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VIA FEDERAL EXPRESS OVERNIGHT
Tracking No. 870667364791
Eric Cornwell
Air Protection Branch
Environmental Protection Division
Department of Natural Resources
4244 International Parkway
Atlanta Tradeport – Suite 120
Atlanta, Georgia 30354

RE: Comments on Permit Amendment 4911-099-0033-P-01-2 for the Longleaf Energy Station, Early County, Georgia.

Dear Mr. Cornwell:

Please accept these comments on the Georgia Environmental Protection Division's ("EPD") proposed Permit Amendment No. 4911-099-0033-P-01-2 ("Amendment" or "Permit Amendment") issued for the Longleaf Energy Station, Early County, Georgia. These comments are submitted on behalf of the following organization and individuals:

FLINT RIVERKEEPER
DON LAMBERT
WALTER LEE

The amendment proposed by EPD contains two distinct parts: 1) an extension of the construction schedule for the PSD permit that was issued for the Longleaf Energy Station ("Longleaf" or "Longleaf Plant") in May 2007, and 2) a determination making the facility a minor source of Hazardous Air Pollutants ("HAPs"). For the reasons stated below, both amendments should be denied.

I. EPD Should Not Grant an Extension to the Longleaf Construction Schedule.

Pursuant to the federal Prevention of Significant Deterioration ("PSD") regulations, no "new major stationary source" can "begin actual construction" without a permit meeting the requirements of the PSD program. 40 C.F.R. § 52.21(a)(2)(iii). The federal regulations also provide that PSD permit approval to construct a major emitting source shall become invalid if:

> construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time.

40 C.F.R. § 52.21(r)(2). This time period may be extended "upon a satisfactory showing that an extension is justified." *Id.*

Longleaf Energy Associates submitted an application to EPD on February 16, 2002 for a PSD Permit to construct and operate a pulverized coal-fired electric power generation facility at a site to be called Longleaf Energy Station in Early County, Georgia. A PSD Permit was issued to Longleaf on May 14, 2007. Section 2.1 of that Permit requires that Longleaf commence construction within "18 months of the date of issuance of" the permit. PSD Permit, § 2.1. The Permit further provides that "[i]n the event that construction of any of these units has not commenced in the time frame specified, and absent approval by the Division for an extension of the commencement date, this Permit shall become null and void with respect to that unit and all units yet to be constructed." *Id.* The Permit also requires that certain components of the facility, such as the boilers, be completed no later than December 31, 2013. PSD Permit, § 2.2. Longleaf has yet to commence construction.

On October 8, 2008, Longleaf submitted an extension request that construction be commenced within 18 months of July 21, 2009 (construction to commence by January 21, 2011), and for the boilers to be completed by December 31, 2015. In June 2009, EPD released a draft permit amendment for public notice and comment, which extended the date to commence construction to January 21, 2011, and for the boilers to be completed by December 31, 2015. On April 9, 2010, EPD issued a final permit amendment which extended the date to commence construction to October 1, 2011, and for the boilers to be completed by December 31, 2015. The identical date for commencement of construction has been proposed again.

For the reasons stated in the letter submitted on August 4, 2009,[1] by GreenLaw for several groups including Flint Riverkeeper, it is our position that this extension should be denied.

II. The Draft Permit Does Not Adequately Limit Longleaf's Potential to Emit Hazardous Air Pollutants to Less than Major Source Emission Thresholds.

In the draft permit amendment, it appears that EPD has added Conditions 2.25 and 8.27, among others, to attempt to make the Longleaf facility into a synthetic minor source[2] of HAPs so that the facility can be exempt from a case-by-case determination of maximum achievable control technology ("MACT") emission limitations. As shown below, Condition 2.25, standing alone, violates fundamental principles regarding the creation of synthetic minor limits.

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[1] A complete copy of these comments can be found on EPD's website at http://www.georgiaair.org/airpermit/downloads/permits/psd/dockets/longleaf/112docs/psd18499/comments/GreenLaw_08042009.pdf.

[2] A "synthetic minor" source is a source with potential emissions in excess of major source emission thresholds except that enforceable limitations on the source's potential to emit are imposed to keep the source from emitting at or above major source emission thresholds.

Condition 8.27 does not remedy the flaw in Condition 2.25 because compliance with that section will not ensure that emissions of hazardous air pollutants from this facility will remain under major source thresholds. Indeed, because EPD has not proposed to limit the Central Appalachian ("CAPP") coal to be burned at Longleaf, the permit appears to be a "sham" permit.

Because of the flaws in these and related conditions of the draft permit amendment, the HAP emission limitations of Condition 2.25 of the draft permit cannot be relied upon to exempt the Longleaf facility from a case-by-case MACT determination. This facility has a potential to emit HAPs in excess of major source HAP emission thresholds, and EPD cannot authorize construction of Longleaf without issuing a Notice of MACT Approval.

A. Background.

Pursuant to 40 C.F.R. § 63.42(c)(2) and Ga. Comp. R. & Regs. r. 391-3-1-.02(9)(b)(16), no new major source of HAPs may begin actual construction until EPD has issued a *Case-by-case* determination of emission limitations that will be no less stringent than the MACT limitations for new sources, as determined pursuant to 40 C.F.R. § 63.43. This determination is referred to as a "Notice of MACT Approval." 40 C.F.R. § 63.41, § 63.43(g), Ga. Comp. R. & Regs. r. 391-3-1-.02(9)(b)(16). A "Notice of MACT Approval" is defined as "a document issued by a permitting authority containing all federally enforceable conditions necessary to enforce the application and operation of MACT or other control technologies such that the MACT emission limitation is met." Georgia law provides that the Notice of MACT Approval, as defined in 40 C.F.R. §63.41, will be the air construction permit for the facility. Ga. Comp. R. & Regs. r. 391-3-1-.02(9)(b)(16)(iii).

A major source of HAPs is defined as a stationary source or group of stationary sources located in a contiguous area and under common ownership and control which have the potential to emit at least 10 tons per year ("tpy") of any single HAP or at least 25 tpy of all HAPs in total. *See* 40 C.F.R. § 63.41, incorporated by reference into Ga. Comp. R. & Regs. r. 391-3-1-.02(9)(b)(16).

"Potential to emit" is defined as

> the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a 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 or the effect it would have on emissions is federally enforceable.

See 40 C.F.R. §§63.2; § 63.41, incorporated by reference into Ga. Comp. R. & Regs. r. 391-3-1-.02(9)(a) and (b)(16)(i).

Longleaf's November 19, 2004 permit application included HAP emission calculations that showed it would be a major source of HAPs. Section 7 and Appendix C of November 19, 2004 Longleaf Permit Application (Exs. 1 and 2). Consequently, EPD issued a Notice of MACT

Approval and associated draft construction permit terms and conditions intended to implement its determination of MACT for Longleaf in June 2009. Although subsequent to issuance of that draft MACT permit Longleaf submitted new HAP emission calculations for its proposed facility that indicated it would instead be a minor source of HAPs and exempt from MACT requirements[3], the company did not propose any additional control equipment nor did it propose any limitations on operating hours, production levels, or the types of fuel combusted to achieve minor source status. Now, EPD is proposing to issue a permit for Longleaf that would limit its HAP emissions to less than major source HAP emission thresholds.

B. Legal Requirements for Restricting a Source's Potential to Emit to Less than Major Source Levels.

The definition of "potential to emit" requires first that "potential to emit" reflect the *maximum* capacity to emit a pollutant. Second, it requires that, to the extent that the applicant or agency claims that maximum capacity to emit is constrained in any way, the constraint must be explicitly set forth in the permit as a *physical or operational* limit – i.e., a specific limit on fuel, hours of operation, or pollution control equipment operating parameters – that is federally and practicably enforceable.

The definition of "potential to emit" in 40 C.F.R. Part 63 is virtually identical to the definition of "potential to emit" in the PSD regulations at 40 C.F.R. §52.21(b)(4). Courts have interpreted the definition of potential to emit in 40 C.F.R. § 52.21(b)(4) to require restrictions on operating hours or production levels or types of material combusted, rather than simply imposing limits on tons of pollutants emitted per year. *See United States v. Louisiana-Pacific Corporation,* 682 F. Supp. 1122, 1133 (D. Colo. 1987) (blanket restrictions on actual emissions cannot be considered in determining potential to emit). Of particular relevance here, the court in *Louisiana-Pacific* held that permit conditions which simply limited carbon monoxide emissions to 78 tons per year (tpy) and volatile organic compound emissions to 101.5 tpy should ***not*** be considered in determining "potential to emit" because these blanket emission restrictions, unlike limitations on hours of operation, fuel consumption, or production, "would be virtually impossible to verify or enforce." *Id.* Accordingly, these same requirements must apply to determining potential to emit under 40 C.F.R. § 63.2 which uses the same language as in 40 C.F.R. § 52.21(b)(4). Consequently, the blanket restrictions of emissions of a single HAP or on emissions of total HAPs in Condition 2.25 of the draft permit are wholly insufficient to limit the potential to emit HAPs from the Longleaf facility.

Courts have emphasized the need to ensure that any constraints assumed on potential to emit are grounded in enforcement reality. *United States v. Louisiana Pacific Corp*., 682 F. Supp. 1122 (D. Colo. 1987). *See also Weiler v. Chatham Forest Products*, 392 F. Supp. 532, 535 (2d Cir. 2004) ("In short, then, a proposed facility that is physically capable of emitting major levels of the relevant pollutants is to be considered a major emitting facility under the Act unless there are legally and practicably enforceable mechanisms in place to make certain that the emissions remain below the relevant levels"). The *Louisiana-Pacific* court described "potential to emit" as "the cornerstone of the entire PSD program," and observed that allowing illusory and

[3] December 22, 2009 Submittal from Longleaf to EPD.

unenforceable limits to curtail potential to emit would create a loophole that could effectively wipe out PSD requirements entirely. 682 F. Supp. at 1133. The same can be said of the MACT program with its parallel structure and process.

Shortly after the *Louisiana-Pacific* decision discussed above, the United States Environmental Protection Agency ("EPA") issued policy on limiting potential to emit on June 13, 1989.[4] In this final guidance, EPA specified requirements for properly limiting potential to emit, consistent with the *Louisiana-Pacific* decision. EPA made clear that, to be federally enforceable, limitations must be enforceable as a practical matter. EPA stated that proper limits on potential to emit must include a production or operational limitation in addition to an emission limitation "where the emission limitation does not reflect the maximum emissions of the source operating at full design capacity without pollution control equipment."[5] Restrictions on production or operation would include limitations on amount of fuel combusted, hours of operation, or conditions which require the source to install and operate air pollution control technology to a specified emission rate or to a specified efficiency level. EPA stated that there are two exceptions to the prohibition on using blanket emission restrictions to limit potential to emit. One exception pertained to surface coating operations, and the other exemption applies when setting operating parameters for control equipment is infeasible. In such cases, a permit that includes "short term emission limits (*e.g.* lbs per hour) would be sufficient to limit potential to emit, provided that such limits reflect the operation of the control equipment, and the permit includes requirements to install, maintain, and operate a continuous emission monitoring (CEM) system and to retain CEM data, and specifies that CEM data may be used to determine compliance with the emission limit."[6]

With respect to operational or emission limitations, EPA requires the compliance period for such limitations be as short as possible and not exceed one month.[7] Specifically, EPA stated "The requirement for a monthly limit prevents the enforcing agency from having to wait for long periods of time to establish a continuing violation before initiating an enforcement action."[8] EPA stated that a limit spanning a longer timeframe should only be allowed in "rare" cases, such as for sources with "substantial and unpredictable annual variation in production."[9] In such cases, rolling 12-month limits may be acceptable, but "[u]nder no circumstances would a production or operation limit expressed on a calendar year annual basis be considered capable of legally restricting potential to emit."[10]

EPA's 1989 guidance also discussed "sham operational permits." Specifically, EPA stated "[P]ermits with conditions that do not reflect a source's planned mode of operation are

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[4] June 13, 1989 EPA Memorandum from Terrell E. Hunt and John S. Seitz with subject "Guidance on Limiting Potential to Emit in New Source Permitting," Ex. 2.
[5] *Id.* at 5-6.
[6] *Id.* at 8.
[7] *Id.* at 9; *see also* March 13, 1987 EPA Memorandum from John Seitz to Bruce Miller, Region IV.
[8] *Id.*
[9] *Id.* at 9.
[10] *Id.* at 10.

void ab initio and cannot act to shield the source from the requirement to undergo preconstruction review."[11]

EPA's June 13, 1989 guidance provides that federally enforceable limits can be required through an EPA-approved permitting program. This typically included preconstruction permitting programs, but on June 28, 1989, EPA specified procedures for creating federally enforceable state operating permit ("FESOP") programs to be used to limit potential to emit. 54 Fed.Reg. 27274.

Subsequent to the 1989 policies and to the promulgation of major source operating permit program requirements in 40 C.F.R. Part 70, EPA issued a policy in January 1995 that discussed the various mechanisms available to create federally enforceable emission limitations on potential to emit, including how to create federally enforceable limitations on HAP emissions.[12] Permitting programs approved under the SIP can only impart federal enforceability with respect to criteria pollutant emission limitations. To create federally enforceable emission limitations on HAPs, the permitting program must be approved under Section 112(l) of the Clean Air Act.[13] EPA's January 25, 1995 guidance elaborated on prior policies, including EPA's June 13, 1989 guidance on creating federally and practically enforceable limitations on potential to emit. These policies continue to be relied upon by EPA for determining whether permit conditions effectively limit potential to emit. *See, e.g.*, August 29, 2002 EPA Objection to the Proposed Title V Permit for Quebecor World Franklin located in Franklin, Kentucky (Ex. 4).

The state of Georgia developed a state operating permit program to, among other things, create federally enforceable limits on potential to emit, and that program was approved by EPA as part of the SIP and under Section 112 of the Clean Air Act on August 30, 1995. 60 Fed.Reg. 45048. In that approval, EPA reiterated the criteria of its June 28, 1989 Federal Register notice that permit limitations must meet to create federally enforceable limitations on potential to emit. EPA mandated that "the limitations, controls and requirements in operating permits [must be] quantifiable and otherwise enforceable as a practical matter." *See* 60 Fed. Reg. 45049 (August 30, 1995). Georgia's operating (SIP) permit regulations require that the limitations in federally enforceable operating permits be "permanent, quantifiable, and otherwise enforceable as a practical matter." Ga. Comp. R. & Regs. r. 391-3-1-.03(2)(h); 40 C.F.R. § 52.570(c)(46)(i). EPD has proposed to issue the permit amendment for Longleaf and limitations on HAPs pursuant to its state FESOP program.[14]

C. The Draft Longleaf Permit Amendment Fails to Include Adequate Terms and Conditions to Create Federally and Practically Enforceable Limitations on Longleaf's Potential to Emit HAPs Below Major Source Emission

[11] *Id.* at 12.

[12] January 25, 1995 Memorandum from Kathie A. Stein to the EPA Regional Air Division Directors with Subject "Guidance an Enforceability Requirements for Limiting Potential to Emit through SIP and §112 Rules and General Permits," Ex. 3.

[13] *Id.* at 3-4.

[14] The regulatory citation for Condition 2.25 of the draft permit is Ga. Comp. R. & Regs. r. 391-3-1-.03(2)(c).

Thresholds.

The limitations that EPD has proposed in the Longleaf permit amendment to limit potential to emit HAPs to less than major source emission thresholds fail to meet the requirements for creating such limits on potential to emit that are discussed above. Specifically, the limitations are nothing more than blanket restrictions on emissions, have long averaging times, and have not been demonstrated to be technically accurate for the Longleaf facility. Even if long term average limits on tons per year of HAP emitted could effectively limit potential to emit, the permit fails to include adequate requirements to ensure that Longleaf's HAP emissions will stay under major source emission thresholds. Thus, the limits are not practically enforceable. Because it is questionable that Longleaf can stay under major source HAP emission thresholds while operating in its permitted modes of operation, this permit appears to be a sham permit.

1. Longleaf's Potential to Emit Would Exceed HAP Major Source Emission Thresholds.

As was shown in Longleaf's November 2004 permit application, the Longleaf facility would clearly be a major source of HAPs based on uncontrolled potential to emit. *See* November 2004 Permit Application (Ex. 1A) at 7-13 and Appendix C to Longleaf's 2004 Permit Application (Ex. 1B).

Even considering the effect of control equipment, Longleaf's potential HAP emissions will exceed the major source thresholds. While Longleaf provided actual emission estimates based on stack test data to show that Longleaf's emissions would be less than major source emission thresholds[15], its emission estimates were not potential to emit calculations. As previously stated, a determination of potential to emit must be based on the maximum emissions that a source can emit under its physical and operational design. The only limitations that can be taken into account are the effect of control equipment or limitations on hours of operation or production rate or types or amounts of materials combusted, and only if such limitations are federally and practically enforceable. The draft permit for Longleaf does not include limitations that reflect the assumed emission rates in Longleaf's HAP emission estimates provided in its December 2009 submittal to EPD.

While the effect of pollution controls, if federally and practically enforceable, can be taken into account in determining whether a facility's potential to emit is over major source emission thresholds, Longleaf's potential controlled HAP emissions will also exceed major source emission thresholds as discussed below.

a) Potential Controlled HCl Emissions from the Longleaf Facility Will Exceed 10 Tons Per Year.

Longleaf previously projected 726 to 4,259 tpy of uncontrolled emissions of HCl per unit (depending on coal burned) per unit. October 6, 2008 Longleaf MACT Application, Table 9 at

[15] *See* Longleaf's December 22, 2009 submittal to EPD.

25. Based on its requested MACT emission limits, Longleaf projected controlled emissions of HCl at 16-62 tpy per unit per unit. *Id.* at 35. Thus, the company's projected controlled emissions of HCl for the facility would exceed 10 tpy. Longleaf now claims the two units' emissions of HCl will be 5.14 tpy. December 22, 2009 Longleaf Submittal to EPD, Attachment A at 3-4. These current projections are much lower than the company's previous projections of controlled emissions and are much lower than the allowable emissions of HCl using EPD's proposed determination of MACT emission limits for HCl at Longleaf. Indeed, the company's projection of HCl emissions is roughly one-quarter of the 21.51 tpy of emissions that would be allowed under EPD's proposed HCl MACT limit for PRB coal of 0.0004 lb/MMBtu.

The pollutant controls that Longleaf is required to install under the permit that will affect HCl emissions are a dry scrubber and a baghouse. According to Longleaf's November 2004 permit application, the maximum uncontrolled HCl emissions with PRB coal would be 0.027 lb/MMBtu and with CAPP coal would be 0.17 lb/MMBtu. November 2004 Longleaf Permit Application (Ex. 1A) at 7-13 (Table 7.4). In order for the Longleaf main boilers to emit less than 10 tpy of HCl in total, the emission rate from each boiler must be no higher than 0.00018 lb/MMBtu. This value was calculated by assuming operation at maximum heat input capacity for 8,760 hours per year, assuming each unit could emit up to 5 tpy of HCl. This emission rate is high because it does not account for the HCl emissions from the auxiliary boiler. But even excluding the auxiliary boiler's potential HCl emissions, there is no way Longleaf's potential controlled HCl emissions from the 2 main boilers could be less than 10 tpy.

To achieve 0.00018 lb/MMBtu, Longleaf would have to achieve 99.3% HCl removal across the dry scrubber and baghouse when burning PRB coal and 99.9% HCl removal when burning CAPP coal, based on the uncontrolled HCl emission rates provided by Longleaf. There is no support in the record to show that such high levels of HCl removal can be achieved by the planned dry scrubber and baghouse at Longleaf. Indeed, an analysis of the HCl removal efficacy at Wygen II, which is equipped with a dry scrubber and baghouse and burns PRB coal, indicated a fairly low HCl removal efficiency across a dry scrubber of only 58%.[16] Even if one could assume that Longleaf will achieve the same level of HCl control as SO2 control, the 93.5% SO2 removal efficiency that is required for Longleaf's dry scrubber is far from the 99+% efficiency necessary to keep HCl emissions under 10 tpy.[17]

In addition, the actual emissions test data provided by Longleaf in its December 2009 submittal of revised HAP emission estimates cannot be relied upon to indicate controlled levels of HCl emissions from similarly configured units because the test data is based on Method 26A measured at coal fired power plants burning PRB coal. As discussed in detail below, this test method has been shown to result in a significant negative bias in measured HCl emissions.[18]

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[16] Black Hills Power & Light Submittal to Wyoming DEQ with Wygen II Performance Test Results, March 12, 2008, Ex. 5.

[17] *See* Final Decision, *Friends of the Chattahoochee, Inc. v. Couch*, OSAH-BNR-AQ-0732139-60-Howells, at 21 (January 11, 2008) (which in turn references EPD File Ex. 48, Appendices Da and Db, and Hearing Transcript at 3089-90).

[18] *See*, e.g., Center for Air Toxic Metals at the Energy and Environmental Research Center at the University of North Dakota (CATM) Annual Report, Measurement of Halogens, 2006, available

Thus, the actual HCl test data provided in Longleaf's December 2009 submittal cannot be relied upon to claim that Longleaf's controlled HCl emissions will be less than major source emission thresholds.

It is also significant to note that several tests done at PRB plants with control schemes similar to what is planned for Longleaf showed HCl levels above the 0.00018 lb/MMBtu rate that Longleaf's controlled HCl emissions would have to achieve in order to have potential controlled emissions less than 10 tpy. The HCl stack test results for Wygen II, Newmont Nevada (April 2008), and OPPD (Nebraska City) were not lower than 0.00018 lb/MMBtu. *See* December 22, 2009 Longleaf submittal, Attachment A at 2 (Table 1).

In addition, Longleaf listed test results for Newmont Nevada for April 2009 that appear to be incorrect. We obtained the April 2009 test results for the HAP testing at Newmont, and the average of three test runs for HCl was 0.00105 lb/MMBtu, which was well in excess of the HCl emission rate that Longleaf needs to emit at to stay under 10 tpy for HCl (i.e., 0,00018 lb/MMBtu).[19] Yet, Longleaf incorrectly identified the April 2009 HCl test result at Newmont as 0.00012 lb/MMBtu. *See* December 2009 Longleaf submittal to EPD, Table 1.

Longleaf improperly discounts the 2008 HCl test result at Newmont, which measured 0.0004 lb/MMBtu, claiming that Newmont "adds $CaCl_2$ to the coal at the feeders to improve performance of the facility's activated carbon injection system." *Id*. at 3. However, Longleaf may need to use the same approach to meet the mercury emission limit in its draft permit, since high levels of mercury control have been shown to be difficult to achieve at units burning low chlorine coal and equipped with dry scrubbers without methods used to improve oxidation of the mercury.[20] Adding chlorine to the coal is one method that has been used to improve mercury removal efficiency at PRB coal burning units.[21] In fact, Longleaf identified the addition of halogens, which include chlorine, as one of the methods it will need to use to meet the mercury emission limits it proposed of 6×10^{-6} lb/MW-hr for bituminous coal and 15×10^{-6} lb/MW-hr for

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at http://www.undeerc.org/catm/pdf/area2/2006MeasurementHalogens.pdf and attached as Ex. 6; Electric Power Research Institute, Responding to the EPA Information Collection Request for Electric Utility Steam Generating Units – Acid Gases and Hydrogen Cyanide, January 2010, at 3, available at http://mydocs.epri.com/docs/public/000000000001020683.pdf and attached as Ex. 7.

[19] *See* April 2009 HCl Stack Test Results for Newmont Nevada, Ex.8.

[20] *See, e.g.,* Machalek, et al., Full-Scale Activated Carbon Injection for Mercury Control in Flue Gas Derived from North Dakota Lignite, Ex. 9; Durham, Michael D. et al., Mercury Control for PRB and PRB/Bituminous Blends, Ex.10; and Sjostrom, Sharon et al., Analysis of Key Parameters Impacting Mercury Control on Coal-Fired Boilers, Presented at Air Quality IV, Arlington, VA, September 22-24, 2003, Ex. 11.

[21] *See, e.g.,* Miller, Charles E. et al., Mercury Capture and Fate Using Wet FGD at Coal-Fired Power Plants, August 2006, Ex. 12.; U.S. DOE, National Energy Technology Laboratory, Large-Scale Testing of Enhanced Mercury Removal for Subbituminous Coals, 8/2007, Project 459, Ex. 13; Serre, Shannon D. et al., US EPA, Evaluation of the Impact of Chlorine on Mercury Oxidation in a Pilot-Scale Coal Combustor – the Effect of Coal Blending, EPA/600/R-09-021, September 2009, Ex. 14.

subbituninous coal. October 6, 2008 Longleaf Energy Associates, LLC's Application for a Notice of MACT Approval for the Longleaf Energy Station at 18-19. Now, under the current draft permit, Longleaf will be subject to more stringent mercury limits than the company had proposed for subbituminous coal, making it even more likely that the facility will need to consider chlorine injection to achieve the mercury emission limits required in the permit.

Moreover, Longleaf cannot burn CAPP coal and emit less than 10 tpy of HCl. CAPP coal has much higher chlorine levels than PRB coal, so a higher HCl removal efficiency will be required to meet the 0.00018 lb/MMBtu HCl emissions levels necessary in order to have potential controlled HCl emissions less than 10 tpy. There is no evidence in the record that the necessary level of HCl control (greater than 99%) or that the required emissions level of less than 0.00018 lb/MMBtu can be achieved at facilities burning CAPP coal and equipped with only a dry scrubber and baghouse for acid gas control. Longleaf admits this in its December 2009 submittal to EPD. Specifically, Longleaf stated that it "is not aware of additional data from bituminous-fired facilities that would allow for a similar reduction in expected [HCl] emissions, thus the option of firing CAPP coal at the Longleaf facility 100% of the time would no longer be possible. Longleaf requests the continued ability to fire CAPP coal, however, to allow for short-term risk mitigation given the significant distance that PRB coal must travel to reach the Longleaf facility."[22] Yet, neither Longleaf nor EPD have proposed to eliminate or even restrict the amount of CAPP coal that can be burned at Longleaf. Accordingly, in determining potential controlled emissions of HCl from Longleaf, 100% use of CAPP coal must be assumed, which means the potential controlled HCl emissions of Longleaf would most exceed 10 tpy.

When EPD proposed a case-by-case MACT approval for Longleaf in June 2009, EPD proposed an HCl limit to be reflective of MACT with the planned dry scrubber and baghouse of 0.0006 lb/MMBtu when burning PRB coal and 0.0024 lb/MMBtu when burning CAPP coal. *See* June 2009 EPD Notice of MACT Approval at 1. EPD has continued to include these emission limits in the current draft permit for Longleaf. *See* Draft Permit Condition 2.15.o. Using these emission limits as reflective of the controlled HCl emissions, potential HCl emissions from the Longleaf facility would be 21.5 tpy when burning PRB coal and 129.1 tpy when burning CAPP coal. Clearly, these potential controlled emission levels are well in excess of major source emission thresholds.

b) Potential Controlled HF Emissions from the Longleaf Facility Will Exceed 10 Tons Per Year.

Longleaf previously projected 360 to 436 tpy of uncontrolled HF emissions per unit. October 6, 2008 Longleaf MACT Application, Table 9 at 25. Based on its requested MACT emission limits, the projected controlled emissions of HF at 5.1-5.4 tpy per unit. *Id.* at 35. Thus, the company's projected controlled emissions of HF for the facility would exceed 10 tpy, and the uncontrolled emissions for the facility would significantly exceed the 10 tpy major source threshold as well as the 25 tpy total HAP emission threshold. Longleaf now claims the two units' emissions of HF will be 8.35 tpy. December 22, 2009 Longleaf Submittal to EPD, Attachment A at 3-4. These current projections are much lower than the company's previous

[22] December 22, 2009 Longleaf submittal to EPD at 2 (fn 1).

projections of controlled emissions and are much lower than the allowable emissions of HF using EPD's proposed determination of MACT emission limits for HF at Longleaf.

The pollutant controls that Longleaf is required to install under the permit that will affect HF emissions are a dry scrubber and a baghouse. According to Longleaf's November 2004 permit application, the maximum uncontrolled HF emissions with PRB coal would be 0.013 lb/MMBtu and with CAPP coal would be 0.017 lb/MMBtu. November 2004 Longleaf Permit Application (Ex. 1A) at 7-13 (Table 7.4). In order for the Longleaf main boilers to emit less than 10 tpy of HF from both boilers in total, the emission rate from each boiler must be no higher than 0.00018 lb/MMBtu. This was calculated by assuming operation at maximum heat input capacity for 8,760 hours per year, assuming each unit could emit up to 5 tpy of HF. This emission rate is high because it does not account for the HF emissions from the auxiliary boiler.

To achieve 0.00018 lb/MMBtu, Longleaf would have to achieve 98.6% HF removal across the dry scrubber and baghouse when burning PRB coal and 98.9% HF removal when burning CAPP coal. Neither Longleaf nor EPD have provided documentation that the dry scrubber is designed and required to achieve, at best, 93.5% SO2 removal and the baghouse can remove 98.6% or more of the HF from the gas stream.

Longleaf relies on the actual emissions from stack tests to indicate that Longleaf's emissions of HF will be less than 10 tpy. Based on the actual HF stack test data from units burning PRB coal, Longleaf determined that an HF emission rate of 0.000155 lb/MMBtu would be achieved at Longleaf. *See* December 2009 Longleaf Submittal at 4.

When EPD had proposed a case-by-case MACT approval for Longleaf, EPD proposed an HF limit to be reflective of MACT with the planned dry scrubber and baghouse of 0.0002 lb/MMBtu. *See* June 2009 EPD Notice of MACT Approval at 1. EPD has continued to include this emission limit in the current draft permit for Longleaf. *See* Draft Permit Condition 2.15.k. Using this emission limit as reflective of the controlled HF emissions, potential HF emissions from the Longleaf facility would be 10.75 tpy. Clearly, these potential controlled emissions are in excess of major source HAP emission thresholds.

c) Longleaf's Potential to Emit All HAPs Exceeds the 25 TPY Emission Threshold.

Because Longleaf's potential controlled HCl emissions are at least 21.5 tpy and its potential controlled HF emissions are at least 10.75 tpy, the total potential controlled HAP emissions will be greater than 25 tpy without even considering the other HAPs to be emitted by Longleaf. But, even if one could assume that Longleaf's potential controlled HCl and HF emissions were the levels the company assumed in its December 22, 2009 submittal to EPD (i.e., 5.14 tpy HCl and 8.35 tpy HF), its total controlled HAP emissions would exceed 25 tpy when AP-42 emission factors are used to determine potential to emit of the other HAPs instead of EPRI emission factors. Specifically, Longleaf originally projected the facility would emit 22 tpy of organic HAP (11 tpy per boiler) based mostly on EPA's AP-42 emission factors. November 2004 Longleaf Permit Application (Ex. 1A) at 7-17. As Longleaf stated in its November 2004 permit application, "organic emissions are not controlled through add-on abatement equipment

but through good combustion practices making uncontrolled emissions difficult to quantify." *Id.* Thus, Longleaf concluded that the 22 tpy of organic HAP based mostly on AP-42 emission factors represented the controlled potential emissions of organic HAP from Longleaf. Adding the company's projected HCl and HF emissions from its December 2009 submittal to the 22 tpy of controlled organic HAP based on AP-42 emission factors equals 35.49 tpy, well in excess of the 25 tpy total HAP emission threshold.

There is no justification for using the EPRI emission factors instead of EPA's AP-42 emission factors. As demonstrated in Longleaf's December 22, 2009 submittal to EPA, the EPRI emission factors are significantly lower than the EPA's AP-42 emission factors. For organic HAP, the EPRI factors are roughly 20% of the EPA's AP-42 emission factors. *See* December 22, 2009 Longleaf Submittal to EPD, Attachment A at 5-6 (Table 3). The EPRI Emission Factor Handbook cited in Longleaf's December 2009 submittal does not appear to be in the record or publicly available online. The EPRI Emission Factor Handbook provides the basis for the emissions calculations for the EPRI LARK TRIPP software program, which is a program used to estimate toxic emissions for Toxic Release Inventory ("TRI") reporting.[23] Such reporting to EPA's TRI program is required under the Emergency Planning and Community Right-to-Know Act (EPCRA). There are no air emission limitations required under EPCRA or the TRI program. It is simply an emissions reporting program. Thus, the emission factors for reporting under TRI cannot be considered as reflecting potential emissions for Longleaf. Testimony given by the environmental plant manager for the Big Stone power plant in South Dakota indicated that companies typically do not have the underlying data for the EPRI LARK TRIPP software program and that the emission factors are not reflective of coal from the specific mine from which plants obtain their coal.[24] Thus, there is simply no justification to rely on the EPRI emission factors for organic HAP to determine potential controlled organic HAP emissions. In contrast to the EPRI emission factors for HAPs, the background of EPA's AP-42 emission factors are provided in the background document for Chapter 1.1 (Bituminous and Subbituminous Coal Combustion).[25]

With respect to the non-mercury metal HAPs, Longleaf originally determined metal HAP emissions based on constituent concentrations from the USGS COALQUAL database that reflected the average concentration plus one standard deviation for each PRB and CAPP coal. *See* November 2004 Permit Application (Ex. 1A) at 7-8. In its December 2009 revised HAP emission estimates, Longleaf simply used the average of each HAP constituent from the USGS COALQUAL database. *See* December 22, 2009 Longleaf Submittal to EPD, Attachment A at 6-7. Use of average coal constituent concentrations is not acceptable for determining potential controlled emissions. Potential to emit is to be based on the "dirtiest fuels and/or highest emitting materials and operating conditions,"[26] not based on average levels of emissions. Furthermore, the representativeness and accuracy of the USGS COALQUAL data is questionable and must be verified. Authors of a study that compared USGS data to commercial

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[23] *See, e.g., mydocs.epri.com/docs/public/000000000001018123.pdf.*
[24] *See* 2008 Big Stone Permits Contested Case Hearing, Tr. At 429-30, 639-662, Ex. 15.
[25] *See* US EPA, AP-42, Section 1.1 and Background Documentation for Section 1.1, attached as Exs.16 and 17, available online at http://www.epa.gov/ttn/chief/ap42/ch01/index.html.
[26] *See* US EPA, New Source Review Workshop Manual, October 1990 Draft, at A.19, Ex.18.

coal data for the Pittsburgh seam cautioned against use of the USGS data, stating: "use of the USGS data base without careful analysis and treatment of the data will produce misleading estimates for trace element emissions from coal-burning utilities."[27,28] For example, the coal sampling was irregular, it reflects coal before it is physically cleaned (e.g., ash removal), most of the mines sampled are now closed, etc.[29]

In summary, Longleaf's December 2009 submittal of revised HAP emission estimates can not be considered to reflect Longleaf's uncontrolled or even its controlled potential to emit HAP. As discussed above and as shown in prior submittals from Longleaf, the facility's potential to emit HCl and HF each exceeds the 10 tpy single HAP major source emissions threshold and the facility's potential emissions total HAPs exceed the 25 tpy total HAP major source emission threshold. Thus, the only way the Longleaf facility can be considered a minor source of HAPs and exempt from MACT is if the facility is subject to federally and practically enforceable limits on the facility's potential to emit HAPs in accordance with federal requirements for limiting potential to emit. As discussed below, the draft Longleaf permit does not include limitations on hours of operations, production rate, or types or amounts of materials combusted that are necessary to limit potential to emit HAPs. It only includes blanket restrictions on emissions which are not acceptable to limit potential to emit. Even if such limitations were acceptable, the blanket emission restrictions in the Longleaf permit are not enforceable as a practical matter. Thus, the Longleaf facility must be considered a major source of HAPs.

2. The Only Provisions that Would Restrict Longleaf's Emissions to Minor Source Levels of HAP Emissions are Blanket Restrictions on Emissions.

As the Court found in Louisiana-Pacific, to limit potential to emit of a source such as Longleaf that would otherwise be major based on maximum uncontrolled emissions, only limitations on hours of operation or production rate or on the types or amounts of fuel combusted can properly be considered in determining potential to emit HAPs. Yet the draft permit amendment for Longleaf does not include any such operational limitations. The draft permit amendment only includes a limitation on actual emissions in an attempt to limit Longleaf's emissions to less than major source HAP emission thresholds, and the permit fails to include any operational limitations consistent with the limitation on actual emissions of HAPs. Specifically, the draft permit amendment includes Condition 2.25 which provides:

> The Permittee shall not discharge or cause the discharge into the atmosphere from the facility any single hazardous air pollutant (HAP) which is listed in Section 112 of the Clean Air Act, in an amount equal to or exceeding 10 tons during any

[27] *See* Tumati, P.R. et al., *Estimating Trace Element Emissions Using USGS Coal Data*, JAWMA, 1996, 46(1), 58-65. Ex. 19 at 1.
[28] *See also* Quick, J.C. et al., *Mercury in U.S. Coal: Observations using the COALQUAL and ICR data, Environmental Geology* (2003) 43: 247-259, Ex. 20.
[29] Ex. 19 at 1-2

twelve consecutive months, or any combination of such listed pollutants in an amount equal to or exceeding 25 tons during any twelve consecutive months.

These limitations are nothing more than blanket restrictions on emissions, which the *Louisiana-Pacific* decision makes clear are not adequate to limit potential to emit.

The only other limitations in the permit pertaining to HAPs are the fluorides limit of 2.0 x 10^{-4} lb/MMBtu (measured as hydrogen fluoride ("HF")) in Condition 2.15.k. of the draft permit and the hydrogen chloride ("HCl") emission limits in Condition 2.15.o. which range from 6.0 x 10^{-4} lb/MMBtu for Powder River Basin ("PRB") coal to 2.4 x 10^{-3} lb/MMBtu while firing Central Appalachian ("CAPP") coal. However, these emission limits do not limit either HF or HCl to less than 10 tpy. Assuming the maximum heat input capacity of the boilers of 6,139 MMBtu/hr each (allowed pursuant to Permit Condition 8.25.b.xviii) and continual operation throughout the year (because the draft permit does not include any limits on hours of operation or on production rate), the emission limits would allow for 10.8 tpy of HF and between 32.3 to 129.1 tpy of HCl. Further, allowable emissions of total HAPs considering the emission limitations of Conditions 2.15.k. and o. would clearly allow for more than 25 tpy when just HCl plus HF are added together. Thus, the HAP emission limitations in Condition 2.15.k. and o. cannot be considered as the additional operational limitations necessary to ensure compliance with the blanket restrictions on HAP emissions in Condition 2.25 of the draft permit.

Based on case law and subsequently-issued federal guidance, the draft permit's blanket restrictions of emissions of a single HAP or on emissions of total HAPs in Condition 2.25 of the draft permit are wholly insufficient to create federally enforceable limits on the potential to emit HAPs from the Longleaf facility.

Not only are the blanket restrictions on actual emission in Condition 2.25 of the draft permit amendment wholly inconsistent courts' views on how potential to emit can be limited, the tpy HAP emission restrictions in Condition 2.25 of the permit are based on a long time period of 12 months.[30] This also is inconsistent with federal guidance on creating federally and practically enforceable emission limits. EPA policy states the compliance period must be as short as possible, preferably no longer than one month. Longer compliance periods, but no less than 12 months rolled monthly, are only allowed in rare circumstances[31], and operation of a base load coal-fired power plant does not fit those circumstances to justify use of an annual emission restriction to limit potential to emit HAPs. EPA's guidance states that in no case is an annual limit on emissions acceptable, yet that is all that is in the Longleaf permit amendment to limit potential to emit HAPs to below major source emission thresholds.

[30] While draft permit condition 8.29 requires Longleaf to notify EPD if emissions of any individual HAP exceed 0.83 tons or if emissions of total HAPs exceed 2.08 tons in any calendar month, these are not defined as emission limits or exceedances. Instead, the purpose of these monthly levels are to trigger the requirement for an explanation as to how the facility will maintain compliance with the emission limits of new Condition 2.25

[31] *See* June 13, 1989 EPA Memorandum from Terrell E. Hunt and John S. Seitz with subject "Guidance on Limiting Potential to Emit in New Source Permitting," Ex. 2, at 9.

EPA's guidance does allow blanket restrictions on emissions to be relied upon in the absence of operational limitations if the limitations apply over a short period, such as pounds per hour, and if CEMs are required to be used for compliance.[32] As previously stated, however, the draft permit does not include any emission limits of short term duration that reflect minor source emission levels. The permit also does not require CEMs. While the draft permit amendment contemplates the use of CEMs for HCl and/or HF in Condition 5.2.h. of the draft permit amendment, it does not require use of CEMs to determine compliance with the tpy emission limits of Condition 2.25.

Thus, for all of the above reasons, the draft permit amendments fail to limit the potential to emit HAPs from the Longleaf facility. Because the Longleaf facility is a major source of HAPs based on its maximum HAP emission rates, EPD cannot authorize construction of Longleaf without performing a case-by-case MACT analysis and issuing a Notice of MACT Approval.

3. Even if Blanket Restrictions on Emissions Were an Acceptable Approach to Limit Longleaf's Potential to Emit HAPs, The Draft Permit Fails to Include Adequate Terms and Conditions to Ensure the Emission Limits are Permanent, Quantifiable, and Enforceable as a Practical Matter.

Although it is clear that the blanket restrictions on actual emissions from Longleaf in Condition 2.25 of the permit are not a legally valid approach to limit Longleaf's potential to emit HAPs, the emission limits in Condition 2.25 are also not enforceable as a practical matter. Indeed, that is the entire reason the Court and EPA have found that blanket restrictions on emissions can't limit potential to emit – because of limited ability to verify compliance with such restrictions on emissions.

Both state and federal law require that emission limitations intended to restrict potential to emit be permanent, quantifiable, and enforceable as a practical matter. Ga. Comp. R. & Regs. r. 391-3-1-.03(2)(h); 40 C.F.R. § 52.570(c)(46)(i). Although the permit includes several provisions that presumably are intended to ensure practical enforceability of the blanket emissions restrictions in Condition 2.25, the provisions fall far short of ensuring compliance with the 10 tpy single HAP emission limitation and the 25 tpy total HAP emission limitation. In fact, due to problems with test methods, it is virtually impossible to ensure that total emissions of all HAP do not exceed the 25 tpy emission threshold, and to ensure that emissions of a single HAP do not exceed the 10 tpy emission threshold without continuous emission monitoring (CEMS).

a) The Draft Permit Amendment Fails to Include Adequate Terms and Conditions to Verify that Emissions of a Single HAP Will Not Be 10 Tons Per Year or More.

There are typically two HAPs that are emitted in large quantities from a coal-fired power plant such as to exceed the 10 tpy single HAP emission threshold: HCl and HF. The draft

[32] *Id.* at 8.

permit amendment fails to include requirements sufficient to ensure that the Longleaf facility's emissions of these HAPs will not exceed major source HAP emission thresholds.

The permit includes the following requirements that presumably are to ensure compliance with the 10 tpy blanket emission restriction on emissions of a single HAP (i.e., which mainly pertain to HCl and HF emissions):

(1) Condition 4.1.m of the draft permit amendment requires performance testing to determine HCl and HF emission rates. Specifically, this provision states:

> Method 26A shall be used for the determination of fluorine and chlorine at the inlet of the control device, hydrogen fluoride, and hydrochloric acid emission rates from the PC-Fired Boilers, S01 and S02; the sampling time for each run shall be a minimum of one hour. The percent removal of hydrogen chloride and hydrogen fluoride shall also be calculated at the time of the test. The Division may require the Permittee to determine the percent removal of hydrogen chloride and hydrogen fluoride when firing PRB or CAPP coal based on the results of the test.

This provision lacks clarity. It does not define or describe how the percent removal is to be calculated. It also does not identify the HCl and HF "control device" at which the chlorine and fluorine is to be determined.

Most significantly, this provision does not definitively require determination of percent removal or HCl and HF testing during all types of coal combustion combinations, when fuel oil is used for startup, or when clarifier sludge is burned. It does not even specify whether PRB or CAPP coal is to be burned in the initial test, and it provides discretion for the EPD to determine whether the percent removal of HCl and HF when firing PRB or CAPP coal is to be calculated.

As is clear from the company's own projections, the HCl emissions when burning PRB coal could vary significantly from the HCl emissions when burning CAPP coal. Longleaf's projections of uncontrolled HCl emissions showed HCl emissions with CAPP coal could be 5-6 times greater than HCl emissions from PRB coal. USGS data confirm this.[33] Not only can the chlorine levels vary greatly between PRB and CAPP coal, but the fate of chlorine in the system can vary between coal type as well.[34] Thus, this performance testing requirement in Condition 4.1.m of the draft permit amendment fails to account for HCl emissions or HCl removal efficiency across the various types of coals that Longleaf will be allowed to burn under its permit.

In addition, Test Method 26A has been shown to cause a negative bias for at least HCl measurements at coal-fired units burning Powder River Basin coals. The Method 26A sampling

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[33] As discussed in Tillman, David et al., "Chlorine in Solid Fuels Fired in Pulverized Coal Boilers – Sources, Forms, Reactions, and Consequences: A Literature Review," presented at Fuel Quality Conference, Banff, Canada, September 28 – October 3, 2008, Ex. 21, at 5

[34] *Id.*

trains call for a filter upstream of four impingers. Fly ash and unburned carbon particles collected on the filter can capture some halogens that would otherwise be emitted as HCl, but the test method does not account for those halogens.[35] This is especially problematic with Powder River Basin coals and has been known to be a problem for quite some time. For example, the Electric Power Research Institute ("EPRI") recently stated regarding use of Method 26A for HCl emissions that "[u]sing this method [Method 26A] for sources containing a significant amount of alkaline particulate, e.g., some units burning Powder River Basin (PRB) coal or with wet scrubber carryover, will result in a known negative bias for HCl…."[36] EPA noted this issue as long ago as 1996.[37] This problem with the test method could likely be an issue with HF emissions as well.

Method 26A also can result in a significant negative bias in measuring acid gases when any moisture is present in the sampling train. An EPA report states "[i]t is important, but difficult to confirm, that any condensed moisture present during sampling be removed completely during a post purge of the Method 26A train to avoid a significant negative bias."[38] EPRI also noted this issue in its guidance for responding to EPA's Information Collection Request for the forthcoming utility MACT standard.[39] Specifically, EPRI states that this can be an issue with low concentrations of HCl, as is likely with low chlorine with PRB coal. EPRI

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[35] *See* Center for Air Toxic Metal at the Energy and Environmental Research Center at the University of North Dakota (CATM) Annual Report, Measurement of Halogens, 2006, available at http://www.undeerc.org/catm/pdf/area2/2006MeasurementHalogens.pdf and attached as Ex. 6, at page 2.

[36] *See* Electric Power Research Institute, Responding to the EPA Information Collection Request for Electric Utility Steam Generating Units – Acid Gases and Hydrogen Cyanide, January 2010, at 3, available at http://mydocs.epri.com/docs/public/000000000001020683.pdf and attached as Ex. 7.

37 Larry D. Johnson, U.S. EPA, Stack Sampling Methods for Halogens and Halogen Acids, Presented at EPA/A&WMA International Symposium, May 1996, p. 7, Available at: http://www.epa.gov/ttn/emc/news/pprhal51.pdf, and attached as Ex. 22. Specifically, this paper states in a section on "Alkaline Particulate" at page 7, "[t]he possibility of low results due to reaction of HCl with alkaline particulate material collected on the filter was of great concern to Steinsberger and Margeson [] and has recently resurfaced in the work of Powell and Dithrich []. The magnitude of this effect has not been conclusively demonstrate, and is likely variable with particle composition." *See also* 64 F.R. 119 at 33214 (June 22, 1999), in which EPA states "[t]he EPA report No. 600/3-89/064 concludes that there is an inexplicable negative bias compared to those using midget impinges (sic). The most likely cause of the low bias at low (3 to 4 ppmv) concentrations is absorption of HCl on alkaline particulate matter collected on the filter."

[38] *See* EMTIC Workshop Background Paper for Method 26 and 26A, Ex. 23, at 2.

[39] *See* Electric Power Research Institute, Responding to the EPA Information Collection Request for Electric Utility Steam Generating Units – Acid Gases and Hydrogen Cyanide, January 2010, at 3, available at http://mydocs.epri.com/docs/public/000000000001020683.pdf and attached as Ex. 7.

states further that "[u]niform and adequate heating of the probe and filter is essential to avoid condensation."[40]

For the reasons discussed above, the performance testing provision of draft Longleaf permit condition 4.1.m. will not ensure HCl emissions remain under major source levels and it could very likely result in inaccurate determinations of HCl control efficiency. It is also questionable whether the performance testing requirements will accurately measure HF emissions.

(2) Condition 8.3 of the draft permit would require Longleaf to obtain a representative sample of coal as fired on a daily basis for analysis of content of chlorine and fluorine, among other constituents, using the procedures in Section 12.5.2.1. of Method 19 in EPD's **Procedures for Testing and Monitoring Sources of Air Pollutants**.

Section 12.5.2.1. of Method 19 does not clearly state how to get a representative sample of the coal to be burned. For example, although it typically requires sampling from a sample size reflective of 1 day of coal to be processed, it allows sampling from a 90 day sample size "if representative sampling can be conducted for each raw coal and product coal."[41] Yet Condition 8.3 of the draft permit requires a "representative sample of coal as fired on a daily basis," and such representativeness of the coal sampling is imperative for it to be of any value. However, it is questionable whether there can be any such thing as a representative sample of coal when it comes to chlorine content. Powder River Basin coal can have a maximum of 1,370 parts per million (ppm) of chlorine, and a minimum level of below 75 ppm, with an arithmetic mean of 100 ppm and a standard deviation of 120 ppm.[42] Appalachian coal can have a maximum level of chlorine of 8,760 ppm, has an arithmetic mean concentration of chlorine of 730 ppm and a standard deviation of 680 ppm.[43] Thus, it is highly questionable whether a representative sample of coal and of uncontrolled chlorine emissions can be made, even with daily coal sampling.

This permit condition also does not identify the test method(s) to be used to determine the amount of chlorine and fluorine in the coal, nor does Section 12.5.2.1. of Method 19 in EPD's **Procedures for Testing and Monitoring Sources of Air Pollutants** specify test method(s) for determining the amount of chlorine and fluorine in the coal. While Section 12.5.2.1.3 of EPD's **Procedures for Testing and Monitoring Sources of Air Pollutants** does identify various ASTM test methods for determining the sulfur content in the coal, it does not specify a test method for determining chlorine or fluorine content. It is a well known practice of effective permit and regulation writing that, to ensure practical enforceability and to ensure replicable data are used to determine compliance with emission limits, test methods must be specified in the permit.

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[40] *Id.*

[41] *See* Section 12.5.2.1.2 of Method 12 in EPD's **Procedures for Testing and Monitoring Sources of Air Pollutants**.

[42] *See* Tillman, David A. et al, Chlorine in Solid Fuels Fired in Pulverized Coal Boilers – Sources, Forms, Reactions, and Consequences: A Literature Review, Presented at Fuel Quality Conference, Banff, Canada, September 28 – October 3, 2008, Ex. 21, at 5-6.

[43] *Id.*

With respect to the testing for chlorine levels in the coal, studies have shown that most of the ASTM test methods for determining the chlorine levels in low chlorine coal such as Powder River Basin coal are not reliable. Specifically, an EPRI study that reviewed four ASTM methods for measuring chlorine in the coal that are either approved methods or under development by ASTM, and found that none of the methods can reliably and consistently measure chlorine in the coal for low chlorine coals including Powder River Basin coal.[44] The oxidative hydrolysis microcoulometry method for measuring chlorine in coal was the only method shown to reliably provide chlorine concentrations in low chlorine coals like PRB coal.[45] This method is now approved method ASTM D6721.[46]

This provision also does not require any testing for HAP constituents in the clarifier sludge that is allowed to be burned at Longleaf, nor does it require testing of the HAP constituents of the fuel oil that is allowed to be used for startup.

Thus, Condition 8.3 of the draft permit will not ensure accurate determinations of the HAP constituents in the fuels burned at the Longleaf facility.

(3) EPD also added a new provision 4.2.h. providing that EPD could require continuous emission monitoring systems ("CEMS") for hydrochloric acid or hydrogen fluoride if, prior to the commencement of operations of Longleaf, EPD determines that a CEMS "exists that can reliably and accurately measure" these pollutants from Longleaf.

Because this provision does not definitively require HCl and HF CEMS, it cannot be relied upon to ensure practical enforceability of the blanket restrictions on actual emissions of HCl and HF in Permit condition 2.25. Yet, for the reasons described in this comment letter, HCl and HF CEMS are the only methods available that could be relied upon to show that actual emissions of HCl and HF at Longleaf total less than the major source HAP emission levels. Indeed, EPA allows blanket restrictions on emissions to be considered in limiting potential to emit *only if* CEMs are used for compliance and if a short term emission limit, such as lb/hr, is imposed.[47] Such CEMs are available and have been used on municipal waste incinerators and cement plants for years. HCl and HF CEMs are available and can measure at low concentrations of HCl and HF.[48]

(4) Condition 8.27 of the draft permit amendment provides equations for Longleaf to use to calculate the monthly hydrochloric acid and hydrogen fluoride emissions from the Longleaf boilers. The monthly emissions are based on actual heat input measured by CEMs and actual

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[44] *See* N. Goodman, Technical Evaluation: Analysis of Chlorine in Coal by Oxidative Hydrolysis Microcoulometry, September 2000, Ex. 24.
[45] *Id.* at 4-1.
[46] Available at http://www.astm.org/Standards/D6721.htm.
[47] *See* June 13, 1989 EPA Memorandum from Terrell E. Hunt and John S. Seitz with subject "Guidance on Limiting Potential to Emit in New Source Permitting," Ex. 2 at 8.
[48] *See* Thermo Scientific Multi-Gas CEMs Brochure,(Ex. 25, and Gasmet CEMs Brochure, Ex. 26.

hours of operation, along with HCl and HF emission factors determined from the monthly average chlorine and fluorine content in the coal determined from the daily sampling required pursuant to draft permit condition 8.3 and from the HCl and HF removal efficiencies determined by the stack test results required by permit condition 4.1(m). These equations are inadequate to accurately quantify the total HCl and HF emissions emitted by the Longleaf facility.

First, the HCl and HF emission factors are based on the chlorine and fluorine content in the coal. As discussed above, draft permit condition 8.3 fails to specify adequate requirements to ensure representative coal sampling and also fails to specify the test method for determining chlorine and fluorine content of the coal. Thus, the permit as currently drafted will not ensure that the chlorine and fluorine contents of the coal are accurate.

Second, draft permit condition 8.27 allows the use of monthly averages of chlorine and fluorine content from the daily coal sampling as well as monthly averages of coal heat value. Such averaging is wholly inadequate to provide any assurances that actual total emissions of HCl and HF do not exceed major source emission thresholds, as the averaging will allow Longleaf to discount days of high chlorine content coal. One example of how the averaging can cause inaccuracies in the tally of HCl emissions is if Longleaf burns PRB coal with higher chlorine content for a few days in a month and also burns more coal those days than other days of the month, but otherwise burns similar amounts of coal with similar chlorine content for the majority of the month. The HCl emission factor based on the average chlorine concentration for the month will be just slightly higher than the typical daily HCl emission factor because the units only burned higher chlorine coal for a few days in the month. However, the resulting determination of monthly emissions under Condition 8.27 will be lower than if HCl emissions were determined and tallied daily, because Condition 8.27 would fail to account for the fact that greater amounts of the higher chlorine coal were burned for a few days in the month. Exhibit 27 provides a spreadsheet of data relevant to this example. Thus, in this and similar circumstances, the averaging of daily chlorine and heat value data from the coal sampling will result in a lower determination of HCl emissions than actually occurred.

Third, after allowing the averaging of all chlorine and fluorine concentrations in the coal burned over a month, draft permit condition 8.27 then takes into account the HCl and HF removal efficiency determined pursuant to permit condition 4.1(m). As stated above, this permit condition does not define or describe how percent removal is to be calculated, does not require determinations of percent removal across the various types of fuels allowed by the permit to be burned or blended, and is based on a test method that is known to inaccurately measure HCl. Further, although it is not clear, it appears the test to determine HCl and HF control efficiency is a one time test for the life of the source. Condition 4.1(m) does not specify a frequency for testing. While permit conditions 4.2d., h., and g. require annual testing of HCl and HF emissions, this testing is only to show compliance with the lb/MM Btu emission limits of draft permit conditions 2.15 k. and o. EPD has provided no justification to show that the HF and HCl control efficiencies collected during the one time performance test will accurately reflect control efficiencies throughout the year. Stack tests are typically conducted during optimum conditions with much advance notice. So, the control efficiencies determined during the one time stack tests may not be reflective the HF and HCl control efficiencies that are achieved day in and day out at each unit. Even once per year stack tests are not likely to reflect the variability in control

efficiencies of acid gas HAPs. For example, the annual HCl tests at the Gilbert CFB unit at Spurlock station (Unit 3) varied by more than a factor of 10 between 2005 and 2007.[49]

By relying on a one-time (or even once per year) stack test to determine the HCl and HF removal efficiency at the Longleaf boilers, EPD assumes that HCl and HF control efficiencies will not ever vary. EPD knows this is not the case. Anna Aponte of EPD testified in the Longleaf PSD appeal that "A test – a one-time emissions test is a setup -it's based on a controlled situation. The testing company and the plant operation knows exactly what scenarios they are setting up…and so it's a controlled situation. And it is important information to let you know what the boiler is emitting, but it's only a snapshot of that information."[50]

HCl and HF control efficiencies will vary with the variability in uncontrolled HCl and HF coming into the dry scrubber, with variability in operation of the scrubber and baghouse, with varying levels of operation of the boiler, during startup and shutdown[51], etc. Thus, a one-time stack test (even once per year) will not provide accurate information as to what the HCl and HF removal efficiencies are hour by hour and day by day.

The dry scrubber is to be operated to primarily remove SO2 emissions, and it will be operated accordingly, with the amount of lime needed to meet SO2 emission limits dependent on the uncontrolled SO2 emissions coming into the scrubber. Hydrogen chloride removal is similarly based on the stoichiometric ratio of lime to chlorine.[52] However, there is no correlation between sulfur content of the coal and chlorine levels in the coal. This is made clear by Exhibits 29 and 30 which include raw data from the USGS COALQUAL database for subbituminous Powder River Basin coal (Ex. 29) and for bituminous Central Appalachian coal (Ex. 30).[53] Because there is no correlation between sulfur content and chlorine content of either PRB or CAPP coal, a dry scrubber operated to meet SO2 BACT emission limits will not likely be optimized for HCl removal. If the scrubber is operated to achieve high levels of SO2 removal and the sulfur content of the coal stays the same but the chlorine content increases (and chlorine content of both PRB and CAPP coals can fluctuate significantly, as shown in Exs. 29 and 30), then HCl removal could plunge.

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[49] *See* June 10, 2008 letter from Eastern Kentucky Power Cooperative to the Kentucky Division of Air Quality, Ex. 32.

[50] *Friends of the Chattahoochee, Inc. v. Couch*, OSAH-BNR-AQ-0732139-60-Howells, Hearing Transcript, 9-25-07, p.2081, lines 14-20.

[51] Emissions during startup and shutdown must be included in determining whether the Longleaf facility has the potential to emit in excess of major source HAP emission thresholds, and thus startup and shutdown emissions must be accounted for in determining compliance with any synthetic minor emission limitations.

[52] *See* Maezawa, Akinori et al., Simulation of Removal of HCl Gas in a Spray Dry Tower, Chem. Eng. Technol. *19* (1996), 550-552, Figure 2 at 552. Ex. 28.

[53] The data for these spreadsheets was downloaded from http://energy.er.usgs.gov/products/databases/CoalQual/. For the charts in Exs. 29 and 30 which plot chlorine versus sulfur content, only samples with chlorine and sulfur concentrations greater than zero were plotted, as it was assumed that zero concentration values meant that element was not tested for that coal sample.

In fact, a dry scrubber operated to optimize SO2 emission reductions may result in lower HCl removal. A study of SO2 and HCl removal in a circulating fluidized bed ("CFB") boiler showed that HCl removal was significantly reduced when SO2 removal was required concurrently.[54] Thus, there is nothing in the permit that would ensure operation of the pollution controls at Longleaf to achieve an HCl removal efficiency consistent with what was measured in the one time stack test will be maintained. In fact, it is very likely that the HCl removal efficiency will vary more than SO2 removal efficiency, because Longleaf will have SO2 CEMs data to use in adjusting the lime feed to the dry scrubber for optimizing SO2 removal and because there is no correlation between sulfur content and chlorine content of the coal.

Even with SO2 CEM data to help with adjustment of the operation of SO2 controls, SO2 emission rates can vary significantly hour by hour and day by day. Exhibit 39 to this letter provides an example of this variability at Unit 1 of the Pleasant Prairie Power Plant in Wisconsin, which burns PRB coal and is equipped with a wet scrubber. The graph shows hourly SO2 emission rate, 24-hour average rates, 30-day average rates and 365-day average rates. Clearly, the hourly and daily rates fluctuate significantly. HCl emission rates could similarly fluctuate significantly hour by hour and day by day. Thus, for all of the above reasons, the reliance on the HCl and HF control efficiencies determined from the one time (or once every year) stack test will not accurately account for the HCl and HF emissions from the Longleaf boilers.

In addition to the significant issues with determining actual HCl and HF emissions from the boilers based on the equations in Condition 8.27, there are absolutely no provisions in the permit that explain how HAP emissions from the auxiliary boiler are to be accounted for.

Thus, Condition 8.27 and its supporting permit conditions are wholly inadequate to ensure that the HCl and/or HF emissions from the Longleaf facility will be less than the 10 tpy limit in Condition 2.25. Therefore, the 10 tpy limit in Condition 2.25 is not permanent, quantifiable, or otherwise enforceable as a practical matter.

b) The Draft Permit Amendment Fails to Include Adequate Terms and Conditions to Verify that Emissions of All HAPs Will Not Be 25 Tons Per Year or More.

Notwithstanding the significant flaws in relying on EPRI emission factors and USGS COALQUAL data for estimating organic HAP and metal HAP emissions, the draft permit fails to include conditions to ensure that the total HAP emission limit of less than 25 tpy is enforceable as a practical matter. Below we provide a review of the specific permit conditions that presumably were intended to provide for practical enforceability of the 25 tpy total HAP emission limit:

(1) Condition 4.1.n. of the draft permit amendment requires Method 29 to be used for the determination of emission rates of lead and other non-mercury metal HAPs, and also requires the

[54] *See* Partanen, Jata et al., Absorption of HCl by limestone in hot flue gases. Part III: simultaneous absorption with SO_2, Fuel 84 (2005) 1685-1694, at 1687, Ex. 31.

percent removal of selenium to be calculated based on the results of the test. This permit condition fails to definitively require determination of metal HAP emission rates during all types of coal combustion combinations, when fuel oil is used for startup, or when clarifier sludge is burned. It does not even specify whether PRB or CAPP coal is to be burned in the initial test. As is clear from the company's own projections, the metal HAP emissions when burning PRB coal could vary greatly from the metal HAP emissions when burning CAPP coal.

Regarding the requirement to determine the removal efficiency of selenium, this permit condition is totally silent as to how removal efficiency is to be determined and across what control equipment. The utter lack of an explanation for determining selenium removal efficiency would allow Longleaf to use whatever approach it chooses and thus makes the provision not replicable. Replicable procedures for determining compliance with emission limits are necessary to ensure enforceability of emission limitations.

(2) Condition 4.1 v. requires Method 0031 to be used for determination of volatile organic HAPs, Method 0010 is to be used to determine emission rates of semi-volatile organic HAPs, Condition Test Method ("CTM") 033 is to be used for the determination of hydrogen cyanide emissions, and Method 29 is to be used for the determination of phosphorus emissions. A minimum one-hour sampling time is required.

With respect to CTM 033, EPRI has indicated that this method can have significant negative biases when CO2, SO2, or other acid gases are present in the flue gas.[55]

(3) Draft permit condition 4.2.j. states "[p]erformance tests on each PC-fired boiler, S01 and S02, for volatile organic HAPs, semi-volatile organic HAPs, hydrogen cyanide, and phosphorus to verify compliance with Condition 2.25. The tests shall be conducted every five years or as requested by the Division."

This provision is wholly inadequate to ensure enforceability with the HAP emission limits in Condition 2.25. First, there are no HAP limits in Condition 2.25 specific to volatile organic HAPs, semi-volatile organic HAPs, hydrogen cyanide, or phosphorus. There is only a limit on total HAPs of less than 25 tpy. Second, there are other HAPs that will be emitted from the Longleaf boilers that must be included in determining whether emissions exceed 25 tpy, including metal HAPs, mercury, HCl, HF, particulate organic compounds such as polynuclear aromatic compounds and dioxins. None of these will be accounted for in the performance testing required in Condition 4.2.j. of the draft permit.

This provision is also inadequate to ensure enforceability with the HAP emission limits in Condition 2.25 because you cannot determine compliance with a limit on total tons of HAPs emitted in one year based on a stack test conducted once every five years. A once every five years stack test does not provide sufficient information to determine whether emissions of all HAPs in a year equal or exceed 25 tpy.

[55] *See* August 31, 2009 EPRI Comments to EPA on its proposed Information Collection Request, at 12, Ex. 33.

Thus draft permit condition 4.2.j. utterly fails to ensure enforceability of the HAP emission limits in Condition 2.25 of the draft permit.

(4) Condition 8.27 of the draft permit amendment provides equations for Longleaf to use to calculate the monthly total HAP emissions from the Longleaf boilers. With respect to non-mercury metal HAPs, the monthly emissions are based on actual heat input measured by CEMs and actual hours of operation, along with emission factors for the metal HAPs that are calculated based on data from the daily coal sampling required pursuant to draft permit condition 8.3. These equations are inadequate to accurately quantify the metal HAPs emitted by the Longleaf facility.

Specifically, the metal HAP emission factors are based on the content of metal HAPs in the coal determined from the daily sampling required in draft permit condition 8.3. As discussed above, draft permit condition 8.3 fails to specify adequate requirements to ensure representative coal sampling and also fails to specify the test method for determining metal HAP content of the coal. Thus, the permit as currently drafted will not ensure that the metal HAP contents of the coal are accurate or ensure replicable results.

Further, draft permit condition 8.27.c. allows the use of monthly averages of metal HAP content and ash content from the daily coal sampling and monthly averaging of the PM emission rates from the CEMs in determining the metal HAP emission factors. Such averaging is wholly inadequate to determine actual emissions of metal HAPs, as the averaging will allow Longleaf to discount the days when coal with higher metal HAP content is burned.

Permit condition 8.27.d. provides an equation for determination of selenium emissions. This provision is flawed because it is based on the monthly average of the selenium content and the monthly average of the heat values of the coal from the daily sampling required in Condition 8.3. Such averaging ignores the days with higher selenium coal and thus would not result in an accurate accounting of selenium emissions. Further complicating an accurate determination of selenium emissions, the draft permit condition 8.27.d. then takes into account the selenium removal efficiency determined pursuant to permit condition 4.1(n). As stated above, this permit condition does not define or describe how percent removal is to be calculated, and it does not require determinations of percent removal across the various types of fuels allowed by the permit to be burned or blended. Further, although it is not clear, it appears the test to determine selenium control efficiency is a one time test for the life of the source. Condition 4.1(n) does not specify a frequency for testing. EPD has provided no justification to show that the selenium control efficiency collected during the one time performance test will accurately reflect control efficiencies throughout the year. Stack tests are typically conducted during optimum conditions with much advance notice. So, the control efficiencies determined during the once-per-year stack tests may not reflect the selenium control efficiencies that are achieved day in and day out at each unit.

Further, the control efficiencies during the stack test would not be reflective of the selenium control efficiency that is achieved during startup and shutdown. Thus, the equations in Condition 8.27 and the associated testing requirements in the permit do not account for HAP

emissions during startup and shutdown. Yet all emissions of HAPs from Longleaf must be accounted for in determining whether the facility is major.

Permit condition 8.27.e.provides an equation for "all other substances that are listed in Section 112 of the Clean Air Act" from the main boilers. This permit condition is vague and unenforceable. The permit must identify all of the other HAPs that are emitted from the boilers. The equation in Condition 8.27.e. is based on emission factors from the performance testing requirement in Condition 4.1(v), but as stated above, this provision does not require testing for all other HAPs even if we exclude those for which there are specific testing requirements (i.e., metal HAPs, HCl, HF). Specifically, Condition 4.1(v) requires testing for the volatile organic HAP, semi-volatile organic HAP, and selenium. But no condition of the permit requires testing of particulate organic compounds such as polynuclear aromatic compounds or dioxins. So these will be completely unaccounted for in determining total HAP emissions.

For those HAPs that Condition 4.1(v) does require testing for, compliance with the total HAP emissions limit will be based on the results of those one time tests. Such infrequent test results are not adequate to accurately account for all emissions of organic HAP, especially because testing is not required across all of the various fuel options that Longleaf is allowed and because it is not required across varying levels of operation including startup and shutdown. Given that the organic HAP are often products of incomplete combustion, it is a major oversight for EPD to not require the testing and development of emission rates at various loads and during startup and shutdown.

In Condition 8.27.f., there is an equation for determination of HAP emissions from auxiliary boiler. This provision is seriously flawed and unenforceable. First, the equation is based on a lb/MMBtu emission factor multiplied by gallons of fuel oil fired, with the result to be in tons per year. The units do not match up for this calculation, and thus the equation makes no sense.

Further, the equation in Condition 8.27.f. relies on emission factors from "Longleaf's auxiliary boiler MACT application." It is not clear what that application is – there is no date of the application and it was not attached to the permit. Further, use of emission factors to show compliance with a synthetic minor HAP permit limit provides no assurance of Longleaf's actual compliance with the HAP emission limits. In addition, EPD has provided no analysis of Longleaf's assumed HAP emission factors to show they are conservative. Thus, reliance on emission factors from an undated document that is not part of this permit and for which EPD has provide no review or assurances to the public that these emission factors are conservative, is not adequate to demonstrate that the Longleaf facility's HAP emissions in total will not exceed the major source HAP emission thresholds.

Thus, for all of the above reasons, draft permit Condition 8.27 and its associated permit conditions fail to provide any assurances that the Longleaf facility's total HAP emissions will truly be less than the 25 tpy emission limit of Condition 2.25 of the draft permit. Therefore, the 25 tpy limit on total HAPs in Condition 2.25 is not permanent, quantifiable, or otherwise enforceable as a practical matter.

D. The Draft Longleaf Synthetic Minor HAP Permit Appears to be a "Sham" Permit.

As discussed above, Longleaf's potential to emit HAPs exceeds major source HAP emission thresholds and the draft permit fails to include proper or enforceable permit conditions to limit Longleaf's potential to emit below major source emission thresholds. For example, as shown above, there is not adequate documentation in either Longleaf's submittals or EPD's permit narrative that supports a finding that the Longleaf facility's HCl emissions will be less than 10 tpy.

Longleaf's assumption that the facility's emissions of HCl when burning PRB coal will be less than 10 tpy are based on stack test results that likely underestimated HCl emissions. As discussed above, Test Method 26A results in a significant negative bias at units burning PRB coal[56], and yet this is the test method used by the PRB coal burning units that Longleaf has relied upon in its claim that the facility's emissions when burning PRB coal will be less than 10 tpy. *See* December 22, 2009 submittal from Longleaf to EPD, Attachment A, Table 1.

Longleaf did not even provide any HCl test data for units burning CAPP coal to support its claim that Longleaf will not emit HCl in amounts greater than 10 tpy. Longleaf admits that the facility cannot burn much if any CAPP coal and stay under major source emission thresholds. *See* December 22, 2009 Longleaf Submittal to EPD, Attachment A at 3. Yet neither Longleaf nor EPD proposed to prohibit Longleaf from burning CAPP coal. Further, the permit includes provisions that seem to indicate an exceedance of the 10 tpy single HAP limit will be allowed if the company can provide an adequate explanation. *See, e.g.,* Condition 8.30 of the draft permit which requires Longleaf to notify the EPD if the emissions of a single HAP equal or exceed 10 tpy, or if total HAP equal or exceed 25 tpy, simply requires "an explanation of how the Permittee intends to maintain compliance with the emission limit in Condition 2.25."

According to EPA policy, sham permits are not allowed under the definition of "potential to emit." Specifically, EPA states "[t]he definition of potential to emit enables a source to obtain federally enforceable permits with operational restrictions as a means of limiting emissions to minor source levels. However, implicit in the application of these limitations is the understanding that they comport with the true design and intended operation of the project."[57] Not only does the permit fail to include operational restrictions that are necessary to effectively limit potential to emit HAPs, the permit limits HCl emissions to less than 10 tpy when the permittee has made clear that the Longleaf facility cannot stay under 10 tpy when it burns CAPP coal. Thus, the draft Longleaf permit fails to comport with the true design of the Longleaf project.

It is also highly questionable whether the Longleaf facility can achieved the necessary 99.3% HCl removal efficiency needed to keep the facility to less than 10 tpy when burning PRB coal, because the facility will only be equipped with a dry scrubber and baghouse rather than

[56] *See* Exs. 6 and 7.
[57] *See* June 13, 1989 EPA guidance with subject "Guidance on Limiting Potential to Emit in New Source Permitting" at 13, Ex. 2.

more effective HCl control technology such as wet scrubbers. Neither EPD nor Longleaf have provided any documentation to verify that such high levels of HCl removal can be achieved at Longleaf with the dry scrubber and baghouse. Exhibits that attached hereto demonstrate that there is no correlation of chlorine with sulfur content of the coal and that chlorine content can vary greatly, thus proper operation of the scrubber to meet SO2 BACT requirements will in no way ensure any level of HCl removal. (*See* Exs. 28-31.)

It is also important to note that, out of the limited number of synthetic minor HAP permits proposed or issued for coal-fired electrical generating units, all either had wet scrubbers (or a combination of wet and dry scrubbers) or were circulating fluidized bed ("CFB") boilers with add-on SO2 control technology. Longleaf is the largest source that has been proposed to be permitted as a synthetic minor source of HAPs, yet it would have the least effective SO2 and acid gas control technology as compared to the other proposed or final synthetic minor HAP permits. The next largest source to claim to be a minor source of HAPs is Cliffside Unit 6, which is a proposed 800 MW unit. This unit will be equipped with a dry scrubber *and* a wet scrubber, and claims it will achieve 99.9% HCl removal. While we do not agree that the Cliffside Unit 6 will truly be a minor source of HAPs, it is very likely that a wet scrubber and a dry scrubber will achieve greater HCl removal than achieved by a dry scrubber alone. And yet the Longleaf facility, which in total is much larger in electrical generating capacity than Cliffside Unit 6, only proposed a dry scrubber to achieve minor source status for HCl. Other facilities that claimed synthetic minor status for HAPs, if not CFBs with dry scrubbers, will have wet scrubbers or wet scrubbers in combination with dry scrubbers or other SO2 control, such as the Trimble Unit 31 permit which will be equipped with a wet scrubber and a wet electrostatic precipitator. We do not agree that any of these permits adequately limit potential to emit of these sources and units to below major source HAP emission thresholds, but find it noteworthy to compare Longleaf's minor source claims to these permits which are for smaller plants and/or plants with much more effective SO2 and acid gas controls.

EPA has identified several guidelines for determining whether a synthetic minor permit is a sham permit including:

> 1) if the source filed a major source permit application around the same time as a synthetic minor permit application;
>
> 2) if the source indicated in loan applications or public utility commission applications that it intended to operate the facility in a manner that would make it a major source;
>
> 3) if the source indicated in stockholder reports, reports to the Securities and Exchange Commission, utility board reports, or business permit applications that it intended to operate in a manner that would make it a major source;
>
> 4) if the source indicated in statements to the state air permitting agency about its intended level of operation that would make it a major source.[58]

[58] *Id.* at 14-15.

Clearly, Longleaf meets some of these guidelines for suspecting a sham synthetic minor HAP permit. It submitted a MACT application as a major source of HAPs on October 6, 2008. Further, its original air permit application submitted in November 2004 also claimed the facility would be a major source. Longleaf did not claim to be a minor source of HAPs until after EPD proposed issuance of a Notice of MACT Approval in June 2009 and after the close of the public comment period on the draft Notice of MACT Approval. Indeed, Longleaf submitted comments on the draft Notice of MACT Approval in a letter dated August 3, 2009, and did not say anything about the Longleaf facility being a minor source of HAPs. Longleaf's December 22, 2009 submittal to EPD was the first time the company claimed it would be a minor source of HAPs.

Longleaf has stated that its "revised estimate [of HCl emissions] rests upon the assumption that it must burn PRB coal most, if not all, the time, that it operates." December 22, 2009 Submittal from Longleaf to EPD, Attachment A at 3. Yet, the company has not indicated any willingness to limit the coal it burns to PRB coal or even to limit the amount of CAPP coal the facility can burn. In fact, the company wants the ability to burn CAPP coal if less expensive than PRB and/or if there are delivery problems with PRB coal. Since its initial PSD permit application, Longleaf had indicated plans to potentially burn all CAPP coal in the Longleaf boilers.[59] In an August 15, 2005 letter to EPD responding to questions on the need for fuel flexibility, Longleaf stated:

> LEA has requested an air permit that provides for flexibility in the fuel supply to the boiler in order to ensure a reliable supply of fuel and to maintain price competitiveness. Based on current price and availability, LEA would likely select coal from the Powder River Basin (PRB) as the fuel for the facility. However, the Longleaf Energy Station is a substantial distance from the PRB coal mines (1,800 to 2,100 miles) as compared to the Central Appalachia (CAPP) coal mines (750 to 900 miles) and coal shipped from the PRB region has experienced some delivery interruptions in recent years. PRB coal delivery interruptions have affected similar power generation as recently as this summer. . . Although, LEA would not expect delivery interruptions to be a long term event, interruption of fuel to operate the Facility, even if for a short amount of time, would have a severely detrimental impact on LEA and the customers purchasing electricity from the Longleaf Energy Station.

August 15, 2005 Letter from Longleaf to EPD at 1-2 (Ex. 34).

It is true that there have been disruptions to PRB coal delivery in recent years. Given that the permit allows Longleaf to burn CAPP coal and given that their choice of coal to burn will be likely based on economics as much as anything else, it is not at all unreasonable to assume that the company will burn CAPP coal at least some of the time and perhaps for the majority of a year. Yet, Longleaf did not even attempt to estimate HCl emissions if it burns CAPP coal.

[59] *See, e.g.,* Section 1.2 states "[t]he facility will be designed to burn Powder River Basin (PRB) coal and/or Central Appalachian (CAPP) coal with the flexibility of blending in alternate coals." November 2004 Longleaf Permit Application at 1-3.

For all of the above reasons, it appears likely that the draft Longleaf permit is a sham synthetic minor HAP permit. But because the permit does not require sufficient testing and monitoring as previously discussed, EPD and the public will not likely know the actual HAP emissions from the Longleaf facility to know with any certainty wether Longleaf is a minor source of HAPs. Further, even if Longleaf does emit less than major source emission thresholds in some years, its minor source status could change quickly if the facility burns CAPP coal. These types of issues are the reasons why blanket restrictions on emissions cannot be relied upon to limit potential to emit. Determinations of MACT are required to be made before a source begins construction. It is not acceptable for EPD to take it on faith that Longleaf may be a minor source of HAPs, with a plan to require them to meet MACT at a later date if they find they were wrong in their assumptions regarding HAP emissions. Thus, EPD must not issue the Longleaf permit without conducting a thorough analysis of whether the potential emission calculations are technically accurate and whether they reflect allowable emissions under the terms of the permit. Such a showing cannot be made for Longleaf under the terms of its permit. Thus, instead of issuing a synthetic minor HAP permit, EPD must issue a Notice of MACT Approval for Longleaf.

III. The Draft Longleaf Permit Does Not Require Emission Limitations that Reflect MACT for the HAPs to be Emitted from Longleaf.

Along with imposing emission limits on a single HAP or on total HAP emissions that are intended to make the Longleaf facility a synthetic minor source and exempt from MACT, the draft permit includes specific emission limits on three HAPs and also includes decreased emission limits on other pollutants such as filterable PM and carbon monoxide which EPD had previously intended to rely on as surrogates for the HAP emissions from Longleaf. These HAP limits and PM and CO limits are consistent with what EPD proposed as MACT for Longleaf in June 2009, with the exception of the mercury limit of the current draft permit which is now lower than what EPD proposed last June. Specifically, EPD has imposed the following emission limits on directly emitted HAPs:

1) Mercury, for which Longleaf is subject to an emission limit of 7.64×10^{-6} lb/MW-hr on a 12-month rolling average when firing PRB coal and 6.0×10^{-6} lb/MW-hr on a 12-month rolling average when firing CAPP coal, or a computed weighted average when burning both types of coal. Condition 2.15.m of the draft permit.

2) HCl, for which Longleaf is subject to a limit of 6.0×10^{-4} lb/MMBtu when firing PRB coal or 2.4×10^{-3} lb/MMBtu when firing CAPP coal, or a computed weight average when firing both coals. Condition 2.15.o. of the draft permit.

3) HF, for which Longleaf is subject to a limit of 2.0×10^{-4} lb/MMBtu. Condition 2.15.k. of the draft permit.

EPD has also imposed a limit on carbon monoxide of 0.10 lb/MMBtu, 30-day rolling average, and on filterable particulate matter of 0.010 lb/MMBtu, 3-hour average. EPD had proposed these limits as reflective of MACT for organic HAPs and metal HAPs, respectively, in its draft permit proposed for public comment in June 2009.

To the extent that EPD may claim that the current draft Longleaf permit includes MACT emission limits, we strongly disagree. We submitted extensive comments as to why the EPD's proposed MACT limits are not reflective of MACT for Longleaf in an August 4, 2009 comment letter. We hereby incorporate all of the exhibits to that comment letter. EPD's Plant Washington permit limits for HAPs demonstrate that Longleaf's permit limits are not MACT, since EPD required Plant Washington to meet more stringent MACT limits for HCl and HF than Longleaf is required to meet under the current draft permit.[60] Also, on June 4, 2010, EPA published in the Federal Register its proposed MACT standards for industrial boilers including pulverized coal-fired industrial boilers. 75 Fed.Reg. 32012 (June 4, 2010).[61] Its proposed MACT standards for industrial boilers included a limit on HCl of 0.00006 lb/MMBtu and a limit on filterable PM of 0.001 lb/MMBtu, both of which are more stringent than the limits in the draft Longleaf permit. *See* 75 Fed.Reg. 32012. And EPA proposed a separate MACT limit for dioxins/furans of 0.002 ng/dscm. *Id.* EPD did not propose any separate emission limit for dioxins/furans in the Longleaf permit. There is no reason why coal-fired electric utility steam generating units should not be subject to the same if not more stringent emission limits as pulverized coal industrial boilers.

Recent stack testing continues to show that coal-fired EGUs have emitted HAPs at lower emission rates than required in the draft Longleaf permit. For example, the Wisconsin Energies Oak Creek plant tested at lower mercury emission rates than the limits required in the Longleaf permit. Specifically, the average mercury emission rate at the Elm Road Unit 1 in 2010 testing was 0.15 lb/TBtu, as compared to the Longleaf mercury emission limits which are approximately equivalent to 0.68 to 0.82 lb/TBtu.[62] Oak Creek also tested at a much lower filterable PM emission rate than required in the Longleaf permit.[63]

EPA is in the process of collecting additional HAP test data in its current Information Collection Request for the electric utility MACT rulemaking that is forthcoming next year. EPA has indicated it will post the data that is collected on the internet.[64] EPD should review that data in evaluating MACT for Longleaf.

Clearly, the draft Longleaf permit does not require the facility to comply with HAP emission limits reflective of MACT.

IV. The Application Must Be Submitted and Reviewed by a Professional Engineer Licensed in Georgia.

In Georgia, "it shall be unlawful for any person other than a professional engineer to practice or to offer to practice professional engineering in this state." O.C.G.A. § 43-15-7. The

[60] A copy of the April 2010 Plant Washington Permit is included as Ex.35.
[61] A copy of the proposed rulemaking is included as Ex. 36.
[62] *See* January 19 and 20, 2010 test results at Wisconsin Energies Elm Road Unit 1, Ex. 37.
[63] *See* February 12, 2010 Particulate Emissions Compliance Test Results for Wisconsin Energies Elm Road Unit 1, Ex. 38.
[64] http://www.epa.gov/ttn/atw/utility/utilitypg.html.

terms “professional engineer” and “professional engineering” are defined by statute. O.C.G.A. § 43-15-2. The term "Professional engineering" means:

> [T]he practice of the art and sciences, known as engineering, by which mechanical properties of matter are made useful to man in structures and machines and *shall include any professional service, such as consultation, investigation, evaluation, planning, designing, or responsible supervision of construction or operation, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects, wherein the public welfare or the safeguarding of life, health, or property is concerned or involved*, when such professional service requires the application of engineering principles and data and training in the application of mathematical and physical sciences..

O.C.G.A. § 43-15-2(11) (emphasis added). The term “professional engineer” means:

> [A]n individual who is qualified, by reason of knowledge of mathematics, the physical sciences, and the principles by which mechanical properties of matter are made useful to man in structures and machines, acquired by professional education and practical experience, to engage in the practice of professional engineering *and who possesses a current certificate of registration as a professional engineer issued by the board.*

O.C.G.A. § 43-15-2(10) (emphasis added). The term “the board” as used in the above definition means “the State Board of Registration for Professional Engineers and Land Surveyors.” O.C.G.A. § 43-15-2(1).

Thus, in order to lawfully practice professional engineering in the State of Georgia, one must be a professional engineer as defined by Georgia law. In order to be considered a professional engineer in Georgia, one must receive certification from the Georgia Board of Registration for Professional Engineers and Land Surveyors. Absent this certification, it is unlawful to practice professional engineering. As stated in the Georgia Code, it is “unlawful for any person other than a professional engineer to practice or to offer to practice professional engineering” in Georgia. O.C.G.A. § 43-15-7.

The Georgia Board of Registration for Professional Engineers and Land Surveyors has ruled that both BACT and MACT determinations constitute the practice of engineering. Minutes, Meeting of the Georgia Board of Registration for Professional Engineers and Land Surveyors, December 6, 1994; Minutes, Meeting of the Georgia Board of Registration for Professional Engineers and Land Surveyors, December 10, 1991. Indeed, the Engineering Board has determined that *all* control technology determinations constitute the practice of engineering. In the present case, Longleaf seeks to be permitted as a minor source. However, although this determination is not a "case-by-case" MACT determination, it nevertheless involves the application of complex environmental engineering principles, and as such, should be performed only by licensed professional engineers. In addition, should EPD staff who perform these tasks hold themselves out as engineers, this likewise constitutes the practice of engineering and cannot be done without a proper license. O.C.G.A. § 43-15-2(11) (stating that a person shall be

construed as practicing engineering where he or in any way "represents of holds himself out as a professional engineer or engineer").

V. Conclusion

For the reasons set forth above, we ask EPD to deny the requested permit amendment and request for an extension of the PSD permit. If you have any questions about these comments, would like any of the source material referenced in these comments, or require any additional information, please do not hesitate to contact us at (404) 320-9979

Thank you for your consideration of these comments and concerns.

Sincerely,

THE FINLEY FIRM, P.C.

Christopher R. Reeves, Esq.