994; Oct. 16, 1985)

Ethylene Oxide (50 FR 40286; Oct. 2, 1985)

Hexachlorocyclopentadiene (50 FR 40154; Oct. 1, 1985)

Manganese (50 FR 32627; Aug. 13, 1985)

Methyl Chloroform (50 FR 24314; June 10, 1985)

Methylene Chloride (50 FR 42037; Oct. 17, 1985)

Nickel (51 FR 34135; Sept. 25, 1986)

Perchloroethylene (50 FR 52800; Dec. 26, 1985)

Phenol (51 FR 22854; June 23, 1986)

Polycyclic Organic Matter (49 FR 31680; Aug. 8, 1984)

Toluene (49 FR 22195; May 25, 1984)

Trichloroethylene (50 FR 52422; Dec. 23, 1985)

Vinylidene Chloride (50 FR 32632; Aug. 13, 1985)

Zinc and Zinc Oxide (52 FR 32597, Aug. 28, 1987)

(c) This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part.

(d) In addition to complying with the provisions of this part, the owner or operator of a stationary source subject to a standard in this part may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to title V of the Clean Air Act (Act) as amended November 15, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter.

[50 FR 46290, Nov. 7, 1985, as amended at 51 FR 7715 and 7719, Mar. 5, 1986; 51 FR 11022, Apr. 1, 1986; 52 FR 37617, Oct. 8, 1987; 59 FR 12429, Mar. 16, 1994]

§ 61.02 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 et seq.).

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference method but which has been demonstrated to the Administrator's satisfaction to produce results adequate for the Administrator's determination of compliance.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

Capital expenditure means an expenditure for a physical or operational change to a stationary source which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the stationary source's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to a stationary source must not be reduced by any "excluded additions" as defined for stationary sources constructed after December 31, 1981, in IRS Publication 534, as would be done for tax purposes. In addition, "annual asset guideline repair allowance" may be used even though it is excluded for tax purposes in IRS Publication 534.

Commenced means, with respect to the definition of "new source" in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Compliance schedule means the date or dates by which a source or category of sources is required to comply with the standards of this part and with any steps toward such compliance which are set forth in a waiver of compliance under §61.11.

Construction means fabrication, erection, or installation of an affected facility.

Effective date is the date of promulgation in the Federal Register of an applicable standard or other regulation under this part.

Existing source means any stationary source which is not a new source.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

Monitoring system means any system, required under the monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a record of emissions or process parameters.

New source means any stationary source, the construction or modification of which is commenced after the publication in the Federal Register of proposed national emission standards for hazardous air pollutants which will be applicable to such source.

Owner or operator means any person who owns, leases, operates, controls, or supervises a stationary source.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permitting authority means:

(1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Reference method means any method of sampling and analyzing for an air pollutant, as described in Appendix B to this part.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Standard means a national emission standard including a design, equipment, work practice or operational standard for a hazardous air pollutant proposed or promulgated under this part.

Startup means the setting in operation of a stationary source for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement:

(1) The provisions of this part; and/or

(2) The permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant which has been designated as hazardous by the Administrator.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

[44 FR 55174, Sept. 25, 1979, as amended at 50 FR 46290, Nov. 7, 1985; 59 FR 12429, Mar. 16, 1994]

§ 61.03 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A=ampere
g=gram
Hz=hertz
J=joule
K=degree Kelvin
kg=kilogram
m=meter
m^2=square meter
m^3=cubic meter
mg=milligram=10^{-3} gram
mm=millimeter=10^{-3} meter
Mg=megagram=10^{-6} gram
mol=mole
N=newton
ng=nanogram=10^{-9} gram
nm=nanometer=10^{-9} meter
Pa=pascal
s=second
V=volt
W=watt
V=ohm
μg=microgram=10^{-6} gram

(b) Other units of measure:

°C=degree Celsius (centigrade)
cfm=cubic feet per minute
cc=cubic centimeter
Ci=curie
d=day
°F=degree Fahrenheit
ft^2=square feet
ft^3=cubic feet
gal=gallon
in=inch
in Hg=inches of mercury
in H_2O=inches of water
l=liter
lb=pound
lpm=liter per minute
min=minute
ml=milliliter=10^{-3} liter
mrem=millirem=10^{-3} rem
oz=ounces
pCi=picocurie=10^{-12} curie
psig=pounds per square inch gage
°R=degree Rankine
μl=microliter=10^{-6} liter
v/v=volume per volume
yd^2=square yards
yr=year

(c) Chemical nomenclature:

Be=beryllium
Hg=mercury
H_2O=water

(d) Miscellaneous:

act=actual
avg=average
I.D.=inside diameter
M=molar
N=normal
O.D.=outside diameter
%=percent
std=standard

[42 FR 51574, Sept. 29, 1977, as amended at 54 FR 51704, Dec. 15, 1989]

§ 61.04 Address.

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following list of EPA Regional Offices.

Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont), Director, Air Management Division, U.S. Environmental Protection Agency, John F. Kennedy Federal Building, Boston, MA 02203.

Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Federal Office Building, 26 Federal Plaza (Foley Square), New York, NY 10278.

Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Curtis Building, Sixth and Walnut Streets, Philadelphia, PA 19106.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 345 Courtland Street, NE., Atlanta, GA 30365.

Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, IL 60604-3590.

Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director; Air, Pesticides, and Toxics Division; U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.

Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air, RCRA, and Toxics Division, U.S. Environmental Protection Agency, 901 N. 5th Street, Kansas City, KS 66101.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), Assistant Regional Administrator, Office of Enforcement, Compliance and Environmental Justice, 999 18th Street, Suite 300, Denver, CO 80202-2466.

Region IX (American Samoa, Arizona, California, Guam, Hawaii, Nevada), Director, Air Division, U.S. Environmental Protection Agency, 75 Hawthorne Street, San Francisco, CA 94105.

Region X (Alaska, Oregon, Idaho, Washington), Director, Office of Air Quality, U.S. Environmental Protection Agency, 1200 Sixth Avenue (OAQ-107), Seattle, WA 98101.

(b) Section 112(d) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce national emission standards for hazardous air pollutants for stationary sources located in such State. If the authority to implement and enforce a standard under this part has been delegated to a State, all information required to be submitted to EPA under paragraph (a) of this section shall also be submitted to the appropriate State agency (provided, that each specific delegation may exempt sources from a certain Federal or State reporting requirement). The Administrator may permit all or some of the information to be submitted to the appropriate State agency only, instead of to EPA and the State agency. If acceptable to both the Administrator and the owner or operator of a source, notifications and reports may be submitted on electronic media. The appropriate mailing address for those States whose delegation request has been approved is as follows:

(A) - (YY) ***not included in this document as they do not pertain to sources in Wyoming.***

(ZZ) State of Wyoming, Air Quality Division, Department of Environmental Quality, 122 W. 25th Street, Cheyenne, WY 82002.

(AAA) - (EEE) ***not included in this document as they do not pertain to sources in Wyoming.***

(c) The following tables list, by Region, the specific Part 61, National Emission Standards for Hazardous Air Pollutants that have been delegated to state and local agencies.

(1) - (7) [Reserved]

(8) The following is a table indicating the delegation status of National Emission Standards for Hazardous Air Pollutants in Region VIII.

Region VIII--Delegation Status of National Emission Standards for Hazardous Air Pollutants[1]

Subpart	CO	MT	ND	SD	UT[2]	WY
A--General Provisions	(*)	(*)	(*)	(*)	(*)	
B--Radon Emissions from Underground Uranium Mines					(*)	
C--Beryllium	(*)	(*)	(*)		(*)	
D--Beryllium Rocket Motor Firing	(*)	(*)	(*)		(*)	
E--Mercury	(*)	(*)	(*)		(*)	
F--Vinyl Chloride	(*)	(*)	(*)		(*)	
H--Emissions of Radionuclides other than Radon from Department of Energy Facilities						
I--Radionuclide Emissions from Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities not covered by Subpart H						
J--Equipment Leaks (Fugitive Emission Sources) of Benzene	(*)	(*)	(*)		(*)	
K--Radionuclide Emissions from Elemental Phosphorus Plants						
L--Benzene Emissions from Coke By-Product Recovery Plants		(*)	(*)		(*)	
M--Asbestos	(*)	(*)	(*)	(*)	(*)	[3](*)
N--Inorganic Arsenic Emissions from Glass Manufacturing Plants		(*)	(*)		(*)	
O--Inorganic Arsenic Emissions from Primary Copper Smelters		(*)	(*)		(*)	
P--Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities		(*)	(*)		(*)	
Q--Radon Emissions from Department of Energy Facilities					(*)	
R--Radon Emission from Phosphogypsum Stacks					(*)	
T--Radon Emissions from the Disposal of Uranium Mill Tailings					(*)	
V--Equipment Leaks (Fugitive Emission Sources)		(*)	(*)		(*)	
W--Radon Emissions from Operating Mill Tailings					(*)	
Y--Benzene Emissions from Benzene Storage Vessels		(*)	(*)		(*)	
BB--Benzene Emission from Benzene Transfer Operations		(*)	(*)		(*)	
FF--Benzene Waste Operations		(*)	(*)		(*)	

(*)Indicates approval of delegation of subpart to state.

[1]Authorities which may not be delegated include 40 CFR 61.04(b), 61.12(d)(1), 61.13(h)(1)(ii), 61.112(c), 61.164(a)(2), 61.164(a)(3), 61.172(b)(2)(ii)(B), 61.172(b)(2)(ii)(C), 61.174(a)(2), 61.174(a)(3), 61.242 - 1(c)(2), 61.244, and all authorities listed as not delegable in each subpart under Delegation of Authority.

[2]Indicates approval of National Emission Standards for Hazardous Air Pollutants as part of the State Implementation Plan (SIP) with the exception of the radionuclide NESHAP Subparts B, Q, R, T, W which were approved through Section 112(l) of the Clean Air Act.

[3]Delegation only for asbestos demolition, renovation, spraying, manufacturing, and fabricating operations, insulating materials, waste disposal for demolition, renovation, spraying, manufacturing and fabricating operations, inactive waste disposal sites for manufacturing and fabricating operations, and operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material.

(9) - (10) *not included in this document as they do not pertain to sources in Wyoming.*

[40 FR 18170, Apr. 25, 1975]

Editorial Note: For Federal Register citations to §61.04 see the List of CFR Sections Affected appearing in the Finding Aids section of the printed volume and on GPO access.

§ 61.05 Prohibited activities.

(a) After the effective date of any standard, no owner or operator shall construct or modify any stationary source subject to that standard without first obtaining written approval from the Administrator in accordance with this subpart, except under an exemption granted by the President under section 112(c)(2) of the Act. Sources, the construction or modification of which commenced after the publication date of the standards proposed to be applicable to the sources, are subject to this prohibition.

(b) After the effective date of any standard, no owner or operator shall operate a new stationary source subject to that standard in violation of the standard, except under an exemption granted by the President under section 112(c)(2) of the Act.

(c) Ninety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the Act.

(d) No owner or operator subject to the provisions of this part shall fail to report, revise reports, or report source test results as required under this part.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46291, Nov. 7, 1985]

§ 61.06 Determination of construction or modification.

An owner or operator may submit to the Administrator a written application for a determination of whether actions intended to be taken by the owner or operator constitute construction or modification, or commencement thereof, of a source subject to a standard. The Administrator will notify the owner or operator of his determination within 30 days after receiving sufficient information to evaluate the application.

[50 FR 46291, Nov. 7, 1985]

§ 61.07 Application for approval of construction or modification.

(a) The owner or operator shall submit to the Administrator an application for approval of the construction of any new source or modification of any existing source. The application shall be submitted before the construction or modification is planned to commence, or within 30 days after the effective date if the construction or modification had commenced before the effective date and initial startup has not occurred. A separate application shall be submitted for each stationary source.

(b) Each application for approval of construction shall include-

(1) The name and address of the applicant;

(2) The location or proposed location of the source; and

(3) Technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including a description of any equipment to be used for control of emissions. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations.

(c) Each application for approval of modification shall include, in addition to the information required in paragraph (b) of this section-

(1) The precise nature of the proposed changes;

(2) The productive capacity of the source before and after the changes are completed; and

(3) Calculations of estimates of emissions before and after the changes are completed, in sufficient detail to permit assessment of the validity of the calculations.

[50 FR 46291, Nov. 7, 1985]

§ 61.08 Approval of construction or modification.

(a) The Administrator will notify the owner or operator of approval or intention to deny approval of construction or modification within 60 days after receipt of sufficient information to evaluate an application under §61.07.

(b) If the Administrator determines that a stationary source for which an application under §61.07 was submitted will not cause emissions in violation of a standard if properly operated, the Administrator will approve the construction or modification.

(c) Before denying any application for approval of construction or modification, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with-

(1) Notice of the information and findings on which the intended denial is based; and

(2) Notice of opportunity for the applicant to present, within such time limit as the Administrator shall specify, additional information or arguments to the Administrator before final action on the application.

(d) A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 days of presentation of additional information or arguments, or 60 days after the final date specified for presentation if no presentation is made.

(e) Neither the submission of an application for approval nor the Administrator's approval of construction or modification shall-

(1) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or of any other applicable Federal, State, or local requirement; or

(2) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act.

[50 FR 46291, Nov. 7, 1985]

§ 61.09 Notification of startup.

(a) The owner or operator of each stationary source which has an initial startup after the effective date of a standard shall furnish the Administrator with written notification as follows:

(1) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date.

(2) A notification of the actual date of initial startup of the source within 15 days after that date.

(b) If any State or local agency requires a notice which contains all the information required in the notification in paragraph (a) of this section, sending the Administrator a copy of that notification will satisfy paragraph (a) of this section.

[50 FR 46291, Nov. 7, 1985]

§ 61.10 Source reporting and waiver request.

(a) The owner or operator of each existing source or each new source which had an initial startup before the effective date shall provide the following information in writing to the Administrator within 90 days after the effective date:

(1) Name and address of the owner or operator.

(2) The location of the source.

(3) The type of hazardous pollutants emitted by the stationary source.

(4) A brief description of the nature, size, design, and method of operation of the stationary source including the operating design capacity of the source. Identify each point of emission for each hazardous pollutant.

(5) The average weight per month of the hazardous materials being processed by the source, over the last 12 months preceding the date of the report.

(6) A description of the existing control equipment for each emission point including-

(i) Each control device for each hazardous pollutant; and

(ii) Estimated control efficiency (percent) for each control device.

(7) A statement by the owner or operator of the source as to whether the source can comply with the standards within 90 days after the effective date.

(b) The owner or operator of an existing source unable to comply with an applicable standard may request a waiver of compliance with that standard for a period not exceeding 2 years after the effective date. Any request shall be in writing and shall include the following information:

(1) A description of the controls to be installed to comply with the standard.

(2) A compliance schedule, including the date each step toward compliance will be reached. The list shall include as a minimum the following dates:

(i) Date by which contracts for emission control systems or process changes for emission control will be awarded, or date by which orders will be issued for the purchase of component parts to accomplish emission control or process changes;

(ii) Date of initiation of onsite construction or installation of emission control equipment or process change;

(iii) Date by which onsite construction or installation of emission control equipment or process change is to be completed; and

(iv) Date by which final compliance is to be achieved.

(3) A description of interim emission control steps which will be taken during the waiver period.

(c) Any change in the information provided under paragraph (a) of this section or §§61.07(b) shall be provided to the Administrator within 30 days after the change. However, if any change will result from modification of the source, §§61.07(c) and 61.08 apply.

(d) A possible format for reporting under this section is included as appendix A of this part. Advice on reporting the status of compliance may be obtained from the Administrator.

(e) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word "calendar" is absent, unless otherwise specified in an applicable requirement.

(f) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery agreed to by the permitting authority, is acceptable.

(g) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(h) If an owner or operator of a stationary source in a State with delegated authority is required to submit reports under this part to the State, and if the State has an established timeline for the submission of reports that is consistent with the reporting frequency(ies) specified for such source under this part, the owner or operator may change the dates by which reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. The allowance in the previous sentence applies in each State beginning 1 year after the source is required to be in compliance with the applicable subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(i) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under part 60, part 63, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State with an approved permit program) a common schedule on which reports required by each applicable standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the source is required to be in compliance with the applicable subpart in this part, or 1 year after the source is required to be in compliance with the applicable part 60 or part 63 standard, whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (j) of this section.

(j)(1)(i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (j)(2) and (j)(3) of this section, the owner or operator of an affected source remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (j)(2) and (j)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

[38 FR 8826, Apr. 6, 1973, as amended at 50 FR 46292, Nov. 7, 1985; 59 FR 12430, Mar. 16, 1994]

§ 61.11 Waiver of compliance.

(a) Based on the information provided in any request under §61.10, or other information, the Administrator may grant a waiver of compliance with a standard for a period not exceeding 2 years after the effective date of the standard.

(b) The waiver will be in writing and will-

(1) Identify the stationary source covered;

(2) Specify the termination date of the waiver;

(3) Specify dates by which steps toward

compliance are to be taken; and

(4) Specify any additional conditions which the Administrator determines necessary to assure installation of the necessary controls within the waiver period and to assure protection of the health of persons during the waiver period.

(c) The Administrator may terminate the waiver at an earlier date than specified if any specification under paragraphs (b)(3) and (b)(4) of this section are not met.

(d) Before denying any request for a waiver, the Administrator will notify the owner or operator making the request of the Administrator's intention to issue the denial, together with-

(1) Notice of the information and findings on which the intended denial is based; and

(2) Notice of opportunity for the owner or operator to present, within the time limit the Administrator specifies, additional information or arguments to the Administrator before final action on the request.

(e) A final determination to deny any request for a waiver will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 60 days after presentation of additional information or argument; or within 60 days after the final date specified for the presentation if no presentation is made.

(f) The granting of a waiver under this section shall not abrogate the Administrator's authority under section 114 of the Act.

[50 FR 46292, Nov. 7, 1985]

§ 61.12 Compliance with standards and maintenance requirements.

(a) Compliance with numerical emission limits shall be determined in accordance with emission tests established in §61.13 or as otherwise specified in an individual subpart.

(b) Compliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart.

(c) The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.

(d)(1) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of a pollutant from a source at least equivalent to the reduction in emissions of that pollutant from that source achieved under any design, equipment, work practice or operational standard, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with the standard. The notice will restrict the permission to the source(s) or category(ies) of sources on which the alternative means will achieve equivalent emission reductions. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(2) Any notice under paragraph (d)(1) shall be published only after notice and an opportunity for a hearing.

(3) Any person seeking permission under this subsection shall, unless otherwise specified in the applicable subpart, submit a proposed test plan or the results of testing and monitoring, a description of the procedures followed in testing or monitoring, and a description of pertinent conditions during testing or monitoring.

(e) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

[50 FR 46292, Nov. 7, 1985, as amended 62 FR 8328, Feb. 24, 1997]

§ 61.13 Emission tests and waiver of emission tests.

(a) If required to do emission testing by an applicable subpart and unless a waiver of emission testing is obtained under this section, the owner or operator shall test emissions from the source-

(1) Within 90 days after the effective date, for an existing source or a new source which has an initial startup date before the effective date; or

(2) Within 90 days after initial startup, for a new source which has an initial startup date after the effective date.

(b) The Administrator may require an owner or operator to test emissions from the source at any other time when the action is authorized by section 114 of the Act.

(c) The owner or operator shall notify the Administrator of the emission test at least 30 days before the emission test to allow the Administrator the opportunity to have an observer present during the test.

(d) If required to do emission testing, the owner or operator of each new source and, at the request of the Administrator, the owner or operator of each existing source shall provide emission testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to each source.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(5) Any other facilities that the Administrator needs to safely and properly test a source.

(e) Each emission test shall be conducted under such conditions as the Administrator shall specify based on design and operational characteristics of the source.

(f) Unless otherwise specified in an applicable subpart, samples shall be analyzed and emissions determined within 30 days after each emission test has been completed. The owner or operator shall report the determinations of the emission test to the Administrator by a registered letter sent before the close of business on the 31st day following the completion of the emission test.

(g) The owner or operator shall retain at the source and make available, upon request, for inspection by the Administrator, for a minimum of 2 years, records of emission test results and other data needed to determine emissions.

(h)(1) Emission tests shall be conducted as set forth in this section, the applicable subpart and appendix B unless the Administrator-

(i) Specifies or approves the use of a reference method with minor changes in methodology; or

(ii) Approves the use of an alternative method; or

(iii) Waives the requirement for emission testing because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the source is in compliance with the standard.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail.

(3) The owner or operator may request approval for the use of an alternative method at any time, except-

(i) For an existing source or a new source that had an initial startup before the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator within 30 days

after the effective date, or with the request for a waiver of compliance if one is submitted under §§60.10(b); or

(ii) For a new source that has an initial startup after the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator no later than with the notification of anticipated startup required under §60.09.

(i)(1) Emission tests may be waived upon written application to the Administrator if, in the Administrator's judgment, the source is meeting the standard, or the source is being operated under a waiver or compliance, or the owner or operator has requested a waiver of compliance and the Administrator is still considering that request.

(2) If application for waiver of the emission test is made, the application shall accompany the information required by §61.10 or the notification of startup required by §61.09, whichever is applicable. A possible format is contained in appendix A to this part.

(3) Approval of any waiver granted under this section shall not abrogate the Administrator's authority under the Act or in any way prohibit the Administrator from later canceling the waiver. The cancellation will be made only after notice is given to the owner or operator of the source.

[50 FR 46292, Nov. 7, 1985]

§ 61.14 Monitoring requirements.

(a) Unless otherwise specified, this section applies to each monitoring system required under each subpart which requires monitoring.

(b) Each owner or operator shall maintain and operate each monitoring system as specified in the applicable subpart and in a manner consistent with good air pollution control practice for minimizing emissions. Any unavoidable breakdown or malfunction of the monitoring system should be repaired or adjusted as soon as practicable after its occurrence. The Administrator's determination of whether acceptable operating and maintenance procedures are being used will be based on information which may include, but not be limited to, review of operating and maintenance procedures, manufacturer recommendations and specifications, and inspection of the monitoring system.

(c) When required by the applicable subpart, and at any other time the Administrator may require, the owner or operator of a source being monitored shall conduct a performance evaluation of the monitoring system and furnish the Administrator with a copy of a written report of the results within 60 days of the evaluation. Such a performance evaluation shall be conducted according to the applicable specifications and procedures described in the applicable subpart. The owner or operator of the source shall furnish the Administrator with written notification of the date of the performance evaluation at least 30 days before the evaluation is to begin.

(d) When the effluents from a single source, or from two or more sources subject to the same emission standards, are combined before being released to the atmosphere, the owner or operator shall install a monitoring system on each effluent or on the combined effluent. If two or more sources are not subject to the same emission standards, the owner or operator shall install a separate monitoring system on each effluent, unless otherwise specified. If the applicable standard is a mass emission standard and the effluent from one source is released to the atmosphere through more than one point, the owner or operator shall install a monitoring system at each emission point unless the installation of fewer systems is approved by the Administrator.

(e) The owner or operator of each monitoring system shall reduce the monitoring data as specified in each applicable subpart. Monitoring data recorded during periods of unavoidable monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in any data average.

(f) The owner or operator shall maintain records of monitoring data, monitoring system calibration checks, and the occurrence and duration of any period during which the monitoring system is malfunctioning or inoperative. These records shall be maintained at the source for a minimum of 2 years and made available, upon request, for inspection by the Administrator.

(g)(1) Monitoring shall be conducted as set forth in this section and the applicable subpart unless the Administrator-

(i) Specifies or approves the use of the specified monitoring requirements and procedures with minor changes in methodology; or

(ii) Approves the use of alternatives to any monitoring requirements or procedures.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, the Administrator may require the monitoring requirements and procedures specified in this part.

[50 FR 46293, Nov. 7, 1985]

§ 61.15 Modification.

(a) Except as provided under paragraph (d) of this section, any physical or operational change to a stationary source which results in an increase in the rate of emission to the atmosphere of a hazardous pollutant to which a standard applies shall be considered a modification.

(b) Upon modification, an existing source shall become a new source for each hazardous pollutant for which the rate of emission to the atmosphere increases and to which a standard applies.

(c) Emission rate shall be expressed as kg/hr of any hazardous pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine the emission rate:

(1) Emission factors as specified in the background information document (BID) for the applicable standard, or in the latest issue of ``Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where use of emission factors demonstrates that the emission rate will clearly increase or clearly not increase as a result of the physical or operational change.

(2) Material balances, monitoring data, or manual emission tests in cases where use of emission factors, as referenced in paragraph (c)(1) of this section, does not demonstrate to the Administrator's satisfaction that the emission rate will clearly increase or clearly not increase as a result of the physical or operational change, or where an interested person demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator using emission factors. When the emission rate is based on results from manual emission tests or monitoring data, the procedures specified in appendix C of 40 CFR part 60 shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator. At least three test runs must be conducted before and at least three after the physical or operational change. If the Administrator approves, the results of the emission tests required in §§61.13(a) may be used for the test runs to be conducted before the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum degree feasible for all test runs.

(d) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category.

(2) An increase in production rate of a stationary source, if that increase can be accomplished without a capital expenditure on the stationary source.

(3) An increase in the hours of operation.

(4) Any conversion to coal that meets the requirements specified in section 111(a)(8) of the Act.

(5) The relocation or change in ownership of a stationary source. However, such activities must be reported in accordance with §§61.10(c).

[50 FR 46294, Nov. 7, 1985]

§ 61.16 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter.

[38 FR 8826, Apr. 6, 1973. Redesignated at 50 FR 46294, Nov. 7, 1985]

§ 61.17 State authority.

(a) This part shall not be construed to preclude any State or political subdivision thereof from-

(1) Adopting and enforcing any emission limiting regulation applicable to a stationary source, provided that such emission limiting regulation is not less stringent than the standards prescribed under this part; or

(2) Requiring the owner or operator of a stationary source to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of the source.

[50 FR 46294, Nov. 7, 1985]

§ 61.18 Incorporations by reference.

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the Federal Register. The materials are available for inspection at the corresponding address noted below, and at the Office of the Federal Register, 800 North Capitol Street, NW, Suite 700, Washington, DC and the Library (MD-35), or at U.S. EPA's Air Docket at 1200 Pennsylvania Avenue, NW, Washington, DC 20460.

(a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM) International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

(1) ASTM D737-75, Standard Test Method for Air Permeability of Textile Fabrics, incorporation by reference (IBR) approved January 27, 1983 for Sec. 61.23(a).

(2) ASTM D835-85, Standard Specification for Refined Benzene-485, IBR approved September 14, 1989 for Sec. 61.270(a).

(3) ASTM D836-84, Standard Specification for Industrial Grade Benzene, IBR approved September 14, 1989 for Sec. 61.270(a).

(4) ASTM D1193-77, 91, Standard Specification for Reagent Water, IBR approved for appendix B: Method 101, Section 7.1.1; Method 101A, Section 7.1.1; and Method 104, Section 7.1; Method 108, Section 7.1.3; Method 108A, Section 7.1.1; Method 108B, Section 7.1.1; Method 108C, Section 7.1.1; and Method 111, Section 7.3.

(5) ASTM D2267-68, 78, 88, Standard Test Method for Aromatics in Light Naphthas and Aviation Gasoline by Gas Chromatography, IBR approved September 30, 1986, for Sec. 61.67(h)(1).

(6) ASTM D2359-85a, 93, Standard Specification for Refined Benzene- 535, IBR approved September 14, 1989 for Sec. 61.270(a).

(7) ASTM D2382-76, 88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved June 6, 1984 for Sec. 61.245(e)(3).

(8) ASTM D2504-67, 77, 88 (Reapproved 1993), Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved June 6, 1984 for Sec. 61.245(e)(3).

(9) ASTM D2879-83, Standard Test Method for Vapor Pressure-- Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved December 14, 2000 for Sec. 61.241.

(10) ASTM D2986-71, 78, 95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for appendix B: Method 103, Section 6.1.3.

(11) ASTM D4420-94, Standard Test Method for Determination of Aromatics in Finished Gasoline by Gas Chromatography, IBR approved for Sec. 61.67(h)(1).

(12) ASTM D4734-87, 96, Standard Specification for Refined Benzene- 545, IBR approved September 14, 1989 for Sec. 61.270(a).

(13) ASTM D4809-95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for Sec. 61.245(e)(3).

(14) ASTM E50-82, 86, 90 (Reapproved 1995), Standard Practices for Apparatus Reagents, and Safety Precautions for Chemical Analysis of Metals, IBR approved for appendix B: Method 108C, Section 6.1.4.

(b) The following material is available from the U.S. EPA Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

(1) Method 601, Test Method for Purgeable Halocarbons, July 1982, IBR approved September 30, 1986, for Sec. 61.67(g)(2).

(c) The following material is available for purchase from the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036.

(1) ANSI N13.1-1969, "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities." IBR approved for 61.93(b)(2)(ii) and 61.107(b)(2)(ii).

(2) ANSI/HPS N13.1-1999 "Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities," IBR approved October 9, 2002, [[Page 36]] for Secs. 61.93(c); 61.107(d) and Method 114, paragraph 2.1 of Appendix B to 40 CFR part 61.

(d) The following material is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325, telephone (202) 512-1800 or outside of Washington, DC area: 1-866-512-1800.

(1) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Third Edition, November 1986, as amended by Revision I, December 1987, Order Number 955-001-00000-1:

(i) Method 8020, Aromatic Volatile Organics, IBR approved March 7, 1990, for Sec. 61.355(c)(2)(iv)(A).

(ii) Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series, IBR approved March 7, 1990, for Sec. 61.355(c)(2)(iv)(B).

(iii) Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, IBR approved March 7, 1990, for Sec. 61.355(c)(2)(iv)(C).

(iv) Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique, IBR approved March 7, 1990, for Sec. 61.355(c)(2)(iv)(D).

(e) The materials listed in this paragraph (e) are available for purchase from the American Petroleum Institute (API), 1220 L Street, NW., Washington, DC 20005.

(1) API Publication 2517, Evaporative Loss from External Floating- Roof Tanks, Third Edition. February 1989. IBR approved December 14, 2000 for Sec. 61.241.

(2) [Reserved]

[48 FR 3740, Jan. 27, 1983, as amended at 48 FR 55266, Dec. 9, 1983; 49 FR 23520, June 6, 1984; 51 FR 34914, Sept. 30, 1986; 54 FR

38073, Sept. 14, 1989; 54 FR 51704, Dec. 15, 1989; 55 FR 8341, Mar. 7, 1990; 55 FR 18331, May 2, 1990; 55 FR 22027, May 31, 1990; 55 FR 32914, Aug. 13, 1990; 65 FR 62150, Oct. 17, 2000; 65 FR 78280, Dec. 14, 2000; 67 FR 57166, Sept. 9, 2002]

§ 61.19 Circumvention.

No owner or operator shall build, erect, install, or use any article machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

[40 FR 48299, Oct. 14, 1975. Redesignated at 50 FR 46294, Nov. 7, 1985]

Subpart FF-National Emission Standard for Benzene Waste Operations

Source: 55 FR 8346, Mar. 7, 1990, unless otherwise noted.

§ 61.340 Applicability.

(a) The provisions of this subpart apply to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries.

(b) The provisions of this subpart apply to owners and operators of hazardous waste treatment, storage, and disposal facilities that treat, store, or dispose of hazardous waste generated by any facility listed in paragraph (a) of this section. The waste streams at hazardous waste treatment, storage, and disposal facilities subject to the provisions of this subpart are the benzene-containing hazardous waste from any facility listed in paragraph (a) of this section. A hazardous waste treatment, storage, and disposal facility is a facility that must obtain a hazardous waste management permit under subtitle C of the Solid Waste Disposal Act.

(c) At each facility identified in paragraph (a) or (b) of this section, the following waste is exempt from the requirements of this subpart:

(1) Waste in the form of gases or vapors that is emitted from process fluids:

(2) Waste that is contained in a segregated stormwater sewer system.

(d) At each facility identified in paragraph (a) or (b) of this section, any gaseous stream from a waste management unit, treatment process, or wastewater treatment system routed to a fuel gas system, as defined in §61.341, is exempt from this subpart. No testing, monitoring, recordkeeping, or reporting is required under this subpart for any gaseous stream from a waste management unit, treatment process, or wastewater treatment unit routed to a fuel gas system.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3095, Jan. 7, 1993; 67 FR 68531, Nov. 12, 2002]

§ 61.341 Definitions.

Benzene concentration means the fraction by weight of benzene in a waste as determined in accordance with the procedures specified in §61.355 of this subpart.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Chemical manufacturing plant means any facility engaged in the production of chemicals by chemical, thermal, physical, or biological processes for use as a product, co-product, by-product, or intermediate including but not limited to industrial organic chemicals, organic pesticide products, pharmaceutical preparations, paint and allied products, fertilizers, and agricultural chemicals. Examples of chemical manufacturing plants include facilities at which process units are operated to produce one or more of the following chemicals: benzenesulfonic acid, benzene, chlorobenzene, cumene, cyclohexane, ethylene, ethylbenzene, hydroquinone, linear alklylbenzene, nitrobenzene, resorcinol, sulfolane, or styrene.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission source to a control device.

Coke by-product recovery plant means any facility designed and operated for the separation and recovery of coal tar derivatives (by-products) evolved from coal during the coking process of a coke oven battery.

Container means any portable waste management unit in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Cover means a device or system which is placed on or over a waste placed in a waste management unit so that the entire waste surface area is enclosed and sealed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Example of covers include a fixed roof installed on a tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

External floating roof means a pontoon-type or double-deck type cover with certain rim sealing mechanisms that rests on the liquid surface in a waste management unit with no fixed roof.

Facility means all process units and product tanks that generate waste within a stationary source, and all waste management units that are used for waste treatment, storage, or disposal within a stationary source.

Fixed roof means a cover that is mounted on a waste management unit in a stationary manner and that does not move with fluctuations in liquid level.

Floating roof means a cover with certain rim sealing mechanisms consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and unit wall.

Flow indicator means a device which indicates whether gas flow is present in a line or vent system.

Fuel gas system means the offsite and onsite piping and control system that gathers gaseous streams generated by facility operations, may blend them with sources of gas, if available, and transports the blended gaseous fuel at suitable pressures for use as fuel in heaters, furnaces, boilers, incinerators, gas turbines, and other combustion devices located within or outside the facility. The fuel is piped directly to each individual combustion device, and the system typically operates at pressures over atmospheric.

Individual drain system means the system used to convey waste from a process unit, product storage tank, or waste management unit to a waste management unit. The term includes all process drains and common junction boxes, together with their associated sewer lines and other junction boxes, down to the receiving waste management unit.

Internal floating roof means a cover that rests or floats on the liquid surface inside a waste management unit that has a fixed roof.

Liquid-mounted seal means a foam or liquid-filled primary seal mounted in contact with the liquid between the waste management unit wall and the floating roof continuously around the circumference.

Loading means the introduction of waste into a waste management unit but not necessarily to complete capacity (also referred to as filling).

Maximum organic vapor pressure means the equilibrium partial pressure exerted by the waste at the temperature equal to the highest calendar-month average of the waste storage temperature for waste stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for waste stored at the ambient temperature, as determined:

(1) In accordance with §§60.17(c); or

(2) As obtained from standard reference texts; or

(3) In accordance with §§60.17(a)(37); or

(4) Any other method approved by the

Administrator.

No detectable emissions means less than 500 parts per million by volume (ppmv) above background levels, as measured by a detection instrument reading in accordance with the procedures specified in §§61.355(h) of this subpart.

Oil-water separator means a waste management unit, generally a tank or surface impoundment, used to separate oil from water. An oil-water separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal

Point of waste generation means the location where the waste stream exits the process unit component or storage tank prior to handling or treatment in an operation that is not an integral part of the production process, or in the case of waste management units that generate new wastes after treatment, the location where the waste stream exits the waste management unit component.

Process unit means equipment assembled and connected by pipes or ducts to produce intermediate or final products. A process unit can be operated independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Process unit turnaround means the shutting down of the operations of a process unit, the purging of the contents of the process unit, the maintenance or repair work, followed by restarting of the process.

Process unit turnaround waste means a waste that is generated as a result of a process unit turnaround.

Process wastewater means water which comes in contact with benzene during manufacturing or processing operations conducted within a process unit. Process wastewater is not organic wastes, process fluids, product tank drawdown, cooling tower blowdown, steam trap condensate, or landfill leachate.

Process wastewater stream means a waste stream that contains only process wastewater.

Product tank means a stationary unit that is designed to contain an accumulation of materials that are fed to or produced by a process unit, and is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

Product tank drawdown means any material or mixture of materials discharged from a product tank for the purpose of removing water or other contaminants from the product tank.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

Segregated stormwater sewer system means a drain and collection system designed and operated for the sole purpose of collecting rainfall runoff at a facility, and which is segregated from all other individual drain systems.

Sewer line means a lateral, trunk line, branch line, or other enclosed conduit used to convey waste to a downstream waste management unit.

Slop oil means the floating oil and solids that accumulate on the surface of an oil-water separator.

Sour water stream means a stream that:

(1) Contains ammonia or sulfur compounds (usually hydrogen sulfide) at concentrations of 10 ppm by weight or more;

(2) is generated from separation of water from a feed stock, intermediate, or product that contained ammonia or sulfur compounds; and

(3) requires treatment to remove the ammonia or sulfur compounds.

Sour water stripper means a unit that:

(1) Is designed and operated to remove ammonia or sulfur compounds (usually hydrogen sulfide) from sour water streams;

(2) has the sour water streams transferred to the stripper through hard piping or other enclosed system; and

(3) is operated in such a manner that the offgases are sent to a sulfur recovery unit, processing unit, incinerator, flare, or other combustion device.

Surface impoundment means a waste management unit which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or waste containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

Tank means a stationary waste management unit that is designed to contain an accumulation of waste and is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

Treatment process means a stream stripping unit, thin-film evaporation unit, waste incinerator, or any other process used to comply with §61.348 of this subpart.

Vapor-mounted seal means a foam-filled primary seal mounted continuously around the perimeter of a waste management unit so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the unit wall, the liquid surface, and the floating roof.

Waste means any material resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled, or discharged.

Waste management unit means a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill.

Waste stream means the waste generated by a particular process unit, product tank, or waste management unit. The characteristics of the waste stream (e.g., flow rate, benzene

concentration, water content) are determined at the point of waste generation. Examples of a waste stream include process wastewater, product tank drawdown, sludge and slop oil removed from waste management units, and landfill leachate.

Wastewater treatment system means any component, piece of equipment, or installation that receives, manages, or treats process wastewater, product tank drawdown, or landfill leachate prior to direct or indirect discharge in accordance with the National Pollutant Discharge Elimination System permit regulations under 40 CFR part 122. These systems typically include individual drain systems, oil-water separators, air flotation units, equalization tanks, and biological treatment units.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 58 FR 3095, Jan. 7, 1993; 67 FR 68531, Nov. 12, 2002]

§ 61.342 Standards: General.

(a) An owner or operator of a facility at which the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr) (11 ton/yr) shall be exempt from the requirements of paragraphs (b) and (c) of this section. The total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream. Other specific requirements for calculating the total annual benzene waste quantity are as follows:

(1) Wastes that are exempted from control under §61.342(c)(2) and 61.342(c)(3) are included in the calculation of the total annual benzene quantity if they have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

(2) The benzene in a material subject to this subpart that is sold is included in the calculation of the total annual benzene quantity if the material has an annual average water content greater than 10 percent.

(3) Benzene in wastes generated by remediation activities conducted at the facility, such as the excavation of contaminated soil, pumping and treatment of groundwater, and the recovery of product from soil or groundwater, are not included in the calculation of total annual benzene quantity for that facility. If the facility's total annual benzene quantity is 10 Mg/yr (11 ton/yr) or more, wastes generated by remediation activities are subject to the requirements of paragraphs (c) through (h) of this section. If the facility is managing remediation waste generated offsite, the benzene in this waste shall be included in the calculation of total annual benzene quantity in facility waste, if the waste streams have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent.

(4) The total annual benzene quantity is determined based upon the quantity of benzene in the waste before any waste treatment occurs to remove the benzene except as specified in §61.355(c)(1)(i) (A) through (C).

(b) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section shall be in compliance with the requirements of paragraphs (c) through (h) of this section no later than 90 days following the effective date, unless a waiver of compliance has been obtained under §61.11, or by the initial startup for a new source with an initial startup after the effective date.

(1) The owner or operator of an existing source unable to comply with the rule within the required time may request a waiver of compliance under §61.10.

(2) As part of the waiver application, the owner or operator shall submit to the Administrator a plan under §61.10(b)(3) that is an enforceable commitment to obtain environmental benefits to mitigate the benzene emissions that result from extending the compliance date. The plan shall include the following information:

(i) A description of the method of compliance, including the control approach, schedule for installing controls, and quantity of the benzene emissions that result from extending the compliance date;

(ii) If the control approach involves a compliance strategy designed to obtain integrated compliance with multiple regulatory requirements, a description of the other regulations involved and their effective dates; and

(iii) A description of the actions to be taken at the facility to obtain mitigating environmental benefits, including how the benefits will be obtained, the schedule for these actions, and an estimate of the quantifiable benefits that directly result from these actions.

(c) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section shall manage and treat the facility waste as follows:

(1) For each waste stream that contains benzene, including (but not limited to) organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the wastes are not discharged to an individual drain system, the owner or operator shall:

(i) Remove or destroy the benzene contained in the waste using a treatment process or wastewater treatment system that complies with the standards specified in §61.348 of this subpart.

(ii) Comply with the standards specified in §61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste stream prior to and during treatment of the waste stream in accordance with paragraph (c)(1)(i) of this section.

(iii) Each waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in §61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to paragraph (c) of this section.

(2) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in §61.355(c)(2) or §61.355(c)(3).

(3) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the conditions specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section are met.

(i) The waste stream is process wastewater that has a flow rate less than 0.02 liters per minute (0.005 gallons per minute) or an annual wastewater quantity of less than 10 Mg/yr (11 ton/yr); or

(ii) All of the following conditions are met:

(A) The owner or operator does not choose to exempt process wastewater under paragraph (c)(3)(i) of this section,

(B) The total annual benzene quantity in all waste streams chosen for exemption in paragraph (c)(3)(ii) of this section does not exceed 2.0 Mg/yr (2.2 ton/yr) as determined in the procedures in §61.355(j), and

(C) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated.

(d) As an alternative to the requirements specified in paragraphs (c) and (e) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

(1) The owner or operator shall manage and treat facility waste other than process wastewater in accordance with the requirements of paragraph (c)(1) of this section.

(2) The owner or operator shall manage and treat process wastewater in accordance with the following requirements:

(i) Process wastewater shall be treated to achieve a total annual benzene quantity from facility process wastewater less than 1 Mg/yr (1.1 ton/yr). Total annual benzene from facility process wastewater shall be determined by adding together the annual benzene quantity at the point of waste generation for each untreated process wastewater stream plus the annual benzene quantity exiting the treatment process for each process wastewater stream treated in accordance with the requirements of paragraph (c)(1)(i) of this section.

(ii) Each treated process wastewater stream identified in paragraph (d)(2)(i) of this section shall be managed and treated in accordance with paragraph (c)(1) of this section.

(iii) Each untreated process wastewater stream identified in paragraph (d)(2)(i) of this section is exempt from the requirements of paragraph (c)(1) of this section.

(e) As an alternative to the requirements specified in paragraphs (c) and (d) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

(1) The owner or operator shall manage and treat facility waste with a flow-weighted annual average water content of less than 10 percent in accordance with the requirements of paragraph (c)(1) of this section; and

(2) The owner or operator shall manage and treat facility waste (including remediation and process unit turnaround waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent, in accordance with the following:

(i) The benzene quantity for the wastes described in paragraph (e)(2) of this section must be equal to or less than 6.0 Mg/yr (6.6 ton/yr) , as determined in §61.355(k). Wastes as described in paragraph (e)(2) of this section that are transferred offsite shall be included in the determination of benzene quantity as provided in §61.355(k). The provisions of paragraph (f) of this section shall not apply to any owner or operator who elects to comply with the provisions of paragraph (e) of this section.

(ii) The determination of benzene quantity for each waste stream defined in paragraph (e)(2) of this section shall be made in accordance with §61.355(k).

(f) Rather than treating the waste onsite, an owner or operator may elect to comply with paragraph (c)(1)(i) of this section by transferring the waste offsite to another facility where the waste is treated in accordance with the requirements of paragraph (c)(1)(i) of this section. The owner or operator transferring the waste shall:

(1) Comply with the standards specified in §61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste prior to shipment of the waste offsite.

(2) Include with each offsite waste shipment a notice stating that the waste contains benzene which is required to be managed and treated in accordance with the provisions of this subpart.

(g) Compliance with this subpart will be determined by review of facility records and results from tests and inspections using methods and procedures specified in §61.355 of this subpart.

(h) Permission to use an alternative means of compliance to meet the requirements of §61.342 through 61.352 of this subpart may be granted by the Administrator as provided in §61.353 of this subpart.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3095, Jan. 7, 1993; 65 FR 62159, 62160, Oct. 17, 2000]

§ 61.343 Standards: Tanks.

(a) Except as provided in paragraph (b) of this section and in §61.351, the owner or operator must meet the standards in paragraph (a)(1) or (2) of this section for each tank in which the waste stream is placed in accordance with §61.342 (c)(1)(ii). The standards in this section apply to the treatment and storage of the waste stream in a tank, including dewatering.

(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.

(i) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the tank except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the tank is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the tank remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of §61.349 of this subpart.

(2) The owner or operator must install, operate, and maintain an enclosure and closed-vent system that routes all organic vapors vented from the tank, located inside the enclosure, to a control device in accordance with the requirements specified in paragraph (c) of this section.

(b) For a tank that meets all the conditions specified in paragraph (b)(1) of this section, the owner or operator may elect to comply with paragraph (b)(2) of this section as an alternative to the requirements specified in paragraph (a)(1) of this section.

(1) The waste managed in the tank complying with paragraph (b)(2) of this section shall meet all of the following conditions:

(i) Each waste stream managed in the tank must have a flow-weighted annual average water content less than or equal to 10 percent water, on a volume basis as total water.

(ii) The waste managed in the tank either:

(A) Has a maximum organic vapor pressure less than 5.2 kilopascals (kPa) (0.75 pounds per square inch (psi));

(B) Has a maximum organic vapor pressure less than 27.6 kPa (4.0 psi) and is managed in a tank having design capacity less than 151 m^3 (40,000 gal); or

(C) Has a maximum organic vapor pressure less than 76.6 kPa (11.1 psi) and is managed in a tank having a design capacity less than 75 m^3 (20,000 gal).

(2) The owner or operator shall install, operate, and maintain a fixed roof as specified in paragraph (a)(1)(i).

(3) For each tank complying with paragraph (b) of this section, one or more devices which vent directly to the atmosphere may be used on the tank provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the tank or cover resulting from filling or emptying the tank, diurnal temperature changes, atmospheric pressure changes or malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(c) Each fixed-roof, seal, access door, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access doors and other openings are closed and gasketed properly.

(d) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 45 calendar days after identification.

(e) Each owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to a control device must meet the requirements specified in paragraphs (e)(1) through (4) of this section.

(1) The tank must be located inside a total enclosure. The enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T – Criteria for and Verification of a Permanent or Temporary Total Enclosure" in 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure as specified in section 5.0 of Procedure T initially when the enclosure is first installed and, thereafter, annually. A facility that has conducted an initial compliance demonstration and that performs annual compliance demonstrations in accordance with the requirements for Tank Level 2 control requirements 40 CFR 264.1084(i) or 40 CFR 265(i) is not required to make repeat demonstrations of initial and continuous compliance for the purposes of this subpart.

(2) The enclosure must be vented through a closed-vent system to a control device that is designed and operated in accordance with the standards for control devices specified in §61.349.

(3) Safety devices, as defined in this subpart, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (e)(1) and (2) of this section.

(4) The closed-vent system must be designed and operated in accordance with the requirements of §61.349.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 18331, May 2, 1990; 58 FR 3096, Jan. 7, 1993; 67 FR 68532, Nov. 12, 2002; 68 FR 6082, Feb. 6, 2003; 68 FR 67935, 67936, Dec. 4, 2003]

§ 61.344 Standards: Surface impoundments.

(a) The owner or operator shall meet the following standards for each surface impoundment in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain on each surface impoundment a cover (e.g., air-supported structure or rigid cover) and closed-vent system that routes all organic vapors vented from the surface impoundment to a control device.

(i) The cover shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the surface impoundment except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the enclosure of the surface impoundment is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart; and

(3) The pressure is monitored continuously to ensure that the pressure in the enclosure of the surface impoundment remains below atmospheric pressure.

(D) The cover shall be used at all times that waste is placed in the surface impoundment except during removal of treatment residuals in accordance with 40 CFR part 268.4 or closure of the surface impoundment in accordance with 40 CFR 264.228. (Note: the treatment residuals generated by these activities may be subject to the requirements of this part.)

(ii) The closed-vent system and control device shall be designed and operated in accordance with §61.349 of this subpart.

(b) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access hatches and other openings are closed and gasketed properly.

(c) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3097, Jan. 7, 1993]

§ 61.345 Standards: Containers.

(a) The owner or operator shall meet the following standards for each container in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain a cover on each container used to handle, transfer, or store waste in accordance with the following requirements:

(i) The cover and all openings (e.g., bungs,

hatches, and sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(ii) Except as provided in paragraph (a)(4) of this section, each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.

(2) When a waste is transferred into a container by pumping, the owner or operator shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe, those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover, and any openings complying with paragraph (a)(4) of this section.

(3) Treatment of a waste in a container, including aeration, thermal or other treatment, must be performed by the owner or operator in a manner such that while the waste is being treated the container meets the standards specified in paragraphs (a)(3)(i) through (iii) of this section, except for covers and closed-vent systems that meet the requirements in paragraph (a)(4) of this section.

(i) The owner or operator must either:

(A) Vent the container inside a total enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs (a)(3)(ii)(A) and (B) of this section; or

(B) Vent the covered or closed container directly through a closed- vent system to a control device in accordance with the requirements of paragraphs (a)(3)(ii)(B) and (C) of this section.

(ii) The owner or operator must meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

(A) The total enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure as specified in section 5 of the ``Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" in 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure as specified in section 5.0 of ``Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually. A facility that has conducted an initial compliance demonstration and that performs annual compliance demonstrations in accordance with the Container Level 3 control requirements in 40 CFR 264.1086(e)(2)(i) or 40 CFR 265.1086(e)(2)(i) is not required to make repeat demonstrations of initial and continuous compliance for the purposes of this subpart.

(B) The closed-vent system and control device must be designed and operated in accordance with the requirements of §61.349.

(C) For a container cover, the cover and all openings (e.g., doors, hatches) must be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h).

(iii) Safety devices, as defined in this subpart, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of paragraph (a)(3)(i) of this section.

(4) If the cover and closed-vent system operate such that the container is maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:

(i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by methods specified in §61.355(h); and

(iii) The pressure is monitored continuously to ensure that the pressure in the container remains below atmospheric pressure.

(b) Each cover and all openings shall be visually inspected initially and quarterly thereafter to ensure that they are closed and gasketed properly.

(c) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3097, Jan. 7, 1993; 67 FR 68532, Nov. 12, 2002; 68 FR 67936, Dec. 4, 2003]

§ 61.346 Standards: Individual drain systems.

(a) Except as provided in paragraph (b) of this section, the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all organic vapors vented from the drain system to a control device.

(i) The cover shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the drain system except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the individual drain system is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the individual drain system remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with §61.349 of this subpart.

(2) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur and that access hatches and other openings are closed and gasketed properly.

(3) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(b) As an alternative to complying with paragraph (a) of this section, an owner or operator may elect to comply with the following requirements:

(1) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.

(2) Each junction box shall be equipped with a cover and may have a vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(i) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(ii) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:

(A) Equip the junction box with a system to prevent the flow of organic vapors from the junction box vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box. A flow indicator shall be installed, operated, and maintained on each junction box vent pipe to ensure that organic vapors are not vented from the junction box to the atmosphere during normal operation.

(B) Connect the junction box vent pipe to a closed-vent system and control device in accordance with §61.349 of this subpart.

(3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(4) Equipment installed in accordance with paragraphs (b)(1), (b)(2), or (b)(3) of this section shall be inspected as follows:

(i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.

(ii) Each drain using a tightly sealed cap or plug shall be visually inspected initially and thereafter quarterly to ensure caps or plugs are in place and properly installed.

(iii) Each junction box shall be visually inspected initially and thereafter quarterly to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.

(5) Except as provided in §61.350 of this subpart, when a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3097, Jan. 7, 1993]

§ 61.347 Standards: Oil-water separators.

(a) Except as provided in §61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with §61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(i) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph (a)(1)(i)(B) of this section does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of §61.349 of this subpart.

(b) Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur between the cover and oil-water separator wall and that access hatches and other openings are closed and gasketed properly.

(c) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, or when detectable emissions are measured, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3098, Jan. 7, 1993]

§ 61.348 Standards: Treatment processes.

(a) Except as provided in paragraph (a)(5) of this section, the owner or operator shall treat the waste stream in accordance with the following requirements:

(1) The owner or operator shall design, install, operate, and maintain a treatment process that either:

(i) Removes benzene from the waste stream to a level less than 10 parts per million by weight (ppmw) on a flow-weighted annual average basis,

(ii) Removes benzene from the waste stream by 99 percent or more on a mass basis, or

(iii) Destroys benzene in the waste stream by incinerating the waste in a combustion unit that achieves a destruction efficiency of 99 percent or greater for benzene.

(2) Each treatment process complying with paragraphs (a)(1)(i) or (a)(1)(ii) of this section shall be designed and operated in accordance with the appropriate waste management unit standards specified in §61.343 through 61.347 of this subpart. For example, if a treatment process is a tank, then the owner or operator shall comply with §61.343 of this subpart.

(3) For the purpose of complying with the requirements specified in paragraph (a)(1)(i) of this section, the intentional or unintentional reduction in the benzene concentration of a waste stream by dilution of the waste stream with other wastes or materials is not allowed.

(4) An owner or operator may aggregate or mix together individual waste streams to create a combined waste stream for the purpose of facilitating treatment of waste to comply with the requirements of paragraph (a)(1) of this section except as provided in paragraph (a)(5) of this section.

(5) If an owner or operator aggregates or mixes any combination of process wastewater, product tank drawdown, or landfill leachate subject to §61.342(c)(1) of this subpart together with other waste streams to create a combined waste stream for the purpose of facilitating management or treatment of waste in a wastewater treatment system, then the wastewater treatment system shall be operated in accordance with paragraph (b) of this section. These provisions apply to above-ground wastewater treatment systems as well as those that are at or below ground level.

(b) Except for facilities complying with §61.342(e), the owner or operator that aggregates or mixes individual waste streams as defined in paragraph (a)(5) of this section for management and treatment in a wastewater treatment system shall comply with the following requirements:

(1) The owner or operator shall design and operate each waste management unit that comprises the wastewater treatment system in accordance with the appropriate standards specified in §61.343 through 61.347 of this subpart.

(2) The provisions of paragraph (b)(1) of this section do not apply to any waste management unit that the owner or operator demonstrates to meet the following conditions initially and, thereafter, at least once per year:

(i) The benzene content of each waste stream entering the waste management unit is less than 10 ppmw on a flow-weighted annual average basis as determined by the procedures specified in §61.355(c) of this subpart; and

(ii) The total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units comprising the facility wastewater treatment systems is less than 1 Mg/yr (1.1 ton/yr). For this determination, total annual benzene quantity shall be calculated as follows:

(A) The total annual benzene quantity shall be calculated as the sum of the individual benzene quantities determined at each location where a waste stream first enters an exempt waste management unit. The benzene quantity discharged from an exempt waste management unit shall not be included in this calculation.

(B) The annual benzene quantity in a waste stream managed or treated in an enhanced biodegradation unit shall not be included in the calculation of the total annual benzene quantity, if the enhanced biodegradation unit is the first exempt unit in which the waste is managed or treated. A unit shall be considered enhanced biodegradation if it is a suspended-growth process that generates biomass, uses recycled biomass, and periodically removes biomass from the process. An enhanced biodegradation unit typically operates at a food-to-microorganism ratio in the range of 0.05 to 1.0 kg of biological oxygen demand per kg of biomass per day, a mixed liquor suspended solids ratio in the range of 1 to 8 grams per liter (0.008 to 0.7 pounds per liter), and a residence time in the range of 3 to 36 hours.

(c) The owner and operator shall demonstrate that each treatment process or wastewater treatment system unit, except as provided in paragraph (d) of this section, achieves the appropriate conditions specified in paragraphs (a) or (b) of this section in accordance with the following requirements:

(1) Engineering calculations in accordance with requirements specified in §61.356(e) of this subpart; or

(2) Performance tests conducted using the test methods and procedures that meet the requirements specified in §61.355 of this subpart.

(d) A treatment process or waste stream is in compliance with the requirements of this subpart and exempt from the requirements of paragraph (c) of this section provided that the owner or operator documents that the treatment process or waste stream is in compliance with other regulatory requirements as follows:

(1) The treatment process is a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 264, subpart O;

(2) The treatment process is an industrial furnace or boiler burning hazardous waste for energy recovery for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart D;

(3) The waste stream is treated by a means or to a level that meets benzene-specific treatment standards in accordance with the Land Disposal Restrictions under 40 CFR part 268, and the treatment process is designed and operated with a closed-vent system and control device meeting the requirements of §61.349 of this subpart;

(4) The waste stream is treated by a means or to a level that meets benzene-specific effluent limitations or performance standards in accordance with the Effluent Guidelines and Standards under 40 CFR parts 401-464, and the treatment process is designed and operated with a closed-vent system and control device meeting the requirements of §61.349 of this subpart; or

(5) The waste stream is discharged to an underground injection well for which the owner or operator has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 122.

(e) Except as specified in paragraph (e)(3) of this section, if the treatment process or wastewater treatment system unit has any openings (e.g., access doors, hatches, etc.), all such openings shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times when waste is being treated, except during inspection and maintenance.

(1) Each seal, access door, and all other openings shall be checked by visual inspections initially and quarterly thereafter to ensure that no cracks or gaps occur and that openings are closed and gasketed properly.

(2) Except as provided in §61.350 of this subpart, when a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(3) If the cover and closed-vent system operate such that the treatment process and wastewater treatment system unit are maintained at a pressure less than atmospheric pressure, the owner or operator may operate the system with an opening that is not sealed and kept closed at all times if the following conditions are met:

(i) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(ii) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h); and

(iii) The pressure is monitored continuously to ensure that the pressure in the treatment process and wastewater treatment system unit remain below atmospheric pressure.

(f) Except for treatment processes complying with paragraph (d) of this section, the Administrator may request at any time an owner or operator demonstrate that a treatment process or wastewater treatment system unit meets the applicable requirements specified in paragraphs (a) or (b) of this section by conducting a performance test using the test methods and procedures as required in §61.355 of this subpart.

(g) The owner or operator of a treatment process or wastewater treatment system unit that is used to comply with the provisions of this section shall monitor the unit in accordance with the applicable requirements in §61.354 of this subpart.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3098, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.349 Standards: Closed-vent systems and control devices.

(a) For each closed-vent system and control device used to comply with standards in accordance with §61.343 through 61.348 of this subpart, the owner or operator shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:

(1) The closed-vent system shall:

(i) Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in §61.355(h) of this subpart.

(ii) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes, except as provided in paragraph (a)(1)(ii)(B) of this section.

(A) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(B) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.

(iii) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(iv) For each closed-vent system complying with paragraph (a) of this section, one or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(2) The control device shall be designed and operated in accordance with the following conditions:

(i) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall meet one of the following conditions:

(A) Reduce the organic emissions vented to it by 95 weight percent or greater;

(B) Achieve a total organic compound concentration of 20 ppmv (as the sum of the concentrations for individual compounds using Method 18) on a dry basis corrected to 3 percent oxygen; or

(C) Provide a minimum residence time of 0.5 seconds at a minimum temperature of 760°C 1,400°F). If a boiler or process heater issued as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(ii) A vapor recovery system (e.g., a carbon adsorption system or a condenser) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(iii) A flare shall comply with the requirements of 40 CFR 60.18.

(iv) A control device other than those described in paragraphs (a)(2) (i) through (iii) of this section may be used provided that the following conditions are met:

(A) The device shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(B) The owner or operator shall develop test data and design information that documents the control device will achieve an emission control efficiency of either 95 percent or greater for organic compounds or 98 percent or greater for benzene.

(C) The owner or operator shall identify:

(1) The critical operating parameters that affect the emission control performance of the device;

(2) The range of values of these operating parameters that ensure the emission control efficiency specified in paragraph (a)(2)(iv)(A) of this section is maintained during operation of the device; and

(3) How these operating parameters will be monitored to ensure the proper operation and maintenance of the device.

(D) The owner or operator shall submit the information and data specified in paragraphs (a)(2)(iv) (B) and (C) of this section to the Administrator prior to operation of the alternative control device.

(E) The Administrator will determine, based on the information submitted under paragraph (a)(2)(iv)(D) of this section, if the control device subject to paragraph (a)(2)(iv) of this section meets the requirements of §61.349. The control device subject to paragraph (a)(2)(iv) of this section may be operated prior to receiving approval from the Administrator. However, if the Administrator determines that the control device does not meet the requirements of §61.349, the facility may be subject to enforcement action beginning from the time the control device began operation.

(b) Each closed-vent system and control device used to comply with this subpart shall be operated at all times when waste is placed in the waste management unit vented to the control device except when maintenance or repair of the waste management unit cannot be completed without a shutdown of the control device.

(c) An owner and operator shall demonstrate that each control device, except for a flare, achieves the appropriate conditions specified in paragraph (a)(2) of this section by using one of the following methods:

(1) Engineering calculations in accordance with requirements specified in §61.356(f) of this subpart; or

(2) Performance tests conducted using the test methods and procedures that meet the requirements specified in §61.355 of this subpart.

(d) An owner or operator shall demonstrate compliance of each flare in accordance with paragraph (a)(2)(iii) of this section.

(e) The Administrator may request at any time an owner or operator demonstrate that a control device meets the applicable conditions specified in paragraph (a)(2) of this section by conducting a performance test using the test methods and procedures as required in §61.355, and for control devices subject to paragraph (a)(2)(iv) of this section, the Administrator may specify alternative test methods and procedures, as appropriate.

(f) Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections.

(g) Except as provided in §61.350 of this subpart, if visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed.

(h) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with §61.354(c) of this subpart.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3098, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.350 Standards: Delay of repair.

(a) Delay of repair of facilities or units that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.

(b) Repair of such equipment shall occur before the end of the next facility or unit shutdown.

§ 61.351 Alternative standards for tanks.

(a) As an alternative to the standards for tanks specified in §61.343 of this subpart, an owner or operator may elect to comply with one of the following:

(1) A fixed roof and internal floating roof meeting the requirements in 40 CFR 60.112b(a)(1);

(2) An external floating roof meeting the requirements of 40 CFR 60.112b (a)(2); or

(3) An alternative means of emission limitation as described in 40 CFR 60.114b.

(b) If an owner or operator elects to comply with the provisions of this section, then the owner or operator is exempt from the provisions of §61.343 of this subpart applicable to the same facilities.

[55 FR 8346, Mar. 7, 1990, as amended at 55 FR 37231, Sept. 10, 1990]

§ 61.352 Alternative standards for oil-water separators.

(a) As an alternative to the standards for oil-water separators specified in §61.347 of this subpart, an owner or operator may elect to comply with one of the following:

(1) A floating roof meeting the requirements in 40 CFR 60.693-2(a); or

(2) An alternative means of emission limitation as described in 40 CFR 60.694.

(b) For portions of the oil-water separator where it is infeasible to construct and operate a floating roof, such as over the weir mechanism, a fixed roof vented to a vapor control device that meets the requirements in §61.347 and 61.349 of this subpart shall be installed and operated.

(c) Except as provided in paragraph (b) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator is exempt from the provisions in §61.347 of this subpart applicable to the same facilities.

§ 61.353 Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in benzene emissions at least equivalent to the reduction in benzene emissions from the source achieved by the applicable design, equipment, work practice, or operational requirements in §61.342 through 61.349, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3099, Jan. 7, 1993]

§ 61.354 Monitoring of operations.

(a) Except for a treatment process or waste stream complying with §61.348(d), the owner or operator shall monitor each treatment process or wastewater treatment system unit to ensure the unit is properly operated and maintained by one of the following monitoring procedures:

(1) Measure the benzene concentration of the waste stream exiting the treatment process complying with §61.348(a)(1)(i) at least once per month by collecting and analyzing one or more samples using the procedures specified in §61.355(c)(3).

(2) Install, calibrate, operate, and maintain according to manufacturer's specifications equipment to continuously monitor and record a process parameter (or parameters) for the treatment process or wastewater treatment system unit that indicates proper system operation. The owner or operator shall inspect at least once each operating day the data recorded by the monitoring equipment (e.g., temperature monitor or flow indicator) to ensure that the unit is operating properly.

(b) If an owner or operator complies with the requirements of §61.348(b), then the owner or operator shall monitor each wastewater treatment system to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows:

(1) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of §61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in §61.355(c)(3).

(2) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in §61.355(c)(3).

(c) An owner or operator subject to the requirements in §61.349 of this subpart shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor the control device operation as specified in the following paragraphs, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator. The owner or operator shall inspect at least once each operating day the data recorded by the monitoring equipment (e.g., temperature monitor or flow indicator) to ensure that the control device is operating properly.

(1) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5°C, whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber.

(2) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations, and have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5°C, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(3) For a flare, a monitoring device in accordance with 40 CFR 60.18(f)(2) equipped with a continuous recorder.

(4) For a boiler or process heater having a design heat input capacity less than 44 MW (150×10^6 BTU/hr), a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5°C, whichever is greater. The temperature sensor shall be installed at a representative location in the combustion chamber.

(5) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW (150×10^6 BTU/hr), a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.

(6) For a condenser, either:

(i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the condenser; or

(ii) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations, and have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5°C, whichever is greater. One temperature sensor shall be installed at a location in the exhaust stream from the condenser, and a second temperature sensor shall be installed at a location in the coolant fluid exiting the condenser.

(7) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either:

(i) A monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the carbon bed; or

(ii) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.

(8) For a vapor recovery system other than a condenser or carbon adsorption system, a monitoring device equipped with a continuous recorder to measure either the concentration level of the organic compounds or the benzene concentration level in the exhaust vent stream from the control device.

(9) For a control device subject to the requirements of §61.349(a)(2)(iv), devices to monitor the parameters as specified in §61.349(a)(2)(iv)(C).

(d) For a carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater. As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.

(e) An alternative operation or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

(f) Owners or operators using a closed-vent system that contains any bypass line that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do the following:

(1) Visually inspect the bypass line valve at least once every month, checking the position of the valve and the condition of the car-seal or closure mechanism required under §61.349(a)(1)(ii) to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(2) Visually inspect the readings from each flow monitoring device required by §61.349(a)(1)(ii) at least once each operating day to check that vapors are being routed to the control device as required.

(g) Each owner or operator who uses a system for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air shall install, calibrate, maintain, and operate according to the manufacturer's specifications a device equipped with a continuous recorder to monitor the pressure in the unit to ensure that it is less than atmospheric pressure.

[55 FR 8346, Mar. 7, 1990, as amended at 58 FR 3099, Jan. 7, 1993; 65 FR 62160, Oct. 17, 2000]

§ 61.355 Test methods, procedures, and compliance provisions.

(a) An owner or operator shall determine the total annual benzene quantity from facility waste by the following procedure:

(1) For each waste stream subject to this subpart having a flow-weighted annual average water content greater than 10 percent water, on a volume basis as total water, or is mixed with water or other wastes at any time and the resulting mixture has an annual average water content greater than 10 percent as specified in §61.342(a), the owner or operator shall:

(i) Determine the annual waste quantity for each waste stream using the procedures specified in paragraph (b) of this section.

(ii) Determine the flow-weighted annual average benzene concentration for each waste stream using the procedures specified in paragraph (c) of this section.

(iii) Calculate the annual benzene quantity for each waste stream by multiplying the annual waste quantity of the waste stream times the flow-weighted annual average benzene concentration.

(2) Total annual benzene quantity from facility waste is calculated by adding together the annual benzene quantity for each waste stream generated during the year and the annual benzene quantity for each process unit turnaround waste annualized according to paragraph (b)(4) of this section.

(3) If the total annual benzene quantity from facility waste is equal to or greater than 10 mg/yr (11 ton/yr), then the owner or operator shall comply with the requirements of §61.342 (c), (d), or (e).

(4) If the total annual benzene quantity from facility waste is less than 10 Mg/yr (11 ton/yr) but is equal to or greater than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall:

(i) Comply with the recordkeeping requirements of §61.356 and reporting requirements of §61.357 of this subpart; and

(ii) Repeat the determination of total annual benzene quantity from facility waste at least once per year and whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr (11 ton/yr) or more.

(5) If the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall:

(i) Comply with the recordkeeping requirements of §61.356 and reporting requirements of §61.357 of this subpart; and

(ii) Repeat the determination of total annual benzene quantity from facility waste whenever there is a change in the process generating the waste that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more.

(6) The benzene quantity in a waste stream that is generated less than one time per year, except as provided for process unit turnaround waste in paragraph (b)(4) of this section, shall be included in the determination of total annual benzene quantity from facility waste for the year in which the waste is generated unless the waste stream is otherwise excluded from the determination of total annual benzene quantity from facility waste in accordance with paragraphs (a) through (c) of this section. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste, for purposes of determining the total annual benzene quantity from facility waste.

(b) For purposes of the calculation required by paragraph (a) of this section, an owner or operator shall determine the annual waste quantity at the point of waste generation, unless otherwise provided in paragraphs (b)(1), (2), (3), and (4) of this section, by one of the methods given in paragraphs (b) (5) through (7) of this section.

(1) The determination of annual waste quantity for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.

(2) The determination of annual waste quantity for wastes at coke by-product plants subject to and complying with the control requirements of §61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:

(i) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.

(ii) The ammonia still meets the definition of a sour water stripper in §61.341.

(3) The determination of annual waste quantity for wastes that are received at hazardous waste treatment, storage, or disposal facilities from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.

(4) The determination of annual waste quantity for each process unit turnaround waste generated only at 2 year or greater intervals, may be made by dividing the total quantity of waste generated during the most recent process unit turnaround by the time period (in the nearest tenth of a year) between the turnaround resulting in generation of the waste and the most recent preceding process turnaround for the unit. The resulting annual waste quantity shall be included in the calculation of the annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process turnaround. For estimates of total annual benzene quantity as specified in the 90-day report, required under §61.357(a)(1), the owner or operator shall estimate the waste quantity generated during the most recent turnaround, and the time period between turnarounds in accordance with good engineering practices. If the owner or operator chooses not to annualize process unit turnaround waste, as specified in this paragraph, then the process unit turnaround waste quantity shall be included in the calculation of the annual benzene quantity for the year in which the turnaround occurs.

(5) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility;

(6) Use the maximum design capacity of the waste management unit; or

(7) Use measurements that are representative of maximum waste generation rates.

(c) For the purposes of the calculation required by §61.355(a) of this subpart, an owner or operator shall determine the flow-weighted annual average benzene concentration in a manner that meets the requirements given in paragraph (c)(1) of this section using either of the methods given in paragraphs (c)(2) and (c)(3) of this section.

(1) The determination of flow-weighted annual average benzene concentration shall meet all of the following criteria:

(i) The determination shall be made at the point of waste generation except for the specific cases given in paragraphs (c)(1)(i)(A) through (D) of this section.

(A) The determination for sour water streams that are processed in sour water strippers shall be made at the point that the water exits the sour water stripper.

(B) The determination for wastes at coke by-product plants subject to and complying with the control requirements of §61.132, 61.133, 61.134, or 61.139 of subpart L of this part shall be made at the location that the waste stream exits the process unit component or waste management unit controlled by that subpart or at the exit of the ammonia still, provided that the following conditions are met:

(1) The transfer of wastes between units complying with the control requirements of subpart L of this part, process units, and the ammonia still is made through hard piping or other enclosed system.

(2) The ammonia still meets the definition of a sour water stripper in §61.341.

(C) The determination for wastes that are received from offsite shall be made at the point where the waste enters the hazardous waste treatment, storage, or disposal facility.

(D) The determination of flow-weighted annual average benzene concentration for process unit turnaround waste shall be made using either of the methods given in paragraph (c)(2) or (c)(3) of this section. The resulting flow-weighted annual average benzene concentration shall be included in the calculation of annual benzene quantity as provided in paragraph (a)(1)(iii) of this section for the year in which the turnaround occurs and for each subsequent year until the unit undergoes the next process unit turnaround.

(ii) Volatilization of the benzene by exposure to air shall not be used in the determination to reduce the benzene concentration.

(iii) Mixing or diluting the waste stream with other wastes or other materials shall not be used in the determination-to reduce the benzene concentration.

(iv) The determination shall be made prior to any treatment of the waste that removes benzene, except as specified in paragraphs (c)(1)(i)(A) through (D) of this section.

(v) For wastes with multiple phases, the determination shall provide the weighted-average benzene concentration based on the benzene concentration in each phase of the waste and the relative proportion of the phases.

(2) Knowledge of the waste. The owner or operator shall provide sufficient information to document the flow-weighted annual average benzene concentration of each waste stream. Examples of information that could constitute knowledge include material balances, records of chemicals purchases, or previous test results provided the results are still relevant to the current waste stream conditions. If test data are used, then the owner or operator shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the flow-weighted annual average benzene concentration for the waste stream. When an owner or operator and the Administrator do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under paragraph (c)(3) of this section shall be used to resolve the disagreement.

(3) Measurements of the benzene concentration in the waste stream in accordance with the following procedures:

(i) Collect a minimum of three representative samples from each waste stream. Where feasible, samples shall be taken from an enclosed pipe prior to the waste being exposed to the atmosphere.

(ii) For waste in enclosed pipes, the following procedures shall be used:

(A) Samples shall be collected prior to the waste being exposed to the atmosphere in order to minimize the loss of benzene prior to sampling.

(B) A static mixer shall be installed in the process line or in a by-pass line unless the owner or operator demonstrates that installation of a static mixer in the line is not necessary to accurately determine the benzene concentration of the waste stream.

(C) The sampling tap shall be located within two pipe diameters of the static mixer outlet.

(D) Prior to the initiation of sampling, sample lines and cooling coil shall be purged with at least four volumes of waste.

(E) After purging, the sample flow shall be directed to a sample container and the tip of the sampling tube shall be kept below the surface of the waste during sampling to minimize contact with the atmosphere.

(F) Samples shall be collected at a flow rate such that the cooling coil is able to maintain a waste temperature less than 10°C (50°F).

(G) After filling, the sample container shall be capped immediately (within 5 seconds) to leave a minimum headspace in the container.

(H) The sample containers shall immediately be cooled and maintained at a temperature below 10°C (50°F) for transfer to the laboratory.

(iii) When sampling from an enclosed pipe is not feasible, a minimum of three representative samples shall be collected in a manner to minimize exposure of the sample to the atmosphere and loss of benzene prior to sampling.

(iv) Each waste sample shall be analyzed using one of the following test methods for determining the benzene concentration in a waste stream:

(A) Method 8020, Aromatic Volatile Organics, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(B) Method 8021, Volatile Organic Compounds in Water by Purge and Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(C) Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(D) Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics: Capillary Column Technique in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (incorporation by reference as specified in §61.18 of this part);

(E) Method 602, Purgeable Aromatics, as described in 40 CFR part 136, appendix A, Test Procedures for Analysis of Organic Pollutants, for wastewaters for which this is an approved EPA methods; or

(F) Method 624, Purgeables, as described in 40 CFR part 136, appendix A, Test Procedures for Analysis of Organic Pollutants, for wastewaters for which this is an approved EPA method.

(v) The flow-weighted annual average benzene concentration shall be calculated by averaging the results of the sample analyses as follows:

$$\bar{C} = \frac{1}{Q_t} \times \sum_{i=1}^{n} (Q_i)(C_i)$$

Where:

C = Flow-weighted annual average benzene concentration for waste stream, ppmw.

Q_t = Total annual waste quantity for waste stream, kg/yr (lb/yr).

n = Number of waste samples (at least 3).

Q_i = Annual waste quantity for waste stream represented by C_i, kg/yr (lb/yr).

C_i = Measured concentration of benzene in waste sample i, ppmw.

(d) An owner or operator using performance tests to demonstrate compliance of a treatment process with §61.348 (a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.

(e) An owner or operator using performance tests to demonstrate compliance of a treatment process with §61.348(a)(1)(ii) of this subpart shall determine the percent reduction of benzene in the waste stream on a mass basis by the following procedure:

(1) The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.

(2) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(3) The mass flow rate of benzene entering the treatment process (E_b) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows:

$$E_b = \frac{K}{n \times 10^6} [\sum_{i=1}^{n} V_i C_i]$$

Where:

E_b = Mass flow rate of benzene entering the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m³ (lb/ft³).

V_i = Average volume flow rate of waste entering the treatment process during each run i, m³/hr (ft³/hr).

C_i = Average concentration of benzene in the waste stream entering the treatment process during each run i, ppmw.

n = Number of runs.

10^6 = Conversion factor for ppmw.

(4) The mass flow rate of benzene exiting the treatment process (E_a) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows:

$$E_a = \frac{K}{n \times 10^6} [\sum_{i=1}^{n} V_i C_i]$$

Where:

E_a = Mass flow rate of benzene exiting the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m³ (lb/ft³).

V_i = Average volume flow rate of waste exiting the treatment process during each run i, m³/hr (ft³/hr).

C_i = Average concentration of benzene in the waste stream exiting the treatment process during each run i, ppmw.

n = Number of runs.

10^6 = Conversion factor for ppmw.

(f) An owner or operator using performance tests to demonstrate compliance of a treatment process with §61.348(a)(1)(iii) of this subpart shall determine the benzene destruction efficiency for the combustion unit by the following procedure:

(1) The test shall be conducted under conditions that exist when the combustion unit is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test.

(2) All testing equipment shall be prepared and installed as specified in the appropriate test methods.

(3) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in paragraph (c)(2) or (c)(3) of this section. Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows:

$$E_b = \frac{K}{n \times 10^6}\left[\sum_{i=1}^{n} V_i C_i\right]$$

Where:

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

K = Density of the waste stream, kg/m³ (lb/ft³).

V_i = Average volume flow rate of waste entering the combustion unit during each run i, m³/hour (ft³/hr).

C_i = Average concentration of benzene in the waste stream entering the combustion unit during each run i, ppmw.

n = Number of runs.

10^6 = Conversion factor for ppmw.

(4) The mass flow rate of benzene exiting the combustion unit exhaust stack shall be determined as follows:

(i) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected and be the same time period at which the mass flow rate of benzene entering the treatment process is determined. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample and each 1-hour period shall correspond to the periods when the waste feed is sampled.

(ii) A run shall consist of a 1-hour period during the test. For each run:

(A) The reading from each measurement shall be recorded;

(B) The volume exhausted shall be determined using method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate.

(C) The average benzene concentration in the exhaust downstream of the combustion unit shall be determined using method 18 from appendix A of 40 CFR part 60.

(iii) The mass of benzene emitted during each run shall be calculated as follows:

$$M_i = D_b V C (10^{-6})$$

Where:

M_i = Mass of benzene emitted during run i, kg (lb).

V = Volume of air-vapor mixture exhausted at standard conditions, m³ (ft³).

C = Concentration of benzene measured in the exhaust, ppmv.

D_b = Density of benzene, 3.24 kg/m³ (0.202 lb/ft³).

10^6 = Conversion factor for ppmv.

(iv) The benzene mass emission rate in the exhaust shall be calculated as follows:

$$E_a = \frac{\sum_{i=1}^{n} M_i}{T}$$

Where:

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

M_i = Mass of benzene emitted during run i, kg (lb).

T = Total time of all runs, hour.

n = Number of runs.

(5) The benzene destruction efficiency for the combustion unit shall be calculated as follows:

$$R = \frac{E_b - E_a}{E_b} \times 100$$

Where:

R = Benzene destruction efficiency for the combustion unit, percent.

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

E_a = Mass flow of benzene emitted from the combustion unit, kg/hr (lb/hr).

(g) An owner or operator using performance tests to demonstrate compliance of a wastewater treatment system unit with §61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in paragraph (c)(3) of this section. The test shall be conducted under conditions that exist when the wastewater treatment system is operating at the highest inlet wastewater stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test.

(h) An owner or operator shall test equipment for compliance with no detectable emissions as required in §61.343 through 61.347, and §61.349 of this subpart in accordance with the following requirements:

(1) Monitoring shall comply with method 21 from appendix A of 40 CFR part 60.

(2) The detection instrument shall meet the performance criteria of method 21.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in method 21.

(4) Calibration gases shall be:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air

at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(5) The background level shall be determined as set forth in method 21.

(6) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface as described in method 21.

(7) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance.

(i) An owner or operator using a performance test to demonstrate compliance of a control device with either the organic reduction efficiency requirement or the benzene reduction efficiency requirement specified under §61.349(a)(2) shall use the following procedures:

(1) The test shall be conducted under conditions that exist when the waste management unit vented to the control device is operating at the highest load or capacity level expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test.

(2) Sampling sites shall be selected using method 1 or 1A from appendix A of 40 CFR part 60, as appropriate.

(3) The mass flow rate of either the organics or benzene entering and exiting the control device shall be determined as follows:

(i) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected. Samples of the vent stream entering and exiting the control device shall be collected during the same time period. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample.

(ii) A run shall consist of a 1-hour period during the test. For each run:

(A) The reading from each measurement shall be recorded;

(B) The volume exhausted shall be determined using method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate;

(C) The organic concentration or the benzene concentration, as appropriate, in the vent stream entering and exiting the control shall be determined using Method 18 from Appendix A of 40 CFR part 60.

(iii) The mass of organics or benzene entering and exiting the control device during each run shall be calculated as follows:

$$M_{aj} = KV_{aj}\left[\sum_{i=1}^{n} C_{ai} MW_i\right](10^{-6})$$

$$M_{bj} = KV_{bj}\left[\sum_{i=1}^{n} C_{bi} MW_i\right](10^{-6})$$

Where:

M_{aj} = Mass of organics or benzene in the vent stream entering the control device during run j, kg (lb).

M_{bj} = Mass of organics or benzene in the vent stream exiting the control device during run j, kg (lb).

V_{aj} = Volume of vent stream entering the control device during run j, at standard conditions, m^3 (ft^3).

V_{bj} = Volume of vent stream exiting the control device during run j, at standard conditions, m^3 (ft^3).

C_{ai} = Organic concentration of compound i or the benzene concentration measured in the vent stream entering the control device as determined by Method 18, ppm by volume on a dry basis.

C_{bi} = Organic concentration of compound i or the benzene concentration measured in the vent stream exiting the control device as determined by Method 18, ppm by volume on a dry basis.

MW_i = Molecular weight of organic compound i in the vent stream, or the molecular weight of benzene, kg/kg-mol (lb/lb-mol).

n = Number of organic compounds in the vent stream; if benzene reduction efficiency is being demonstrated, then n=1.

K = Conversion factor for molar volume at standard conditions (293°K and 760 mm Hg (527°R and 14.7 psia)).

10^{-6} = Conversion factor for ppmv.

(iv) The mass flow rate of organics or benzene entering and exiting the control device shall be calculated as follows:

$$E_a = \frac{\sum_{j=1}^{n} M_{aj}}{T}$$

$$E_b = \frac{\sum_{j=1}^{n} M_{bj}}{T}$$

Where:

E_a = Mass flow rate of organics or benzene entering the control device, kg/hr (lb/hr).

E_b = Mass flow rate of organics or benzene exiting the control device, kg/hr (lb/hr).

M_{aj} = Mass of organics or benzene in the vent stream entering the control device during run j, kg (lb).

M_{bj} = Mass of organics or benzene in vent stream exiting the control device during run j, kg (lb).

T = Total time of all runs, hr.

n = Number of runs.

(4) The organic reduction efficiency or the benzene reduction efficiency for the control device shall be calculated as follows:

$$R = \frac{E_a - E_b}{E_a} \times 100$$

Where:

R = Total organic reduction efficiency or benzene reduction efficiency for the control device, percent.

E_a = Mass flow rate of organics or benzene entering the control device, kg/hr (lb/hr).

E_b = Mass flow rate of organics or benzene emitted from the control device, kg/hr (lb/hr).

(j) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by §61.342 (c)(3)(ii)(B) according to the provisions of paragraph (a) of this section, except that the procedures in paragraph (a) of this section shall also apply to wastes with a water content of 10 percent or less.

(k) An owner or operator shall determine the benzene quantity for the purposes of the calculation required by §61.342(e)(2) by the following procedure:

(1) For each waste stream that is not controlled for air emissions in accordance with §61.343. 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the benzene quantity shall be determined as specified in paragraph (a) of this section, except that paragraph (b)(4) of this section shall not apply, i.e., the waste

quantity for process unit turnaround waste is not annualized but shall be included in the determination of benzene quantity for the year in which the waste is generated for the purposes of the calculation required by §61.342(e)(2).

(2) For each waste stream that is controlled for air emissions in accordance with §61.343. 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the determination of annual waste quantity and flow-weighted annual average benzene concentration shall be made at the first applicable location as described in paragraphs (k)(2)(i), (k)(2)(ii), and (k)(2)(iii) of this section and prior to any reduction of benzene concentration through volatilization of the benzene, using the methods given in (k)(2)(iv) and (k)(2)(v) of this section.

(i) Where the waste stream enters the first waste management unit not complying with §61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a) that are applicable to the waste management unit,

(ii) For each waste stream that is managed or treated only in compliance with §61.343 through 61.348(a) up to the point of final direct discharge from the facility, the determination of benzene quantity shall be prior to any reduction of benzene concentration through volatilization of the benzene, or

(iii) For wastes managed in units controlled for air emissions in accordance with §61.343, 61.344, 61.345, 61.346, 61.347, and 61.348(a), and then transferred offsite, facilities shall use the first applicable offsite location as described in paragraphs (k)(2)(i) and (k)(2)(ii) of this section if they have documentation from the offsite facility of the benzene quantity at this location. Facilities without this documentation for offsite wastes shall use the benzene quantity determined at the point where the transferred waste leaves the facility.

(iv) Annual waste quantity shall be determined using the procedures in paragraphs (b)(5), (6), or (7) of this section, and

(v) The flow-weighted annual average benzene concentration shall be determined using the procedures in paragraphs (c)(2) or (3) of this section.

(3) The benzene quantity in a waste stream that is generated less than one time per year, including process unit turnaround waste, shall be included in the determination of benzene quantity as determined in paragraph (k)(6) of this section for the year in which the waste is generated. The benzene quantity in this waste stream shall not be annualized or averaged over the time interval between the activities that resulted in generation of the waste for purposes of determining benzene quantity as determined in paragraph (k)(6) of this section.

(4) The benzene in waste entering an enhanced biodegradation unit, as defined in §61.348(b)(2)(ii)(B), shall not be included in the determination of benzene quantity, determined in paragraph (k)(6) of this section, if the following conditions are met:

(i) The benzene concentration for each waste stream entering the enhanced biodegradation unit is less than 10 ppmw on a flow-weighted annual average basis, and

(ii) All prior waste management units managing the waste comply with §61.343, 61.344, 61.345, 61.346, 61.347 and 61.348(a).

(5) The benzene quantity for each waste stream in paragraph (k)(2) of this section shall be determined by multiplying the annual waste quantity of each waste stream times its flow-weighted annual average benzene concentration.

(6) The total benzene quantity for the purposes of the calculation required by §61.342(e)(2) shall be determined by adding together the benzene quantities determined in paragraphs (k)(1) and (k)(5) of this section for each applicable waste stream.

(7) If the benzene quantity determined in paragraph (6) of this section exceeds 6.0 Mg/yr only because of multiple counting of the benzene quantity for a waste stream, the owner or operator may use the following procedures for the purposes of the calculation required by §61.342(e)(2):

(i) Determine which waste management units are involved in the multiple counting of benzene;

(ii) Determine the quantity of benzene that is emitted, recovered, or removed from the affected units identified in paragraph (k)(7)(i) of this section, or destroyed in the units if applicable, using either direct measurements or the best available estimation techniques developed or approved by the Administrator.

(iii) Adjust the benzene quantity to eliminate the multiple counting of benzene based on the results from paragraph (k)(7)(ii) of this section and determine the total benzene quantity for the purposes of the calculation required by §61.342(e)(2).

(iv) Submit in the annual report required under §61.357(a) a description of the methods used and the resulting calculations for the alternative procedure under paragraph (k)(7) of this section, the benzene quantity determination from paragraph (k)(6) of this section, and the adjusted benzene quantity determination from paragraph (k)(7)(iii) of this section.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10, 1990; 58 FR 3099, Jan. 7, 1993; 65 FR 62160, 62161, Oct. 17, 2000]

§ 61.356 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. Each record shall be maintained in a readily accessible location at the facility site for a period not less than two years from the date the information is recorded unless otherwise specified.

(b) Each owner or operator shall maintain records that identify each waste stream at the facility subject to this subpart, and indicate whether or not the waste stream is controlled for benzene emissions in accordance with this subpart. In addition the owner or operator shall maintain the following records:

(1) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(2) For each waste stream exempt from §61.342(c)(1) in accordance with §61.342(c)(3), the records shall include:

(i) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters (0.005 gallons) per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr (11 ton/yr) in accordance with §61.342(c)(3)(i), or

(ii) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with §61.342(c)(3)(ii).

(3) For each facility where process wastewater streams are controlled for benzene emissions in accordance with §61.342(d) of this subpart, the records shall include for each treated process wastewater stream all measurements, calculations, and other documentation used to determine the annual benzene quantity in the process wastewater stream exiting the treatment process.

(4) For each facility where waste streams are controlled for benzene emissions in accordance with §61.342(e), the records shall include for each waste stream all measurements, including the locations of the measurements, calculations, and other documentation used to determine that the total benzene quantity does not exceed 6.0

Mg/yr (6.6 ton/yr).

(5) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with §61.355(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with §61.355(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with §61.355(a)(1)(iii) of this section.

(6) For each facility where wastewater streams are controlled for benzene emissions in accordance with §61.348(b)(2), the records shall include all measurements, calculations, and other documentation used to determine the annual benzene content of the waste streams and the total annual benzene quantity contained in all waste streams managed or treated in exempt waste management units.

(c) An owner or operator transferring waste off-site to another facility for treatment in accordance with §61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the facility receiving the waste, and a copy of the notice sent with the waste shipment.

(d) An owner or operator using control equipment in accordance with §61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.

(e) An owner or operator using a treatment process or wastewater treatment system unit in accordance with §61.348 of this subpart shall maintain the following records. The documentation shall be retained for the life of the unit.

(1) A statement signed and dated by the owner or operator certifying that the unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content expected to occur.

(2) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams, and other documentation necessary to demonstrate the unit performance.

(3) If performance tests are used to determine treatment process or wastewater treatment system unit performance, then the owner or operator shall maintain all test information necessary to demonstrate the unit performance.

(i) A description of the unit including the following information: type of treatment process; manufacturer name and model number; and for each waste stream entering and exiting the unit, the waste stream type (e.g., process wastewater, sludge, slurry, etc.), and the design flow rate and benzene content.

(ii) Documentation describing the test protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the unit performance. The description of the test protocol shall include the following information: sampling locations, sampling method, sampling frequency, and analytical procedures used for sample analysis.

(iii) Records of unit operating conditions during each test run including all key process parameters.

(iv) All test results.

(4) If a control device is used, then the owner or operator shall maintain the control device records required by paragraph (f) of this section.

(f) An owner or operator using a closed-vent system and control device in accordance with §61.349 of this subpart shall maintain the following records. The documentation shall be retained for the life of the control device.

(1) A statement signed and dated by the owner or operator certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit vented to the control device is or would be operating at the highest load or capacity expected to occur.

(2) If engineering calculations are used to determine control device performance in accordance with §61.349(c), then a design analysis for the control device that includes for example:

(i) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the owner or operator, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. The design analysis shall address the following vent stream characteristics and control device operating parameters:

(A) For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

(B) For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

(C) For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the flame zone.

(D) For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in 40 CFR 60.18.

(E) For a condenser, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level or the design outlet benzene concentration level, design average temperature of the condenser exhaust vent stream, and the design average temperatures of the coolant fluid at the condenser inlet and outlet.

(F) For a carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

(G) For a carbon adsorption system that does not regenerate the carbon bed directly on-site in the control device, such as a carbon canister, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(H) For a control device subject to the requirements of §61.349(a)(2)(iv), the design analysis shall consider the vent stream composition, constituent concentration, and flow rate. The design analysis shall also include all of the information submitted under §61.349 (a)(2)(iv).

(ii) [Reserved]

(3) If performance tests are used to determine control device performance in accordance with §61.349(c) of this subpart:

(i) A description of how it is determined that the test is conducted when the waste management unit or treatment process is operating at the highest load or capacity level. This description shall include the estimated or design flow rate and organic content of each vent stream and definition of the acceptable operating ranges of key process and control parameters during the test program.

(ii) A description of the control device including the type of control device, control device manufacturer's name and model number, control device dimensions, capacity, and construction materials.

(iii) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(iv) All test results.

(g) An owner or operator shall maintain a record for each visual inspection required by §61.343 through 61.347 of this subpart that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed.

(h) An owner or operator shall maintain a record for each test of no detectable emissions required by §61.343 through 61.347 and §61.349 of this subpart. The record shall include the following information: date the test is performed, background level measured during test, and maximum concentration indicated by the instrument reading measured for each potential leak interface. If detectable emissions are measured at a leak interface, then the record shall also include the waste management unit, control equipment, and leak interface location where detectable emissions were measured, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed.

(i) For each treatment process and wastewater treatment system unit operated to comply with §61.348, the owner or operator shall maintain documentation that includes the following information regarding the unit operation:

(1) Dates of startup and shutdown of the unit.

(2) If measurements of waste stream benzene concentration are performed in accordance with §61.354(a)(1) of this subpart, the owner or operator shall maintain records that include date each test is performed and all test results.

(3) If a process parameter is continuously monitored in accordance with §61.354(a)(2) of this subpart, the owner or operator shall maintain records that include a description of the operating parameter (or parameters) to be monitored to ensure that the unit will be operated in conformance with these standards and the unit's design specifications, and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the unit.

(4) If measurements of waste stream benzene concentration are performed in accordance with §61.354(b), the owner or operator shall maintain records that include the date each test is performed and all test results.

(5) Periods when the unit is not operated as designed.

(j) For each control device, the owner or operator shall maintain documentation that includes the following information regarding the control device operation:

(1) Dates of startup and shutdown of the closed-vent system and control device.

(2) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the control device.

(3) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when:

(i) Any valve car-seal or closure mechanism required under §61.349(a)(1)(ii) is broken or the by-pass line valve position has changed.

(ii) The flow monitoring devices required under §61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required.

(4) If a thermal vapor incinerator is used, then the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28°C (50°F) below the design combustion zone temperature.

(5) If a catalytic vapor incinerator is used, then the owner or operator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28°C (50°F) below the design gas stream temperature, and records of all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference.

(6) If a boiler or process heater is used, then the owner or operator shall maintain records of each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone as required by §61.349(a)(2)(i)(C). For a boiler or process heater having a design heat input capacity less than 44 MW (150 x 10^6 BTU/hr), the owner or operator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the boiler or process heater and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28°C (50°F) below the design combustion zone temperature. For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW (150 x 10^6 BTU/hr), the owner or operator shall maintain continuous records of the parameter(s) monitored in accordance with the requirements of §61.354(c)(5).

(7) If a flare is used, then the owner or operator shall maintain continuous records of the flare pilot flame monitoring and records of all periods during which the pilot flame is absent.

(8) If a condenser is used, then the owner or operator shall maintain records from the monitoring device of the parameters selected to be monitored in accordance with

§61.354(c)(6). If concentration of organics or concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the temperature of the condenser exhaust stream and coolant fluid is monitored, then the owner or operator shall record all 3-hour periods of operation during which the temperature of the condenser exhaust vent stream is more than 6°C (11°F) above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6°C (11°F) above the design average coolant fluid temperature at the condenser outlet.

(9) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time.

(10) If a carbon adsorber that is not regenerated directly on site in the control device is used, then the owner or operator shall maintain records of dates and times when the control device is monitored, when breakthrough is measured, and shall record the date and time then the existing carbon in the control device is replaced with fresh carbon.

(11) If an alternative operational or process parameter is monitored for a control device, as allowed in §61.354(e) of this subpart, then the owner or operator shall maintain records of the continuously monitored parameter, including periods when the device is not operated as designed.

(12) If a control device subject to the requirements of §61.349(a)(2)(iv) is used, then the owner or operator shall maintain records of the parameters that are monitored and each occurrence when the parameters monitored are outside the range of values specified in §61.349(a)(2)(iv)(C), or other records as specified by the Administrator.

(k) An owner or operator who elects to install and operate the control equipment in §61.351 of this subpart shall comply with the recordkeeping requirements in 40 CFR 60.115b.

(l) An owner or operator who elects to install and operate the control equipment in §61.352 of this subpart shall maintain records of the following:

(1) The date, location, and corrective action for each visual inspection required by 40 CFR 60.693-2(a)(5), during which a broken seal, gap, or other problem is identified that could result in benzene emissions.

(2) Results of the seal gap measurements required by 40 CFR 60.693-2(a).

(m) If a system is used for emission control that is maintained at a pressure less than atmospheric pressure with openings to provide dilution air, then the owner or operator shall maintain records of the monitoring device and records of all periods during which the pressure in the unit is operated at a pressure that is equal to or greater than atmospheric pressure.

(n) Each owner or operator using a total enclosure to comply with control requirements for tanks in §61.343 or the control requirements for containers in §61.345 must keep the records required in paragraphs (n)(1) and (2) of this section. Owners or operators may use records as required in 40 CFR 264.1089(b)(2)(iv) or 40 CFR 265.1090(b)(2)(iv) for a tank or as required in 40 CFR 264.1089(d)(1) or 40 CFR 265.1090(d)(1) for a container to meet the recordkeeping requirement in paragraph (n)(1) of this section. The owner or operator must make the records of each verification of a total enclosure available for inspection upon request.

(1) Records of the most recent set of calculations and measurements performed to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T – Criteria for and Verification of a Permanent or Temporary Total Enclosure" in 40 CFR 52.741, appendix B;

(2) Records required for a closed-vent system and control device according to the requirements in paragraphs (d) (f), and (j) of this section.

[55 FR 8346, Mar. 7, 1990; 55 FR 12444, Apr. 3, 1990; 55 FR 18331, May 2, 1990, as amended at 58 FR 3103, Jan. 7, 1993; 65 FR 62161, Oct. 17, 2000; 67 FR 68533, Nov. 12, 2002]

§ 61.357 Reporting requirements.

(a) Each owner or operator of a chemical plant, petroleum refinery, coke by-product recovery plant, and any facility managing wastes from these industries shall submit to the Administrator within 90 days after January 7, 1993, or by the initial startup for a new source with an initial startup after the effective date, a report that summarizes the regulatory status of each waste stream subject to §61.342 and is determined by the procedures specified in §61.355(c) to contain benzene. Each owner or operator subject to this subpart who has no benzene onsite in wastes, products, by-products, or intermediates shall submit an initial report that is a statement to this effect. For all other owners or operators subject to this subpart, the report shall include the following information:

(1) Total annual benzene quantity from facility waste determined in accordance with §61.355(a) of this subpart.

(2) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions in accordance with the requirements of this subpart.

(3) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart the following information shall be added to the table:

(i) Whether or not the water content of the waste stream is greater than 10 percent;

(ii) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate;

(iii) Annual waste quantity for the waste stream;

(iv) Range of benzene concentrations for the waste stream;

(v) Annual average flow-weighted benzene concentration for the waste stream; and

(vi) Annual benzene quantity for the waste stream.

(4) The information required in paragraphs (a)(1), (2), and (3) of this section should represent the waste stream characteristics based on current configuration and operating conditions. An owner or operator only needs to list in the report those waste streams that contact materials containing benzene. The report does not need to include a description of the controls to be installed to comply with the standard or other information required in §61.10(a).

(b) If the total annual benzene quantity from facility waste is less than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall submit to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 1 Mg/yr (1.1 ton/yr) or more.

(c) If the total annual benzene quantity from facility waste is less than 10 Mg/yr (11 ton/yr) but is equal to or greater than 1 Mg/yr (1.1 ton/yr), then the owner or operator shall submit to the Administrator a report that

updates the information listed in paragraphs (a)(1) through (a)(3) of this section. The report shall be submitted annually and whenever there is a change in the process generating the waste stream that could cause the total annual benzene quantity from facility waste to increase to 10 Mg/yr (11 ton/yr) or more. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

(d) If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr), then the owner or operator shall submit to the Administrator the following reports:

(1) Within 90 days after January 7, 1993, unless a waiver of compliance under §61.11 of this part is granted, or by the date of initial startup for a new source with an initial startup after the effective date, a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests have been carried out in accordance with this subpart. If a waiver of compliance is granted under §61.11, the certification of equipment necessary to comply with these standards shall be submitted by the date the waiver of compliance expires.

(2) Beginning on the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

(3) If an owner or operator elects to comply with the requirements of §61.342(c)(3)(ii), then the report required by paragraph (d)(2) of this section shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams.

(4) If an owner or operator elects to comply with the alternative requirements of §61.342(d) of this subpart, then he shall include in the report required by paragraph (d)(2) of this section a table presenting the following information for each process wastewater stream:

(i) Whether or not the process wastewater stream is being controlled for benzene emissions in accordance with the requirements of this subpart;

(ii) For each process wastewater stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;

(iii) For each process wastewater stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart, the table shall report the following information for the process wastewater stream as determined at the exit to the treatment process: Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(5) If an owner or operator elects to comply with the alternative requirements of §61.342(e), then the report required by paragraph (d)(2) of this section shall include a table presenting the following information for each waste stream:

(i) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the point of waste generation: annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity;

(ii) For each waste stream identified as being controlled for benzene emissions in accordance with the requirements of this subpart; the table shall report the following information for the waste stream as determined at the applicable location described in §61.355(k)(2): Annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(6) Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit quarterly to the Administrator a certification that all of the required inspections have been carried out in accordance with the requirements of this subpart.

(7) Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit a report quarterly to the Administrator that includes:

(i) If a treatment process or wastewater treatment system unit is monitored in accordance with §61.354(a)(1) of this subpart, then each period of operation during which the concentration of benzene in the monitored waste stream exiting the unit is equal to or greater than 10 ppmw.

(ii) If a treatment process or wastewater treatment system unit is monitored in accordance with §61.354(a)(2) of this subpart, then each 3-hour period of operation during which the average value of the monitored parameter is outside the range of acceptable values or during which the unit is not operating as designed.

(iii) If a treatment process or wastewater treatment system unit is monitored in accordance with §61.354(b), then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr.

(iv) For a control device monitored in accordance with §61.354(c) of this subpart, each period of operation monitored during which any of the following conditions occur, as applicable to the control device:

(A) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal vapor incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the design combustion zone temperature.

(B) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic vapor incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference.

(C) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a boiler or process heater having a design heat input capacity less than 44 MW (150 x 10^6 BTU/hr), as measured by the temperature monitoring device, is more than 28°C (50°F) below the design combustion zone temperature.

(D) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas.

(E) Each 3-hour period of operation during which the temperature of the condenser

exhaust vent stream is more than 6°C (11°F) above the design average exhaust vent stream temperature, or the temperature of the coolant fluid exiting the condenser is more than 6°C (11°F) above the design average coolant fluid temperature at the condenser outlet.

(F) Each period in which the pilot flame of a flare is absent.

(G) Each occurrence when there is a change in the location at which the vent stream is introduced into the flame zone of a boiler or process heater as required by §61.349(a)(2)(i)(C) of this subpart.

(H) Each occurrence when the carbon in a carbon adsorber system that is regenerated directly on site in the control device is not regenerated at the predetermined carbon bed regeneration time.

(I) Each occurrence when the carbon in a carbon adsorber system that is not regenerated directly on site in the control device is not replaced at the predetermined interval specified in §61.354(c) of this subpart.

(J) Each 3-hour period of operation during which the parameters monitored are outside the range of values specified in §61.349(a)(2)(iv)(C), or any other periods specified by the Administrator for a control device subject to the requirements of §61.349(a)(2)(iv).

(v) For a cover and closed-vent system monitored in accordance with §61.354(g), the owner or operator shall submit a report quarterly to the Administrator that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure.

(8) Beginning one year after the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that summarizes all inspections required by §61.342 through 61.354 during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken.

(e) An owner or operator electing to comply with the provisions of §61.351 or 61.352 of this subpart shall notify the Administrator of the alternative standard selected in the report required under §61.07 or §61.10 of this part.

(f) An owner or operator who elects to install and operate the control equipment in §61.351 of this subpart shall comply with the reporting requirements in 40 CFR 60.115b.

(g) An owner or operator who elects to install and operate the control equipment in §61.352 of this subpart shall submit initial and quarterly reports that identify all seal gap measurements, as required in 40 CFR 60.693-2(a), that are outside the prescribed limits.

[55 FR 8346, Mar. 7 1990; 55 FR 12444, Apr. 3, 1990, as amended at 55 FR 37231, Sept. 10,1990; 58 FR 3105, Jan. 7, 1993; 65 FR 62161, Oct. 17, 2000]

§ 61.358 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Clean Air Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Alternative means of emission limitation under §61.353 of this subpart will not be delegated to States.

§ 61.359 [Reserved]