



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
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AUG 12 2010

We appreciate the opportunity to review and provide comments on the proposed construction permit for the Sunflower Holcomb Station Expansion Project. The proposed permit includes requirements under the Prevention of Significant Deterioration (PSD) program and limitations on hazardous air pollutants that are not covered by the PSD program. Please note that these comments reflect our review of the permit to date. We reserve the right to provide additional comments, including comments related to the air quality modeling analysis and other matters, at a later date.

Emission Limits

- Options that maximize the energy efficiency of the facility ought to be considered in the BACT analysis and decision. As the thermal efficiency of a coal-fired boiler is increased, less coal is burned per kilowatt-hour (kWh) generated, and there is a corresponding decrease in air emissions such as NO_x, SO₂, and greenhouse gasses. For example, ultra-supercritical boilers can operate at higher efficiencies compared to supercritical boilers. Although currently there are no operating ultra-supercritical boilers in the United States, the technology is used widely for new units in other parts of the world. The BACT record does not include any analysis evaluating ultra-supercritical boiler technology.
- If this permit is issued on or after January 2, 2011, the permit must also include BACT emission limitations for greenhouse gasses. See, 75 Fed. Reg. 17004 (Apr. 2, 2010).
- The draft permit needs to clearly state that requirements in the Air Emission Limitations section of the permit must be complied with. For example, on page 10, paragraphs 3 through 7 of this section of the draft permit seem to be re-stating regulatory requirements. We suggest that the permit state at the beginning of the Air Emission Limitations section that all requirements and conditions included in or referenced in this section must be met.
- On page 7, the draft permit defines "day" for the 30-day rolling limits to have the same meaning as "boiler operating day" as defined in 40 CFR 60.41Da. We suggest that the permit specify the date of incorporation, for example by stating "as defined in 40 CFR 60.41Da as of July 1, 2010," or simply include the definition in the permit. This will prevent problems if EPA changes the definition of "boiler operating day" in the future.

- On page 7, the draft permit proposes a NOx emissions limit of 0.05 pounds per million BTU (lb/MMBtu) heat input on a 30-day rolling average basis, excluding periods of startup and shutdown. We understand that this limit is consistent with other NOx limits in previously issued PSD permits for similar units in the nation. However, the Best Available Control Technology (BACT) is based on the maximum degree of reduction taking into account energy, environmental, and economic impacts and other costs. Therefore, the record should evaluate if lower NOx rates are technically and economically feasible.¹ The permit record should explain whether these rates are achievable at the proposed unit and if such rates are not achievable, why they cannot be achieved, and why they do not otherwise represent BACT.

Startup, Shutdown, and Malfunction

- On page 4, in the listing of the Significant Applicable Air Pollution Control Regulations, the draft permit lists Kansas' administrative regulation related to excess emission events (startups, shutdowns, and malfunctions). The draft permit includes such events in certain emission limits and is silent as to such events in other emission limits. Under the Clean Air Act, the BACT requirement and the relevant NAAQS and increments must be protected at all times, including instances of startup, shutdown, and malfunction. Therefore, to ensure compliance with the Clean Air Act and implementing regulations, we recommend the permit delete the reference to operation under the general regulation relating to excess emissions. The permit may, however, contain secondary limitations for periods of startup, shutdown, and malfunction provided such limitations ensure compliance with the BACT provisions and do not authorize the source to cause or contribute to a violation of the NAAQS or increments.
- Examples of where the draft permit is confusing on startup, shutdown, and malfunction events include:
 - On page 7, the proposed NOx limit states that emissions during startup and shutdown shall be limited to an average of 1740 lb/hr determined on an "individual event basis." The draft permit does not provide an averaging time for the limit and does not define an "individual event basis." The draft permit does not state whether periods of malfunction shall be included in this limit.

¹ There are units achieving rates lower than the proposed 0.05 lb/MMBtu rate. On June 14, 2007, Texas adopted Rule 117.1210 (30 Tex. Admin. Code § 117.1210 (2007)). This regulation requires tangential-fired units to meet a NOx emission limit of 0.045 lb/MMBtu heat input in certain non-attainment areas in Texas. W.A. Parish units 7 and 8 are tangential-fired pulverized coal units subject to Rule 117.210. Emissions data for these units is available from the Clean Air Markets Division. Looking at data from 2008, unit 7 had a median 30-day NOx rate of 0.041 lb/MMBtu and a maximum 30-day rate of 0.046 lb/MMBtu. Unit 8 had a median 30-day NOx rate of 0.044 lb/MMBtu and a maximum 30-day rate of 0.045 lb/MMBtu. These 30-day (720 boiler operating hours) rates include all hours the boilers were operating including startups and shutdowns. These examples demonstrate that lower rates are achievable at sources that are similar to the Sunflower. Thus, the Sunflower permit should either reflect such rates or the record should be supported by a demonstration that such rates are not achievable for the Sunflower facility, or do not otherwise represent BACT.

- On page 8, the proposed SO₂ limit states that during periods of startup and shutdown, the total annual emissions of SO₂ will not exceed 3239 tons. The annual limit does not correlate with the abbreviated nature of startup and shutdown events and the potential impact of emissions during these events on the short-term SO₂ limits. In general, it is difficult to enforce annual limits. We suggest looking at options for a time frame that could be more easily enforced but still allows Sunflower operational flexibility, such as a 12-month rolling total.
- We read the draft permit to include malfunctions in the 30-day SO₂ limit but it is not clear if that was the permits intent.
- The draft permit should state whether periods of malfunction are included in the PM emission limit on page 8.
- The draft permit should state whether periods of startup, shutdown, or malfunction are included in the VOC limit on page 9.
- The draft permit on page 18 in Paragraph 8 of the section titled “Reporting,” provides additional information regarding malfunction events. This paragraph should make clear that excess emissions during startup and shutdown are violations unless in compliance with conditions expressly providing for secondary emissions limits as described above. The permit should also state that excess emissions during malfunction events may constitute violations and are subject to enforcement.

Air Toxic Hazardous Air Pollutant (HAP) Emission Limits

The draft permit limits the Hazardous Air Pollutant (HAP) emissions from the proposed Unit 2 to 10 tons per year for any single HAP or 25 tons per year for any combination of HAPs. The limit appears to be intended to limit the potential to emit of the unit to avoid the 112(g) Maximum Achievable Control Technology (MACT) requirement. We have several comments in regard to the HAP permit limits and compliance monitoring.

- The permit needs to define HAPs to make it clear which pollutants are included in the HAP limit.
- The permit limits for HAPs should be expressed as tons per 12-month period instead of tons per year to clarify that a year is any consecutive 12-month period and not a calendar year.
- The draft permit requires the chlorine and fluorine concentration in the coal burned to be sampled once each calendar quarter. This frequency would allow the operator to select the lowest chlorine and fluorine containing coal to sample. Considering the possible variability in coal chlorine and fluorine content, the permit should require sampling of every shipment of coal received. A quarterly average chlorine and fluorine concentration can be calculated based on the content in the coal and the mass of coal received. This concentration should be

used to adjust the emission rates in paragraph 2 on page 17 of the Recordkeeping section of the draft permit to determine compliance with the hydrogen chloride and hydrogen fluoride HAP limits by multiplying by the average coal content and dividing by the content of the coal during the test.

- In Recordkeeping on page 18, paragraph 4, the draft permit requires the 12-month rolling average to be maintained. In Reporting on page 18, paragraph 7 the draft permit requires 12-month rolling average emissions to be submitted. We believe you intended these to be 12-month rolling totals of the emissions.
- More information should be provided regarding the relationship of the sulfur dioxide control efficiency and hydrogen chloride and hydrogen fluoride control efficiency. We are concerned that if Sunflower operated the sulfur dioxide control equipment at a higher than required efficiency during the HAP stack tests that would bias the test results, which in turn would bias the HAP emission calculations.
- The general description on page 3 states that “there is no potential” that Unit 2 could exceed the major source HAP limits. The permit record should include an explanation as to why the major source limit for HAPs is not exceeded and explain how the monitoring and testing requirements included in the permit demonstrate this.

Ambient Air Quality Protection

The permit needs to assure that the project protects the National Ambient Air Quality Standards (NAAQS).

- On pages 7 and 8, the draft permit limits NO_x and SO₂ emissions for the Unit 2 on a 30-day average. The existing unit is also subject to 30-day limits. There can be considerable variability in 1-hour emission rates. Therefore, to assure compliance with the 1-hour NO_x and SO₂ NAAQS, the permit needs to contain NO_x and SO₂ 1-hour average emission rates for both the new and existing steam generating units. The existing unit needs the 1-hour limits because its emissions are important to the modeling demonstration for the proposed unit. To ensure the source does not cause or contribute to a violation of the NAAQS, the emission limits must be consistent with the modeling rates and have the same averaging period, i.e. in this case 1-hour average emission rates for the 1-hour NAAQS.
- The permit needs to specify that construction cannot commence until a construction permit is issued limiting Sunflower’s Garden City facility’s fuel oil sulfur content to less than 0.5% since that restriction is assumed in the modeling.
- The air quality analysis must include impacts in all areas that are “ambient air.” Therefore, the permit record needs to demonstrate that public access, to Sunflower’s property that was not modeled, is precluded by a fence or other physical barrier.

- For the reasons stated in EPA's June 28, 2010 memo "General Guidance for Implementing the 1-hour NO₂ National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO₂ Significant Impact Level" the emergency equipment's emissions should be modeled as occurring at any time instead of just occurring between the hours of 8:00 am to 5:00 pm.

General Comments

- On page 3, in the fourth paragraph, the draft permit states that "mercury is not regulated under 40 CFR Part 52." It should be made clear in permit record that mercury is a hazardous air pollutant that is regulated under Section 112 of the Clean Air Act (42 U.S.C. §. 7412) and not under the PSD program. The record should explain that the mercury limits in the permit are from the May 4, 2009, agreement between Kansas and Sunflower.
- The Permit Conditions in paragraphs 7 and 8 on page 12, state that emergency operation is unrestricted. Rather than allowing unrestricted operations, the permit should include a definition of emergency and a requirement to do what is reasonable to minimize emissions during emergency events.
- The Title V Requirements section on page 20 is unclear about what is required for Title V. The draft permit does not specify that the current Title V permit is for Holcomb Unit 1 and that the Title V permit shall be modified to include the requirements of the construction permit.
- The draft permit should define the terms "commercial operation" and "maximum production rate" even though various testing and monitoring requirements are based on these terms.
- The application appears to lack a detailed schedule for construction as required by 40 CFR § 52.21(n)(1)(ii), which is incorporated by reference in the Kansas state implementation plan, K.A.R. 28-19-350. We believe this required schedule should be provided.

Monitoring

The permit needs to assure ongoing compliance with the various emission limits. For volatile organic compounds, lead, and sulfuric acid the draft permit only requires a one-time performance test. See page 12, paragraph 4. The draft permit should list methods to determine ongoing compliance with these emission limitations. Also, the draft permit in paragraph 12 on page 15 requires the first HAP test within 90 days after achieving 90% of the maximum production rate. We suggest that this be clarified as the maximum hourly production rate.

Again, we appreciate the opportunity to provide comments on this draft permit and may follow with additional comments at a later date. Please feel free to contact me at 913-551-7487, if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Becky Weber". The signature is written in a cursive style with a large initial "B" and a long, sweeping underline.

Becky Weber, Director
Air & Waste Management Division

cc: Attn: Sunflower Comments