

**CLEAN AIR ACT SECTION 112(g)
HAZARDOUS AIR POLLUTANT (HAP)
MAXIMUM ACHIEVABLE CONTROL
TECHNOLOGY (MACT) ANALYSIS
RESPONSE TO OHIO EPA QUESTIONS**

For:

**AMERICAN MUNICIPAL POWER
GENERATING STATION**

Submitted By:

AMERICAN MUNICIPAL POWER-OHIO, INC.

April 7, 2009

GT

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April 7, 2009



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**RE: AMP-Ohio's 112(g) Submittal for AMPGS:
Response to Ohio EPA's March 26, 2009 Letter**

Dear Rod and Dean:

This letter provides the response from American Municipal Power-Ohio, Inc. ("AMP-Ohio") to Ohio EPA's March 26, 2009 letter requesting additional information regarding AMP-Ohio's 112(g) analysis for the proposed American Municipal Power Generating Station ("AMPGS"). For ease of review, the questions are restated below along with AMP-Ohio's responses. This letter and attachments supplement the Section 112(g) application and supporting materials previously submitted to Ohio EPA on July 18, 2008; February 6, 2009; and March 4, 2009.

Ohio EPA Question 1:

Ohio EPA does not consider control equipment as a parameter to distinguish similar sources as defined in OAC Chapter 31-01(OOOOO). Substantive differences in plant size and design could cause significant differences in uncontrolled emission of air pollutants. Therefore, these factors are more appropriate for identifying similar sources. Please complete Table 1 as attached. In order to complete Table 1, please research the sources used to propose the Clean Air Mercury Rule (CAMR) and the proposed utility MACT from ~2003. In addition to these sources please research the BL England facility in New Jersey as described in the meeting on March 24, 2009.

Response to Question 1

Per Ohio EPA's request, Attachment A to this letter is Table 1 which includes the sources that AMP-Ohio considered during the preparation of the 112(g) analysis and responses to questions posed by Ohio EPA. A copy of each air permit referenced in Table 1 is also included in Attachment A.

OHIO: AMHERST • ARCADIA • ARCANUM • BEACH CITY • BLANCHESTER • BLOOMDALE • BOWLING GREEN • BRADNER • BREWSTER • BRYAN • CAREY • CELINA • CLEVELAND • CLYDE
COLUMBIANA • COLUMBUS • CUSTAR • CUYAHOGA FALLS • CYGNET • DESHLER • DOVER • EDGERTON • ELDORADO • ELMORE • GALION • GENOA • GLOUSTER • GRAFTON • GREENWICH
HAMILTON • HASKINS • HOLIDAY CITY • HUBBARD • HUDSON • HURON • JACKSON • JACKSON CENTER • LAKEVIEW • LEBANON • LODI • LUCAS • MARSHALLVILLE • MENDON • MILAN • MINSTER
MONROEVILLE • MONTPELIER • NAPOLEON • NEW BREMEN • NEW KNOXVILLE • NEWTON FALLS • NILES • OAK HARBOR • OBERLIN • OHIO CITY • ORRVILLE • PAINESVILLE • PEMBERVILLE
PIONEER • PIQUA • PLYMOUTH • PROSPECT • REPUBLIC • ST. CLAIRSVILLE • ST. MARYS • SEVILLE • SHELBY • SHILOH • SOUTH VIENNA • SYCAMORE • TIPP CITY • VERSAILLES • WADSWORTH
PENNSYLVANIA: WAYNESFIELD • WELLINGTON • WESTERVILLE • WHARTON • WOODSFIELD • WOODVILLE • YELLOW SPRINGS
WEST VIRGINIA: BERLIN • BLAKELY • CATAWISSA • DUNCANNON • EAST CONEMAUGH • ELLWOOD CITY • EPHRATA • GIRARD • GROVE CITY • HATFIELD • HOOVERVILLE • KUTZTOWN • LANSDALE
LEHIGH: LEHIGH • LEWISBERRY • MIDDLETOWN • MIFFLINBURG • NEW WILMINGTON • PERKASIE • QUAKERTOWN • ROYALTON • ST. CLAIR • SCHUYLKILL • SMETHPORT
SOUTH CAROLINA: SUMMERHILL • WATSONTOWN • WEATHERLY
MICHIGAN: CLINTON • COLDWATER • DOWAGIAC • HILLSDALE • MARSHALL • UNION CITY • WYANDOTTE
VIRGINIA: BEDFORD • DANVILLE • FRONT ROYAL • MARTINSVILLE • RICHLANDS
WEST VIRGINIA: NEW MARTINSVILLE • PHILIPPI
KENTUCKY: WILLIAMSTOWN



AMP-Ohio has utilized Ohio's "similar source" definition, currently found at O.A.C. 3745-31-01(OOOOO), as the foundation for our evaluation and identification of projects that are similar sources to the AMPGS for purposes of MACT. Specifically, similar source is defined as "a stationary source or process that has comparable emissions and is structurally similar in design and capacity to a constructed or reconstructed major MACT sources such that the source could be controlled using the same control technology." In practical terms, this definition frames similar source as: (1) comparable emissions, (2) structurally similar in design; and (3) similar in capacity.

With respect to comparable emissions, there is no operating EGU that has sustained a level of control that would meet the definition of "achieved in practice" which contemplates a long-term compliance demonstration (*i.e.*, through continuous monitoring). Thus, for purposes of this analysis, AMP-Ohio evaluated emission limits in permits for new EGU units (both permitted pursuant to the now vacated EGU NSPS and pursuant to Section 112). For purposes of structurally similar in design, AMP-Ohio evaluated EGUs that were designed as pulverized coal units that have the capability of utilizing both eastern bituminous and western sub-bituminous coals (less than 100% of each). Finally, for purposes of similar in capacity, AMP-Ohio focused on units from 400-600 MW since the units at AMPGS will be 480 MW.

The attached Table 1 summarizes the information and data requested by Ohio EPA for HAPs for other projects along with a determination of whether or not the project should be used to establish the best controlled similar source. There is no discernable best controlled similar source for HAPs other than mercury. Table 1A identifies the same projects as identified in Table 1, but only includes information and data regarding mercury for each project. The best controlled similar source identified in Table 1A for mercury is the Louisville Gas & Electric ("LG&E") Trimble facility. Although the mercury emission limitation for the LG&E Trimble facility is equivalent to 1.4 lb Hg/TBtu, AMP-Ohio continues to maintain that this emission rate has not been demonstrated as achievable on a continuous long-term basis. Therefore, we believe the 1.9 lb Hg/TBtu limit proposed in the 112(g) study submitted by AMP-Ohio is an appropriate site-specific MACT limit for the AMPGS.

With respect to the sources used by US EPA to establish the mercury emission limitations in 40 CFR Part 60 Subpart Da, although US EPA identified a number of utility boilers with tested mercury emission rates less than 1.9 lb/TBtu, those tests were performed during isolated three-hour periods that are not indicative of the maximum mercury emission rates over an extended period of time (*i.e.*, cannot be used to establish "achieved in practice"). Any further review of the mercury test data accumulated by US EPA is compromised by the lack of information concerning boiler design and the range of fuels that could be combusted. US EPA's review of the data led to the adoption of the emission limitations in 40 CFR Part 60 Subpart Da § 60.45a (CAMR).

With respect to the B.L. England Power Station, this facility consists of two coal-fired boilers and one oil-fired boiler that produce approximately 450 MW of power output.

Boiler #1 is a 120 MW coal-fired cyclone boiler and was installed in 1963. Boiler #2 is a 160 MW coal-fired cyclone boiler and was installed in 1965. Boiler #3 is a 160 MW tangential oil-fired boiler and was installed in 1974. At various times all three of these units were oil-fired and Boiler #1 has been tested (1998) with a mixture of wood chips, tire derived fuel (TDF) and coal. The B.L. England Power Station was purchased by Rockland Capital Energy Investments, LLC in February 2007. The coal-fired boilers at B.L. England are regulated pursuant to the New Jersey Department of Environmental Protection Mercury rules. On May 14, 2008, the New Jersey Clean Air Council reported that the B.L. England Station was meeting the requirements of those rules (*i.e.*, 90% control or 3 mg/MWh).

Neither of the coal-fired boilers at the B.L. England Power Station is similar to the boilers proposed for the AMPGS. The coal-fired boilers are cyclone units, much smaller than the boilers proposed for the AMPGS and burn different types of coal. A comparison of the proposed 112(g) MACT limits for the AMPGS to the limits that may have been achieved by these units is inappropriate because the units are not similar.

Ohio EPA Question 2:

Please confirm that the heat input rating is still 5,191 million Btu/hr for each boiler for the proposed AMP-Ohio Meigs County project. If 5,191 million Btu/hr is no longer the heat input value for the utility boilers in the project, then please provide the expected heat input value.

Response to Question 2:

5,191 million Btu/hr represents the maximum heat input rating associated with the potential to emit for each of the two main boilers at the AMPGS. This is the maximum heat input rating that has been presented in AMP-Ohio's prior submittals, including the May 2006 permit to install application and Ohio EPA's February 2008 Permit-to-Install. The maximum hourly emission rates for each pollutant for which there is a maximum lb/mmBtu emission rate is calculated by multiplying the maximum heat input rating (million Btu per hour) times the maximum emission rate (pounds per million Btu) consistent with the following example:

VOC (surrogate for organic HAPs):

0.0037 lb/mmBtu = Engineering Estimate of the maximum VOC emission rate
with good combustion practices

5,191 mmBtu/hr = Maximum design heat input rating of each boiler

0.0037 lb VOC/mmBtu x 5,191 mmBtu/hr = 19.2 lb VOC/hr

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Attachment B to this letter contains two spreadsheets that provide a comparable calculation for each HAP that may be emitted by the AMPGS.

OEPA Questions 3:

If the response to #1 does not produce a "best controlled similar source", please provide cost justification demonstrating that activated carbon injection is not cost effective as indicated in the AMP-Ohio submitted 112(g) determination.

Response to Question 3:

The attached Table 1 and Table 1A, prepared to respond to question #1, identify similar sources, including sources that identify the use of activated carbon injection ("ACI"). However, as AMP-Ohio has articulated in past communications, AMP-Ohio does not anticipate the use of ACI, given the host of control equipment that will be employed at the AMPGS, will result in very little, if any, additional mercury control. Thus, AMP-Ohio continues to maintain the use of ACI cannot be justified from a cost perspective. Attachment C to this letter is a summary of a cost evaluation of ACI for the AMPGS prepared by AMP-Ohio's consultant R.W. Beck.

OEPA Question #4:

Please provide the calculation sheets for the estimation of each identified HAP in EXCEL or another electronic format as requested by question #3 in the January 9th set of questions and question #2 in the February 19th set of questions.

Response to Question 4:

Please find, attached, a hard-copy of the calculations requested. In addition, these calculations will also be provided in an electronic EXCEL spreadsheet. These calculations are consistent with AMP-Ohio's February and March 2009 responses.

OEPA Question #5:

Please provide an explanation as to why activated carbon injection, which seems suitable for multiple powder river basin facilities, is not suitable for the AMP-Ohio Meigs County project. If cost is the only factor then the response to question #3 is sufficient.

Response to Question 5:

As indicated in Table 1 in Attachment A, ACI has typically been employed to facilitate the control of mercury at facilities that are burning exclusively low sulfur fuels (e.g., PRB coal) and equipped with a dry-FGD system for control of sulfur dioxide (SO₂) emissions. ACI is used to enhance mercury control at these units because PRB coal is relatively low in chlorine content which interferes with the oxidation of mercury and the use of dry-FGD is less effective in controlling oxidized mercury which is better controlled in a wet-FGD control system (oxidized mercury is water soluble).

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Several 112(g) studies recently submitted by electric utilities have made the point that, because of the oxidation of mercury that occurs in a SCR control system, it is very likely that the use of ACI with a wet-FGD system may not produce any greater overall mercury control than would otherwise be achieved. The use of ACI with wet-FGD systems may simply change the location where the mercury control occurs (*i.e.*, in the fabric filter following the dry-FGD system rather than in the wet-FGD system).

* * *

Thank you once again for your consideration of this information and data that supplements the 112(g) study submitted by AMP-Ohio in July 2008. Please contact me if you have any questions concerning this letter or attachments.

On behalf of the members,



Randy Meyer
Director of Environmental Affairs

Attachments:

- Attachment A – Table 1 and Table 1A
- Attachment B – HAP Emission Calculations
- Attachment C – ACI Costs

cc: Bob Hodanbosi (w/o attachments)
Mike Hopkins (w/o attachments)
Scott Kiesewetter (w/o attachments)