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NATURAL RESOURCES DEFENSE COUNCIL

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October 25, 2007

Ohio Power Siting Board
 180 East Broad Street
 Columbus, Ohio 43215-3793

RE: Motion to Intervene in Case No. 06-1358-EL-BGN, In re: Application of American Municipal Power-Ohio for a Certificate of Environmental Compatibility and Public Need for an Electric Generation Station and Related Facilities in Meigs County, Ohio.

Dear Ohio Power Siting Board Members:

Please find enclosed for filing with the Board an original and ten copies of the Motion to Intervene and supporting documents of the Natural Resources Defense Council, Ohio Environmental Council, and Sierra Club in Case No. 06-1358-EL-BGN, American Municipal Power-Ohio's ("AMP") application for a certification for the proposed Meigs County electric generation station.

I would like to bring to the Board's attention that Exhibit 4 to our motion – the executive summary of an initial feasibility study for the proposed plant – has been stamped by AMP as confidential business information. We received the study through a public records request and therefore believe it to be part of the public record.

Please contact me at (312) 780-7431 if you have any questions. Thank you for your time and consideration.

Sincerely,

Shannon Fisk
 Staff Attorney
 Natural Resources Defense Council

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FILE

**BEFORE THE
OHIO POWER SITING BOARD**

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Application of American Municipal Power,)
Ohio, Inc. (AMP-Ohio) for a Certificate of)
Environmental Compatibility and Public)
For the American Municipal Power)
Generating Station in Meigs County, Ohio)

Case No. 06-1358-EL-BGN

**MOTION TO INTERVENE OF THE
NATURAL RESOURCES DEFENSE COUNCIL, INC.,
OHIO ENVIRONMENTAL COUNCIL, AND
SIERRA CLUB**

Pursuant to Ohio Rev. Code 4906.08(A)(3) and Ohio Admin. Code 4906-7-04(A)(2), the Natural Resources Defense Council ("NRDC"), Ohio Environmental Council ("OEC"), and Sierra Club (collectively, "Citizen Groups") move to intervene in this proceeding, in which American Municipal Power – Ohio, Inc. ("AMP") has applied for a certificate of environmental compatibility and public need for a proposed pulverized coal-fired power plant in Meigs County, Ohio ("Meigs plant"). This motion should be granted because all of the standards for intervention are satisfied here. Ohio Admin. Code 4906-7-04(B).

This motion is timely pursuant to Ohio Admin. Code 4906-7-04(A)(2)(b), as the administrative law judge set a intervention deadline of October 26, 2007.

As described in the attached memorandum in support of this motion, each of the Citizen Groups have direct and substantial interests at stake in this proceeding, Ohio Admin. Code 4906-7-04(B)(1)(a), because each of the Groups have members who live in Meigs County or other areas that would be directly and adversely impacted by the air and water pollution from the Meigs plant, the mining and transport of coal for the plant, and the disposal of waste from the plant. In addition, Citizen Group members will be adversely impacted by the global warming

that would be exacerbated by the Meigs plant. Also, each of the Citizen Groups have numerous members who live in the 70+ communities throughout Ohio that AMP is asking to help build the proposed plant and would be financially impacted by the plant. Finally all three Citizen Groups have long running organizational interests in the air quality, water quality, and alternatives issues presented in this proceeding.


Citizen Group intervention will contribute to a just resolution of the proceeding, Ohio Admin. Code 4906-7-04(B)(1)(c), as the issues they seek to raise are directly relevant to the standards for certification set forth in the Power Siting Statute.

The Citizen Groups' interests are not presently represented in the proceeding, Ohio Admin. Code 4906-7-04(B)(1)(b), as the project applicant is currently the only party to the proceeding.

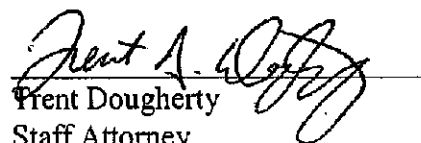
The Citizen Groups are prepared to present the issues they seek to raise in an expeditious fashion (and have identified experts to assist in that presentation) and, therefore, intervention will not unduly delay the proceeding. Ohio Admin. Code 4906-7-04(B)(1)(d).

For the foregoing reasons, and the reasons set forth in the attached memorandum in support, NRDC, OEC, and the Sierra Club respectfully request that they be permitted to intervene in this proceeding.

Respectfully Submitted,



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October 25, 2007

**BEFORE THE
OHIO POWER SITING BOARD**

Application of American Municipal Power,)
Ohio, Inc. (AMP-Ohio) for a Certificate of)
Environmental Compatibility and Public)
For the American Municipal Power)
Generating Station in Meigs County, Ohio)

Case No. 06-1358-EL-BGN

**MEMORANDUM IN SUPPORT OF THE
MOTION TO INTERVENE OF THE
NATURAL RESOURCES DEFENSE COUNCIL, INC.,
OHIO ENVIRONMENTAL COUNCIL, AND
SIERRA CLUB**

The Natural Resources Defense Council ("NRDC"), Ohio Environmental Council ("OEC"), and Sierra Club (collectively, "Citizen Groups") move to intervene in this proceeding, in which American Municipal Power – Ohio, Inc. ("AMP") has applied for a certificate of environmental compatibility and public need for a proposed 960 megawatt ("MW") pulverized coal-fired power plant in Meigs County, Ohio ("Meigs plant").

Intervention is sought because the record does not address issues critical to the certification decision and required by the Board's regulations, including: (1) financial information relating to the risk of escalating construction costs, operating costs, and the cost of controlling carbon dioxide emissions (or otherwise complying with future CO2 regulations, (2) environmental information relating to the impacts of CO2 emissions and global warming, and to the cumulative impacts of the Meigs plant, and (3) an evaluation of alternatives that would have less adverse environmental impact than the proposed coal plant. A thorough evaluation of these issues is legally required and demonstrates that the Board must deny certification because AMP's proposed pulverized coal plant does not "represent the minimum adverse environmental

impact,” “serve the public interest, convenience, and necessity,” or “incorporate maximum feasible water conservation practices.” Ohio Rev. Code § 4906.10(A)(3), (6), (8).

Intervention is appropriate because the Citizen Groups each have members that will be adversely affected by the air, water, and financial impacts of the proposed Meigs plant. The Citizen Groups’ interests are not adequately represented in this proceeding, as the only other party to the proceeding is the applicant. Intervention would not unduly delay the proceeding, as the Citizen Groups are prepared to provide expert testimony or evidence in a timely manner on the issues raised herein.

Factual Background

AMP is proposing to build a 960 MW pulverized coal power plant in Letart Falls, which is located in Meigs County, a rural area on the Ohio River in southeast Ohio. According to a feasibility study commissioned by AMP-Ohio, but apparently not submitted to the Board, the plant would cost \$2.912 billion to build (including \$400 million in financing costs), a figure that has more than doubled from a \$1.2 billion provided two years ago. Every year, the Meigs plant would emit approximately 7.3 million tons of carbon dioxide (“CO₂”) – a primary cause of global warming – and burn at least 2.8 million tons of coal. According to the draft air permit to install recently issued by the Ohio Environmental Protection Agency, every year the plant would also release up to 6,820 tons of sulfur dioxide, 3,194 tons of nitrogen oxide, 1,182 tons of particulate matter, 343 tons of sulfuric acid mist, 166.87 tons of volatile organic compounds, 880 pounds of lead, and 192 pounds of mercury.¹

¹ The Ohio EPA’s draft air permit for the Meigs plant is available at http://www.epa.state.oh.us/dapc/pti_issued/pti_pdf_07/0608138d.pdf.

AMP-Ohio is proposing its plant for Meigs County, which is an area in southeast Ohio that already has a high concentration of coal-fired power plants and other major polluting sources. There are four coal-fired power plants – J.M Gavin, Mountaineer, Philip Sporn, and Kyger Creek – within approximately 10 miles of Letart Falls, and there are numerous other major sources of air pollution in or near Meigs County.² American Electric Power has also recently proposed two integrated gasification combined cycle coal plants in the area, and a coal mine proposal for Meigs County is working its way through the permitting system.

AMP-Ohio filed its application for certification on May 4, 2007, and supplemented that application on June 11 and 19, 2007. On August 2, the Administrative Law Judge (“ALJ”) scheduled a public hearing on the application for November 1 in Meigs County, and an adjudicatory hearing for November 8 in Columbus. The ALJ also set a deadline for interested parties to move to intervene of October 26, five days before the public hearing. On September 5, 2007, AMP filed a response to Staff questions about the application. On October 16, 2007, the Staff filed its Report of Investigation.

The Citizen Groups

Intervention is sought here by NRDC, OEC, and the Sierra Club Ohio Chapter.

NRDC is a national, non-profit, environmental organization with more than 1.2 million members and activists nationwide, including 35,114 in Ohio, and 11 in Meigs County. Many of NRDC’s Ohio members and activists live in communities that are being asked by AMP to pay for the construction of the Meigs plant and to purchase power from the plant until 2057, and/or live in areas of Ohio or neighboring states that will be affected by emissions from the proposed plant. When an individual becomes a member of NRDC, that individual authorizes NRDC to take legal action on his or her behalf in order to protect the environment and public health.

² Tom Baker and Spencer Hunt, Ohio River Coal-Fired Power Plants, Columbus Dispatch (Dec. 5, 2005), attached as Exhibit 1.

One of NRDC's purposes is to "safeguard the Earth" by working to "restore the integrity of the elements that sustain life" and protecting "nature in ways that advance the long-term welfare of present and future generations."³ As part of achieving its mission, NRDC has had a long history of involvement in issues related to protecting air and water quality, challenging global warming, and promoting cleaner energy alternatives. Over its 37 year history, NRDC has, among other things, helped spearhead efforts to stop acid rain by reducing sulfur dioxide emissions, create national energy efficiency standards for appliances, and to require American Electric Power to spend \$4.6 billion to reduce emissions from its coal-fired power plants in Ohio and elsewhere. NRDC is a founding member of the U.S. Climate Action Partnership, an alliance of businesses and environmental organizations calling for a cap-and-trade program to require reductions of global warming emissions from large stationary sources, transportation, and commercial and residential energy use. In January 2007, NRDC opened a Midwest Office in order to increase its advocacy for cleaner energy in the Midwest.

OEC is a statewide non-profit environmental advocacy organization with 115 member environmental/conservation organizations and 2,364 individual members throughout the state of Ohio. OEC has 3 members who live in the area of Meigs County directly impacted by the siting of the proposed Meigs facility, as well as members and member organizations in many of the municipalities to which AMP provides electricity.

The mission of the OEC is to secure healthy air, land, and water for all who call Ohio home. For nearly 40 years, OEC has been in the forefront of Ohio environmental policy, including a strong emphasis on reducing air pollution from stationary and mobile sources, reducing Ohio's impact on climate change, and promoting clean energy and energy efficiency. Among other things, OEC has worked closely with consumer, agricultural, labor, and industry

³ <http://www.nrdc.org/about/mission.asp>.

groups for a strong energy policy in the state; advocating for an achievable state energy efficiency standard and advanced energy portfolio standard; and aggressively promoting responsible carbon management programs such as a cap and trade, no-till farming, geological sequestration and enhanced oil recovery. In 2005 and 2006 OEC drafted a two-part Ohio Climate Change Roadmap which lays out a road to a stable climate by analyzing emission reduction targets and how Ohio's manufacturing, agriculture, and coal industries can contribute to a reduction in Ohio's carbon footprint.

The Sierra Club is the nation's oldest grassroots organization, with more than 750,000 members nationwide. The organization's Ohio Chapter has 17,305 members statewide, including 9 in Meigs County. There are also substantial numbers of Sierra Club members who live in communities that are being asked by AMP to pay for the construction of the Meigs plant and to purchase power from the plant until 2057, and/or live in areas of Ohio or neighboring states that will be affected by emissions from the proposed plant.

The Sierra Club represents the interests of its members in state and federal litigation, public policy advocacy, administrative proceedings, and before state, local, and federal lawmakers. A primary focus of this advocacy is a responsible energy policy, including adoption, implementation, and enforcement of meaningful requirements to evaluate the appropriateness of new electricity capacity (especially new capacity that would use dirty fuels such as coal to generate electricity). Sierra Club's experts have provided testimony in numerous instances before state public utility commissions on issues such as consideration of costs associated with carbon regulation and the importance of thoroughly evaluating efficiency, conservation, and other demand-side options. All of these activities support Sierra Club's mission to explore, enjoy, and

protect the wild places of the earth and educate and enlist humanity to protect and restore the quality of the natural and human environment.

Legal Background

In order to build an "electric generating plant," a company must, among other things, obtain a certificate of environmental compatibility and public need ("certificate") from the Board. Ohio Rev. Code § 4906.04. Pursuant to the Power Siting Statute, Ohio Rev. Code 4906 *et seq.*, the Board "shall not grant a certificate for the construction, operation, and maintenance" of an electric generating plant "unless it finds and determines all of the" elements set forth in the Statute. Ohio Rev. Code 4906.10(A). The four most relevant of those elements for purposes of this intervention are:

- The nature of the probable environmental impact
- That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations
- That the facility will serve the public interest, convenience, and necessity
- That the facility incorporates maximum feasible water conservation practices, as determined by the board, considering available technology and the nature and economics of the various alternatives.

Ohio Rev. Code 4906.10(A)(2), (3), (6), & (8).

The Board has promulgated regulations for implementing the Power Siting Statute. *See* Ohio Admin. Code 4906-1 to 4906-15. Chapter 4906-13 of those regulations identifies some of the information that "shall" be submitted by an applicant for certification of an electric power generating facility. Among other things, an applicant must provide a project overview, a detailed description of the project, a description of the site and its geologic features, financial data

regarding the capital and operating cost of the facility and alternatives, an analysis of air and water quality impacts, and a description of the likely social and economic impacts of the facility. Ohio Admin. Code 4906-13.

In order to intervene in a Board proceeding, a party must identify its grounds for the proposed intervention and its interest in the proceeding. Ohio Admin. Code § 4906-7-04(A)(2)(a). The Board or the ALJ "shall grant" an intervention petition "only upon a showing of good cause." *Id.* at 4906-7-04(B). In evaluating whether good cause is shown, the Board or ALJ may consider "the nature and extent" of the interest of the proposed intervenor, the extent to which the proposed intervenor's interest is already represented in the proceeding, the proposed intervenor's "potential contribution to a just and expeditious resolution of the issues involved," and whether "intervention would unduly delay the proceeding or unjustly prejudice an existing party." *Id.*

ARGUMENT

I. The Citizen Groups Should Be Permitted to Intervene

Intervention should be granted to NRDC, OEC, and Sierra Club Ohio Chapter because all of the factors upon which the evaluation of whether good cause for intervention exists weigh in favor of intervention.

First, the Citizen Groups each have direct and substantial interests at stake in this proceeding. As described above, NRDC, OEC, and the Sierra Club each have a number of members who live in Meigs County or other areas that would be directly impacted by the air and water pollution from the Meigs plant, the mining and transport of coal for the plant, and the disposal of waste from the plant. The plant's emissions of sulfur dioxide, nitrogen oxides and

particulate matter contribute to asthma and other respiratory ailments and, therefore, pose a public health risk to, and curb the outdoor activity of, the Citizen Groups' members. In addition, power plant emissions reduce outdoor visibility and pollute waterways with mercury and other chemicals, thereby reducing the ability of Citizen Group members to use and enjoy rivers, streams, and other natural areas around the plant, and to consumer fish from area rivers and streams due to mercury contamination.

In addition, all Citizen Group members will be adversely impacted by the global warming that would be exacerbated by the 7.3 million tons of annual CO2 emissions from the Meigs plant. As described in Section III.A below, global warming poses significant public health, environmental, and economic risks that will adversely affect the members of the Citizen Groups. Each of the Citizen Groups also have numerous members who live in the 70+ communities throughout Ohio that AMP is asking to help build the proposed plant. These members would be financially impacted by construction of the plant and, therefore, have a direct interest in whether the plant "serves the public interest, convenience, and necessity." Ohio Rev. Code § 4906.10(A)(6). Finally, as described above, all three Citizen Groups have long running organizational interests in the air quality, water quality, and alternatives issues presented in this proceeding.

Citizen Group intervention will contribute to a just resolution of the proceeding, as the issues raised below regarding cost, environmental impacts and alternatives are directly relevant to the standards for certification set forth in the Power Siting Statute. Our interests are not presently represented in the proceeding, as the project applicant is currently the only party, and neither the applicant nor the Board Staff have addressed the issues that the Citizen Groups seek to raise. The Citizen Groups are prepared to present these issues in an expeditious fashion (and

have identified experts to assist in that presentation) and, therefore, our intervention will not unduly delay the proceeding.

II. The Board Must Consider the Full Costs of Construction, Operation, and Carbon Dioxide Controls for the Meigs Plant and Alternatives.

The record in this proceeding does not include the financial data required by the Board's regulations or needed to determine whether certification should be granted. Ohio Rev. Code § 4906.10(A)(3), (6); Ohio Admin. Code § 4906-13-05. In particular, the project cost estimates provided by AMP-Ohio do not reflect the risk of the rapidly escalating costs of building coal-fired power plants, include the cost of fuel and other operating expenses for the plant, or address the cost of controlling carbon dioxide ("CO₂") emissions from the plant. In addition, there is no analysis in the record of the comparative cost of AMP's proposal and alternative methods for satisfying the energy needs of AMP and its member communities.

A thorough evaluation of the capital and operating costs of AMP's proposed plant and its alternatives is plainly required as part of this proceeding. In particular, the financial risks involved are an important factor in determining whether AMP's proposal to lock Ohio communities into a pulverized coal plant for the next 50 years "will serve the public interest, convenience, and necessity." Ohio Rev. Code 4906.10(A)(6). In addition, an accurate estimate of construction and operating costs is required because, in evaluating whether the Meigs plant "represents the minimum adverse environmental impact," the Board is supposed to consider the "economics of the various alternatives." Ohio Rev. Code 4906.10(A)(3). In fact, an accurate evaluation of cost issues demonstrates that the Meigs plant does not satisfy either of these standards for certification.

To help ensure that there is an accurate evaluation of the cost of AMP's proposal and alternatives, the Board's regulations require AMP to, among other things, provide "estimates of applicable capital and intangible costs for the various alternatives" and "tabulate the present worth and annualized cost for capital costs and any additional cost details as required to compare capital costs of alternatives." Ohio Admin. Code § 4906-13-05(B)(1), (3). In addition, AMP is required to supply an estimate of the annual operation and maintenance cost of the plant and to tabulate those costs and "any additional cost breakdowns as required to compare alternatives." *Id.* at 4906-13-05(C)(3).⁴

AMP has not come close to complying with these requirements. Instead, AMP has submitted only a short summary of "financial data," which asserts that the plant will cost \$2.7 billion to build (including financing and owner's costs) and \$42 million per year for operation and maintenance, and that price increases for coal plant construction of 10% in six months have been reported. (AMP App., Section OAC 4906-13-05 at 2-4). AMP has not provided any detailed explanation for how the \$2.7 billion capital cost estimate was reached or whether that figure includes the likelihood that project construction costs will continue to escalate, or provided information regarding the cost of alternatives.

At a minimum, the following financial issues must be addressed in this proceeding, and factored into the cost estimates used for the Meigs plant and alternatives.

⁴ AMP incorrectly asserts that it is not legally required to provide financial data about the proposed plant because AMP is not an "electric light company." AMP App., Section OAC 4906-13-05 at 1 & n.2. The question of whether AMP is an electric light company, however, is relevant only to the form in which financial data is to be presented, not whether the information is to be presented. Ohio Admin. Code 4906-13-05(B)(1) and (C)(1). The Board's regulation is clear that any "applicant shall" submit the financial data, *id.*, and such data is necessary for the Board to make the findings required by the Siting Statute. Ohio Rev. Code 4906.10(A)(3), (6). To the extent that AMP is able to demonstrate a legitimate claim to trade secret protection for certain pieces of information, arrangements can be made to ensure that such information is kept confidential by the parties and not released to the public.

A. Cost Estimates for the Meigs Plant Must Factor in the Risk of Further Construction Cost Increases.

The record is inadequate because there is no evaluation of the risk of future construction cost increases for the proposed pulverized coal plant. In discussing the impact of delay on the project, AMP notes that "Price increases currently being experienced in the expected construction costs of coal based electric generation are staggering. Price increases of 10% in a single six month period are being reported." (AMP App., Section OAC 4906-13-05 at 4). AMP, however, does not discuss whether the \$2.7 billion construction cost estimate that it has provided factors in the risk of continued "staggering" cost escalations. Such an evaluation of this risk must occur and be factored into cost estimates for the plant.

While one would not know it from AMP's application, the estimated cost for the proposed Meigs plant has increased significantly over the past two years and is already higher than \$2.7 billion. When the project was first announced in October 2005, AMP estimated the cost at \$1.2 billion.⁵ In May 2006, the cost estimate was up to \$1.5 billion.⁶ While AMP provided a \$2.7 billion cost estimate (including financing costs) with its May 2007 application to the Board, a June 2007 project feasibility study that AMP provided to its member communities estimated the total cost of construction (including financing) at \$2.912 billion.⁷ The \$212 million increase between the May estimate presented to the Board and the June estimate is strong

⁵ AMP Press Release, AMP-Ohio Announces Site For New Generating Facility (Oct. 28, 2005), attached as Exhibit 2.

⁶ AMP Press Release, Air Permit Application filed for American Municipal Power Generating Station (May 22, 2006), attached as Exhibit 3.

⁷ RW Beck, Initial Project Feasibility Study (June 2007), at ES-7 to ES-8. The Executive Summary of that Feasibility Study is attached as Exhibit 4. While the Feasibility Study fails to adequately address many of the issues identified herein, it at least provides a more detailed cost estimate than AMP provided to the Board. The Citizen Groups are prepared to provide an analysis of whatever cost estimate for the Meigs plant that the applicant decides to file in this proceeding. While AMP has stamped a claim of confidentiality on the Feasibility Study, NRDC received a somewhat redacted version of the Study via a public records request from Cleveland Public Power.

evidence that the risk of construction cost increases has not been adequately evaluated in the present proceeding.

As explained in the attached testimony from David Schlissel at Synapse Energy Economics, significant increases in power plant construction costs have been experienced throughout the country in recent years.⁸ For example, a witness for Duke Energy Carolina in a North Carolina Public Utilities Commission proceeding testified that coal-fired power plant capital costs had increased 90% to 100% since 2002.⁹ Similarly, a June 2007 Standard & Poor's report entitled Increasing Construction Costs Could Hamper U.S. Utilities' Plan to Build New Power Generation noted that the power industry had experienced a 50% increase in capital costs over the past three years.¹⁰ Also, the Brattle Group's September 2007 report Rising Utility Construction Costs noted "across-the-board increase in the costs of investing in utility infrastructure" and that such "higher costs show no immediate signs of abating."¹¹

In order to provide an accurate estimate of the capital cost for building the Meigs plant, this construction cost risk issue must be fully evaluated in this proceeding. Additionally, AMP must disclose the underlying assumptions and calculations that give rise its cost estimate, including the data it uses, the analytic methodology, the timing of the analysis, and any changes in real-world conditions that may affect the accuracy of its analysis. Without this kind of information, AMP's cost estimates are of little real value.

⁸ Direct Testimony of David A. Schlissel on Behalf of the Alliance for Affordable Energy et al., Louisiana Public Service Commission, Docket No. U-30192 (Sept. 14, 2007), at 34-37. Mr. Schlissel's testimony is attached as Exhibit 5. Assuming that intervention is granted in this proceeding, Mr. Schlissel should be available to provide expert testimony regarding cost and alternatives regarding the AMP proposal at issue here.

⁹ *Id.* at 34-35.

¹⁰ *Id.* at 35-36.

¹¹ *Id.* at 36-37; Marc Chupka and Gregory Basheda, Rising Utility Construction Costs: Sources and Impacts, The Brattle Group (Sept. 2007), attached as Exhibit 6. The Brattle report identifies several factors affecting the of cost new coal plants, including materials (such as steel, copper, concrete, and manufactured products), engineering, fabrication capacity, and labor costs.

B. Cost Estimates for the Meigs Plants Must Include an Analysis of Fuel and Other Operating Costs

AMP has failed to provide the Board with an accurate estimate of the annual operation and maintenance costs for its proposed plant, as required by Ohio Admin. Code 4906-13-05(C). While AMP stated in its application that annual operation and maintenance costs would be \$42 million per year, that figure does not include annual fuel costs or apparently any other costs besides staffing and maintenance. (AMP App., Section OAC 4906-13-05 at 4). Unless AMP is committing to spend billions of dollars to build a power plant that will be maintained but never operated, an accurate estimate of the cost of operating the plant must include the cost of the coal that is being burned, along with any other cost of running the plant.¹²

C. Cost Estimates for the Meigs Plant Must Factor in the Cost of Carbon Dioxide Regulations.

Another glaring inadequacy in AMP's application is the failure to factor the cost of capturing and sequestering the approximately 7.3 million tons of carbon dioxide ("CO2") that the Meigs plant would emit every year. As discussed more thoroughly in Section III below, CO2 is a primary cause of global warming, which is very likely to have numerous and severe adverse economic, public health, and environmental impacts on Ohio, the United States, and the world. Contrary to AMP's claim that CO2 emissions are not regulated (AMP App., Section OAC 4906-13-01 at 4)), the U.S. Supreme Court's ruling in *Massachusetts v. EPA*, 127 S.Ct. 1438 (2007), recently confirmed that CO2 is an air pollutant, which means that emissions of CO2 from coal-

¹² AMP did provide an estimate of its operating expenses in the Feasibility Study that it provided to its member communities. Once again, the Citizen Groups will submit an analysis of whatever estimate of operation costs that the applicant decides to submit into the record. Such estimate must include the cost of fuel (including the risk of fuel supply disruptions and higher fuel costs), controlling pollution emissions (including carbon dioxide, as discussed in Section II.D), waste disposal, water use, routine maintenance and repair, emission testing, and any other cost of operation.

fired power plants and other major sources must be controlled. Moreover, U.S. EPA has announced its intention to develop regulations that will address CO₂ emissions – both for mobile sources and stationary sources.

The need to control CO₂ emissions places an especially large financial cost on pulverized coal plants because they emit more CO₂ and are costlier to retrofit than other alternatives. For example, a natural gas combined cycle plant releases substantially less CO₂ than a pulverized coal plant does,¹³ and alternatives such as energy efficiency and wind generate no CO₂. In fact, a pulverized coal plant would likely be the most expensive energy option once the cost of capturing CO₂ is factored in.¹⁴ In addition, estimates show that capturing CO₂ from a pulverized coal plant could add between 58% and 84% to the cost of electricity from such plant, which is a higher cost penalty than would likely be experienced by natural gas combined cycle plants and Integrated Gasification Combined Cycle (“IGCC”) coal plants.¹⁵ The cost of controlling CO₂ emissions must be factored into the evaluation of the Meigs plant and alternatives.¹⁶

Even if AMP is improperly permitted to build the Meigs plant without being required to control its CO₂ emissions, it is a virtual certainty that federal global warming legislation will impose a substantial cost on CO₂ emissions in the near future. In fact, there are currently at least six bills proposing mandatory CO₂ emission targets, four states have already required CO₂

¹³ U.S. Department of Energy/National Energy Technology Laboratory, Fossil Energy Power Plant Desk Reference, Bituminous Coal and Natural Gas to Electricity Summary Sheets (May 2007), at Overview 5. The Overview is attached as Exhibit 7.

¹⁴ Testimony of Janine L. Migden-Ostrander, Director of the Ohio Consumers' Counsel, to the Ohio Senate Energy and Public Utilities Committee, Oct. 11, 2007, at Appendix C. Appendix C of that testimony is attached as Exhibit 8.

¹⁵ Testimony of Richard C. Furman at 11-13, and Exhibit RCF-5 to that testimony. Mr. Furman's testimony is included as Exhibit 9.

¹⁶ AMP has suggested that it might use Powerspan control technology to capture CO₂ emissions in the future, and provided an initial economic scoping study by the U.S. Department of Energy of using aqueous ammonia systems to capture CO₂. The company, however, has not legally committed to using Powerspan and that technology has never been tested for CO₂ capture outside of a lab. As such, a CO₂ control cost estimate cannot be based simply on the possible use and cost of Powerspan, and must include estimates of other CO₂ capture alternatives in case Powerspan proves unsuccessful.

reductions from power plants, a number of states have proposed CO2 reductions goals, and energy industry leaders and investors are preparing and even calling for CO2 regulations.¹⁷ As such, federal CO2 regulation is a question of “when” not “if,” and certainly would apply for most, if not all, of the projected 45 year operating life of the Meigs plant.

The cost impact of such CO2 regulation must be factored into the evaluation of the Meigs plant. One way to do so is to develop an expected per ton CO2 price forecast, and add that to the annual operating costs for the plant. In the spring of 2006, Synapse Energy Economics developed such a forecast, and concluded that the estimated middle range levelized cost of CO2 emissions would be \$19.83 per ton in 2005 dollars.¹⁸ Multiplied by 7.3 million tons of CO2 per year, such CO2 regulation would add approximately \$144.76 million to the annual operating costs of the Meigs plant. In addition, today’s estimate of the cost of CO2 regulations could be even higher, given that a number of bills mandating even steeper reductions in CO2 emissions have been introduced in Congress since Synapse’s Spring 2006 estimate.¹⁹ In fact, other estimates issued since then have been higher.²⁰

There is a general consensus that the U.S. will need to achieve 60% to 80% reductions in CO2 emissions by 2050 in order to stabilize atmospheric CO2 concentrations and avoid the most dangerous changes to the climate. In order to get to that goal, significant CO2 capture will be necessary, and the cost of emitting CO2 under any program designed to achieve this goal will be high. Those costs must be factored into this proceeding.

¹⁷ See Testimony of David A. Schlissel on behalf of Mark Trechock and Dakota Resource Council, Public Service Commission of the State of North Dakota, Case Nos. PU-06-481 and PU-06-482 (May 31, 2007), at 21-37, attached as Exhibit 10. As noted previously, assuming intervention is granted, Mr. Schlissel should be available to provide an updated analysis of CO2 cost risks that is focused specifically on the AMP proposal.

¹⁸ *Id.* at 41; Synapse Energy Economics, *Climate Change and Power: Carbon Dioxide Emission Costs and Electricity Resource Planning* (April 2006), attached as Exhibit 11.

¹⁹ *Id.* at 45-46.

²⁰ *Id.*

D. AMP Has Not Provided an Evaluation of the Comparative Costs of the Meigs Plant and Alternatives.

The Board's regulations require AMP to provide capital and operation cost estimates for alternatives so that they can be compared to the proposed Meigs plant. Ohio Admin. Code 4906-13-05(B)(1), (3) & (C)(1), (3). AMP, however, has failed to do so. Instead, the company noted in its application that "based on its due diligence, AMP-Ohio believes the levelized costs of [the Meigs plant] compares favorably with other possible sources of long term base load power to make up a part of its members' power supply portfolios," and that, with the exception of the possible use of an alternative type of pollution scrubber, "AMP-Ohio is not proposing any other alternatives" to the Meigs plant. (AMP App., Section OAC 4906-13-05 at 2, 3).

This is plainly inadequate. Leaving aside the fact, described in Section IV below, that there are more cost effective ways than pulverized coal to meet energy needs, AMP's unsupported statements do not satisfy the requirements of the Board's regulations. AMP cannot simply claim that it has evaluated the cost of alternatives; instead it must "submit" such evaluation so that the ALJ, Board and the public can "compare alternatives," Ohio Admin. Code 4906-13-05(B)(1), (3) & (C)(1), (3), in order to determine if the Meigs plant would have the "minimum adverse environmental impact, considering . . . various alternatives." Ohio Rev. Code § 4906.10(A)(3). Certainly, the fact that AMP does not want to propose any other alternatives does not allow it to avoid the legal requirement that such alternatives be evaluated. Ohio Rev. Code § 4906.10(A)(3). Feasible alternatives to the proposed facility are discussed in more detail below.

III. The Board Must Evaluate the Global Warming and Cumulative Environmental Impacts of the Proposed Meigs Plant.

Another area where the record is lacking in this proceeding is in the evaluation of the environmental impacts of the proposed Meigs plant. The Power Siting Statute requires that the Board "finds and determines . . . the nature of the probable environmental impact" of the proposed facility. Ohio Rev. Code § 4906.10(A)(2). But the record includes no information on at least two critical areas of environmental impact – global warming and cumulative environmental impacts. Both of these issues must be evaluated in this proceeding, as they are relevant to the issue of whether AMP's proposal "serves the public interest, convenience, and necessity" or "represents the minimum adverse environmental impact."

A. The Board Must Evaluate the Global Warming Impact of the Meigs Plant

A major environmental impact of the proposed Meigs plant is its annual emission of 7.3 million tons of CO₂,²¹ which is the primary contributor to global warming. The science is undeniable that global warming is real and is likely to have numerous and severe adverse public health, environmental, and economic impacts.²² These include direct heat-related effects, extreme weather events, climate-sensitive disease impacts, air quality effects, agricultural effects (and related impacts on nutrition), wildlife and habitat impacts, biodiversity impacts, impacts on marine life, economic effects, and social disruption (such as population displacement).²³ As the Director of the Kansas Department of Health and the Environment recently stated in denying a permit application for the proposed Holcomb coal plant, "it would be irresponsible to ignore

²¹ Feasibility Study at Appendix ES-1 pp. 1-2 line 13.

²² See, e.g., Intergovernmental Panel on Climate Change, Working Group II, *Climate Change 2007: Impacts, Adaptation, and Vulnerability*, available at <http://www.ipcc-wg2.org/> (The summary of this report is included as Exhibit 12); STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE, available at http://www.hm-treasury.gov.uk/Independent_Reviews/stern_review_economics_climate_change/sternreview_index.cfm. (The executive summary of the Stern report is included as Exhibit 13). The Pew Center on Global Climate Change has also issued a series of reports on the impacts of climate change, which are available at http://www.pewclimate.org/global-warming-in-depth/environmental_impacts/reports/.

²³ See <http://www.epa.gov/climatechange/effects/health.html>.

emerging information about the contribution of carbon dioxide and other greenhouse gases to climate change and the potential harm to our environment and health if we do nothing.²⁴ And the only way to reduce CO₂ emissions, as recognized by the Supreme Court in *Massachusetts v. EPA*, is to address the individual sources that contribute to the problem.²⁵

The Board is legally required to evaluate the substantial impact that the CO₂ emissions from the Meigs plant would have. As noted, the Power Siting Statute requires the Board to evaluate the "probable environmental impact" of AMP's proposal. Ohio Rev. Code § 4906.10(A)(2). As discussed below, CO₂ emissions from the Meigs plant would contribute to the significant public health and environmental impacts caused by global warming. Such impacts, therefore, constitute a "probable environmental impact" of the plant. In addition, the Board's regulations require the applicant to address a list of specific air pollutants and "other pollutants." Ohio Admin. Code 4906-13-06(B)(1)(b), (B)(3)(a)(vi). While "pollutant" is not defined in the Power Siting Statute or Board regulations, the U.S. Supreme Court recently held that it is "unambiguous" that CO₂ constitutes an "air pollutant" under the Clean Air Act. *Massachusetts v. EPA*, 127 S.Ct. 1438, 1460 (2007). It would be legal error for the Board to hold otherwise here.

²⁴ Kansas Dept. of Health and the Environment, Press Release: KDHE Electric Denies Sunflower Electric Air Quality Permit (Oct. 18, 2007), attached as Exhibit 14.

²⁵ The Board must reject any argument that the climate-related CO₂ impacts of the Meigs plant can be ignored simply because the specific emissions from the plant cannot be identified as the direct cause of any particular environmental impact. The fact that a multitude of sources contribute collectively to global warming cannot function to excuse consideration of the contribution of each individual source. Such a reading would render meaningless laws intended to address environmental effects, and would allow the most significant contributors to the most important environmental problem of our day to entirely avoid scrutiny. We know that CO₂ is the primary contributor to global warming, and that coal-fired power plants are the primary contributors to anthropogenic CO₂ emissions. We also know that the proposed Meigs plant would emit more than 7 million tons of CO₂ every year (totaling more than 350 million tons over its likely operational life). As a result, it would be illogical and irresponsible to ignore these emissions in the context of the pre-construction review process that is specifically designed to evaluate human health and environmental impacts

1. The Science Indisputably Demonstrates that Global Warming is Occurring and Will Have Major Environmental and Public Health Impacts.

Perhaps the leading source of research and data regarding global warming, its causes, and its impacts is the Intergovernmental Panel on Climate Change ("IPCC"), which recently won a Nobel Peace Prize for its work. The IPCC was established by the World Meteorological Organization ("WMO") and the United Nations Environment Programme ("UNEP") in 1988. The IPCC's mission is to comprehensively and objectively assess the scientific, technical and socio-economic information relevant to human-induced climate change, its potential impacts, and options for adaptation and mitigation.²⁶

The IPCC is currently finalizing its Fourth Assessment Report, "Climate Change 2007."²⁷ In advance of public release of the finalized Fourth Assessment Report, the IPCC has recently released summaries of its three working groups that are contributing to the Fourth Assessment Report. The Board should consider the entire Fourth Assessment Report and make it part of the administrative record for the proposed certification. The Report authoritatively documents the adverse environmental and socio-economic impacts of global warming at local, regional, national and global scales, and the primary role of the burning of fossil fuels, including coal, in causing global warming.

In February 2007, the IPCC released a summary of the contribution of Working Group I to its Fourth Assessment Report.²⁸ Working Group I is responsible for assessing the scientific

²⁶ <http://www.ipcc.ch/about/about.htm>.

²⁷ *Id.*

²⁸ The Summary is attached as Exhibit 15. The complete Working Group I report is available at <http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>.

aspects of the climate system and climate change.²⁹ The Working Group I Summary concludes, among other things, that:

- The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 ppm to 379 ppm in 2005;
- The atmospheric concentration of carbon dioxide in 2005 exceeds by far the natural range over the last 650,000 years;
- The primary source of the increased atmospheric concentration of carbon dioxide since the pre-industrial period results from fossil fuel use;
- There is at least a 9 out of 10 chance that the global average net effect of human activities since 1750 has been one of warming;
- Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level;
- At continental, regional and ocean basin scales, numerous long term changes have been observed. These include changes in arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones;
- There is greater than a 90% likelihood that most of the observed increases in global average temperatures since the mid-20th century are due to the observed increases in anthropogenic greenhouse gas emissions;
- For the next two decades, warming of about 0.2 Degrees Celsius per decade is projected for a range of emission scenarios;
- There is greater than a 90% likelihood that hot extremes, heat waves and heavy precipitation events will continue to become more frequent; and
- Anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks, even if greenhouse gas concentrations were to be stabilized.

In April 2007, the IPCC released a summary of the Contribution of Working Group II to its Fourth Assessment Report.³⁰ Working Group II is responsible for assessing the vulnerability

²⁹ <http://www.ipcc.ch/about/about.htm>.

³⁰ The Summary is attached as Exhibit 12. The complete Working Group II report is available at <http://www.ipcc-wg2.org/>.

of socio-economic and natural systems to climate change, the consequences of climate change, and the options for adapting to it.³¹ The Working Group II Summary, concludes, among other things, that:

- By mid-century, annual average river runoff and water availability are projected to decrease by 10-30% over some dry regions at mid-latitudes and in the dry tropics, some of which are presently water stressed areas;
- In the course of the century, water supplies stored in glaciers and snow cover are projected to decline, reducing water availability in regions supplied by meltwater from major mountain ranges, where more than one-sixth of the world population currently lives;
- Warming in the mountains of western North America is projected to cause decreased snowpack, more winter flooding, and reduced summer flows, exacerbating competition for over-allocated water resources;
- Drought-affected areas will likely increase in extent. Heavy precipitation events which are very likely to increase in frequency, will augment flood risk;
- Increases in the frequency of droughts and floods are projected to affect local crop production, especially in subsistence sectors at low latitudes;
- Poor communities can be especially vulnerable, in particular those concentrated in high-risk areas. They tend to have more limited adaptive capacities, and are more dependent on climate-sensitive resources such as local food and water supply;
- Disturbances from pests, disease and fire are projected to have increasing impacts on North American forests, with an extended period of high fire risk and large increases in area burned;
- In North America, major challenges are projected for crops that are near the warm end of their suitable range or depend on highly utilized water resources;
- The resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbances (e.g., flooding, drought, wildfire, insects, ocean acidification), and other global change drivers (e.g., land use change, pollution, over-exploitation of resources);
- Approximately 20-30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperatures exceed 1.5-2.5 Degrees Celsius;

³¹ <http://www.ipcc.ch/about/about.htm>

- For increases in global average temperature exceeding 1.5-2.5 Degrees Celsius and in concomitant atmospheric carbon dioxide concentrations, there are projected to be major changes in ecosystem structure and function, species' ecological interactions, and species' geographic ranges, with predominantly negative consequences for biodiversity, and ecosystem goods and service, e.g., water and food supply;
- Projected climate change-related exposures are likely to affect the health status of millions of people, particularly those with low adaptive capacity; and
- Even the most stringent mitigation efforts cannot avoid further impacts of climate change in the next few decades, which make adaptation essential, particularly in addressing near-term impacts. Unmitigated climate change would, in the long term, be likely to exceed the capacity of natural, managed and human systems to adapt.

The serious harms attributable to global warming were also recently acknowledged by the U.S. Supreme Court. On April 2, 2007, the Court issued a seminal ruling on EPA's authority and obligations under the Clean Air Act to regulate greenhouse gas emissions. *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007). In its ruling, the Court, even without the benefit of the most recent IPCC Summary Reports, noted that the "[t]he harms associated with climate change are serious and well recognized." *Id.* at 1455. The Supreme Court also acknowledged "the enormity of the potential consequences associated with man-made climate change," and the contribution of carbon dioxide emissions to global warming. *Id.* at 1457 – 58.

2. Global Warming Will Have Significant Environmental, Public Health, and Economic Impacts on Ohio and Meigs County.

While global warming is a worldwide phenomenon, it will have substantial localized impacts on Ohio and Meigs County.³² The major climate changes associated with global

³² For an overview of some of the likely impacts of global warming on Ohio, see George Kling and Donald Wuebbles, *Confronting Climate Change in the Great Lakes Region*, Union of Concerned Scientists (2003), attached as Exhibit 16; U.S. EPA, *Climate Change and Ohio*, EPA 236-F-98-007s (Sept. 1998), attached as Exhibit 17. It is important to note, however, that the science regarding the likely scope and intensity of the impacts of global warming has continued to advance since those two reports were issued.

warming – increases in average temperature, and increased incidences of extreme heat, droughts, and heavy rain events – will be experienced throughout Ohio.

Such climate changes will have significant public health impacts, including increased numbers of heat related deaths and expanded habitat and infectiousness of disease carrying species such as ticks that carry Lyme disease. Global warming will also lead to increased concentrations of ground-level ozone, which can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. Repeated exposure to ozone can lead to bronchitis, emphysema, asthma, and permanent scarring of lung tissue.³³

Climate changes will also have a significant impact on Ohio's environment. For example, it is predicted that global warming will lead to a 4 to 5 foot drop in the level of Great Lakes, including Lake Erie,³⁴ and to declines in the levels of inland lakes. Increased temperatures, heavy rain events, and droughts will also disrupt or alter agricultural and forestry patterns in the state. As the U.S. EPA has recognized, "[a]griculture is highly sensitive to climate variability and weather extremes, such as droughts, floods and severe storms."³⁵ As such, climate change can adversely affect crop yields in regions where summer heat already limits production, increase the likelihood of severe droughts, and increase the rate of evaporation of moisture from topsoil. Moreover, the increase in heavy precipitation events to which climate change contributes is projected to lead to increased soil erosion, and disrupt habitat for animal, plant, and aquatic life throughout Ohio.

Global warming will also have significant economic impacts on Ohio and Meigs County. For example, the lowering of the level of Lake Erie and inland lakes throughout the state will

³³ U.S. EPA, Ground-Level Ozone: Health and Environment (2007), Available at <http://www.epa.gov/air/ozonepollution/health.html> (last visited Aug. 26, 2007).

³⁴ U.S. Global Climate Change Research Program "Climate Change Impacts on the United States", ch. 6 (2001)

³⁵ U.S. EPA, Climate Change – Health and Environmental Effects – Agriculture and Food Supply, available at <http://www.epa.gov/climatechange/effects/agriculture.html> (visited Oct. 23, 2007).

adversely impact shipping on Lake Erie and tourism throughout the state. Increased droughts and severe weather events will cause property damages and lead to increased insurance costs. In addition, water infrastructure such as sewers and waste-water treatment plants will have to be upgraded to handle heavy precipitation events. The longer we wait to address these issues, the greater the economic cost will be, both because the impacts of global warming will continue to build up and because the reductions in CO2 emissions will have to occur much more rapidly.

3. Coal-Fired Power Plants and Other Sources of CO2 Emission Are a Primary Cause of Global Warming.

As discussed above, CO2 emissions from coal-fired power plants and other fossil fuel sources are a primary cause of global warming. Fortunately, there are lower CO2 energy options that will help curb global warming and have numerous other societal benefits. For example, in May 2007 the IPCC released a summary of the contribution of Working Group III to its Fourth Assessment Report.³⁶ Working Group III is responsible for assessing options for limiting greenhouse gas emissions and otherwise mitigating climate change.³⁷ The Working Group III Summary concludes, among other things, that:

- Global greenhouse gas (GHG) emissions have grown since preindustrial times, with an increase of 70% between 1970 and 2004;
- The largest growth in global GHG emissions between 1970 and 2004 has come from the energy supply sector (an increase of 145%);
- With current global climate change mitigation policies and related sustainable development practices, global GHG emissions will continue to grow over the next few decades;
- There is substantial economic potential for the mitigation of global GHG emissions over the coming decades, that could offset the projected growth of global emissions or reduce emissions below current levels;

³⁶ The Summary is attached as Exhibit 18. The complete Working Group III report is available at http://www.mnp.nl/ipcc/pages_media/ar4.html.

³⁷ <http://www.ipcc.ch/about/about.htm>.

- There are mitigation opportunities with net negative costs, in other words, for which the benefits such as reduced energy costs and reduced emissions of pollutants equal or exceed their costs to society, excluding the benefits of avoided climate change;

- Fuel switching from coal to gas, renewable heat and power (hydropower, solar, wind, geothermal and bioenergy), and early applications of carbon capture and storage (eg. storage of removed carbon dioxide from natural gas) are key mitigation technologies and practices currently commercially available;

- Near-term health co-benefits from reduced air pollution as a result of actions to reduce GHG emissions can be substantial and may offset a substantial fraction of mitigation costs;

- It is often more cost-effective to invest in end-use energy efficiency improvement than in increasing energy supply to satisfy demand for energy services. Efficiency improvement has a positive effect on energy security, local and regional air pollution abatement and employment;

- Renewable energy generally has a positive effect on energy security, employment and on air quality; and

- In order to stabilize the concentrations of GHGs in the atmosphere, emissions would need to peak and decline thereafter

Coal-fired power plants in Ohio are a major source of CO₂ emissions. In 2004, Ohio had the fourth highest overall CO₂ emissions in the U.S., and the second highest CO₂ emissions from coal-fired power plants in the U.S.³⁸ Reductions of 60-80% of CO₂ emissions in Ohio and nationwide will be needed to prevent significant additional global warming. Two major ways to achieve that goal is to prevent CO₂ emissions in the first instance by limiting the burning of coal, and by controlling CO₂ emissions from coal-fired power plants that do exist.³⁹ Unfortunately, AMP is proposing to build a major new source of CO₂ without any commitment to control those

³⁸ Environment Ohio, *The Carbon Boom* (April 2007).

³⁹ See, e.g., Daniel Lashof and David Hawkins, *An Action Plan to Reduce U.S. Global Warming Pollution*, NRDC (July 27, 2006), attached as Exhibit 19.

emissions.⁴⁰ Given the serious and urgent threat posed by global warming, this should not be allowed.

B. The Board Must Evaluate the Cumulative Environmental Impact of the Meigs Plant and Other Major Sources of Pollution in Meigs County.

In order to determine the "probable environmental impact" of AMP's proposal, the Board must also evaluate the cumulative environmental impacts of the proposal on Meigs County. An evaluation of cumulative impacts is necessary because, combined, pollution loadings may add up to have a larger impact than would be expected if they were only considered individually. As the U.S. Senate Report accompanying the National Environmental Policy Act ("NEPA") stated in explaining the importance of evaluating cumulative impacts under that statute: "Important decisions concerning the use and the shape of man's future environment continue to be made in small but steady increments which perpetuate rather than avoid the recognized mistakes of previous decades."⁴¹ Therefore, in order to get "a realistic evaluation of the total impacts," it is important to evaluate the cumulative environmental impacts of major pollution sources, rather than just considering individual projects "in a vacuum."⁴²

AMP is proposing its plant for Letart Falls, in Meigs County, which is an area in southeast Ohio that already has a high concentration of coal-fired power plants and other major polluting sources. There are four coal-fired power plants – J.M Gavin, Mountaineer, Philip Sporn, and Kyger Creek – within approximately 10 miles of Letart Falls, and there are numerous

⁴⁰ As noted above, AMP has suggested that it might use Powerspan control technology to capture CO2 emissions from the Meigs plants. AMP, however, has not legally committed to actually capturing CO2 emissions with Powerspan or any other technology. In addition, Powerspan has never been tested outside of a lab for CO2 capture. The possibility that AMP might use a technology that is currently unproven for CO2 capture should not be used to justify the construction of a major new source of CO2 emissions.

⁴¹ S. Rep. No. 91-296, 91 Cong., 1st Sess. 5 (1969).

⁴² *Grand Canyon Trust v. Federal Aviation Administration*, 290 F.3d 339, 342 (D.C. Cir. 2002) (citations from multiple circuits omitted).

other major sources of air pollution in or near Meigs County. In 2004, the Gavin plant ranked in the top 50 nationwide for sulfur dioxide emissions, while as of 2002 the Kyger plant was in the top 50 for mercury emissions.⁴³ In 2005, the Mountaineer and Sporn plants emitted 12.4 million pounds of air toxins.⁴⁴ A thorough evaluation of the air, water, and land use impacts of the cumulative impacts of the Meigs plant and other major pollution sources in and around Meigs County is needed to determine the “probable environmental impact” of adding another major source of air pollution to Meigs County.

IV. The Board Must Deny Certification for the Meigs Plant Because it Would Not Serve the Public Interest, Convenience and Necessity.

The Power Siting Statute prohibits the certification of a proposed power plant unless the proposal “will serve the public interest, convenience, and necessity.” Ohio Rev. Code 4906.10(A)(6). As described above, the Meigs plant would contribute to the substantial economic, environmental, and public health threat posed by global warming, be subject to significant costs relating to the regulation of CO₂ emissions, add to the already large pollution load in Meigs County, and likely cost substantially more to construct and operate than currently estimated. As such, it would be arbitrary and capricious to deem the proposed Meigs plant to be in the “public interest.” Given the substantial threat posed by global warming, AMP would, at a minimum, have to include legally binding carbon capture and sequestration requirements and agree to achieve significantly lower emission levels of other pollutants in order to satisfy the standards of the Power Siting Statute. AMP’s proposal does not do so.

⁴³ Tom Baker and Spencer Hunt, Ohio River Coal-Fired Power Plants, Columbus Dispatch (Dec. 5, 2005).

⁴⁴ Spencer Hunt, What’s a Little Smoke, Columbus Dispatch (Oct. 15, 2007).

V. The Board Must Deny Certification For the Meigs Plant Because it Does Not Represent the Minimum Adverse Environmental Impact Given the Availability, Feasibility, and Cost Effectiveness of Less Polluting Alternatives.

AMP's certification application must also be denied because there are feasible and cost effective alternatives that would have less environmental impact than the proposed Meigs plant. The Power Siting Statute provides that the Board "shall not grant certification" unless the proposed facility "represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives." Ohio Rev. Code 4906.10(A)(3). It is perhaps not surprising that AMP improperly failed to submit an alternatives analysis to the Board, given that there is strong evidence that AMP's proposal does not represent the minimum adverse environmental impact in light of the available alternatives.

AMP's assertion that the Meigs plant would "be one of the cleanest emitting facilities of its type in the nation" (AMP App. Section OAC 4906-13-01 at 10) is misleading at best because the type of plant AMP has proposed – a pulverized coal plant – is a highly polluting source of power. In fact, the impacts of the proposed Meigs plant would be significant.⁴⁵ Every year, the plant would emit 7.3 million tons of CO₂, and up to 6,820 tons of sulfur dioxide ("SO₂"), 3,194 tons of nitrogen oxides ("NO_x"), and 1,182 tons of particulate matter ("PM"), 343 tons of sulfuric acid mist ("H₂SO₄"), 166.87 tons of volatile organic compounds ("VOC"), 880 pounds of lead ("Pb"), and 192 pounds of mercury ("Hg"). In addition, the plant would require at least 2.8 million tons of coal every year, the mining of which can pose substantial safety risks to miners, destroy natural habitats including entire Appalachian mountaintops, pollute rivers and streams, threaten houses and businesses with mine subsidence, and release substantial amounts of methane, which is another global warming gas. Waste from the plant would also have to be

⁴⁵ For a complete overview of the environmental and public health consequences of coal use, see the Natural Resources Defense Council's Issue Paper, Coal in a Changing Climate (Feb. 2007), attached as Exhibit 20.

disposed of in landfills, which present risks to public health and water quality.

Fortunately, there are less polluting ways to meet our energy needs. The existence of these alternatives prevents a finding that the Meigs plant "represents the minimum adverse environmental impact" and, therefore, requires the denial of this certification.

A. Energy Efficiency, Renewable Energy and Natural Gas Combined Cycle Represent a Cost Effective, Feasible, and Less Environmentally Damaging Alternative to the Proposed Meigs Plant.

The best alternative to the proposed Meigs plant is an aggressive energy efficiency and renewable energy program complemented by natural gas combined cycle plants. Such an alternative would have significantly less adverse environmental impact than coal-based generation. Energy efficiency and renewable energy sources such as wind generate virtually no CO₂, SO₂, NO_x, PM, or other air pollutants, do not require the mining of coal, do not produce solid wastes, and do not generate water pollution. Natural gas combined cycle plants, in comparison to a pulverized coal plant such as the proposed Meigs plant, emit only negligible amounts of SO₂ and PM, approximately 1/7th the NO_x, and substantially less CO₂.⁴⁶ Given these advantages, efficiency, renewable energy, and natural gas combined cycle should be fully pursued before new coal-based generation is considered.

Such alternatives are cost competitive with a proposed pulverized coal plant. For example, the director of the Ohio Consumers' Counsel recently testified to the Ohio Senate

⁴⁶ U.S. Department of Energy/National Energy Technology Laboratory, Fossil Energy Power Plant Desk Reference, Bituminous Coal and Natural Gas to Electricity Summary Sheets (May 2007), at Overview 4-5. The Overview is attached as Exhibit 7. It is important to note that this study overestimated the amount of NO_x that IGCC plants would emit because it failed to include the use of SCRs for the control of NO_x emissions from such plants.

Energy and Public Utilities Committee that the estimated cost per kilowatt hour ("kWh") of power, levelized over the next 20-years, for various sources of energy is:⁴⁷

Technology	Cost (cents/kWh)
Energy Efficiency	1.3 to 3.2
Wind	4.5
Pulverized Coal w/o carbon capture	6.40
Natural Gas w/o carbon capture	6.84
Natural Gas w/carbon capture	9.74
Pulverized Coal w/carbon capture	11.88

Therefore, with the cost of the legally and environmentally necessary CO2 controls factored in, energy efficiency, wind, and natural gas combined cycle are all significantly less expensive than pulverized coal. Even if the Board improperly ignored the cost of CO2 capture, energy efficiency and wind are less expensive, and natural gas combined cycle is cost competitive, with pulverized coal.

It is important to note here that the Board cannot simply eliminate an alternative because it is estimated to be more slightly expensive than AMP's proposal. The Power Siting Statute makes clear that the Board is supposed to determine whether there are less environmentally damaging alternatives, and to "consider" the "economics of the various alternatives" in making this determination. Ohio Rev. Code § 4906.10(A)(3). As such, the Statute requires the Board only to evaluate whether an alternative is economically feasible, not whether it is the cheapest alternative. In addition, in comparing the "economics" of alternatives, the Board must factor in the fact that air and water pollution has a significant economic impact. As such, the small difference in cost between natural gas combined cycle and pulverized coal without carbon

⁴⁷ See Exhibit 8. It is important to note that these cost estimates do not fully reflect the substantial increases in construction costs for new power generating sources. While such increases impact coal, natural gas, and wind projects, they are likely to have the largest impact on coal plants given that such plants have higher construction costs to begin with.

capture is more than made up for by the economic benefit of the lower air and water pollution that results from natural gas.

Finally, energy efficiency, wind, and natural gas combined cycle are all technologically available and AMP could easily pursue them with the billions of dollars it is proposing to spend on the Meigs plant.⁴⁸ For example, the Northwest Power and Conservation Council used aggressive energy efficiency efforts to achieve 1,535 average megawatts of electricity savings since 1980 at an average cost of 2.1 cents/kWh.⁴⁹ When combined with federal appliance efficiency standards, per capita energy use has flatlined since 1980 in the states covered by the Council.

Similarly, in its 2007 Integrated Resource Plan, Avista Utilities included no new coal-fired generation.⁵⁰ Instead, the utility plans to meet future energy needs with 350 MW of natural gas combined cycle, 300 MW of wind, 35 MW of other renewables, and 87 MW of conservation between 2007 and 2017.

Also, in Arizona, the Southwestern Power Group recently announced that its proposed Bowie Power Station IGCC coal plant is instead going to be built as a natural gas combined cycle plant.⁵¹ The company made this change because of concerns about the market economics and regulatory uncertainty related to coal generation.

As another example, Waverly, Iowa's municipal power authority, which has 4,900 customers, has purchased three wind turbines with a combined capacity of 1.5 MW, and has managed to reduce its energy demand by 2.3 MW through energy efficiency programs. Waverly

⁴⁸ Assuming that intervention is granted, Mr. Schlissel should be available to provide expert testimony regarding the cost and feasibility of alternatives to the AMP proposal.

⁴⁹ Northwest Power and Conservation Council, *The Fifth Northwest Electric Power and Conservation Plan – Conservation Resources* (2005), at 3-6, attached as Exhibit 21.

⁵⁰ Avista Utilities, 2007 Electric Integrated Resource Plan (2007). The Executive Summary of this Plan is attached as Exhibit 22. The complete Plan is available at <http://www.avistautilities.com/resources/plans/electric.asp> (visited Oct. 23, 2007).

⁵¹ Bob Christie, *Facing Criticism, Power Firm Drops Plan to Burn Coal at Proposed Plant*, *Arizona Daily Star* (Sept. 3, 2007), attached as Exhibit 23.

is also one of the more than 100 municipal utilities in Iowa, Minnesota, and the Dakotas that are developing the Iowa Stored Energy Project that would use compressed air energy storage to turn wind power into base load generation.⁵²

The evidence is clear that an alternative combining an aggressive energy efficiency and renewable energy program with natural gas combined cycle plants would have less adverse environmental impact, be cost effective, and is technologically achievable. Therefore, it would be arbitrary and capricious for the Board to determine that the Meigs plant represents the minimum adverse environmental impact, and certification must be denied.

B. AMP's Proposal Does Not Represent the Minimum Adverse Environmental Impact For Even Coal Power Generation.

Given the serious global warming, air, water, land use, and financial impacts of using coal, energy efficiency, renewable energy, and natural gas combined cycle should be fully realized before new coal power generation is sought. Even looking just at coal, however, it is clear that the Meigs plant does not "represent the minimum adverse environmental impact" for meeting energy needs. In particular, in comparison to the proposed Meigs plant, IGCC is an available and cost competitive technology that leads to significantly lower emissions of the six criteria air pollutants and provides commercially proven opportunities to control carbon dioxide emissions.

The attached expert testimony from Richard Furman, a consulting engineer with more than 30 years experience with energy issues, thoroughly explains how IGCC leads to lower pollution emission than the proposed Meigs plant, is technologically feasible and cost effective,

⁵² <http://www.isepa.com/index.asp>.

and allows for the capture and sequestration of CO2 emissions. It is important to emphasize here two points from that testimony.

First, recently permitted IGCC plants emit significantly less pollution than the Meigs plant would emit. For example, below is a comparison of the total tons per year of pollutants that the two 480 MW units in the Meigs plant and the emissions that a similarly sized IGCC plant consisting of three 320 MW units would emit, based on the recently permitted Taylorville IGCC plant in Illinois:

	AMPGS ⁵³	Taylorville ⁵⁴
Sulfur Dioxide ("SO2")	6,820	654
Nitrogen Oxide ("NOx")	3,194	1,128
Particulate Matter ("PM")	1,182	636
Carbon Monoxide ("CO")	7,009	1,566

Second, IGCC is cost competitive with pulverized coal. With carbon capture, energy from an IGCC plant is estimated to cost 10.63 cents per kWh, while energy from a pulverized coal plant would likely cost 11.88 cents/kWh.⁵⁵

The evidence is clear that IGCC is a cost effective and technologically feasible way to produce energy from coal and that IGCC plants create less air pollution and provide a more proven opportunity to capture and sequester CO2 than the proposed Meigs plant would.

Additionally, IGCC produces less solid waste, uses less water, and emits less mercury than does a pulverized coal plant. As such, the Meigs plant does not "represent the minimum adverse environmental impact" and certification must be denied.

⁵³ Ohio EPA, Draft Air Permit-to-Install for American Municipal Power Generating Station (Sept. 13, 2007) at 9. The Ohio EPA's draft air permit for the AMP plant is available at http://www.epa.state.oh.us/dapc/pti_issued/pti_pdf_07/0608138d.pdf.

⁵⁴ Illinois EPA, Christian County Generation LLC Final Air Permit (June 5, 2007), Attachment 1 at 1-3. Taylorville is a 630 MW plant, so we have adjusted the emission limits in the Taylorville permit to reflect a 960 MW IGCC plant. The Illinois EPA's final air permit for the Taylorville IGCC plant is available at [http://yosemite.epa.gov/r5/il_permit.nsf/7687aeaba1673e7d862566eb00669d30/ddb883bbdf61292b852572330056c63c/\\$FILE/05040027.pdf](http://yosemite.epa.gov/r5/il_permit.nsf/7687aeaba1673e7d862566eb00669d30/ddb883bbdf61292b852572330056c63c/$FILE/05040027.pdf) (visited Oct. 23, 2007).

⁵⁵ See Furman Testimony, Exhibit 9, at RCF-6; Migden-Ostrander Testimony, Exhibit 8 at Appendix C.

C. AMP's Proposal Does Not Incorporate the Maximum Feasible Water Conservation Practices

Certification must also be denied because AMP's proposal does not "incorporate maximum feasible water conservation practices . . . considering available technology and the nature and economics of the various alternatives." Ohio Rev. Code 4906.10(A)(8). In particular, with or without carbon capture, a pulverized coal plant would use approximately two-and-a-half times as much water as a natural gas combined cycle plant, and nearly twice as much water as an IGCC plant.⁵⁶ Energy efficiency and wind require almost no water use. As such, certification for the Meigs plant must be denied.

D. At a Minimum, the Board Must Evaluate Other Alternatives For Reducing the CO2 and Other Pollution Impacts of the Proposed Meigs Plant.

As discussed above, the Board must deny certification for the Meigs plant because there are less environmentally damaging alternatives available. If the Board does not deny the certification, it must require modifications to AMP's proposal to limit its adverse impacts. Ohio Rev. Code § 4906.10(A) (noting that a proposal may be modified by the Board). Most significantly, the Board must require the proposed plant to capture and sequester its CO2 emissions, so that the significant environmental and economic risks related to CO2 emissions can be avoided, and to achieve significantly lower emission levels for other pollutants. In addition, the Board should evaluate output-based standards that will reduce the amount of coal burned by


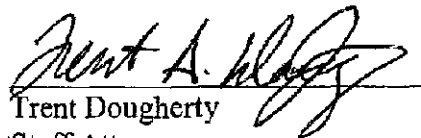
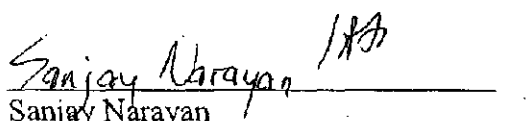
⁵⁶ See Exhibit 7 at 5.

requiring increased efficiency,⁵⁷ co-firing with lower carbon fuels such as natural gas or biomass, and a combination of alternatives that would allow for the building of a smaller coal plant.

VI. Conclusion

For the foregoing reasons, the Board should grant intervention to the Citizen Groups, allow for a full airing of the issues identified above, and deny certification to the proposed Meigs plant.

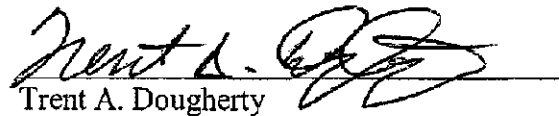
Respectfully Submitted,


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⁵⁷ See Furman Testimony, Exhibit 9 at 37 and RCF-30 to RCF-32.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing pleading and attachments were served upon the following parties of record or as a courtesy, via U.S. Mail postage prepaid, express mail, hand delivery, or electronic transmission, on October 25, 2007.


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