

BEFORE

THE OHIO POWER SITING BOARD

In the Matter of the Application of)
American Municipal Power-Ohio, Inc., for a)
Certificate of Environmental Compatibility) Case No. 06-1358-EL-BGN
and Public Need for an Electric Generation)
Station and Related Facilities in Meigs)
County, Ohio.)

ENTRY ON REHEARING

The Ohio Power Siting Board finds:

- (1) On May 4, 2007, American Municipal Power-Ohio, Inc. (AMP-Ohio), filed an application for a certificate of environmental compatibility and public need to construct the American Municipal Power Generating Station (AMPGS), a 960 megawatt (MW) electric generation facility, consisting of two 480 MW electric generating units in Meigs County, Ohio.
- (2) On March 3, 2008, the Board issued its Opinion, Order and Certificate (Order) in this proceeding.
- (3) Section 4906.12, Revised Code, states that Sections 4903.02 to 4903.16, Revised Code shall apply to any proceeding or order of the Board under Chapter 4906, Revised Code, in the same manner as if the Board were the Public Utilities Commission of Ohio under such sections. Section 4903.10, Revised Code, states that any party may apply for rehearing with respect to any matters determined in an order, within 30 days of the entry of the order upon the journal.
- (4) On April 2, 2008, the Natural Resource Defense Council, the Sierra Club, and Ohio Environmental Council (Citizen Groups) filed an application for rehearing alleging that the Order in this proceeding is unreasonable and unlawful on the following grounds.
 - (a) The Board failed to require an evaluation of the impacts of the AMP-Ohio facility's carbon dioxide (CO₂) emissions and improperly concluded that such CO₂ impacts need not be factored into the evaluation of

alternatives for minimizing the impacts of AMP-Ohio's proposal.

- (b) The Board improperly dismissed energy efficiency and renewable energy alternatives to the proposed AMP-Ohio facility.
 - (c) The Board improperly upheld AMP-Ohio's rejection of natural gas combined cycle and integrated gasification combined cycle alternatives to the proposed AMP-Ohio facility.
 - (d) The Board improperly upheld evidentiary rulings that were contrary to the Board's regulations and the Ohio Rules of Evidence.
- (5) On April 14, 2008, AMP-Ohio filed a memorandum contra the application for rehearing.
- (6) In their first assignment of error, the Citizen Groups allege that the Board failed to require an evaluation of the impacts of the AMP-Ohio facility's CO₂ emissions and improperly concluded that such CO₂ impacts need not be factored into the evaluation of alternatives for minimizing the impacts of AMP-Ohio's proposal. The Citizen Groups argue that the Order does not identify any evaluation of the impacts of CO₂ and overlooks numerous steps that could be taken to minimize those impacts. The Citizen Groups claim that it was erroneous not to require that the AMPGS minimize its global warming impacts by capturing and sequestering its CO₂ emissions.

In its memorandum contra, AMP-Ohio argues that the Board's Order, with respect to CO₂ emissions and alternatives, was reasonable and lawful. AMP-Ohio notes that no parties disputed the fact that the AMPGS CO₂ emissions are estimated at 7.3 million tons. AMP-Ohio argues that Section 4906.10(A)(3), Revised Code, explicitly requires consideration of *available* technology; but no evidence was presented at the hearing demonstrating that carbon capture and sequestration is commercially available for electric generation facilities.

The Board considered all emissions, including CO₂ emissions not currently regulated by the Ohio Environmental Protection Agency, when it determined the nature of the probable

environmental impact of AMP-Ohio's application (Order at 12, 16, 26, and 42-43). The Board granted AMP-Ohio a certificate for the construction, operation, and maintenance of two pulverized coal-fired generating units (each 480 MWs) that utilize multiple emissions control technologies including Powerspan ECO technology, and with terms and conditions that the Board considered appropriate (Order at 2, 16, 40, and 44). The Board also found that AMP-Ohio's Powerspan technology also has the potential for future carbon dioxide capture and sequestration (Order at 6-7), and one of the conditions in the Board's Certificate requires AMP-Ohio to file an application with the Board if and when it seeks to conduct carbon capture and sequestration (Order at 33, Condition 6). Another condition in the Certificate required AMP-Ohio to utilize either a subcritical or supercritical boiler design (Order at 32, Condition 2). AMP-Ohio has noted in its Memorandum Contra Application for Rehearing that it will be utilizing the more efficient supercritical boiler design which the record indicates will have less overall emissions than the proposed subcritical design would for AMPGS (AMP-Ohio Ex. 4 at 15-16).

The Board also concluded that the record demonstrates that there is no *commercially available* technology which provides a means of sequestering carbon at this time. Citizen Groups now argue that all of the necessary components of a carbon capture system have been demonstrated and that coal gasification plants at which CO₂ is captured have demonstrated the ability to inject CO₂ underground for enhanced oil recovery. However, the Citizen Groups' arguments fail to address whether there is a commercially available technology to sequester carbon.

The record in this case demonstrates that an integrated carbon capture and sequestration system requires three components: capture, transportation, and sequestration (Tr. I at 175-176). Thus, the fact that all of the components of carbon *capture* may have been demonstrated, as the Citizen Groups claim, does not address whether carbon *sequestration* has been demonstrated (Tr. I at 170-171). Further, there is no evidence in the record that the use of captured carbon for enhanced oil recovery is an adequate means of sequestering carbon.

Moreover, the fact that demonstration projects have been successfully completed for a given technology does not mean that the technology is commercially available for use at this time. The evidence in this proceeding indicates that there is a substantial lag between the demonstration of a given technology and its availability for commercial use (Tr. II at 53-54). In fact, the Citizen Groups' witness Furman testified that "there are many technologies that are successful in the laboratory that never see the light of day in commercial applications . . . we shouldn't be counting on things that aren't commercially available if we have an urgent problem to solve" (Tr. I at 188).

The record in this case supports the Board's finding that there is no commercially available means of sequestering carbon at this time. *The Future of Coal* study, which both the Citizen Groups and AMP-Ohio cited to as authoritative, indicates that there "is no operational experience with carbon capture from coal plants and certainly not with an integrated sequestration operation (AMP-Ohio Ex. 9 at xiii). Further, the Citizen Groups' own witness Furman acknowledged that existing IGCC plants in the United States are not equipped to capture and sequester CO₂ (Tr. I at 54-55, 176-177).

Therefore, the Board finds that our Order properly determined the nature of the probable environmental impact of the proposed AMPGS facility and properly determined that the proposed facility represented the minimum adverse environmental impact, considering the state of available technology and the nature and economics of various alternatives. Accordingly, rehearing on this assignment of error should be denied.

- (7) The Citizen Groups, in their second assignment of error, argue that the Board improperly dismissed energy efficiency and renewable energy alternatives to the proposed AMP-Ohio facility. The Citizen Groups contend that AMP-Ohio has failed to demonstrate that there are no less environmentally damaging alternatives to the proposed AMPGS facility. The Citizen Groups also argue that the Board must limit any certification for the proposed AMPGS facility to the amount of need that cannot be satisfied through less polluting alternatives. Finally, the Citizen Groups argue that the Board

based its decision on a significant underestimation of the amount of need that can be met through energy efficiency.

AMP-Ohio argues in its memorandum contra that the Board reasonably and lawfully found that energy efficiency and renewable energy sources, alone or in combination with other sources, could not serve the critical base load needs of AMP-Ohio.

Rehearing on this assignment of error should be denied. With respect to alternatives to the AMPGS facility, the Board found in the Order that the evidence in this case demonstrated that there is no feasible combination of energy efficiency measures and generation resources based upon renewable resources which could serve as an alternative to the proposed 960 MW AMPGS facility as a baseload generation resource. The Board found that the evidence in this proceeding demonstrates that energy efficiency measures can reduce generation needs by one to two percent (Tr. III at 78-79). Therefore, the Board concluded that energy efficiency may reduce required generation needs by 64 MW, without accounting for projected load growth in the future. The Citizen Groups now speculate that such reductions may be continued year after year, but, at the hearing, its witness Schlissel testified that there is no evidence to answer the question of whether such gains can or cannot be sustained over a period of years (Tr. III at 79).

With respect to generation based upon renewable resources, the Board noted in the Order that AMP-Ohio had identified potential additional wind-based generation resources of 50 MW and potential additional hydroelectric resources of 340 MW. However, the Board also noted that testimony at the hearing in this proceeding indicated that wind-based generation has a capacity factor of 21 to 23 percent (AMP-Ohio Ex. 17 at 3) and that hydroelectric generation has a capacity factor of 50 to 60 percent (AMP-Ohio-Ex. 18 at 6; Tr. VI at 66-67). Moreover, the record in this case demonstrates that wind and hydroelectric generation in this state are not dispatchable (Tr. III at 149; Tr. IV at 67; AMP-Ohio Ex. 17 at 2; AMP-Ohio-Ex. 18 at 6). Dispatchability, or the ability to ramp up generation quickly when needed, is critical to AMP-Ohio and its members because this facility will provide 47 percent of the base load resources available to its members when it becomes

operational (AMP-Ohio Ex. 3 at SK-7; Tr. II at 55-56). On the other hand, the AMPGS will have a capacity factor of 85 percent and will be dispatchable. Based on this evidence, the Board concluded that the substantially lower capacity factors for wind and hydroelectric generation and the fact that these resources are not dispatchable indicate that they are not comparable alternatives to the AMPGS facility as a baseload generation resource, which must be available 24 hours per day, seven days per week (AMP-Ohio Ex. 3 at 2).

The Citizen Groups do not dispute or otherwise address the lower capacity factors for wind and hydroelectric generation. Likewise, the Citizen Groups do not explain how wind and hydroelectric generation are comparable alternatives to the proposed AMPGS given the fact that these resources are not dispatchable. Therefore, the Board finds that the record in this proceeding supports our conclusion that there is no feasible combination of energy efficiency measures and generation resources based upon renewable resources which could serve as an alternative to the proposed AMPGS facility.

The Board further notes that the Citizen Groups have cited to no legal precedent to support their contention that the Board should limit any certification for the proposed AMPGS to the amount of needed generation that cannot be satisfied through alternatives based upon the record of this case. Moreover, there is no evidence in the record of this proceeding that it would be technically feasible for AMP-Ohio to construct the proposed facility subject to an arbitrary limit on capacity imposed by the Board (Tr. I at 135).

- (8) In their third assignment of error, the Citizen Groups claim that the Board improperly upheld AMP-Ohio's rejection of natural gas combined cycle and integrated gasification combined cycle alternatives to the proposed AMP-Ohio facility.

AMP-Ohio contends that the Board reasonably and lawfully found that AMP-Ohio properly considered and rejected natural gas combined cycle and integrated gasification combined cycle based upon pertinent considerations of cost, risk, reliability, dispatchability, vendor guarantees, and environmental and operational performance.

The Board thoroughly addressed these issues in its Order, and the Citizen Groups have raised no new arguments regarding these issues. Accordingly, rehearing on this assignment of error should be denied. Nonetheless, the Board notes that the record in this proceeding fully supports our conclusion that AMP-Ohio's selection of a pulverized coal (PC) plant was reasonable in light of the nature and economics of the alternatives.

With respect to a natural gas combined cycle (NGCC) facility as an alternative to a PC plant, the Board held that AMP-Ohio's decision to choose a PC plant over an NGCC plant was appropriate because the record demonstrated that the levelized cost of NGCC was higher than the levelized costs of PC, taking into account the estimated future costs of CO₂ emissions (AMP-Ohio Ex. 16 at 6).

Moreover, the Board noted that the evidence supported AMP-Ohio's concerns about the *risk* of volatility of natural gas prices (AMP-Ohio Ex. 1 at 5). The Citizen Groups mischaracterize the evidence in the record in this proceeding, stating that there is no evidence of volatility in natural gas prices. However, the evidence clearly demonstrates that, between 1995 and 2005, natural gas prices exhibited a high degree of volatility (AMP-Ohio Ex. 4, Ex. IC-4). It is true that future *projections* do not predict future volatility, but the actual *data*, rather than the projections, indicate that natural gas prices were very volatile between 1995 and 2005. The Citizen Groups have presented no evidence to show why there is less risk of volatility in the future than has been experienced in the past. Thus, the record demonstrates that, in considering the nature and economics of the alternatives, AMP-Ohio's selection of a PC plant over a NGCC plant was reasonable in light of the higher levelized costs of an NGCC plant and the risk of volatility of future natural gas prices.

Regarding the selection of a PC plant over an integrated gasification combined cycle (IGCC plant), the Board held that, based upon the evidence, AMP-Ohio's decision was reasonable based upon consideration of factors such as risk, cost, size, reliability and environmental and operational considerations (AMP-Ohio Ex. 1 at 4-5). The Board believes that the weight of the evidence presented at hearing supports the selection made

by AMP-Ohio; in fact, the factors relied upon by AMP-Ohio are consistent with the factors and conclusions discussed in *The Future of Coal* study, which both the Citizen Groups and AMP-Ohio have cited as authoritative (Tr. I at 178-179). Moreover, notwithstanding claims by the Citizen Groups of environmental benefits by IGCC plants, the testimony at the hearing demonstrates that existing IGCC plants have emission rates comparable to the PC plant that AMP-Ohio has proposed. Finally, the record in this proceeding demonstrates that IGCC plants are not as dispatchable as PC plants (AMP-Ohio Ex. 1 at 4-5). As previously discussed, dispatchability is critical to AMP-Ohio, in this case, because the proposed AMPGS will provide 47 percent of the base load resources available to its members when the AMPGS becomes operational (AMP-Ohio Ex. 3 at SK-7; Tr. 11 at 55-56). Further, without an alternate source of fuel, existing IGCC plants are not as reliable as PC plants (Tr. I at 130-134). Therefore, the Board finds that AMP-Ohio's technology choice is reasonable and supported by the evidentiary record.

- (9) The Citizen Groups argue, in their fourth assignment of error, that the Board improperly upheld evidentiary rulings that were contrary to the Board's regulations and the Ohio Rules of Evidence. The Citizen Groups argue that, under Rule 4906-7-9, Ohio Administrative Code (O.A.C), the only grounds for excluding evidence in a Board proceeding are if the evidence is not relevant and material or if it is unduly repetitious.

AMP-Ohio responds that the Board properly upheld the administrative law judges' evidentiary rulings. AMP-Ohio claims that the Citizen Groups' position would allow all statements and documents to be admitted into the record even if such statements and documents constitute classic hearsay, are outside of the scope of witness expertise, and are completely unreliable. AMP-Ohio further notes that, even if the rulings were reversed, the Board held in its Order that the reversal of the evidentiary rulings would not alter the Board's decision in this case.

The Board notes that the Citizen Groups did not present any arguments on brief why the evidentiary rulings should be reversed. In their brief, the Citizen Groups simply noted, in a number of footnotes, that they maintained their objections to a

number of evidentiary rulings at the hearing. Nonetheless, the Board has reviewed the arguments made by the Citizen Groups in their application for rehearing, and the Board finds that rehearing on this assignment of error should be denied.

The Citizen Groups' arguments are based upon an expansive reading of Rule 4906-7-09, O.A.C. The Citizen Groups rely solely on the use of the word "shall" in Rule 4906-7-9, O.A.C. However, Ohio courts have held that "shall" must be interpreted as permissive or advisory if it appears from the wording, sense, or policy that the drafter so intended. *Woodman v. Tubbs*, 103 Ohio App.3d 577, 660 N.E.2d 520 (Ohio Ct. App. 1995). In this case, the Citizen Groups have failed to read Rule 4906-7-9, O.A.C., in *pari materia* with Rule 4906-7-01, O.A.C., in which the Board vests its administrative law judges with the authority to regulate the course of the hearing, including the authority to rule on objections, subject to interlocutory appeals to the Board pursuant to Rule 4906-7-15, O.A.C., or later review by the Board. Read in conjunction with Rule 4906-7-01, O.A.C., Rule 4906-7-09, O.A.C., authorizes, but does not require, the administrative law judges to admit evidence which would otherwise be inadmissible under a strict reading of the rules of evidence. Rule 4906-7-9, O.A.C., is not intended to require the wholesale, unregulated admission of hearsay evidence, evidence to which a witness is not competent to testify, or evidence which is obviously unreliable.

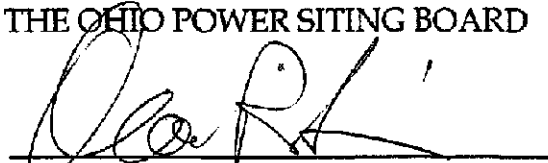
Moreover, as we noted in the Order, the Board has reviewed the evidence excluded by the administrative law judges and has determined that consideration of such evidence would not have changed its findings in this case, even if the evidence had not been excluded.

It is, therefore,

ORDERED, That the Citizen Groups' application for rehearing be denied. It is, further,

ORDERED, That a copy of this entry be served upon AMP-Ohio and its counsel, and all other interested persons of record.

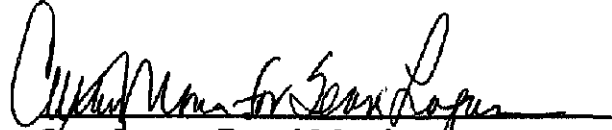
THE OHIO POWER SITING BOARD



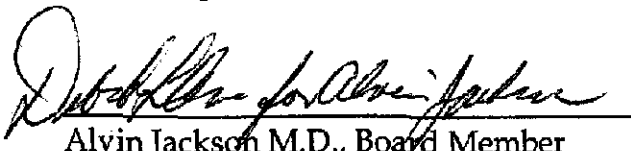
Alan R. Schriber, Chairman of the
Public Utilities Commission of Ohio



Lee Fisher, Board Member
and Director of the Ohio Department
of Development



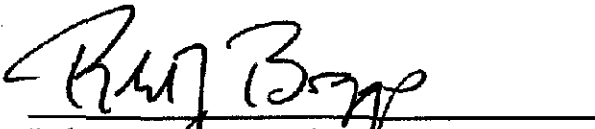
Sean Logan, Board Member
and Director of the Ohio Department
of Natural Resources



Alvin Jackson M.D., Board Member
and Director of the Ohio Department
of Health



Christopher Korleski, Board Member and
Director of the Ohio
Environmental Protection Agency



Robert Boggs, Board Member and
Director of the Ohio Department
of Agriculture

ABSTAIN

Andrew M. Boatright, P.E., Board
Member and Public Member

GAP/KWB:ct

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Renee J. Jenkins
Secretary