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MEMORANDUM

To: Beverly McKeone, NSR Program Manager
From: Edward Andrews, Engineer
Date: July 1, 2016
Subject: Class I Administrative Update Request of Permit R14-0024E (R14-0024F) for Longview Power, LLC

The purpose of this request focus around the operational restriction of the auxiliary boiler and how compliance with the heat input limit for the PC boiler is determined.

Items b (hours of operation limit) and c (annual fuel usage restriction) of Condition 6.1.1. in Permit R14-0024E limits the annual operation of auxiliary boiler to 197,100 MMBtu per year, which limits this boiler to an annual capacity factor of less than 10%. These two item created a double restriction. Longview proposed to have the capacity factor focus in terms as defined in Subpart Db, which utilizes boiler heat input.

This writer proposes to rewrite item b in line with Subpart Db, which allows boilers to avoid the oxides of nitrogen standard and monitoring requires by taking a heat input limit of 10%, while using the fuel restriction in item c as a means to link back to the capacity factor limit. The suggested changes are as follows:

- 6.1.1. The following conditions and requirements are specific to the Auxiliary Boiler (ID #SX1):
- a. The hourly heat input of the Auxiliary Boiler shall not exceed 225 million British Thermal Units (MMBtu) per hour.
 - b. The permittee shall limit the annual capacity factor of the boiler to no more than 10 percent by limiting the total annual heat input of the boiler to 197,100 MMBtu per year. Compliance with this limit shall be satisfied though compliance with the annual fuel usage limit in item c of this condition.
[40 CFR §60.44b(c) and 45 CSR §2-8.4.a.1.]
 - c. The Auxiliary Boiler shall not consume more than 197.1 million cubic feet of natural gas on an annual basis.

The permit already require monitor of fuel monitoring for each operating day. Thus, no other changes in Section 6.0 of Permit R14-0024E are necessary.

This writer original established an annual heat input for PC Boiler in Permit R14-0024 limit/cap annual emissions from the unit without creating individual annual emissions limits. In 2011, Longview agreed to use Part 75 Monitoring to determine actual heat input of the PC Boiler, which is in Condition 5.1.1.a.

The issue with Part 75 for other purposes than emission trading programs (i.e. Acid Rain, NOx SIP Call) is the procedures for determining emissions always error higher that actuals. This approach ensures that none of the sources in these programs are short changing the trading programs at all times, even when monitoring equipment malfunctions or fails.

Part 60 monitoring is focused on measuring actual emissions with respect to the specific emission standard for the source category. In addition, Part 60 emission standards allow the use of Part 75 monitoring standards to demonstrate compliance with the Part 60 standard expect the use of missing data procedures or bias factors are not accepted.

Longview's PC Boiler is subject to Part 60 emissions standards and the Title IV of the Clean Air Act (Acid Rain) which requires Part 75 monitoring. The Part 75 method that Longview used to determine compliance with the heat input limits is determine by Equation F-15 in Appendix F of Part 75, which is illustrated below:

$$HI = Q_w \times \frac{1}{F_c} \times \frac{\%CO_{2w}}{100}$$

Where:

HI = Hourly heat input rate during unit operating, MMBtu/hr.

Q_w = Hourly average volumetric flow rate during unit operation, wet basis, scfh.

F_c = Carbon-based F-factor, listed in section 3.3.5. of this Appendix F for each fuel, scf CO₂ /MMBtu. For Bituminous Coal, F_c is 1,800 scf CO₂ /MMBtu.

$\%CO_{2w}$ = Hourly concentration of CO₂ during unit operation, percent CO₂ wet basis.

The CO₂ in this equation is used to correct the flow rate. This equation assumes that the CO₂ is generated from fuel combustion. The problem this method is that location of the probes for the monitoring equipment and the SO₂ control device used. These probes are located downstream of the wet limestone force oxidation scrubber. This type of SO₂ control device will generate CO₂ as a by-product in the exhaust stream. This additional CO₂ is being measured by the CO₂ monitoring and influencing the calculated heat input of the PC Boiler. This writer agree that this method is not appreciate for demonstrating compliance with Permit R14-0024E.

Longview has proposed to used produces incorporated by reference in Part 60 to determine the calorific value of the coal to be fired (received by Longview). Longview

purchases fuel in terms of heat energy (MMBtu), rather than by weight. To administer the fuel contact, Longview uses a mechanical sampler to obtain daily fuel sample for an independent laboratory analysis. These daily samples are analyzed for moisture, sulfur, ash, and calorific value. The lab has been certified to ISO 17000-025 and uses ASTM method D5865 to determine the calorific value of the coal (fuel). This analytic method has been incorporated by reference in 40 CFR §60.17, and specified for use to measure the calorific value of coal in 40 CFR §60.45(f)(5)(ii) and 40 CFR §60.46(c)(2). Using the actual daily calorific value of the fuel and hourly fuel feed rates, the heat input for the PC boiler can be determine.

This writer proposed the Condition 5.1.1.a. be revised to the following:

- 5.1.1. The following conditions and requirements are specific to the PC Boiler (ID #SB1):
 - a. The annual heat input of the PC Boiler shall not exceed 53,558,640 MMBtu per calendar year as determined via methods in 40 CFR 60.

The emission limits in the current permit have defined average periods with corresponding procedures how compliance is determine. These averaging periods range from 3-hour rolling to an calander year with the most of the emissions limits are on a 30 day rolling average. For PM, NO_x, SO₂, CO, and mercury, these pollutants compliance is through the use of continuous emission monitoring systems.

The previous permit had compliance for the heat input limit on a 12-month rolling basis versus on a calendar year. This limit is not link or used to ensure compliance with any of the emission limits. Today, this limit is mainly used as indicate for the agency to determine if potential changes had occurred that would increase capacity or firing rate of the PC Boiler that might not been disclosed to the DAQ. Thus, it is consider to be reasonable to change the average period to calendar year basis for the heat input limit in Condition 5.1.1.a.

For consistence purposes, Longview request to redefine the coal throughput for the coal handling equipment. Thus, Longview proposed the following change to be made to Condition 4.1.1.a.

- 4.1.1. The following conditions and requirements are specific to the coal handling operations:
 - a. The coal transferred through the facility shall not exceed 2,550,411 tons per calendar year.

The PM and PM₁₀ limits are very low for Longview's coal handling facility, which are less than 0.4 lb per hour and 1.4 tpy. The source would have very little room for compliance on whether on a calendar year or 12-month rolling basis. Second, the facility has a storage limit on the open stockpile in Condition 4.1.1.c. of 120,000 tons of coal. Third, the facility is limited to the firing rate of the PC boiler, which is the heat input that was discussed earlier. Dropping the

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12-month rolling total from Condition 4.1.1.a., this change should be consider reasonable with the change.

Other changes that are being proposed correction to Condition 5.2.1.f. and re-insert Condition 3.2.1. Item f of Condition 5.2.1. defines the location, performance specifications, and quality assurance requirements for the diluent monitor. The source uses O₂ for the CO monitor under Part 60 and CO₂ for pollutants required to be monitored under Part 75 monitors.

Condition 3.2.1. defines how the visible emission checks are to be performed within the permit. This condition was inadvertently omitted when Permit R14-0024E was issued on July 20, 2012. This omission affects Conditions 4.2.1. and 7.2.1.

All of these changes can fit into what can be allowed under the 45CSR§13-4.2.b. Therefore, I recommend to the Director to issue Permit R14-0024F to Longview Power, LLC in approving this Class I Administrative Update.