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August 29, 2011

By Hand Delivery

Georgia Department of Natural Resources
Environment Protection Division
Air Protection Branch
Attn: Eric Cornwell
4244 International Parkway
Suite 120
Atlanta, GA 30354

Via Email: epdcomments@dnr.state.ga.us

Re: Comments on Plant Washington 112(g) Case-by-Case Maximum Achievable Control Technology ("MACT") Determination, Draft Notice of MACT Approval ("NOMA"), SIP Permit Application No. 20397, Permit No. 4911-303- 0051-P-01-1

Dear Mr. Cornwell:

GreenLaw and the Southern Environmental Law Center ("SELC") respectfully submit these comments on the Georgia Environmental Protection Division's ("EPD") Draft Notice of MACT Approval issued to Power4Georgians, LLC ("P4G") for its proposed Plant Washington coal-fired power plant, SIP Permit Application No. 20397, Permit No. 4911-303- 0051-P-01-1. These comments are submitted on behalf of the following organizations (hereinafter referred to as "Environmental Organizations"):

1) Altamaha Riverkeeper
2) Fall-Line Alliance for a Clean Environment
3) Flint Riverkeeper
4) Friends of the Chattahoochee
5) Ogeechee Riverkeeper
6) Sierra Club – Georgia Chapter
7) Southern Alliance for Clean Energy

The Environmental Organizations incorporate by reference and reassert all comments, citations, and authorities which they previously have filed regarding the proposed Plant Washington project, particularly those comments filed on or about October 27, 2009 to the proposed Prevention of Significant Deterioration ("PSD") and 112(g) Case-by-Case Maximum Achievable Control Technology ("MACT") Determination, Construction Permit No. 4911-303-

0051-P-01-0, for Plant Washington. For the reasons previously stated and for the additional reasons stated below, this permit should be denied.

I. EPA's Proposed MACT Standards for Coal-Fired Power Plants

On March 16, 2011, EPA released for publication in the Federal Register its proposed National Emission Standards for Hazardous Air Pollutants ("NESHAPS") for coal- and oil-fired utility electric generating units ("EGUs") (in these comments, the NESHAPS will be referred to as the "Power Plant MACT Rule").[1] *See* "National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units," Proposed Rule 76 Fed. Reg. 24,976 (May 3, 2011). Pursuant to the proposed Power Plant MACT Rule, Plant Washington is a new source that must demonstrate that it will comply with all of the standards, conditions, emission limitations, and reporting, and record-keeping requirements of the proposed rule before P4G commences construction and operation of the plant. 42 U.S.C. §§ 7412(a)(4), (i)(1); *see* 76 Fed. Reg. at 25,020, 25,054; *see also* C.F.R. §§ 63.5 and 63.43(d)(2), (4). In addition, because P4G had not obtained a final NOMA prior to publication of the proposed Power Plant MACT Rule, the NOMA and Amended Permit must include as enforceable permit conditions all of the terms, conditions, and limitations necessary to ensure compliance with EPA's proposed MACT standards.

There is no question that Plant Washington is a "new affected source" under the proposed Power Plant MACT Rule, because P4G did not commence construction of the plant prior to EPA's publication of the proposed rule.[2] *See* 76 Fed. Reg. 24,976, 25,020 (defining new affected source as a coal- or oil-fired EGU for which construction or reconstruction began after May 3, 2011); *see also* Clean Air Act ("CAA") § 112(a)(4) (new source is one that commences construction after EPA first proposes regulations establishing a MACT standard). The proposed rule provides that all new or reconstructed units must comply with the EGU MACT standards immediately upon startup or upon the publication date of the final rule, whichever is later. 76 Fed. Reg. at 25,054. Pursuant to CAA § 112(i)(1), after the effective date of a MACT standard,

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[1] EPA published the proposed rule in accordance with a consent decree entered by the District Court for the District of Columbia in *American Nurses Ass'n, et al v. Jackson*, Civil Action No. 08-2198 (D.D.C. April 15, 2010) (Consent Decree, Memorandum Opinion, and Order entered April 15, 2010). According to the consent decree, EPA must sign and submit the final Power Plant MACT Rule for publication in the Federal Register by November 16, 2011.

[2] In fact, Plant Washington currently lacks all required CAA approvals and, accordingly, still has not commenced construction.

no person may construct a new major source subject to such standard unless EPA or the State has determined that the new source will comply with the standard. Thus, there is no question that Plant Washington would be a new affected source that must demonstrate it will comply with all applicable MACT requirements prior to commencing construction. Furthermore, it must comply with EPA's Power Plant MACT Rule requirements immediately upon start up.[3]

In its application, P4G acknowledges that the federal regulations governing case-by-case MACT determinations under CAA § 112(g) require EPD to consider the MACT emission limits and requirements contained in EPA's proposed Power Plant MACT Rule. *See* June 2011 Notice of MACT Approval at 2. Georgia has incorporated these federal CAA § 112(g) regulations into its state implementation plan ("SIP"). *See* Ga. Comp. Rules & Regs. r. 391-3-1-.02(9)16. As P4G notes in its application, "while no EGU MACT standard existed when the original case-by-case analysis for Plant Washington was prepared, EPA's recent regulatory action and the applicable state and federal regulations compel P4G and EPD to consider this proposed regulatory action in this case-by-case determination." *See* June 2011 Notice of MACT Approval at 3. As a result of EPA's publication of the proposed Power Plant MACT Rule prior to issuance of a final NOMA for Plant Washington, P4G and EPD must "strongly consider" the proposed Power Plant MACT Rule when evaluating and issuing the NOMA.[4] 61 Fed. Reg. 68,384, 68,394. Additionally, before commencing construction of the plant, P4G must file a notice and application with EPA demonstrating that Plant Washington will meet all requirements of the Power Plant MACT Rule. 40 C.F.R. § 63.5. Finally, Plant Washington must comply with all emission limitations and other standards of the MACT Rule immediately upon startup. CAA § 112(i)(1).

EPD's obligation to conduct a thorough case-by-case MACT analysis and render an independent MACT determination begins but does not end with "strong consideration" of the proposed MACT Rule. In regulations implementing the case-by-case MACT requirements of CAA §112(g) EPA has explained that "[i]n determining the appropriate level of control, this rule requires consideration of 'available information.' In some instances, such information sources are readily apparent. For example, if a Federal MACT standard has been proposed, but not yet promulgated, the EPA expects that a MACT determination will strongly consider that proposal." 61 Fed. Reg. 68384, 68394. EPA also provided, however, that "[o]ther information may be

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[3] Moreover, since the case-by-case MACT requirements of CAA § 112(g) are "preconstruction requirements," P4G must demonstrate compliance with the Power Plant MACT Rule requirements before commencing construction of Plant Washington.

[4] As discussed in Section IV, below, P4G and EPD must consider the entire proposed Power Plant MACT Rule – including the standards for mercury and acid gases – and not limit its re-evaluation and revisions to selected portions of the proposed Rule.

available in some cases, for example, based upon public comment on the MACT proposal, but such data would need to be adequate to refute the finding in the proposal." *Id.*

As discussed in Sections II – IV, below, public comments in the proposed Power Plant MACT Rule docket disclose several flaws in the proposed rule that, when corrected, mandate more stringent emissions limitations for non-mercury metal HAPs and for organic HAPs.

II. The Draft NOMA and Amended Air Quality Permit Improperly Rely on Surrogates for Control of Non-Mercury Metal HAPs, Acid Gas HAPs, and Organic HAPs.

In the draft NOMA and Amended Permit, EPD proposes to control certain HAPs through surrogates. Specifically, EPD plans to use filterable particulate matter ("PM") as a surrogate for control of non-mercury metal HAPs; carbon monoxide ("CO") as a surrogate for control of organic HAPs; and sulfur dioxide ("SO_2") as a surrogate for control of acid gas HAPs. As a basis for this decision, EPD observes that "EPA and the courts have indicated that HAPs can be characterized and controlled together using surrogates for measuring compliance when three factors are met: 1) whether the HAPs to be regulated are 'invariably present' in the emissions of the proposed surrogate; 2) whether the pollution control technology used for the surrogate 'indiscriminately captures' the HAPs to be regulated along with the emission of the proposed surrogate; and 3) whether the pollution control technology used for the surrogate is the only means by which a facility could reduce the emissions of the HAPs to be regulated."[5] Draft NOMA at 5. EPD has failed to demonstrate on the record that each of the selected surrogates meets the criteria for regulating HAPs through use of surrogate pollutants.

The Clean Air Act "establishes a 'clear statutory obligation to set emission standards for each listed HAP' that the source category emits."[6] As a narrow exception to this mandate, a permitting authority may substitute control and monitoring requirements for one pollutant, known as a "surrogate" pollutant, in lieu of setting emission limits directly for a HAP, but the agency may do so only under limited circumstances that assure a high level of HAP control.[7] For another pollutant to operate as a surrogate for a HAP, the agency must conduct an analysis and demonstrate each of the following three criteria: (1) the HAP is "invariably present in [the surrogate];" (2) the control technology for the surrogate "indiscriminately captures [the] HAP . . .

[5] As support, EPD cites *Sierra Club v. EPA*, 353 F.3d at 984 (citing *Nat'l Lime Ass'n*, 233 F.3d at 639).

[6] *Mossville Envtl. Action Now v. EPA*, 370 F.3d 1232, 1242 (D.C. Cir. 2004) (quoting *Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 634 (D.C. Cir. 2000)).

[7] *Nat'l Lime*, 233 F.3d at 637-39; *Sierra Club v. EPA*, 353 F.3d 976, 982-85 (D.C. Cir. 2004).

along with [t]he surrogate;" and (3) the surrogate "control is the only means by which facilities 'achieve' reductions in [the] HAP . . . emissions."[8] EPD has proposed to use limits on filterable particulate matter for non-mercury metal HAPs, including selenium; limits on SO_2 as a surrogate for all acid gas HAPs, including hydrogen cyanide; and work practice standards for CO as surrogate for organic HAPs. EPD has not adequately demonstrated that the three requisite criteria are met for all of the HAPs that would be covered by surrogate limits.[9]

A. Particulate Matter is Not an Appropriate Surrogate for Non-Mercury Metal HAPs.

In the draft NOMA, EPD notes that EPA collected a large amount of emissions data from numerous EGUs throughout the country through an Information Collection Request ("ICR") issued to help develop the Power Plant MACT Rule. The Environmental Organizations have analyzed these data to determine if filterable PM is an appropriate surrogate for non-mercury metal HAPs. Specifically, the Environmental Organizations assessed all of the ICR data for which both filterable PM and HAP metals data are available, and further refined their analysis by examining only those used units that burned bituminous or sub-bituminous coals, i.e., the coals that are proposed to be used at Plant Washington.

Table 1 depicts the results of our analysis of emissions data from 201 units that fit the profile described above.

Table 1
Correlations Between Filterable PM and Non-Mercury Metal HAPs

	Antimony	*Arsenic*	*Beryllium*	*Cadmium*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Nickel*	*Selenium*
Antimony	1.000									
Arsenic	0.749	1.000								
Beryllium	0.464	0.261	1.000							
Cadmium	0.335	0.136	0.512	1.000						
Chromium	0.418	0.010	0.319	0.138	1.000					
Cobalt	0.381	0.175	0.804	0.563	0.523	1.000				
Lead	0.029	0.021	0.024	0.060	0.119	0.162	1.000			
Manganese	0.153	0.006	0.336	0.241	0.094	0.371	0.012	1.000		

[8] *Sierra Club v. EPA*, 353 F.3d at 984 (quoting *Nat'l Lime*, 233 F.3d at 639).

[9] The Environmental Organizations adopt and incorporate by reference comments filed by various environmental organizations to EPA's proposed Power Plant MACT Rule. A copy of those comments is attached as Attachment 1. Specifically as those comments relate to EPD's proposed use of surrogate pollutants, the Environmental Organizations cite to Chapter VII, pages VII-1 through VII-23 of Attachment 1.

Nickel	0.429	0.028	0.384	0.192	0.893	0.559	0.218	0.077	1.000	
Selenium	0.360	0.379	0.653	0.398	0.071	0.511	0.009	-0.006	0.115	1.000
Filt. PM	0.209	0.195	0.628	0.367	0.109	0.566	0.014	0.014	0.134	0.395

As Table 1 indicates, the correlations between filterable PM and the non-mercury metal HAPs Plant Washington will emit are weak. With the exception of cadmium and cobalt, all of the other correlations are below 0.5, meaning that only a small fraction of the emissions variability of the metals is explained by the emissions of filterable PM.

To determine whether filterable PM pollution controls would affect the correlation between filterable PM emissions and non-mercury metal HAPs, the Environmental Organizations also separately analyzed only those units that have fabric filters and scrubbers, like Plant Washington. Based on the ICR data, a class of 54 units fit this more restricted profile. The results of this more refined analysis are shown below in Table 2.

Table 2
Correlations Between Filterable PM and Non-Mercury Metal HAPs in Units Equipped with Fabric Filters and Scrubbers

	Antimony	*Arsenic*	*Beryllium*	*Cadmium*	*Chromium*	*Cobalt*	*Lead*	*Manganese*	*Nickel*	*Selenium*
Antimony	1.000									
Arsenic	0.112	1.000								
Beryllium	0.190	0.915	1.000							
Cadmium	-0.040	0.270	0.324	1.000						
Chromium	0.111	0.826	0.758	0.275	1.000					
Cobalt	0.257	0.472	0.483	0.145	0.796	1.000				
Lead	0.051	0.224	0.207	0.036	0.142	0.040	1.000			
Manganese	0.168	0.436	0.384	0.112	0.791	0.946	0.031	1.000		
Nickel	0.173	0.456	0.419	0.132	0.798	0.961	0.055	0.986	1.000	
Selenium	0.153	0.136	0.099	-0.080	0.038	0.011	-0.042	0.030	0.105	1.000
Filt. PM	-0.039	0.299	0.305	-0.019	0.157	0.113	0.045	0.015	0.029	0.082

As Table 2 demonstrates, the correlation between filterable PM emissions and emissions of non-mercury metal HAPs was even weaker in units equipped with fabric filters and scrubbers. Indeed, none of the HAP metals have a correlation coefficient of 0.5 or higher. EPD's assumption that filterable PM is an appropriate surrogate for non-mercury metals is incorrect. Therefore, EPD should set individual MACT limits for each of these metals.

In addition to the foregoing reasons, PM is particularly inappropriate as a surrogate for selenium, which is a semi-volatile metal HAP that behaves in a manner similar to mercury. Coal-fired EGUs emit substantial amounts of selenium.[10] According to data from the Toxics Release Inventory, in 2009 EGUs in Georgia released 13,000 pounds of selenium.[11] Under the high temperatures present during coal combustion, the selenium contained in the combusted coal will both volatilize in the flue gas and partially condense into particulates.[12] Because selenium is volatile at the elevated temperature ranges in EGU flue gases, traditional particulate air pollution devices (such as electrostatic precipitators or fabric filter bag houses) are not able to capture it efficiently.[13] Whereas traditional particulate controls, such as electrostatic precipitators or fabric filters, can remove more than 99% of fly ash, they cannot effectively control fine particles or gaseous substances.[14] Studies show that volatile selenium is present in a gaseous phase and thus will not be effectively removed by traditional particulate matter control technologies.[15] Moreover, selenium species that are not vaporized are likely to be present as particulates that are too fine for control by traditional ESPs or fabric filters.[16] Thus far, hydrated lime technology is likely to have the best capability for removing selenium, but researchers have suggested "novel technologies are needed to remove Se [selenium] vapor."[17]

Additionally, it is important to note that the design parameters of controls for other pollutants can affect the amount of selenium emitted. The design of an FGD absorber, for example, can have a significant effect. For instance, some wet FGD devices use forced-oxidation systems that form selenate.[18] As a result, PM is not an appropriate surrogate for selenium, and EPD must establish MACT limits directly for selenium.

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[10] TOM SANDY & CINDY DISANTE, REPORT FOR N. AM. METALS COUNCIL, REVIEW OF AVAILABLE TECHNOLOGIES FOR THE REMOVAL OF SELENIUM FROM WATER 3-3 (2010).

[11] EPA, TOXIC RELEASE INVENTORY (2009).

[12] *Id.*

[13] *Id.* at 6-3.

[14] Marie-Pierre Pavageau et al., *Volatile Metal Species in Coal Combustion Flue Gas*, 36 ENVTL. SCI. TECH., 1561, 1561 (2002).

[15] *Id.* at 1572.

[16] Rong Yan et al., *Behavior of selenium in the combustion of coal or coke spiked with Se*, 138 COMBUSTION AND FLAME, 20, 21 (2004).

[17] *Id.* at 20.

[18] Sandy, *supra* note 308, at 6-4.

B. Sulfur Dioxide Is Not an Appropriate Surrogate for Acid Gas HAPs.

In the draft NOMA and Amended Permit, EPD has signaled its intention to use emission limits and monitoring requirements for SO_2 as a surrogate in lieu of establishing such requirements directly for certain acid gases, including hydrogen cyanide ("HCN"), hydrogen fluoride ("HF"), selenium (present as "SeO_2").[19] EPD reached this conclusion without providing any data or justification to support its decision. In order to approve the use of SO_2 as a surrogate for acid gases, EPD must first demonstrate that SO_2 is a proper surrogate for each acid gas noted above based on the three-part surrogacy test. Then, EPD must demonstrate the level of SO_2 that corresponds to the MACT limits for each acid gas. Finally, EPD must prescribe SO_2 emission levels monitored by SO_2 CEMS to track the proper level of SO_2 as a surrogate for each acid gas. EPD has not, and cannot, make the required demonstrations.

Analysis of the emissions data EPA obtained through its Information Collection Request ("ICR") to support the Power Plant MACT Rule shows that there is a weak correlation, if any at all, between SO_2 emissions and HCN, HF, SeO_2, and even HCl emissions. The acid gas HAPs HCN, HF, and SeO_2 are formed from the nitrogen, fluorine, and selenium that exist in trace amounts in the parent coal.[20] The amounts of these trace metals present in the parent coal are independent variables that bear no relation to one another. Thus, the amount of sulfur present in the coal Plant Washington will burn does not determine or correlate to the amount of nitrogen, fluorine, or selenium that also may be present.

In the proposed Power Plant MACT Rule, EPA attempted to justify its choice of HCl or, alternatively, SO_2, as a surrogate for acid gas HAPs, stating that "acid gases are likely to be removed in typical FGD systems due to their solubility or their acidity."[21] EPA observed that because the regulated acid gases are water-soluble, they should be more easily removed from flue gas streams in typical FGDs than SO_2, "even when only plain water is used."[22] EPA further explained that acid gases will be absorbed in slurry streams used in both wet-scrubber and dry-scrubber absorber FGD systems, noting that HCl reacts easily in acid-base reactions with the "caustic sorbents (*e.g.,* lime, limestone) that are commonly used in FGD systems."[23] Specifically, EPA stated that HCl and HF can be removed by injecting dry alkaline sorbents (*e.g.*

[19] Power Plant MACT Rule at 25,005.

[20] *Id.*

[21] *Id.* at 25,014.

[22] *Id.*

[23] *Id.*

hydrated lime, trona, sodium carbonate) upstream of PM control devices,[24] and points to limited testing showing that CL_2 is also effectively removed with these pollution controls.[25] Significantly, EPA did not state that HCN is effectively removed using these technologies.[26] Indeed, EPA acknowledges that because HCN is the weakest acid gas, it is not as highly reactive as HCl or SO_2.[27]

In fact, neither SO_2 nor HCl meets any of the three statutory criteria for serving as a surrogate for HCN. HCN is not invariably present with SO_2 or HCl; HCN is not indiscriminately captured along with SO_2 or HCl; and controlling SO_2 or HCl is not the only means used to control HCN. Thus, neither SO_2 nor HCl is an appropriate surrogate for controlling HCN.

HCN is difficult to completely remove from flue gases; it passes through wet scrubbing processes that effectively remove SO_2, HCl, and some other acid gases.[28] Rather, HCN is controlled during incineration, which produces as by-products carbon dioxide ("CO_2") and nitrogen ("N_2"), along with NO_X.[29] Remaining HCN in the flue gas may be absorbed by passing the exhaust gases through a sodium or potassium hydroxide scrubber, which produces a cyanide salt.[30] However, these scrubbers are untested, and there is reason to believe that they are ineffective under real-world conditions, as explained below.

Most coals contain various nitrogen species, commonly known as "fuel nitrogen." The N-bounded structures in fossil fuels cause them to produce HCN and Ammonia ("NH_3") during combustion.[31] The HCN then either oxidizes and becomes NO_X or is emitted into the atmosphere.[32] Because HCN and NO_X interact, processes to eliminate one gas may affect the

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[24] *Id.*

[25] *Id.*

[26] *Id.*

[27] *Id.*

[28] EPA, OFFICE OF RESEARCH AND DEVELOPMENT, RECOMMENDED METHODS OF REDUCTION, NEUTRALIZATION, RECOVERY OR DISPOSAL OF HAZARDOUS WASTE, XIII INORGANIC COMPOUNDS, 1, 59 (1973), *available at* http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=91007S23.txt.

[29] *Id.* at 60.

[30] *Id.*

[31] Philippe Dagaut et al., *The oxidation of hydrogen cyanide and related chemistry*, 34 PROGRESS IN ENERGY AND COMBUSTION SCIENCE 1, 2 (2008).

[32] *Id.*

production of the other.[33] The combustion process thus affects which pollutants are emitted.[34] For example, incomplete combustion may result in emissions of certain pollutants, such as CO_2 and HCN.[35] While the combustion process can be modified to abate certain pollutants, doing so often creates a trade-off whereby decreasing some pollutants increases the emissions of others.[36] Modifying the combustion process to achieve full combustion, for example, tends to create more NO_X.[37] Conversely, a common three-zone process for eliminating NO_X emissions causes significant HCN creation during the re-burning phase when N intermediates are formed.[38] N_2 fixation produces HCN, mainly due to $CH+N_2$ reaction, which increases nitrogen and decreases hydrocarbon radicals. This can limit the effectiveness of combustion modification techniques that involve fuel-rich regimes in reducing NO_X emissions, especially as NO_X levels decrease.[39]

Currently, EGUs (including Plant Washington) are required to meet NO_X standards. They are equipped with NO_X controls that are generally considered to be either primary or secondary control technologies.[40] Primary control technologies focus on eliminating NO_X during the primary fuel combustion stage.[41] Secondary control technologies use a second combustion stage, such as re-burning, or downstream controls, such as selective non-catalytic reduction ("SNCR") or selective catalytic reduction ("SCR").[42] Multi-pollutant controls, which simultaneously reduce multiple pollutants, function similarly to the NO_X control systems, either by attempting to limit pollutant formation, removing pollutants once formed, or both.[43]

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[33] *Id.*

[34] Peter Glarborg, *Hidden Interactions—Trace Species governing combustion and emissions*, 31 PROCEEDINGS OF THE COMBUSTION INSTITUTE 77, 77 (2007).

[35] *Id.*

[36] *Id.* at 78.

[37] *Id.*

[38] Dagaut, *supra* note 279, at 8.

[39] Jamal B. Mereb, *Air staging and reburning mechanisms for NO_x abatement in a laboratory coal combustor*, 73 FUEL, 1020, 1022 (1991).

[40] Ravi K. Srivastava et al., *Nitrogen Oxides Emission Control Options for Coal-Fired Electric Utility Boilers*, 55 J. AIR & WASTE MGMT. ASS'N, 1367, 1369 (2005).

[41] *Id.*

[42] *Id.*

[43] *Id.*

In the United States, industry primarily uses low-NO_X burners ("LNB") and air staging (over-fire air or "OFA") techniques as primary control technologies to limit NO_X emissions.[44] LNBs control stoichiometric and temperature profiles of combustion, keeping NO_X from forming by keeping fuel and air from mixing for as long as possible.[45] These low NO_X combustion technologies rely on staged combustion, meaning that the overall combustion of the fuel, which requires a certain minimum level of oxygen, is accomplished in several phases.[46] Typically, an excess quantity of fuel is burned with reduced air in a "rich" combustion environment. This keeps oxygen and temperature low and consequently does not generate as much NO_X as would otherwise occur during combustion. However, in these rich, air-starved conditions, a significant portion of the fuel nitrogen in the coal is converted to HCN. While some of this HCN further transforms into nitrogen, some of it does not. It is difficult to control the amount of HCN produced during this fuel-rich stage, because it requires manipulating difficult-to-control kinetics and residence time parameters. This technique also typically reduces combustion efficiency by increasing levels of unburned carbon.[47]

Next, the remaining combustion air is introduced to complete the combustion process, typically in the zone known as the over-fire-air zone. A large portion of the CO and other products of incomplete combustion are fully oxidized in this stage. However, HCN from the first stage is not susceptible to further oxidation and can remain in the gas stream. Thus, the efforts to minimize NO_X formation in the combustion zones can actually increase HCN formation and emissions overall, unless plants focus on limiting HCN during combustion and capturing NO_X later using downstream pollution control equipment, such as SCRs or SNCRs. Because these downstream NO_X controls are more expensive than controlling NO_X during combustion, the strict NO_X limitations currently in place encourage combustion practices that produce higher levels of HCN.

The typical secondary pollution control equipment present in coal-fired boilers is unlikely to be effective in removing HCN. First, NO_X control equipment such as SNCR or SCR is not effective for controlling HCN. Neither are particulate control devices, such as ESPs or fabric filters, because HCN is a gas. The most promising controls are scrubbers which rely on various reagents to neutralize mainly SO_2, SO_3, and perhaps HCl. However, there are no data demonstrating that typical reagents effective for these pollutants, such as limestone or lime, can

[44] *Id.*

[45] *Id.*

[46] *Id.* at 1370.

[47] *Id.*

also remove HCN in significant quantities. Furthermore, it should be noted that all scrubbers are typically designed to remove SO_2, which is present in far greater concentrations than the other acid gases. Operating set points (such as pH and liquid to gas ratios, etc.) and any feed-back loops are also focused on SO_2 removal. Any acid gas removal in present scrubbers is strictly a co-benefit which may or may not accrue. Duct sorbent injection ("DSI") also has been proposed and used to specifically address acid gas removal, such as HCl. This technique, using agents such as lime or even limestone, can be effective for controlling HCl. But no data regarding actual removal of HCN with these systems are available. The recently proposed Power Plant MACT Rule is based on data collected in an ICR in 2010. Correlations of data for the various acid gases and SO_2 show almost no correlation of HCN emissions against the other acid gases. This indicates that scrubber systems, which are present in many of the units tested in the ICR, either do not or cannot remove HCN as effectively as the other acid gases.

On the other hand, HCN can be removed by using agents such as sodium hydroxide (NaOH). However, this reagent is not typically used in coal-fired systems. Trona, which has been used in a few cases, can be somewhat effective against HCN, but data are scant. Some research has shown that the Rectisol process, which uses cooled methanol as a reagent, can control HCN in flue gas streams from coal gasification processes.[48]

Clearly, technology employed to reduce SO_2 or HCl emissions will not invariably capture HCN. Furthermore, it is highly unlikely that utilities will voluntarily choose a suite of pollution controls that will reduce HCN emissions absent some regulatory compulsion to do so. An engineering consulting group, URS, recently prepared a study in which it recommended different technological control scenarios to utilities as compliance options for the Power Plant MACT Rule.[49] URS looked at several different boiler designs and ranked potential technological control upgrades based on cost, maturity, and ability to regulate multiple HAPs.[50] URS recommends that EGUs with only a fabric filter add either: 1) FGD (dry), or 2) FGD (wet), or 3) Dry Sorbent Injection, or 4) Coal switch.[51] EGUs with a fabric filter and wet FGD do not need to add additional controls.[52] EGUs with fabric filter and dry FGDs (or fabric filter, dry FGD and SCR)

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[48] *See* EPA, CONTROL TECHNOLOGY APPENDICES FOR POLLUTION CONTROL TECHNICAL MANUALS, EPA-600/8-83-009, at A2-1, A2-15 – A2-17 (Apr. 1983).

[49] GEORGE LIPINSKI, URS ASSESSMENT OF TECHNOLOGY OPTIONS AVAILABLE TO ACHIEVE REDUCTIONS OF HAZARDOUS AIR POLLUTANTS (2011), *available at* http://www.supportcleanair.com/resources/studies/file/4-8-11-URSTechnologyReport.pdf.

[50] *Id.* at 4.

[51] *Id.* at 7.

[52] *Id.*

do not need to add additional controls.[53] EGUs with electrostatic precipitators with wet FGD and SCR do not need to add additional controls.[54] EGUs with electrostatic precipitators only would need to add either: 1) FGDd/FF, or 2) Toxecon with Dry Sorbent Injection, or 3) Coal Switch, or 4) FGDw.[55] EGUs with an electrostatic precipitator with wet FGD do not need to add additional controls.[56] While these are generalizations, they indicate that EGUs with fabric filters or ESPs and FGDs of any type are unlikely to add to or modify their technological controls in order to remove HCl. They also indicate that EGUs will pick pollutant control options other than a sorbent injection control, the only technology that is even purports to remove HCN. Even then, the typical reagent used in sorbent injection is not as effective against HCN as it is for SO_2 or HCl.

In light of the high levels of HCN that EGUs emit, and the fact that HCN is not invariably present with SO_2 or HCl nor indiscriminately captured by the same pollution controls, neither SO_2 nor HCl meets the minimum legal standards to qualify as a surrogate for HCN. Thus, EPD must carefully examine additional methods for controlling HCN, including any technology transfer issues, and establish MACT emission limits directly for HCN.

C. Carbon Monoxide Is Not an Appropriate Surrogate for Organic HAPs.

The Environmental Organizations similarly analyzed the ICR data to determine whether CO is an appropriate surrogate for organic HAPs. Although test data for all organic HAPs are not available, the ICR data set contains significant data on some organic HAPs that can be used to examine EPD's surrogacy assumption. For example, data above detection limits for formaldehyde, a major organic HAP, are available for 68 units with conventional, pulverized-coal boilers (*i.e.*, no fluidized bed boilers or IGCC units) burning either bituminous or subbituminous coals.

As Table 3 demonstrates, there is no statistically significant correlation coefficient between formaldehyde and CO.

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[53] *Id.*

[54] *Id.*

[55] *Id.*

[56] *Id.*

Table 3
Correlation Between CO and Formaldehyde

	CO	*Formaldehyde*
CO (lb/MMBtu)	1	
Formaldehyde (lb/MMBtu)	0.023	1

Instead of examining the actual data EPA collected through the ICR, EPD relies on the spurious argument that most of the organic HAP data were below detection limits. While that may be true of some organic HAPs that will be emitted by Plant Washington, it is certainly not the case for all of them. As we reiterate, over 68 units had above-detection limit data for formaldehyde. As these data overwhelmingly show, CO is not an appropriate surrogate for formaldehyde. Thus, EPD can and should directly set a MACT limit for this important HAP, without relying on CO.

Similarly, EPD should examine the data for naphthalene and cyanides collected as part of the ICR. Over 35 units have reported above detection limit data for naphthalene. Over 100 units have reported above detection limit data for cyanides. Pollutant-specific limits can be set for each of these, and likely other organic HAPs, using the ICR data.

D. The Draft NOMA and Amended Permit Should Set MACT Limits Directly for Dioxins and Furans.

On March 21, 2011, EPA issued a final rule to regulate emissions of various HAPs from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP emissions ("Major Source Boiler MACT").[57] This rule specifies numeric emission limits for existing and new coal-fired units for mercury, particulate matter, carbon monoxide, hydrogen chloride, and dioxins. Specifically, the rule specifies limits for these pollutants for three sub-categories of coal-fired units – stoker, fluidized bed, and pulverized coal-burning units. Dioxin limits (expressed in a ng/dscm TEQ basis) for these categories are as follows: existing and new coal stoker units (0.003 ng/dscm); existing and new fluidized bed units (0.002 ng/dscm); existing pulverized units (0.004 ng/dscm); and new pulverized units (0.003 ng/dscm). The rule also specifies dioxin limits for biomass-fired, liquid-fired and process-gas fired units.[58]

The Major Source Boiler MACT will affect units that are generally much smaller than coal-fired EGUs. For example, the largest of the Major Source Boiler MACT units are in the

[57] 76 Fed. Reg. 15,608 (March 21, 2011) (hereinafter "Major Source Boiler MACT").

[58] Major Source Boiler MACT at 15,612.

range of 1000 to 1500 MMBtu/hr, with the vast majority in the range of 200-800 MMBtu/hr. Indeed, many are much smaller than 200 MMBtu/hr. Coal-fired EGUs are significantly larger, with all units greater than 250 MMBtu/hr, and the largest ones being in the range of 8000 MMBtu/hr.

The Clean Air Act "establishes a 'clear statutory obligation to set emission standards for each listed HAP' that the source category emits."[59] Although CAA § 112(h) authorizes EPA to establish work pracatice standards and other requirements to the extent that "it is not feasible . . . to prescribe an emission standard for control of a hazardous air pollutant," there is no factual or legal justification to support EPA's failure to prescribe dioxin emission limits for EGUs.[60] Based on a similar factual record, including similar monitoring and detection issues, EPA has specified numerical dioxin limits for the smaller sources in the Major Source Boiler MACT Rule. Thus, there is no rational technical or legal basis for EPA's failure to set dioxin limits for EGUs.

III. The Draft NOMA and Amended Air Quality Permit Do Not Meet MACT-Floor Emission Standards for Non-Mercury Metal Hazardous Air Pollutants.

In the draft NOMA, EPA recites and accepts P4G's proposed MACT analysis for filterable PM as a surrogate for non-mercury metal HAP emissions. Draft NOMA at 6-12. P4G's analysis and EPD's reliance on it are flawed in several key respects.

First, while EPD must strongly consider EPA's proposed Power Plant MACT Rule, EPD may not fulfill its obligation to conduct a thorough, case-by-case MACT determination for Plant Washington simply by deferring to EPA's proposed rule. As noted above, EPA's proposal, while an important step toward regulating power plant HAP emissions, suffers from several flaws. With respect to EPA's proposed standards for non-mercury metal HAPs, the Environmental Organizations adopt and incorporate by reference comments filed by various environmental organizations to EPA's proposed Power Plant MACT Rule. A copy of those comments is attached as Attachment 1. Specifically, as those comments relate to EPD's proposed emission standards for non-mercury metal HAPs, the Environmental Organizations cite to Chapter IX, pages IX-1 through IX-84 of Attachment 1.

Second, P4G and EPD continue to misconstrue fundamental requirements of MACT floor determinations. P4G states that "*has serious concerns about the achievability of the non-*

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[59] *Mossville Environmental Action Now v. EPA*, 370 F.3d 1232, 1242 (D.C. Cir. 2004) (quoting *National Lime*, 233 F.3d at 634).

[60] 42 U.S.C. § 7412(h)(1) (2011).

mercury metal HAP emission limits contained in the Proposed EGU MACT. MACT emission limits must be actually achievable in practice under the worst reasonably foreseeable circumstances." (citing 40 C.F.R. § 63.43(d)(1); *Sierra Club v. EPA*, 167 F.3d 658, 665 (D.C. Cir. 1999)). Draft NOMA at 7. P4G is mistaken.

The MACT floor level of emission control "shall not be less stringent than the level of emission control that is achieved in practice by the best controlled similar source" (the "MACT floor"). 42 U.S.C. § 7412(d)(3), (g)(2)(B); 40 C.F.R. §§ 63.42(c)(2); 63.43(d)(1) (incorporated by reference at Ga. Comp. R. & Regs r. 391-3-1-.02(9)(a) and (b)(16)). In setting the MACT floor level of control, permitting authorities "may not deviate" from what "the best performers actually achieve." *Cement Kiln Recycling Coalition v. EPA*, 255 F.3d 855, 861-62 (D.C. Cir. 2001). The D.C. Circuit Court of Appeals[61] has consistently rejected any attempts by regulators to deviate from this strict standard. *See, e.g., Northeast Maryland Waste Disposal Authority v. EPA,* 358 F.3d 936, 955 (D.C. Cir. 2004) ("EPA has once again improperly invoked achievability ... (incorrectly relying on the emission variability of ***all*** [sources] ... rather than on the variability of the ***best performing*** unit) to gloss over the actual achievement requirement.") (emphasis in original).

Third, EPD did not conduct a beyond-the-floor MACT analysis specific to Plant Washington, again simply deferring to P4G's discussion of EPA's proposed Power Plant MACT Rule. In particular, EPD accepts P4G's observation that, in assessing beyond-the-floor controls for filterable PM as a surrogate for non-mercury metal HAPs, "*EPA also investigated the possibility of fuel switching, such as the use of natural gas, as a beyond the floor option . . . [and] determined that natural gas is not available at all locations or in sufficient quantities . . .*". *See* Draft NOMA at 8. EPD's acceptance of P4G's rationale for rejecting fuel-switching to natural gas as a beyond-the-floor control option for Plant Washington confirms that EPD did not require or conduct a case-by-case analysis specific to Plant Washington. There is no indication or discussion in the record about whether natural gas is available in sufficient quantities at the Plant Washington location such that fuel-switching could be considered a viable beyond-the-floor control option. Simply put, EPD did not require or conduct a case-specific beyond the floor analysis.

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[61] Like decisions of the Supreme Court, which represent "the controlling interpretation of federal law," *Harper v. Va. Dept of Taxation*, 509 U.S. 86, 97 (1993), decisions of the D.C Circuit Court of Appeals represent the controlling interpretation (unless overturned by the Supreme Court) of regulations promulgated under the CAA, as the Act vests in the D.C. Circuit exclusive jurisdiction for suits challenging such regulations. 42 U.S.C. § 7607(b)(1).

Fourth, the Draft NOMA lacks adequate assurances that compliance with the filterable PM limit (which is already flawed because it is not sufficiently stringent) will demonstrate adequate control of the various HAP metals Plant Washington will emit. In order to provide for greater correlation between filterable PM emissions control and control of the non-mercury HAP metals, compliance should be calibrated and assessed by: (a) periodic stack tests for each metal with the control efficiency of the bag house measured at the same time (based on the metal input to the boiler *via* coal during the test); (b) measurement of bag house operating parameters such as pressure drop and fan amperes during the periodic test and establishment of proper ranges for these indicator parameters that will ensure that the bag houses are properly maintained and operated at the efficiency observed during the test; (c) weekly measurement of the coal metal content; and (d) continuous compliance of the bag house operating parameters with the indicator ranges established during the last periodic test. In addition, EPD should reconsider and require the use of the bag leak detection system, which Plant Washington proposed, as an indicator of proper control maintenance and operation.

IV. The Draft NOMA and Amended Air Quality Permit Do Not Meet MACT-Floor Emission Standards for Organic Hazardous Air Pollutants.

In the draft NOMA, EPA also recites and accepts P4G's proposed MACT analysis for CO as a surrogate for organic HAP emissions. Draft NOMA at 13-16. P4G's analysis and EPD's reliance on it are flawed in several key respects.

First, as noted above, while EPD must strongly consider EPA's proposed Power Plant MACT Rule, EPD may not fulfill its obligation to conduct a thorough, case-by-case MACT determination for Plant Washington simply by deferring to EPA's proposed rule. Although EPA's proposal is an important step towards regulating power plant HAP emissions, the Rule as proposed suffers from several flaws. With respect to EPA's proposed standards for organic HAPs, the Environmental Organizations adopt and incorporate by reference comments filed by various environmental organizations to EPA's proposed Power Plant MACT Rule. A copy of those comments is attached as Attachment 1. Specifically, as those comments relate to EPD's proposed emission standards for organic HAPs, the Environmental Organizations cite to Chapter IX, pages IX-1 through IX-84 of Attachment 1.

Second, as discussed above in Section II. D., P4G's analysis is fundamentally flawed with respect to CO as a surrogate for dioxins and furans. At page 13 of the Draft NOMA, EPD recites (and later approves) P4G's premise for relying on CO as a surrogate for directly regulating organic HAP emissions, including dioxins and furans:

> *Plant Washington proposes the use of CO as a surrogate for organic HAPs. CO and organics are both products of incomplete combustion. Thus, the good*

> *combustion practices that serve as effective pollution control to reduce CO emissions will also indiscriminately act to reduce the emissions of organic HAPs. CO will also be continuously monitored with a CEMS.*

Unlike CO, which is formed and destroyed solely within the boiler, dioxins and furans can form post-combustion. Additionally, unlike CO, dioxins and furans can be controlled with downstream controls, such as the duct sorbent injection ("DSI") and fabric filter baghouses. Significantly, Plant Washington is designed with both DSI and a fabric filter baghouse. Thus, it is not appropriate to rely on CO as a surrogate for controlling dioxins and furans.

Third, even for those organic HAPs formed and controlled in the boiler only, tracking CO emissions with CEMS is not an appropriate method for meeting MACT emission requirements for organic HAPs. Instead, for organic HAP emissions generated in the boiler and for which there are no post-combustion controls, the compliance determination method should be based on combustion operating variables such as air/fuel ratios in the primary and over-fire air zones, temperature of the exhaust gases at critical points in the flue gas path, and residence time of the exhaust gases in the post-over-fire air region, where the temperatures are high enough to oxidize or destroy organic HAPs formed in the primary combustion zone. EPD should require calibrating organic HAP emissions based on these variables (and others) to determine optimum boiler operating parameters during in the initial testing time period. Thereafter, EPD should require that operation of the boiler within the optimal range for organic HAP destruction, and should require monitoring of these operating variables to demonstrate continuous compliance.

Fourth, the Draft NOMA and Amended Permit impermissibly prioritize control of nitrogen oxide ("NOx") emissions at the expense of optimal control CO as a surrogate for organic HAPs. The Draft NOMA accepts P4G's request to specify as a CO work practice a requirement to "*[o]ptimize total emissions of CO and NO_X. This optimization will be consistent with the manufacturer's specifications and the requirements of Permit No. 4911-303-0051-P-01-0.* Draft NOMA at 15. As EPD has explained with respect to Plant Washington, EPD focused on NO_X controls and developed the Plant Washington permit to have the lowest NO_X emission limits of any permit in the country due to ozone pollution problems in the area. Moreover, EPD has taken the position that there is a trade off between control of NO_X and other pollutants – including CO. Nevertheless, because Plant Washington would be a major source of NO_X emissions in a region that would affect ozone concentrations in nearby areas that have not attained the ambient standard for ozone pollution or are in danger of ozone non-attainment, EPD decided to maximize NO_X control and to then calibrate other pollutant emission limits based on the operating parameters for the boiler and the pollution control operating constraints required to meet the NO_X emission limits. Thus, in this case, the "good combustion practices" required by the Plant Washington permit are designed to minimize NO_X formation and to maximize NO_X

control, even if they will not achieve the best level of CO or other organic HAP control. This is unlawful. MACT standards are imperative; operating requirements necessary to assure compliance with MACT standards should take priority over operating conditions needed to meet BACT emission limits for other pollutants, as EPD has previously acknowledged.[62]

V. The Draft NOMA and Amended Air Quality Permit Do Not Meet MACT-Floor Emission Standards for Mercury and Acid Gas Hazardous Air Pollutants.[63]

As discussed in Section I above, the Clean Air Act and federal and Georgia state regulations require P4G and EPD to reconsider and revise the draft NOMA and Amended Permit in accordance with the EPA's proposed Power Plant MACT Rule. *See, e.g.,* 61 Fed. Reg. 68,384, 68,394 (explaining "if a Federal MACT standard has been proposed, but not yet promulgated, the EPA expects that a MACT determination will strongly consider that proposal").[64] This obligation encompasses all aspects of the draft NOMA and Amended Permit, including the proposed mercury and acid gas HAP emission limits, and requires EPD to re-evaluate and, where necessary, revise all relevant terms, conditions, and emissions limitation requirements for Plant Washington to at least meet the requirements of the proposed Power Plant MACT Rule.

P4G erred by limiting its consideration to EPA's proposed MACT requirements for PM as a surrogate for non-mercury metal HAPs and CO as a surrogate for organic HAPs, completely ignoring EPA's proposed MACT standards for mercury and acid gas HAPs. In its application, which EPD now proposes to endorse in the draft NOMA, P4G recommended revising the emission limits for non-mercury metal and organic HAPs to comport with EPA's limits for those pollutants in the proposed Power Plant MACT Rule. Neither P4G nor EPD re-evaluated or

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[62] *See* hearing transcript, *Fall-Line Alliance for a Clean Environment, et al. v. F. Allen Barnes, Director, Environmental Protection Division, et al.,* Docket No. OSAH-BNR-AQ-1031707-98-Walker (Sept. 28, 2010), at p. 1635.

[63] The Environmental Organizations also adopt and incorporate by reference comments filed by various environmental organizations to EPA's proposed Power Plant MACT Rule. A copy of those comments is attached as Attachment 1. Specifically as those comments relate to EPD's proposed emission standards for mercury and acid gas HAPs, the Environmental Organizations cite to Chapter IX, pages IX-1 through IX-84 of Attachment 1.

[64] As discussed in the sections addressing EPD's proposed PM and CO limits, however, consideration of the proposed MACT standards alone does not end the case-by-case MACT analysis. In directing permitting authorities to consider all available information when conducting case-by-case MACT determinations, EPA has explained that "[o]ther information may be available in some cases, for example, based upon public comment on the MACT proposal, but such data would need to be adequate to refute the finding in the proposal. In other cases, EPA will have generated background documents summarizing MACT findings which should be readily available." 61 Fed. Reg. 68,384, 68,394.

recommended revisions in the draft NOMA and Amended Permit to the mercury and acid gas emission limits, or the case-by-case MACT determination for the auxiliary boiler. Instead, the draft NOMA states

> This permitting action is in response to the OSAH final decision by Judge Walker on December 16, 2010, remanding the permit back to EPD for the limited purpose of re-addressing the case-by-case MACT review for non-mercury metals and organic HAPs. No changes will be made to the case-by-case MACT determinations for mercury or acid gases for the coal-fired boiler, or the case-by-case MACT determinations for the auxiliary boiler.

Draft NOMA at 6.

This is a significant error that, if not corrected, would render the final NOMA and Amended Permit unlawful. EPD originally issued a case-by-case MACT determination on April 8, 2010. The original determination was based upon information available at that time, which did not include either the proposed Power Plant MACT Rule or the data and analyses underpinning it. On May 10, 2010, Petitioners filed a challenge to the PSD Permit. While the Georgia Air Quality Rules provide that a NOMA becomes effective upon the EPD's issuance of the air construction permit[65], Petitioners' challenge stayed the Permit and its accompanying MACT Approval pending a final decision from the Administrative Law Judge ("ALJ"). *See* O.C.G.A. § 12-2-2(c)(2)(B) ("In any case involving the grant of a permit ... the filing of such a petition by a person to whom such order or action is not directed shall stay such order or action until such time as the hearing has been held and for ten days after the administrative law judge renders his or her decision on the matter.").

The ALJ issued a "Final Decision" reversing the Permit on December 16, 2010. EPD and P4G subsequently filed a joint motion seeking to clarify that the Court's reversal of the Permit did not mean that "P4G must apply for, and EPD must issue, an entirely new permit for Plant Washington." In response, the ALJ entered a "Revised and Interlocutory Decision" on January 18, 2011. The revised order clarified that the Court was granting two of Petitioners' challenges (*i.e.,* Petitioners' claims that the permitted limits for PM as a surrogate for non-mercury metals and CO as a surrogate for organic HAPs did not meet MACT standards); was denying Petitioners' remaining claims; and was remanding the Permit to the EPD for the "sole and limited purpose of addressing the deficiencies noted" in the Court's December 16, 2010 Final Decision. The Court added, "[n]o other provisions of the Permit need be addressed on remand." Finally, the ALJ noted that given the remand, her revised decision was interlocutory and non-appealable: "The right to appeal any ruling set forth in the December 16, 2010 Order

[65] *See* Ga. Comp. Rules & Regs. r. 391-3-1-.02(9)16(vii).

shall be expressly preserved during the pendency of the remand and may be asserted by any party after a final decision by this Court."

Based on this background, the draft NOMA incorrectly states that "the court ultimately affirmed the Permit in most respects." June 2011 Notice of MACT Approval at 1. EPD and P4G did, in fact, urge the Court to "affirm the Permit in all respects," other than the two MACT limits found defective in the December 16, 2010 Order, and included in their joint proposed order specific language to that effect. However, the ALJ declined their request and did not adopt their proposed language. Instead, the ALJ properly limited the revised order to clarifying which of Petitioners' claims were granted, which were denied, and what actions were required of EPD on remand to afford appropriate relief for Petitioners' successful claims.

Contrary to EPD's assertion in the NOMA, the Court did not "affirm" the Permit's MACT limits for mercury and acid gases or any other aspect of the Permit. In fact, it would have been inappropriate for the Court to affirm portions of the Permit that were not addressed in Petitioners' challenge. Although the Court stated that "[n]o other provisions of the Permit need be addressed on remand," this was in the context of clarifying the scope of relief required to redress Petitioners' successful claims. The statement does not preclude EPD from taking the permitting actions required by both federal and Georgia law in light of regulatory developments post-dating the Court's decision by almost five months. In other words, the Court's holding that EPD "need not address" other aspects of the permit does not mean EPD "shall not address" any other provision of the permit, particularly where intervening regulatory developments mandate additional review and revision. Simply put, the Court's Revised and Interlocutory Order remanding the Permit does not insulate the Permit, or any part of it, from the effects of the proposed Power Plant MACT Rule, nor does it preclude review and revision of the MACT limits for mercury and acid gas HAPs.

Subsequent to the Court's Order, P4G filed its application for a NOMA on April 18, 2011. Notably, by April 18, 2011, EPA's proposed Power Plant MACT Rule was publicly available (though it had not yet been published in the Federal Register).[66] P4G thus had ample ability to consider the proposed Power Plant MACT Rule and, in fact, did so, acknowledging that it would be "bound by any final source category MACT emission limits promulgated by EPA, even if those limits are lower than the limitation established by EPD on a case-by-case basis."

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[66] EPD and P4G were well aware – or certainly should have been aware – that EPA was required to issue proposed MACT standards for coal- and oil-fired EGUs by no later than March 16, 2011, pursuant to a consent decree entered by the Federal District Court for the District of Columbia. On May 3, 2011, almost five months after the ALJ's revised order and while the Permit was on remand, EPA published its proposed Power Plant MACT Rule in the Federal Register, though the substantive provisions of the rule were publicly available as of March 16, 2011.

See June 2011 Notice of MACT Approval at 7. This statement holds true not only with respect to EPA's final MACT limits for non-mercury metal HAPs and organic HAPs, but also for the MACT emission limits for mercury and acid gases. Nevertheless, in its application on remand, P4G failed to consider EPA's proposed MACT emission limits for mercury and acid gases. Similarly, the draft NOMA and Amended Permit do not re-evaluate or revise the emission limits for mercury and acid gases. P4G and EPD have attempted to justify these omissions based on the erroneous claim that the Court's remand order prevents them from doing so. To the contrary, the Court's Order does not preclude EPD from reconsidering and revising the MACT requirements for mercury and acid gas emissions. The Clean Air Act, the proposed Power Plant MACT Rule, and Georgia's SIP all require EPD to exercise its legal obligation to consider the MACT emission limits and requirements of the proposed Power Plant MACT Rule and to revise the Amended Permit based on full consideration of all MACT standards contained in the proposed rule, including the standards for controlling mercury and acid gas HAPs.

P4G and EPD's failure to re-evaluate and revise the MACT emission limits for mercury and acid gases is significant and would unnecessarily expose people and the environment to excessively high levels of those toxic air pollutants. The emission limits for mercury in the current permit are 34-38 times greater than the new source MACT floor limits in the proposed Power Plant MACT Rule (0.0002 lb/GWh), and 210 times higher than the level of emission control achieved in practice by the best controlled similar source (Spruance Genco, Unit 2) . *See* Attachment 2, Sahu Spreadsheet *Summary of Findings - Comparing Plant Washington Proposed HCl and Mercury Limits to Proposed EGU MACT and Data.*[67] Stated another way, under the draft NOMA, Plant Washington could emit anywhere from 66.2 pounds of mercury per year (if burning 100% sub-bituminous coal) to 55.6 pounds of mercury per year (if burning a 50:50 blend of bituminous and sub-bituminous coal). *Id.* By contrast, under the proposed MACT, Plant Washington's maximum annual emissions of mercury could not exceed 1.63 pounds per year. Moreover, if Plant Washington performed as well as the lowest emitting similar source, its mercury emission would not exceed 0.28 pounds per year. *Id.*

Similarly, the draft NOMA would allow far greater emissions of HCl, as a surrogate for all acid gas HAPs, than allowed under the proposed Power Plant MACT Rule. The draft NOMA would allow Plant Washington to emit 23,412 pounds of HCl when burning sub-bituminous

[67] Dr. Sahu derived these spreadsheets directly from data obtained by EPA pursuant to its ICR, which EPA used to develop the Power Plant MACT Rule. These data are publicly available and, in fact, EPD has indicated that it has reviewed EPA's proposed Power Plant MACT Rule and the data and supporting documents on which the rule is predicated. Based on EPD's assertions, the Environmental Organizations are not reproducing and attaching those data here, but reserve the right to do so if EPD later contends, contrary to its representations in the draft NOMA, that it has not reviewed these data or that they are not part of this permitting record.

coals, up to 98,883 pounds of HCl every year when burning a 50:50 blend of bituminous and sub-bituminous coals. *Id.* Under the proposed Power Plant MACT Rule, Plant Washington would be prohibited from emitting more than 2,444 pounds of HCl per year. *Id.* In other words, the draft NOMA would allow Plant Washington to emit HCl at levels that exceed the emissions allowed under the proposed Power Plant MACT Rule (0.0003 lb/MWh) by 11 times for sub-bituminous coal and 45 times for the 50:50 blend of coal types. *Id.* The permitted emission levels also exceed the level of emission control achieved by the best performing unit (the test data for Logan, Unit 1 shows HCl emissions of 938 pounds per year) by a factor of 25 to 105 times. *Id.*

P4G and the draft NOMA would accomplish this unlawful and dangerous result by ignoring and circumventing applicable MACT requirements for new affected power plant sources like Plant Washington. As discussed in Section I above, Plant Washington is a "new affected source" under the Power Plant MACT Rule. P4G did not have a final NOMA when EPA published its proposed Power Plant MACT Rule. P4G still does not have a final NOMA, as the draft NOMA and Amended Permit currently are before EPD for review, revision, and approval. P4G is months away from commencing construction. As designed, particularly considering the modifications to the fabric filter baghouse in the draft NOMA, Plant Washington will have the full complement of pollution control equipment needed to comply with all emission limit requirements in EPA's proposed Power Plant MACT Rule, including the mercury and acid gas MACT limits.[68] Thus, considering the proposed Power Plant MACT limits for mercury and acid gases, as required by law, would not require P4G to "redo the entire permitting process" or to redesign the facility. On the other hand, reconsidering the mercury and acid gas MACT limits would comply with the federal and Georgia SIP directive to give appropriate consideration to the requirements of EPA's proposed Power Plant MACT Rule. Accordingly, P4G and EPD must strongly consider all of the requirements of EPA's proposed Power Plant MACT Rule, including the MACT standards for mercury and acid gases, and not merely selected provisions of the rule.

VI. Conclusion

For the reasons discussed above and in the attached documents, the Draft NOMA does not meet the minimum legal requirements for case-by-case MACT determinations pursuant to CAA § 112(g), federal regulations implementing MACT requirements, and Georgia's SIP. Thus,

[68] EPA derived the proposed Power Plant MACT limits based on its review of actual emissions data from existing sources that relied on pollution controls that are similar to – or even older and less effective – than the pollution controls specified for Plant Washington. Thus, P4G cannot claim that it is "impracticable" for Plant Washington to comply with the Power Plant MACT Rule immediately upon startup of the unit.

the Environmental Organizations respectfully urge EPD to deny P4G's application for a case-by-case MACT approval for Plant Washington.

Respectfully submitted on behalf of Environmental Organizations by,

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With Attachments (exhibits and other references cited above)