August 27, 2009

Dean Ponchak
Ohio EPA, DAPC
Southeast District Office
2195 Front Street
Logan, Ohio 43138

Mike Hopkins
Ohio EPA, DAPC
Central Office
50 West Town Street, Suite 700
Columbus, Ohio 43215

RE: AMPGS Permit to Install 06-08138
Ohio EPA's Draft Action for Case-by-Case MACT

Dear Dean and Mike:

American Municipal Power, Inc. (AMP) has continued to evaluate comments received during the public process related to Ohio EPA's draft action to add Section 112(g) case-by-case maximum achievable control technology (MACT) requirements in PTI 06-08138 for AMP's American Municipal Power Generating Station (AMPGS). As you know, AMP submitted comprehensive answers to address these comments on July 21, 2009 and requested that Ohio EPA consider lowering the draft MACT emission limits for HCl, HF and PM-10 (as a surrogate for metal HAPs) as part of that submittal. Please consider this letter and attachments a supplement to the July 21, 2009 submittal and all earlier submittals by AMP as part of the case-by-case MACT process.

The primary reason for the submittal is to notify Ohio EPA that AMP proposes to move forward with the installation of sorbent injection/activated carbon injection (ACI) as a supplement to the overall air pollution control system for the AMPGS. As you know, AMP previously contemplated sorbent injection/ACI as part of this case-by-case MACT process. After careful consideration, AMP had eliminated the use of ACI for several reasons, most significantly based on high costs and a determination that it was not likely that the use of ACI would result in any significant additional mercury control given the host of control equipment for the AMPGS and the use of a wet scrubber couple with the use of blends of both eastern and western coals.

While AMP continues to maintain its previous position that sorbent injection/ACI is not cost-effective, both pursuant to Ohio EPA cost guidance as well as USEPA cost determinations, AMP recently concluded that sorbent injection/ACI may provide the possibility of additional mercury emission control.

As such, AMP will agree to commit to installing sorbent injection/ACI at AMPGS in an effort to capture and control the very small portion of mercury that is not controlled by AMPGS's other control technologies. Combined, the control technologies proposed by AMP represent the most robust air pollution control equipment that is commercially available. To that end, attached as Addendum 1 please find a letter, issued by AMP's engineer R.W. Beck, that addresses the control technologies proposed for AMPGS and confirms that these technologies represent the maximum and best control technologies available to control the emissions of mercury and all other MACT pollutants.

Contemporaneous with the decision to utilize sorbent injection/ACI, AMP also made the decision to lower the proposed beyond-the-floor MACT emission limit for mercury from 1.9 lb/TBtu to 1.4 lb/TBtu per rolling 12-month period. While it is AMP's position that the new proposed limit will be a challenge for long-term achievability for the AMPGS, we have confirmed with R.W. Beck and our pollution equipment control vendors that AMP can commit to this lower proposed emission limit. R.W. Beck's confirmations regarding mercury and the other proposed MACT emission limits are also included in the attached letter. AMP requests that Ohio EPA consider this new lower, proposed mercury emission limit of 1.4. lb/TBtu per rolling 12-month period in making its final decision regarding the case-by-case MACT for AMPGS.

Also attached are Addendum 2 and 3, found in AMP's previous submittals, that have been updated to reflect AMP's decision to propose to install sorbent injection/ACI and to lower the mercury emission limit to 1.4 lb/TBtu.

Finally, we noted that, while we referenced the United States Geological Survey COALQUAL database in earlier submittals, we did not provide a web link. You can find the database at: http://energy.er.usgs.gov/products/databases/CoalQual/index.htm.

As always, please do not hesitate to contact me or Randy Meyer if you have any questions concerning this letter or attachment.

Sincerely,

Jolene M. Thompson
Senior Vice President
AMP

August 27, 2009

R·W·BECK
An SAIC Company

Mr. Randy Meyer
American Municipal Power, Inc.
1111 Schrock Road, Suite 100
Columbus, Ohio 43229

RE: **American Municipal Power Generating Station**

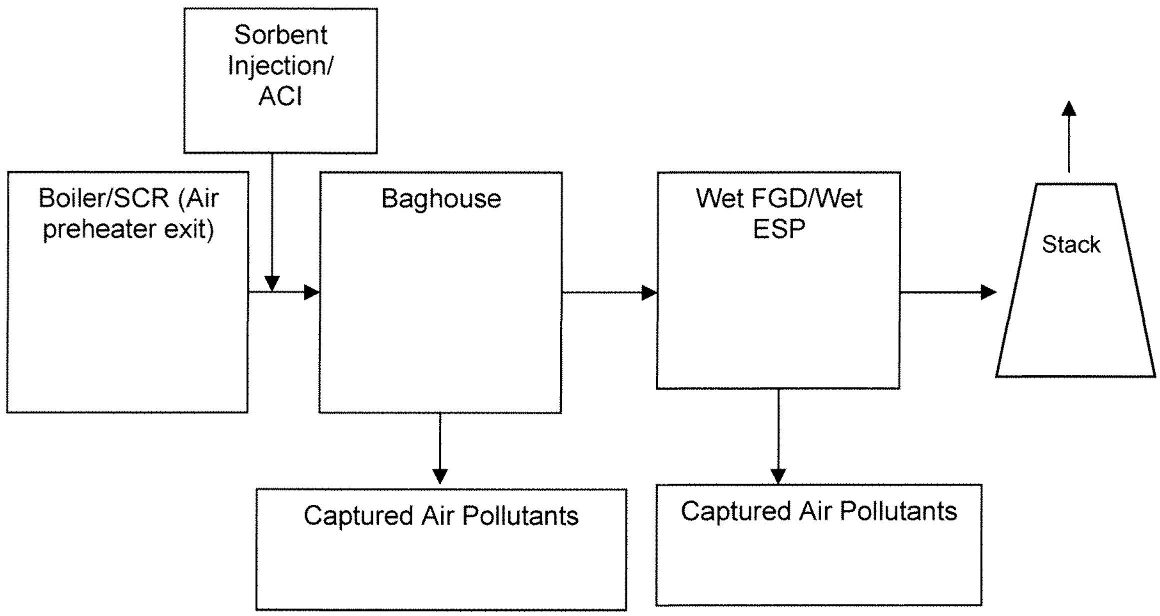
Dear Randy:

American Municipal Power (AMP) requested that R. W. Beck review the air quality control systems (AQCS) proposed for the American Municipal Power Generating Station (AMPGS) and render opinions/confirmations regarding vendor/supplier information (control technology and proposed emission limits) related to AMP's case-by-case maximum achievable control technology (MACT) application. The information presented herein is based on R. W. Beck's knowledge and experience in the utility industry as well as AMPGS specific design, vendor and supplier information as applicable.

GENERAL AIR QUALITY CONTROL PARAMETERS

The AMPGS is a new greenfield power plant with two identical coal-fired boilers. Each unit will have a separate AQCS system and its own stack. The AQCS will combine state-of-the-art proven control equipment and work practices and will utilize, for the first time in large utility scale application, an innovative Wet flue gas desulfurization (FGD) packed bed ammonia scrubber supplied by Powerspan. Overall, the AMPGS will include the following AQCS: staged combustion process control (including overfire air (OFA) and low-NO_X burners), Selective Catalytic Reduction (SCR), Fabric Filter/Baghouse, Powerspan Wet FGD Scrubber and a Wet Electrostatic Precipitator (ESP). As an additional control measure for mercury, AMP has recently concluded that a sorbent injection/activated carbon injection (ACI) system may provide the possibility of additional mercury emission control; thus, AMP has proposed to install sorbent injection/ ACI. The following diagram shows a diagram of the AQCS:

1801 CALIFORNIA STREET, SUITE 2800 DENVER, CO 80202 (P) 303.299.5200 (F) 303.297.2811



Additional details regarding each of the control equipment are set forth as follows:

Staged Combustion Process Control (including OFA and Low-NO_X Burners)

AMPGS will use staged combustion process controls to meet the carbon monoxide (CO) and volatile organic compounds (VOC) emission limits. Nitrogen oxides (NO_X) emission limits will be met by the combustion controls in combination with an SCR system. While only CO, as a surrogate for organic Hazardous Air Pollutants (HAPs), is the subject of AMP's case-by-case MACT application, it is important to address CO, VOC and NO_X together since the combustion process, equipment and techniques used impact the emissions of all three criteria pollutants. The boilers at AMPGS, as well as the combustion controls and SCR, will be provided by Hitachi. Each boiler is designed to produce superheated steam. Coal is pulverized and transported to low NO_X burners where combustion in suspension occurs. The pulverizers feed low NO_X burners that are mounted on the front and rear walls of the boiler furnace.

Low-NO_X coal burners, OFA staged combustion and SCR will be used to achieve the emission limits for NO_X, CO and VOC. The low NO_X burners and OFA achieve low NO_X values without adversely affecting flame temperature, thereby reducing the tradeoff between NO_X reduction and unburned carbon loss. In other words, more complete combustion minimizes the emissions of CO and VOC while also minimizing the production of NO_X in the boiler. During the initial commissioning of the units the inlet damper positions will be measured and programmed ("tuned") against air flows to achieve the staged combustion ratio design that results in NO_X reduction and complete combustion.

Low-NO_X burners control the mixing of fuel, coal transport (primary) air, and combustion (secondary) air so that ignition and initial combustion of the coal occurs in an oxygen-deficient atmosphere. Controlling excess oxygen during the ignition and initial combustion zone of the burner limits the formation of NO_X compounds. Limited secondary air is injected downstream of the burner's ignition and initial combustion zone to provide additional air to allow combustion of the pulverized coal to approach completion while maintaining a sub-stochiometric fuel/air ratio.

The OFA system further controls the formation of NO_X emissions by injecting the remaining secondary air required to complete combustion through overfire air ports located at a higher elevation in the furnace. In this cooler flame temperature zone, combustion of any unburned fuel or incomplete combustion products leaving the burner zone is completed. This controlled combustion process limits flame temperature and subsequent dissociation of molecular nitrogen in the presence of excess oxygen, thereby controlling formation of NO_X emissions leaving the furnace.

Selective Catalytic Reduction (SCR)

Once the combustion gases exit the boiler economizer, they flow to the SCR where the flue gas is injected with ammonia vapor (produced from urea) before passing through the catalyst bed where NO_X is converted to nitrogen (N_2) and water vapor. The ammonia injection grid is designed to provide optimal mixing of ammonia with flue gas. The SCR catalyst bed supplied by Hitachi will be the TRAC catalyst which controls nitrogen oxide compounds and encourages mercury oxidation. Hitachi has offered a guarantee, based on the use of the TRAC catalyst, that 10% or less mercury will remain in elemental form after the SCR. This guarantee is consistent with or superior to similar offerings based on R. W. Beck's knowledge and experience. The SCR TRAC catalyst which operates most efficiently at temperatures in the range of 700 °F includes catalyst arranged in layers. The SCR is designed for catalyst replacement every 24,000 hours of operation which is consistent with or superior to similar offerings from other boiler/SCR vendors based on R. W. Beck's knowledge, experience and recent communications with vendors.

Sorbent Injection/ACI

A sorbent injection/ACI system will be installed in an effort to potentially add additional control of mercury emissions. The sorbent injection/ACI system is installed prior to the baghouse and includes storage capacity for sorbent, activated carbon, injection fans to inject the sorbent and activated carbon into the flue gas and associated controls to regulate the injection rates into the flue gas. ACI controls mercury emissions by the process of adsorption due to its large surface area (i.e., mercury is adsorbed or attached onto the ACI). The dry sorbent injection (typically in the form of trona or hydrated lime) is used to control the concentration of sulfur trioxide (SO_3) so that the SO_3 does not interfere with the ability of the ACI to adsorb mercury.

Fabric Filter/Baghouse

Particulate matter (PM), including filterable PM, Metal HAPs and particulate-bound mercury, will be controlled by a pulse jet fabric filter/baghouse before the flue gas passes through a pair of induced draft (ID) fans. The flue gas will be distributed in compartment areas and pass through individual filter bags before discharge into the downstream ductwork. A sequential online cleaning mode will pulse a medium pressure jet of air to dislodge flyash from the bags. The flyash is collected in the hoppers before pneumatic transport to storage silos. The fabric filter/baghouse represents the most stringent method of particulate emissions control at recently permitted power plants.

The AMPGS baghouse is designed with an air to cloth ratios of 3.5:1 and a collection area of 470,000 ft^2. Each boiler island will have its own compartmentalized baghouse that will have up to 15,000 individual bags, each approximately 30 feet long and five inches in diameter. Bag replacement, when required, can be accomplished while the generating unit remains on line by isolating the individual compartment where the replacement is required.

Ammonia Wet FGD/Wet ESP

The Wet FGD system at AMPGS consists of a single ECO-SO_2 absorber vessel per unit in which dissolved ammonia and injected oxygen contacts the sulfur dioxide (SO_2) in the flue gas to form ammonium sulfate. The ammonium sulfate is removed as slurry, dried, and sold as a commercial fertilizer. In addition to SO_2 control, the AMPGS Wet FGD system will also remove other acid gases, hydrogen chloride (HCl) and hydrogen fluoride (HF); oxidized mercury; and particulate material remaining after the baghouse.

Flue gas from the ID fans enters the lower section of the ECO-SO_2 absorber vessel just above the liquid level. The flue gas passes upward through a liquid contact distribution tray and into the packed-column spray tower. Recirculation pumps circulate ammonia liquor from the sump of the vessel to two levels of spray headers to provide contact between the scrubber liquor and the flue gas. The lower loop primarily cools the incoming flue gas and concentrates ammonium sulfite formed in the upper loop when acid gases react with the ammonia. Oxidation air is injected into the sump to oxidize the final product to ammonium sulfate, which is removed for further processing into commercial fertilizer.

A Wet ESP is located at the top of the absorber vessel to control aerosols/fine PM emissions (including HAPS that may be in aerosol form). Treated gas from the absorber upper loop enters the Wet ESP where aerosols are removed. As the aerosols and fine particulates enter the grounded collection tubes they become charged from negatively charged emitting electrodes. The negatively charged particles adhere to the wetted collection tube and are periodically flushed down into the ECO-SO_2 absorber.

Flue gas containing fine particulates, aerosols, and entrained water droplets enter the ground collection tubes in the Wet ESP, which are bundled between two tube sheets in a honeycomb type arrangement. The aerosols and water droplets keep the inside surface of the tubes continually wetted. In the middle of each grounded collection tube is a corona-generating electrode which is powered by automatically-controlled high voltage transformer rectifiers. Power levels are controlled to maintain optimum collection efficiency by regulating to an ideal power input while moderating the frequency and intensity of sparks.

Each mechanical field is further divided into electrical sections that are periodically shut down on a rotating basis to allow flushing the collected material from the tubes. Above the collection tubes is a set of spray headers which supply flush water through automatic flushing valves. The electrodes are insulated from the frame and purge air blowers protect the high voltage feed housings from flue gas intrusion that could compromise their electrical integrity.

Summary of AQCS

Based on R. W. Beck's knowledge, experience and research, the AQCS proposed for the AMPGS represent the top, maximum control technologies that are proven and commercially available for control of HAPs.

THE AMPGS PROPOSED CASE-BY-CASE MACT EMISSION LIMITS

Mercury Emission Limit

Establishing a case-by-case mercury emission limit for AMPGS considered numerous factors and was based on the following general, fundamental observations:

- Mercury comes from fuel, and mercury content and speciation vary widely across coal ranks and even within the same or similar coal seams
- Mercury emissions are primarily speciated into three basic forms: elemental, particulate, and oxidized form and mercury can change form as the flue gases move through the AQCS.
- The oxidized form of mercury is water soluble and can be effectively removed by the fabric filter/baghouse and the Wet FGD.
- The use of SCR systems to control NO_X aid in the further oxidation of elemental mercury that can be removed by the other AQCS equipment (Wet FGD, baghouse/fabric filter/Wet ESP).
- There is a higher degree of oxidized mercury resulting from the combustion of coals with higher chlorine contents such as eastern bituminous coals.
- Particulate mercury can be removed in particulate collection devices such as fabric filters/baghouses and ESPs.
- A small amount of elemental mercury may be expected to be controlled by the particulate control devices and the Wet FGD. However, the control level of elemental mercury is difficult to predict.

As explained above, AMPGS is equipped with a state-of-the art AQCS that includes an SCR, baghouse/fabric filter, a Wet FGD and a Wet ESP. Each of these emission control devices will either directly remove or contribute to the removal of mercury from the flue gas. In addition, AMP recently determined that the installation of sorbent injection/ACI has the potential to further reduce mercury emissions. Thus, AMP has updated its Section 112(g) case-by-case MACT submittal to propose the use of sorbent injection/ACI. R. W. Beck had previously concluded that ACI could be eliminated as a control technology for AMPGS based on collateral impacts since ACI is not cost-effective (costs per pound removed ranged between $54,000 and $106,000 for ACI with additional costs for sorbent injection); this analysis, presented to Ohio EPA in April 2009, remains current. Typically, ACI is utilized by electric generating unit (EGU) projects burning purely western coals (primarily PRB) which have a higher proportion of elemental mercury and operating with dry FGDs. At the AMPGS, elemental mercury is expected to be no more than 10% of the total mercury. Sorbent injection/ACI will be used in an effort to capture this remaining small amount.

Starting with the SCR, AMP has committed to utilizing Hitachi's TRAC catalyst to promote mercury oxidation which makes the mercury easier to capture in the downstream control equipment. Hitachi has offered a guarantee that the combustion equipment and catalyst will release no more than 10% elemental mercury at the fabric filter/baghouse inlet. Hitachi offers the TRAC catalyst as a superior product in promoting oxidation of mercury. Powerspan's Wet FGD is expected to remove at least 90% of oxidized mercury entering the Wet FGD. The baghouse/fabric filter is also expected to remove mercury (primarily particulate mercury). Thus, the addition of the sorbent injection/ACI is an attempt to capture the incremental amount of mercury that is not captured elsewhere in the AQCS. R. W. Beck has concluded that the overall AQCS proposed by AMP represents the maximum control technologies that are proven and commercially available to control mercury.

In determining whether or not the AMPGS could achieve a "beyond the floor" mercury emission limit, R. W. Beck believes the following considerations must be evaluated:

- The maximum available controls that are commercially available and proven are being installed.
- The mercury emission limit must provide flexibility in fuel procurement during the life of the project.
- There must be a high degree of engineering confidence that the mercury emission limit can be met at all times under all operating scenarios and for the life of the facility.
- The mercury emission limit is established after reviewing and considering recently permitted facilities utilizing generally similar fuels (i.e. mixed fuel projects).

With the addition of sorbent injection/ACI, AMP has proposed a mercury emission limit of 1.4 lb/TBtu. This limit was identified taking into account the degree of control achievable by the various components of the AQCS over the life of the facility and considering the full range of fuels that could be used. Overall, the control level needed to reach this emission limit is estimated at more than 90% when the full range of fuels are considered (including eastern bituminous and western sub-bituminous coals). The 1.4 lb/TBtu mercury emission limit proposed by AMP is representative of the most stringent control limit set forth at other recently permitted mixed fuel facilities. Specifically, in its Section 112(g) case-by-case MACT application and supporting documentation, AMP identified two proposed but not-yet in operation projects: Trimble and Thoroughbred, that have proposed similar coals (utilizing eastern bituminous and western sub-bituminous coal blends). Trimble has the most stringent mercury limit of the two at 1.4 lb/TBtu. AMP also considered one additional project, Consumers Energy's Karn-Weadock, that appears to indicate that while it is being proposed as a 100% sub-bituminous project, it could burn up to 50% bituminous coal. However, several key factors interfere with the comparison of the Karn-Weadock project with AMPGS: (1) a final Section 112(g) determination has not been issued for the project; (2) the facility is being proposed as a 100% sub-bituminous project; thus, making it dissimilar to AMPGS; and (3) Consumers has proposed an optimization study that potentially allows the mercury limit to go as high as 1.5 lb/TBtu.

In summary, the design of the AMPGS incorporates control technologies that are comparable to or more stringent than other recently permitted facilities. The proposed mercury emission limit of 1.4 lb/TBtu is consistent with the limits for the most stringent limits contained in recent permits for other similar mixed fuel projects.

HCl Emission Limit

HCl emissions will primarily be controlled by the Wet FGD. No other control system or equipment is superior to control HCl from an EGU. AMP has proposed a HCl limit of 0.004 lb/mmBtu, which was established by Bechtel (AMP's project engineer for AMPGS) based on experience, commercially-available guarantees, fuels and to allow for the deployment of the ammonia Wet FGD and project design (i.e. mixed fuel project). This proposed limit takes into account Powerspan's first-of-a-kind ammonia-based Wet FGD. R. W. Beck has concluded that the 0.004 lb/mmBtu emission limit represents the maximum emission limit reduction of HCl for AMPGS so as to allow flexibility in operation and fuel selection during the life of the project.

HF Emission Limit

HF emissions will primarily be controlled by the Wet FGD. No other control system or equipment is superior to control HF from an EGU. AMP has proposed a HF emission limit of 0.0004 lb/mmBtu, which was established by Bechtel based on industry experience, commercially-available guarantees, fuels and to allow for the deployment of the ammonia wet FGD and project design as a mixed fuel project. This proposed limit takes into account Powerspan's first-of-a-kind ammonia-based Wet FGD, and the measurement uncertainty of the low outlet HF limit. As a result, R. W. Beck has concluded that 0.0004 lb/mmBtu represents the maximum emission limit reduction for HF for AMPGS so as to allow flexibility in operation and fuel selection during the life of the project.

PM/PM10 (filterable) Emission Limit (as a surrogate for Metal HAPs)

The control of filterable PM/PM_{10} is primarily provided by the baghouse/fabric filter, with co-benefit control expected from both the Wet FGD and the Wet ESP. No other control system represents superior control to that proposed by AMP. In addition, AMP has committed to a 0.012 lb/mmBtu PM_{10} (filterable) emission limit as a 3-hour average based on continuous emission monitoring. This limit represents the current best industry performance guarantee and is consistent with the emission limit established in the most recent permits issued for other EGUs (SWEPCO's Turk project, and Duke's Cliffside #6 projects). As a result, R. W. Beck has concluded that filterable PM_{10} is an appropriate surrogate for metal HAPs and 0.012 lb/mmBtu represents the maximum emission reduction for PM/PM_{10} (filterable) and metal HAPs for AMPGS.

CO Emission Limit (as a surrogate of Organic HAPs)

Hitachi, AMP's boiler and SCR vendor, will guarantee CO emissions of 0.154 lb/mmBtu based on the use of the combined Low-NO_X burner and OFA staged combustion technology. This emission limit is based on a three hour average utilizing a continuous emission monitor. R. W. Beck has concluded that the emission limits for NO_X and CO, which are inversely related in the combustion process, represent the maximum emission limit reduction for AMPGS so as to allow flexibility in operation and fuel selection during the life of the project.

Sincerely,

R. W. BECK, INC.

Evis C. Couppis, Ph.D., P.E.
Lead Consultant and
Environmental Services Director

Ivan L. Clark, P.E.
Vice President

Addendum 2
Requirements in O.A.C. Rule 3745-31-28(D)(1)[1]

Paragraph	Requirement	Required Information/Data
(D)(1)(a)	The name and address of the major MACT source.	American Municipal Power Generating Station (AMPGS). Site Location: Letart Falls, Ohio (along Route 124, south of Plants Road and north of Cemetery Road) AMP Mailing Address: Attn: Randy Meyer American Municipal Power, Inc. 1111Schrock Road, Suite 100 Columbus, Ohio 43229
(D)(1)(b)	A brief description of the major MACT sources and an identification of the listed source category from Section 112(c).	B001 – max. 5,191 mmBtu/hr pulverized coal-fired boiler; and B002 – max. 5,191 mmBtu/hr pulverized coal-fired boiler. The Section 122(c) category for emissions units B001 and B002 is coal-fired electric utility steam generating units; pulverized coal technology with bituminous/sub-bituminous coal as the primary fuel.
(D)(1)(c)	The expected date that construction of the major MACT sources will commence.	B001 – 2009 est. B002 – 2009 est.
(D)(1)(d)	The expected date that construction of the major MACT sources will be completed.	B001 – 2014 est. B002 – 2014 est.
(D)(1)(e)	The anticipated date of start-up of the major MACT sources.	B001 – 2014 est. B002 – 2014 est.
(D)(1)(f)	The HAPs to be emitted by the major MACT source(s) and the estimated full emission rate for each HAP.	HAP emission estimates are included in the attached response Addendum 3.
(D)(1)(g)	The federally enforceable emission limitations applicable to the major MACT sources.	B001 and B002 (each unit): - 40 CFR Part 60, Subpart Da (NSPS) - OAC rules 3745-31-10 through 20 (PSD BACT) - OAC Chapter 3745-14 (NO_x Budget) - OAC Chapter 3745-109 (CAIR) - OAC Chapter 3745-103 (Acid Rain)

[1] This information has previously been provided to Ohio EPA, but has been updated in this response. In addition, the requirements of this regulation are consistent with the requirements 40 CFR 63.43. As such, AMP's responses meet both regulations.

Paragraph	Requirement	Required Information/Data
(D)(1)(h)	The maximum and expected utilization of capacity of the major MACT sources.	Maximum Possible Utilization: B001 and B002 – operating at 100% capacity factor 5,191 mmBtu/hr for 8,760 hrs/yr. Expected Utilization: B001 and B002 – operating at between 90-100% capacity factor as base load units. Uncontrolled HAPs Emissions: Refer to Addendum 3.
(D)(1)(i)	The controlled annual emissions (tons/yr or TPY) at the maximum and expected utilization of capacity[1]	Refer to Addendum 3 for emissions data for each boiler. The annual emissions at the expected utilization are reduced proportionately.
(D)(1)(j)	The recommended emission limitation for the major MACT sources consistent with paragraph (E) of OAC rule 3745-31-28. Note: This summary includes control equipment utilized for each recommended MACT emission limit to address (D)(1)(l). Details of the control equipment have been provided as part of the original PTI application and in subsequent supplemental submissions; however, additional information can be provided upon request.	B001 and B002 (each unit): CO (surrogate for organic HAPs) 0.15 lb/mmBtu (3-hr average) based on CEM; Good combustion practice PM_{10} filterable (surrogate for metal HAPs) 0.012 lb/mmBtu (3-hr average) based on stack test; Pulse jet fabric filter with leak detectors, Wet-FGD and Wet-ESP SO_2 (monitoring surrogate for acid gas HAPs) CEM demonstration of compliance with BACT limits; Wet-FGD HF 0.0004 lb/mmBtu (3-hr average) based on stack test; Wet-FGD and Wet-ESP HCl 0.004 lb/mmBtu (3-hr average) based on stack test; Wet-FGD and Wet-ESP Mercury No more than 1.4 lb/trillion Btu heat input and no more than 63.7 lb as a 12-month rolling average; SCR, Sorbent Injection/ACI, Pulse Jet Fabric Filter, Wet-FGD, Wet-ESP

Paragraph	Requirement	Required Information/Data
(D)(1)(k)	Any other relevant information required by 40 CFR Part 63, Subpart A	The requirements of 40 CFR Part 63, Subpart A are set forth above in the context of O.A.C. 3745-31-28(D).
(D)(1)(l)	Control technology selected	See (D)(1)(j) above and Addendum 3.
(D)(1)(m)	Supporting documentation of alternative controls	This requirement has been addressed in the "beyond the floor" analysis set forth herein and in prior AMP submittals.

Notes:

(1) This analysis assumes that both boilers could operate at the maximum capacity for the entire year. If the actual utilization of each boiler is less than 100%, HAP emissions will be less than the maximum annual emission rates presented in the PTI application and the 112(g) analysis. For example, the maximum annual uncontrolled acetaldehyde emission rate at a 100% capacity factor is 0.79 tons per boiler (refer to Table 3-2). If the actual annual average capacity factor is 75%, the estimated uncontrolled acetaldehyde emissions would be 75% of the emission rate at the 100% capacity factor (e.g., acetaldehyde emissions at a 75% capacity factor = 75% x 0.79 tons = 0.59 tons).

Addendum 3
HAP Emission Estimates

Table 1
Emissions Estimates for HAPs with Proposed Section 112(g) MACT Limitations
Boilers B001 and B002

Parameter	Maximum	Notes
Heat Input Rating (MMBtu/hr)	5,191	Engineering Estimate
Coal Usage Rate (tons/hr)	317	Maximum Requirement for Lowest Btu Coal Supply
SO_2 30-Day Rolling Average (Monitoring Surrogate for Acid Gas HAPs) (based on CEM)		
CEM demonstration of compliance with BACT limits		
PM_{10} 3-Hr Average (Filterable Only) (Surrogate for non-mercury Metal HAPs) (based on stack test)		
PM_{10}-lbs/MMBtu	0.012	Engineering Estimate
PM_{10}-lbs/hr	62	Calculated as maximum lb/MMBtu x Max Heat Input
PM_{10}-tons/yr	273	Calculated as lb/hr x 8,760 hours/yr x 1 ton/2,000 lbs
Estimated Fabric Filter Control Efficiency	99.5+%	Engineering Estimate (varies based on ash content of fuel blend)
CO 3-Hour Average (Surrogate for Organic HAPs) (based on CEM)		
CO-lbs/MMBtu	0.154	Engineering Estimate
CO-lbs/hr	799	Calculated as maximum lb/MMBtu x Max Heat Input
CO-tons/yr	3,501	Calculated as lb/hr x 8,760 hours/yr x 1 ton/2,000 lbs
Estimated Efficiency of Good Combustion Practices	NA	Inherent to boiler design and operation
Mercury 12-Month Rolling Average (based on CEM)		
Hg-lbs/TBtu	1.4	Engineering Estimate
Hg-lbs/hr	0.0073	Engineering Estimate
Hg-lbs/yr	63.7	Calculated as lb/hr x 8,760 hours/yr
Estimated SCR/Sorbent Injection/ACI/ Fabric Filter/Wet-FGD/Wet-ESP Control Efficiency	90+%	Engineering Estimate
HF 3-Hour Average (based on stack test)		
HF-lbs/MMBtu	0.0004	Engineering Estimate
HF-lbs/hr	2.1	Calculated as maximum lb/MMBtu x Max Heat Input
HF-tons/yr	9.09	Calculated as lb/hr x 8,760 hours/yr x 1 ton/2,000 lbs

Table 1 Emissions Estimates for HAPs with Proposed Section 112(g) MACT Limitations Boilers B001 and B002		
Parameter	**Maximum**	**Notes**
Estimated Wet-FGD/Wet-ESP Control Efficiency	97+%	Engineering Estimate
HCl 3-Hour Average (based on stack test)		
HCl-lbs/MMBtu	0.004	Engineering Estimate
HCl-lbs/hr	20.8	Calculated as maximum lb/MMBtu x Max Heat Input
HCl-tons/yr	90.95	Calculated as lb/hr x 8,760 hours/yr x 1 ton/2,000 lbs
Estimated Wet-FGD/Wet-ESP Control Efficiency	97+%	Engineering Estimate