

STATEMENT OF BASIS

To: Reviewers
Through: Lori Bocchino, Operating Permit Program Manager
From: Hillary Killorn, P.E., Operating Permit Engineer
Subject: Draft Chapter 6, Section 3 Operating Permit 3-2-158-1, Black Hills Power, Inc., Neil Simpson Station II
Date: June 25, 2013 (*September 5, 2013 Addendum*) (*October 28, 2013 Addendum*)

Attached for your review is the draft modification Wyoming Air Quality Standards and Regulations (WAQSR) Ch 6, Sec 3 operating permit 3-2-158-1 for the Neil Simpson Station II. The Division issued Operating Permit 3-2-158 on June 24, 2009. This modification is to add applicable requirements associated with recently issued construction permits and waivers and to update requirements from NSPS and NESHAP standards.

Waiver AP-8924 (8/3/09): authorized the construction of six additional cooling cells to increase turbine efficiency and produce additional power without increasing boiler emissions or the amount of fuel consumed. To demonstrate that there will not be a significant net increase in emissions under the PSD program, the permittee must show that the heat input will not exceed 10,157,515 MMBtu per year for five years following the addition of the cooling cells. Requirements that apply until January 1, 2015 include: monthly calculation of total heat input using CEM data and the procedures in 40 CFR 75, Appendix F, annual submission of a summary of the 12 calendar month heat inputs and total heat input for the previous calendar year, and notification within 10 days if any calendar year heat input exceeds 10,157,515 MMBtu.

Division Letter (2/26/10): addressed the vacature of the federal Clean Air Mercury Rule in March 2008 and clarified how the permittee shall continue to comply with the WAQSR Chapter 14, Section 4 mercury requirements by installing and operating a mercury CEMS. This letter was superseded by Division Letter (6/12/12).

Permit MD-10901 (8/30/11): authorized the installation of one Norit silo (source 16) to be part of a mercury control sorbent injection system and operation of one 292 horsepower Caterpillar 3406B diesel generator (source 15) to power the emergency fire suppression system. Initial performance tests as required by this permit were completed in October and November 2011. Requirements include: PM/PM₁₀ emission limits for the silo and daily visual emission observations on any day the silo is operating; NO_x and CO emission limits, 500 hours per year operation limit, testing at least once every five years, maintenance requirements and compliance with 40 CFR 63 Subpart ZZZZ for the diesel generator.

Waiver wv-12425 (9/19/11): authorized a temporary calcium chloride and proprietary mercury sorbent injection test into the flue gas to test the ability of calcium chloride to enhance mercury removal. This waiver expired January 1, 2012.

Division Letter (1/5/12) and (8/2/11): required that emissions associated with startup/shutdown events and malfunctions or emergency situations be included in the 30 day rolling average calculations for lb/MMBtu NO_x, lb/hr NO_x and lb/MMBtu SO₂. These emissions must also be evaluated and reported according to WAQSR Chapter 5, Section 2 quarterly excess emissions and CEMs performance reporting requirements. These requirements do not take the place of, and must be completed in addition to, applicable 40 CFR 60 Subpart Da averaging and reporting requirements.

Waiver wv-13263 (4/13/12): authorized the installation of a pneumatic piping system from the Surge Bins beneath the ESP to the CDS to assist in complying with SO₂ emission limits during periods of startup. There are no remaining requirements.

Waiver wv-13430-1 (6/11/12): authorized a temporary long-term test using proprietary sorbent and calcium chloride for mercury capture and evaluating the effects of the sorbent on downstream processes alone and in combination with the calcium chloride. This waiver has no remaining requirements and will expire on June 11, 2013.

Division Letter (6/12/12): superseded Division Letter (2/26/10) and removed the requirement to comply with WAQSR Ch 14, Sec 4 because this section was removed from the regulations by Wyoming Environmental Quality Council vote on January 13, 2012. The section was removed because of the vacature of the federal Clean Air Mercury Rule in 2008 and the promulgation of 40 CFR 63 Subpart UUUUU in February 2012. The letter requests that the permittee continue to operate all currently installed mercury CEMS and requires compliance with Subpart UUUUU by the appropriate compliance date listed in the subpart.

In addition to the permit requirements listed above, the facility continues to be subject to any applicable requirements from WAQSR Chapter 5, Section 2 New Source Performance Standards and 40 CFR 60 Subparts Da, Y, and GG.

The facility is subject to applicable requirements from WAQSR Chapter 5, Section 3 National Emission Standards for Hazardous Air Pollutants and 40 CFR 63 Subpart ZZZZ for the Caterpillar 3406B diesel emergency generator engine. The engine is not subject to 40 CFR 60 Subpart IIII because of its date of construction.

The pulverized coal-fired boiler (source 1) is subject to WAQSR Ch 5, Sec 3 and 40 CFR 63 Subpart UUUUU and must comply with the applicable requirements of the subpart no later than April 16, 2015 (40 CFR 63 §63.9984).

The operating permit revisions include the following:

- Table of Contents: repagination as required; removed reference to the Mercury Requirements section as the section containing conditions F31 and F32 has been removed; added references to the new sections containing Heat Input, 40 CFR 63 Subpart ZZZZ and 40 CFR 63 Subpart UUUUU requirements; Appendices B through E and G were removed and reserved as the Division no longer includes copies of WAQSR Chapter 7, Section 3, Federal NSPS and NESHAP standards, or the Portable Analyzer Monitoring Protocol in operating permits.
- Source Emissions Points table: added sources 15 and 16 per permit MD-10901 and included a reference to AP-8924 for the boiler (source 1).
- Total Facility Estimated Emissions table: updated with new values that include emissions from newly permitted sources 15 and 16.
- Condition F4: included visible emission requirements from permit MD-10901 for the newly permitted Emergency Diesel Fire Pump engine (source 15) and Mercury Sorbent Silo (source 16).
- Condition F8: included particulate emission limits from permit MD-10901 for the new Mercury Sorbent Silo (source 16).

- Condition F9: included NO_x and CO emission limits, an operating hour limit, and operation and maintenance requirements for the Emergency Diesel Fire Pump engine (source 15).
- Condition F13: included reference to permit MD-10901 and added the Mercury Sorbent Silo (source 16) to the Process Handling Systems Compliance Assurance Monitoring (CAM) Plan and all associated monitoring requirements.
- Condition F14: revised the required calculation methodology for SO₂ and NO_x 30-day rolling average emission rates to specify that data obtained during startup, shutdown, malfunctions and emergency conditions shall be included per the Division letter issued on August 2, 2011. The revision also includes a statement explaining that the exclusion of startup, shutdown, malfunction and emergency emissions only applies to the 40 CFR 60 Subpart Da standards as authorized in Subpart Da.

Additionally, replaced the reference to condition P60-Da1 with an updated reference to 40 CFR 60 Subpart Da as the previous condition was replaced with language currently in use by the Division for 40 CFR 60 Subpart Da requirements; replaced conditions containing specific CEM requirements derived from Subpart Da with the general requirement to comply with all applicable requirements of Subpart Da to be consistent with other permits currently being issued by the Division. These revisions do not result in changes to monitoring, but direct the permittee to the monitoring requirements of Subpart Da rather than rewriting portions of that rule in the permit (as had been done in the previous version of this permit).

- Condition F15: included monitoring requirements from permit MD-10901 and for periodic visibility monitoring for the Emergency Diesel Fire Pump engine (source 15).
- Condition F16: removed the reference to Appendix G.
- Condition F19: included permit MD-10901 as a reference for incorporating source 16 into the CAM recordkeeping requirements; added requirement from permit MD-10901 that the records shall be made available to the Division upon request.
- Condition F20: included recordkeeping requirements from permit MD-10901 and conditions F15(e) and F15(g) for the Emergency Diesel Fire Pump engine (source 15).
- Condition F24: included testing and monitoring reporting requirements for the Emergency Diesel Fire Pump engine (source 15).
- Condition F25: included reference to bin vent filters in addition to baghouses.
- Condition F26: included Division letter August 2, 2011 as a reference for incorporating NO_x and SO₂ calculation and reporting requirements for the boiler (source 1); replaced the specific percentage for SO₂ reduction with a reference to 40 CFR 60 Subpart Da to be consistent with other permits currently being issued by the Division; clarified additional reporting requirements to be submitted concurrently with the quarterly excess emissions and monitoring systems performance report.
- Conditions F31 and F32: removed and reserved pursuant to Division letter June 12, 2012 and the promulgation of 40 CFR 63 Subpart UUUUU.
- Greenhouse Gas Reports: added condition F33 to incorporate greenhouse gas reporting requirements pursuant to Wyoming Statute 35-11-110.

- Heat Input Requirements: added condition F34 to incorporate heat input monitoring and reporting requirements from permit waiver AP-8924.
- Condition CAM-1: included reference to source 16 as one of the baghouse/bin vent filter controlled equipment installed at the facility.
- WAQSR Ch 5, Sec 2 NSPS and 40 CFR Part 60 Subpart Da, Subpart Y, and Subpart GG: updated to be consistent with language currently in use by the Division.
- WAQSR Ch 5, Sec 3 NESHAPS and 40 CFR Part 63 Subpart ZZZZ: added to capture 40 CFR 63 Subpart ZZZZ requirement as they apply to the Emergency Diesel Fire Pump engine (source 15).
- WAQSR Ch 5, Sec 3 NESHAPS and 40 CFR Part 63 Subpart UUUUU: added to capture 40 CFR 63 Subpart UUUUU requirements as they apply to the boiler (source 1).
- Compliance Certification: removed obsolete references to P60-Da, P60-GG, P60-Y as appropriate; included references to source 16; included compliance certification requirements for visible emissions, NO_x and CO emissions, and operating hours limitations for the Emergency Diesel Fire Pump engine (source 15); included compliance certification requirements for greenhouse gas reporting and boiler heat input requirements; included compliance certification requirements for 40 CFR 60 Subparts Da, Y and GG and 40 CFR 63 Subparts ZZZZ and UUUUU.
- State Only Permit Conditions: updated to be consistent with recent revisions to the state ambient standards.
- Summary Tables: removed obsolete references to P60-Da, P60-GG, P60-Y as appropriate; included new references to applicable subparts; included any additional requirements from recent WAQSR Ch 6, Sec 2 permits and waivers; included new table for the Emergency Diesel Fire Pump engine (source 15).
- Appendix A: revised the Process Handling Systems portion of the CAM plan to include source 16.
- Appendices B through E and G: removed and reserved.

September 5, 2013 Addendum

Due to comments received from the permittee during the initial public notice period, condition F15(g) was rephrased to remove the word "periodic" and further clarify the visual emission observation requirements for the Emergency Diesel Fire Pump engine (source 15).

October 28, 2013 Addendum

On March 28, 2012, the Air Quality Division updated the WAQSR Chapter 14, Section 3 for the Sulfur Dioxide Milestone Inventory, to revise measurement techniques and baseline date language. Conditions F29(c) and (f) have been updated accordingly to reflect current requirements.