

FILE

BEFORE

THE OHIO POWER SITING BOARD

In the Matter of an Application of Columbus)
Southern Power Company and Ohio Power)
Company for a Certificate of Environmental) Case No. 06-30-EL-BGN
Compatibility and Public Need to Construct an)
Electric Generation Facility in Meigs County,)
Ohio.)

OPINION, ORDER, AND CERTIFICATE

The Ohio Power Siting Board (Board) coming now to consider the above-entitled matter; having appointed an administrative law judge to conduct the hearings; having reviewed the exhibits introduced into evidence in this matter, including the Joint Stipulation filed by the parties; and being otherwise fully advised, hereby issues its Opinion, Order, and Certificate in this case as required by Section 4906.10, Revised Code.

APPEARANCES:

Steven T. Nourse, 1 Riverside Plaza, 29th Floor, Columbus, Ohio 43215, on behalf of Columbus Southern Power Company and Ohio Power Company.

Marc Dann, Attorney General, by Duane W. Luckey, Senior Deputy Attorney General, and Thomas W. McNamee and John H. Jones, Assistant Attorneys General, Public Utilities Section, 180 East Broad Street, 9th Floor Columbus, Ohio 43215-3793, and by Margaret A. Malone and Jessica Atleson, Assistant Attorneys General, Environmental Enforcement Section, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215-3428, on behalf of the Board Staff.

OPINION:

I. Summary of the Proceedings:

All proceedings before the Board are conducted according to the provisions of Chapter 4906, Revised Code, and Chapter 4906, Ohio Administrative Code (O.A.C.).

By letter docketed on January 10, 2006, Columbus Southern Power Company and Ohio Power Company (jointly AEP-Ohio, applicant)¹ notified the Board that AEP-Ohio planned to file an application for a certificate of environmental compatibility and public need (certificate) to construct an integrated gasification combined-cycle (IGCC) electric generation facility in Meigs County, Ohio (Great Bend project or project). The proposed

¹ Columbus Southern Power Company and Ohio Power Company are electric distribution subsidiaries of American Electric Power Company, Inc.

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Great Bend facility will produce a nominal net generating capacity of 629 megawatts (MW). According to the application, the parent company of AEP-Ohio has determined that there is a growing demand for electricity in Ohio as well as throughout the eastern portion of the parent corporation's service area. The applicant notes that electric demand has increase 22 percent since 1991. AEP-Ohio contends that the IGCC process is the premier clean coal technology to take advantage of the abundance, accessibility and affordability of coal. The application notes the possibility of constructing a second generation facility at the proposed plant site in the future. AEP-Ohio conducted one public information meeting on January 24, 2006, in Meigs County.

On March 24, 2006, as supplemented on July 14, 2006, AEP-Ohio filed its application for a certificate to construct the Great Bend electric generation facility (jointly application, AEP-Ohio Exhibits 1 and 2, respectively). AEP-Ohio proposes to construct a 629 MW IGCC facility in Meigs County on the Ohio River. Applicant states that the facility will be fueled primarily by coal and potentially supplemented by petroleum coke. Natural gas will also be used for startup and shutdown of the units. In the IGCC process, coal, water and oxygen are fed into a high-pressure gasifier, where the coal is partially combusted, and converted into syngas. The syngas is then cleaned to remove the particulate and sulfur compounds and mercury. The syngas is used to fuel two 232 MW combustion turbine generators which feed exhaust gases into heat recovery steam generators (HRSGs). The steam from the 2 HRSGs, as well as the steam produced in the gasification process, is fed into a 300 MW (nominal) steam turbine generator. The applicants presented only the Great Bend site for the proposed facility. The site is on the Ohio and West Virginia borders in southeast Meigs County, in Lebanon Township.

On April 17, 2006, the Industrial Energy Users-Ohio (IEU)² filed a motion to intervene and a motion to dismiss, or in the alternative, a request that AEP-Ohio amend its application. IEU argued that its members have an interest in the price, reliability and availability of energy available in the AEP-Ohio service territory. Further, IEU argued that AEP-Ohio's application was deficient as the statement of need failed to: (1) assert that AEP-Ohio requires additional generation; (2) state that additional incremental generation is needed; or (3) state the total Ohio retail load and existing generation available to meet that load. Accordingly, IEU argues that AEP-Ohio's application for the Great Bend project should be dismissed or, in the alternative, the Board should direct AEP-Ohio to amend its application to demonstrate that AEP-Ohio needs incremental base load generation to serve its Ohio retail customers as part of its provider of last resort (POLR) obligations.

² IEU is an association of customers who purchase significant quantities of electricity and related services from AEP-Ohio.

On April 24, 2006, Ohio Energy Group (OEG)³ filed a motion to intervene. OEG states that its interest may be directly affected by the outcome of this proceeding and that its interest cannot adequately be represented by any other party.

On May 2, 2006 and May 8, 2006, AEP-Ohio filed memoranda contra the motions to intervene and to IEU's motion to dismiss or amend the application. On May 22, 2006, AEP-Ohio filed a request to extend the application completeness review period for 90 days. By entry issued June 14, 2007, the Administrative Law Judge (ALJ) found that the nature and extent of OEG's and IEU's interest in this application was inconsistent with the purpose of the Board proceeding to evaluate the likely environmental effects of the construction, operation and maintenance of the proposed Great Bend project on the immediately surrounding community. Thus, IEU's and OEG's motions to intervene were denied. Further, IEU's motion to dismiss the application or amend the application was also dismissed. The June 14, 2006 entry also granted AEP-Ohio's request to extend the completeness review period for 90 days until August 21, 2006.

On August 18, 2006, the Board notified AEP-Ohio that its application complied with the content requirements of Section 4906.06, Revised Code, and Chapter 4906-1, O.A.C., *et seq.* As directed in the notice from the Board and pursuant to Rules 4906-5-05 and 4906-5-06, O.A.C., AEP-Ohio served copies of the application upon local government officials and public agencies, and filed the certificate of service of the application on September 15, 2006. AEP-Ohio also filed, as required by Rule 4906-5-11, O.A.C., the appropriate fees with the Board to process the certificate application on September 15, 2006.

By entry issued September 28, 2006, a local public hearing was scheduled for December 12, 2006, at Meigs High School in Pomeroy, Ohio and the evidentiary hearing was scheduled to commence on December 14, 2006, at the offices of the Public Utilities Commission of Ohio in Columbus, Ohio. The entry also directed AEP-Ohio to publish notice of the application and the hearings twice, pursuant to Rule 4906-5-08, O.A.C. On November 2, and December 1, 2006, AEP-Ohio filed its proofs of publication of the application and hearings in The Pomeroy Daily Sentinel, a newspaper of general circulation in Meigs County, Ohio (AEP-Ohio Exhibit 3). Rule 4906-5-08(B)(3), O.A.C., requires the applicant to provide a notice to all affected property owners. AEP-Ohio owns the site on which the Great Bend project is proposed to be built and, therefore, no direct notice to additional property owners is required.

On November 27, 2006, the Staff filed its Report of Investigation of the proposed Great Bend project (Staff Report or Staff Exhibit 1).

The local public hearing was held, as scheduled, on December 12, 2006. At the hearing 12 members of the public offered testimony in favor of the project and one

³ OEG is an association of large industrial and commercial customers served by AEP-Ohio.

member testified in opposition to the proposed project. In addition, 13 members of various trade unions registered their support of the project as testified to by their respective union representatives (Tr. at 55-58). Many of the witnesses support the proposed project because of the positive economic effect the construction and operation of the facility is expected to have on the Meigs County community, including the local school district, community infrastructure and other businesses in the area. The representative from the Ohio Environmental Council stated that they support AEP-Ohio's incorporation of clean coal technology like the proposed IGCC facility (Tr. at 13-20).

The witness who testified in opposition to the proposed facility expressed concern as to the affects the facility and existing generation facilities have on the residents in the area. The witness noted that there are four existing power plants within a 10-mile radius of Racine—Gavin, Kyger Creek, Mountaineer and Philip-Sporn, the proposed Great Bend project, the facility proposed by American Municipal Power, Inc. and other proposed power facilities. The witness was concerned as to the cumulative effects of the power facilities on area residents' health, air quality, and water and the effects air emissions have on historic buildings in the area (Tr. at 40-50).

The adjudicatory hearing commenced on December 14, 2006 and was continued to January 30, 2007, to allow AEP-Ohio and the Staff additional time to negotiate a settlement of the issues raised in the application. At the January 30, 2007 hearing, the parties stated that although significant progress had been made at reaching a resolution, additional time was necessary to reach a settlement of all the issues raised. On March 9, 2007, AEP-Ohio and the Staff filed a Joint Stipulation, Recommended Finding of Facts and Conclusions of Law (Stipulation, Joint Exhibit 1) that would, if accepted by the Board, resolve all of the issues presented in this case.

II. Certification Criteria:

Pursuant to Section 4906.10(A), Revised Code, the Board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the Board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas or natural gas transmission line;
- (2) The nature of the probable environmental impact;

- (3) 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;
- (4) In the case of an electric transmission line or generating facility, such facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems; and that such facilities will serve the interests of electric system economy and reliability;
- (5) The facility will comply with Chapters 3704, 3734, and 6111, Revised Code, and all rules and standards adopted under those chapters and under Sections 1501.33, 1501.34, and 4561.32, Revised Code;
- (6) The facility will serve the public interest, convenience, and necessity;
- (7) The impact of the facility on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929, Revised Code, that is located within the site and alternate site of the proposed major facility; and
- (8) The facility incorporates maximum feasible water conservation practices as determined by the Board, considering available technology and the nature and economics of various alternatives.

III. Summary of the Evidence:

A. Basis of Need (Section 4906.10(A)(1), Revised Code)

AEP-Ohio states that it has an obligation to provide a firm supply of generation service to its customers which includes any customer that has not switched to a competitive retail electric service (CRES) supplier, or any customer that defaults to AEP-Ohio's generation service as a result of a CRES supplier's failure to deliver service or any customer who elects to return to AEP-Ohio's generation service. Thus, AEP-Ohio is characterized as the provider of last resort (POLR). AEP-Ohio notes that the Public Utilities Commission of Ohio has recognized that POLR providers must have sufficient capacity to meet unanticipated demand and encouraged AEP-Ohio to move forward with

the companies' plans to construct an IGCC facility.⁴ Further, AEP-Ohio notes that the IGCC process is environmentally superior to a traditional pulverized coal plant.

The basis of need is not applicable to electric generation facilities. Therefore, the Board Staff is not required to evaluate the application for need for the proposed facility.

B. Nature of Probable Environmental Impact and Minimum Adverse Environmental Impact (Sections 4906.10(A)(2) and (3), Revised Code)

The 1,248 acre site is comprised primarily of agricultural lands (560 acres) and second growth forest (430 acres). The project site is owned by AEP-Ohio, and the residences on the property are occupied on a leased basis. The two leases will need to be terminated prior to construction. The remaining residences on the project site are vacant. AEP-Ohio anticipates a four-year construction phase. Construction of the facility will necessitate the removal of six residences and several outbuildings from the site. The footprint of the primary generation site has been farmland in recent years and, therefore, will require no tree removal.

Staff reviewed the environmental information contained in the application and other data provided. Staff supplemented its review with site visits to the project area and discussions with employees and representatives of AEP-Ohio. Below is the list of the nature of the probable environmental impacts associated with the construction and operation of the proposed Great Bend facility and AEP-Ohio's proposal to mitigate adverse impacts.

Air emissions

Air emissions during construction will include nitrogen oxides, sulfur dioxide, carbon monoxide, particulate matter, and volatile organic compounds primarily from the use of construction vehicles and equipment. Because of the relatively low volume of emissions and the temporary nature of construction activities, it is not expected that these emissions will have any adverse impacts on-site or beyond the site boundary. AEP-Ohio will institute various dust suppression techniques to help control dust creation during construction and construction vehicles will be well maintained to prevent unnecessary emissions related to inefficient operation.

Materials handling, auxiliary boilers, a cooling tower, combustion turbines, and the heat recovery steam generator stacks will be the source of air emissions during operation of the proposed facility. Air emissions from the facility will include nitrogen oxides, sulfur dioxide, carbon monoxide, particulate matter, sulfuric acid mist and volatile organic

⁴ See Case No. 04-169-EL-UNC, *In the Matter of the Application of the Columbus Southern Power Company and the Ohio Power Company for Approval of a Post-Market Development Period Rate Stabilization Plan* (RSP case or 04-169) Order issued January 26, 2005 at 37.

compounds. Particulates can also originate from the cooling tower and the materials handling systems. AEP-Ohio proposes to include a drift elimination system at the facility. To minimize particulate emissions associated with the materials handling system, the proposed facility will include conveyor enclosures, enclosed transfer points, dust suppression, and forced air dust collection systems.

Continuous Emission Monitors will be installed to continually measure and monitor air emissions exiting the heat recovery steam generator stacks. The proposed Great Bend facility will incorporate several technologies within the syngas cleaning process that are designed to reduce air emissions including water scrubbers, to reduce particulates; an activated carbon system, to remove at least 90 percent of mercury from the syngas; and an acid gas removal system, which, according to AEP-Ohio, is expected to remove in excess of 99 percent of the sulfur from the syngas. The applicant will supplement the syngas with steam and nitrogen diluents to reduce the creation of thermal nitrogen oxides.

The proposed Great Bend facility will also emit carbon dioxide. Although the applicant is not including carbon capture and storage (CCS)⁵ as a part of the plant design under consideration in this application, AEP-Ohio plans to incorporate space in the facility to accommodate the necessary equipment for CCS. The site selection study determined that the Great Bend site was acceptable for CCS.⁶

AEP-Ohio's air Permit to Install (PTI) application is pending review by the Ohio Environmental Protection Agency (EPA). Compliance with the PTI permit, as well as other required air permits, will ensure that the facility's air impacts are minimized.

Landfill and Waste

The proposed project includes the construction of an on-site landfill. The construction and operation of the landfill is likely to create the most extensive direct environmental impacts associated with the proposed project because of the need to remove trees from a wooded area, and because of the presence of numerous headwater streams and wetlands on the proposed landfill site. Slag and sulfur will be the primary byproducts of the gasification process and unsold slag and sulfur will be disposed of in the on-site landfill. The landfill will be classified as a Class III Residual Solid Waste Landfill. The landfill footprint, and all ancillary facilities, will require the clearing of approximately

⁵ Carbon capture and storage is a process in which CO₂ is captured prior to exiting the flue stack and piped to some geologic formation for long-term storage or sequestration.

⁶ The Staff report notes that if AEP-Ohio elects to install CCS equipment, a separate application will be required prior to construction of the facility.

66 acres of wooded area on the northern portion of the project site. The wooded portion of the site includes two areas of particular floral significance: a mixed mesophytic forest and an oak-hickory forest. Both forest types are generally believed to support significant biological diversity. Although the mixed mesophytic forest is outside of the footprint of the proposed landfill, AEP-Ohio anticipates that 7.2 acres of the oak-hickory forest would need to be cleared. Tree removal will likely cause the loss of food and habitat for wildlife, increase the potential for soil erosion and sedimentation, and cause the loss of aesthetic quality. Preserving portions of the remaining wooded area adjacent to the proposed landfill footprint will mitigate some of the impacts associated with the loss of trees.

Construction activities are expected to produce both solid and hazardous waste materials. The solid wastes, which will include construction items such as metals, wood, and glass, will be disposed of in licensed landfills if not recyclable. Hazardous waste products, such as waste oils and paints, will be disposed of by an authorized hazardous waste management company.

Some of the wooded area that will need to be cleared for the landfill represents potential Indiana bat habitat. Prior to any tree removal, AEP-Ohio should conduct mist netting to determine if the site is host to Indiana bats. A positive finding during the mist net surveys would require additional coordination with Staff prior to any tree removal. If the mist netting does not provide evidence of the Indiana bat's presence, then AEP-Ohio should proceed with scheduling its tree clearing for outside of the Indiana bat's typical summer roosting season in Ohio (April 15 to September 15) unless Staff approves otherwise. Approximately 360 acres of wooded area would remain adjacent to the landfill footprint. These remaining trees could offer suitable habitat for the Indiana bat. Preserving the remaining wooded areas will help to minimize potential impacts to the Indiana bat, if present at the site. Construction of the landfill will also require the relocation of a portion of the existing Bashan-Ravenswood 69-kV distribution line that stretches across the proposed landfill footprint.

Wetlands and Streams

AEP-Ohio identified 15 wetlands on the site totaling approximately 4.26 acres. Seven of the wetlands were assigned to Category 1, while the remaining eight wetlands were determined to be Category 2. During construction of the proposed landfill and associated facilities, the applicant anticipates filling three on-site wetlands located in the wooded area. The impacted wetlands include a .03 acre Category I wetland and two Category II wetlands totaling .52 acre. The impact to the wetlands is not likely to be significant considering the existing quality of the affected wetlands and the limited amount of the proposed disturbance.

The loss of wetlands can reduce available wildlife habitat, negatively impact water quality, and impair flood control. In order to mitigate these impacts, AEP-Ohio proposes to create an additional 0.86 acre of wetland by expanding two existing wetlands as a part of AEP-Ohio's proposed Wetland Stream Mitigation Plan (WSMP). The proposed WSMP is currently under review by the Ohio EPA as part of AEP-Ohio's pending 401 permit review process. The remaining 12 wetlands on the project site are not expected to be adversely impacted by the construction and operation of the proposed Great Bend facility. Nonetheless, AEP-Ohio will avoid negatively impacting the wetlands during the construction or operation of the facility by instituting best management practices.

The project site includes approximately 37,000 linear feet of streams. The majority of the on-site streams are located within the wooded portion of the property, north of U.S. 33. AEP-Ohio has determined that construction of the landfill will impact 325 feet of Class I headwater streams, 6,437 feet of Class II headwater streams, and 1,164 feet of Class III headwater streams. Due to the extent of the proposed disturbance and the quality of the headwater streams involved, this appears to be one of the most significant environmental impacts associated with the proposed project.

In regards to the streams on the project site, AEP-Ohio proposes two mitigation activities in its proposed WSMP. In addition to using best management practices during the construction of the facility to avoid adverse impacts to headwater streams, AEP-Ohio plans to relocate segments of three streams to be outside of the landfill construction area and to improve the channel and riparian habitat of a Class I stream by streambank armoring, adding in-stream structures, such as boulder clusters or root-wads to increase habitat, and plantings along riparian corridor. Like the wetlands plan, the proposed WSMP for the headwater stream impacts is currently under review by the Ohio EPA as part AEP-Ohio's pending 401 permit review process.

Wildlife

The project area includes habitat supporting numerous common reptile, amphibian, bird and mammal species. These species will likely be impacted, both directly and indirectly, during the construction and operation of the proposed facility. Faunal impacts will include the loss of habitat, increased habitat fragmentation, increased disturbance (i.e., noise, lighting, human activity), temporary and permanent displacement, and direct mortality due to construction activities. Threatened or endangered species within the project site include:

(A) Plants

No protected plants are recorded by the Ohio Department of Natural Resources (ODNR) or the United States Fish and Wildlife Service (USFWS) as being in the project area and none were observed by Staff during the field survey.

(B) Birds

A nesting pair of osprey (*Pandion haliaetus*) was observed on an electric transmission tower in the southeast portion of the property. There is limited suitable nest habitat on this portion of the site, a fact which may have prompted the ospreys to build their nest on the tower. Ospreys, a state endangered species, are believed to exhibit strong site fidelity, often returning to the same nest year after year. Therefore it is possible that this pair will return to the property in subsequent years. Construction, operation and maintenance activities near the nest could represent a disturbance. To protect any ospreys residing on the site property, AEP-Ohio proposes to restrict activity within 600 feet of any nest during the nesting season (April 15–October 15), and to maintain and improve the riparian habitat by planting additional trees along a stream where it crosses the eastern portion of the project site.

(C) Reptiles and amphibians

The eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species, is found in sandy soils near river valleys. A breeding population of spadefoot toads has been identified in Meigs County. Therefore, AEP-Ohio consulted with a local expert to determine if this endangered species was present on site. The herpetologist consulted has extensive experience with both the spadefoot toad and this particular area of Meigs County. The herpetologist concluded that while the habitat at the site is favorable, no spadefoot toads have been found on the project site in over twenty years of surveying.

(D) Mammals

The range of the federally-endangered Indiana bat (*Myotis sodalis*) includes Meigs County. The summer roosting habitat of the Indiana bat generally includes areas near water (i.e., streams, wetlands, ponds, etc.) that have snags (i.e., dead trees), trees with exfoliating bark, or trees with cavities. The applicant's consultant performed a formal bat habitat evaluation of the proposed landfill area in October 2006 and concluded that suitable habitat for the Indiana bat exists at the site. Construction of the landfill and associated facilities will require removal of approximately 66 acres of trees. The tree clearing could represent the loss of habitat for the Indiana bat, if present at the site. AEP-Ohio intends to conduct any tree clearing outside of the Indiana bat's typical summer roosting season (April 15- September 15) in Ohio.

(E) Aquatic species

The proposed project lies within the range of the pink mucket pearly mussel (*Lampsilis arbupta*) and the fanshell mussel (*Cyprogenia stegaria*), both of which are federally-endangered, as well as a federal candidate species, the sheepsnose mussel (*Plethobasus cyphus*). To evaluate the potential presence of these particular species, as well as other mollusk species, AEP-Ohio had a survey conducted in July 2005 for river miles 221.5 thru 224.5 of the Ohio River. Thirty-two live mussels were collected representing eight different species. In addition, shells representing five additional species were located within the study area. The survey did not find any live or dead federally-listed species. However, the survey did locate live specimens representing four state-listed species. State-threatened mussel species are the black sandshell (*Ligumia recta*) and the threehorn wartyback (*Obliquaria reflexa*). The state-endangered mussel species are the washboard (*Megaloniais nervosa*) and the monkeyface (*Quadrula metanerva*). Construction activities could negatively impact the mussel species near the project site through increased siltation from construction activities or direct mortality during dredging activities. Minimizing sedimentation through the use of cofferdams and filter screens, as proposed by AEP-Ohio, will help to reduce impacts to mussel species in the area.

Water Intake and Discharge

AEP-Ohio plans to meet its process water needs by withdrawing water from the Ohio River at a point just upstream of river mile 223. Although the system will be designed to achieve a maximum raw water intake capacity of approximately 12,000 gallons per minute (gpm), average water withdrawal is expected to range from 5,100 to 8,672 gpm. The intake structure for the process water will consist of two cylindrical wedgewire screens placed approximately 185 feet out from the river bank. The screens will be placed approximately 20 feet below normal pool depth. The relatively small size of the wedgewire screens, their low intake velocities, and their location offshore should help avoid significant impingement and entrainment of aquatic biota.

The potable water needs of the proposed facility will likely be supplied by the Tupper Plains Chester Water District. During construction, the maximum potable water demand is estimated to be approximately 44,000 gallons per day. During operation of the facility, the maximum potable water demand drops to approximately 22,000 gallons per day. Delivery of the potable water to the project site will require the construction of an approximately 3 mile long pipeline. The route of the pipeline has not yet been determined.

The proposed facility will discharge waters to both an on-site tributary and directly to the Ohio River. The landfill combined leachate and sedimentation pond and the stack-out erosion and sedimentation pond will discharge to an adjacent on-site tributary. The remaining retention ponds will discharge directly to the Ohio River. Waste water from the facility will be treated prior to discharge to avoid the potential introduction of pollutants, sedimentation, and thermal pollution to the aquatic environment. The applicant will include the use of oil/water separators, settling basins, and metals precipitation. To reduce the potential for negative impacts from water discharge, the facility will employ an oil/water separator to help clean waters from the power block, air separation unit, and gasifiers. The oil will be collected and sent off-site for disposal, while the remaining water will be routed to an on-site settling basin prior to discharge to the Ohio River. The water discharges must comply with the terms of a National Pollutant Discharge Elimination System (NPDES) permit from the Ohio EPA to ensure that the impacts from these water discharges are minimized. The proposed facility will also include the construction of an on-site sewage treatment plant in order to treat the sanitary wastewater prior to discharge to the Ohio River in accordance with a NPDES permit to help minimize any water quality impacts.

Storm water runoff will be routed into ditches and directed into sediment control ponds prior to discharge into the Ohio River. During construction, AEP-Ohio will use best management practices such as silt fencing, reseeding, and straw bales to help control storm water discharges. A Storm Water Pollution Prevention Plan (SWPPP) and storm water management plan will be developed to help minimize surface water runoff impacts prior to construction and post-construction during plant operation.

Barge Docking/Unloading Facility

The barge delivery and unloading facility will occupy approximately 4,200 feet of the Ohio River shoreline. Minimal tree removal will occur near the Ohio River to facilitate the construction and operation of the barge unloading facility. AEP-Ohio proposes to mitigate the impact of tree removal at the shoreline by creating and maintaining a 50-foot wide riparian buffer along the river following the completion of construction activities. The proposed riparian buffer will potentially offer habitat to species displaced by the initial tree removal in this area and also offer some aesthetic improvements relative to the view of the project site from the Ohio River.

The barge dock and 800 additional feet of shore will be stabilized with approximately 50,000 cubic yards of stone. Twenty-two mooring cells will be installed off-shore to accommodate the approximately 1,000 barges expected to be docked and unloaded at the site per year. Dredging is expected to be necessary during the construction of the barge docking and unloading facilities. Approximately 320,000 cubic yards of dredging materials will be disposed of off-site at an approved location.

To minimize the potential negative impact to aquatic species present in the area, AEP-Ohio plans to perform the majority of its in-river work within cofferdams. Filter screens may be used if significant levels of siltation are expected and rip-rap will also be installed in the area to further minimize erosion and sedimentation.

Transportation Corridors and Traffic

Transportation corridors directly impacted by the proposed project include U.S. 33, County Road 338A (Great Bend Road), Township Road 371 (T-371, or Sandy Desert Road) and the Ohio River. Primary access to the plant site and barge facility will be from U.S. 33, on the eastern portion of the project site. Secondary access to the facility will be from Sandy Desert Road to the west of the proposed plant. There are potential temporary adverse traffic impacts associated with construction of the proposed facility, particularly with increases in traffic on routes leading to the site, due to the number of construction workers and the delivery of equipment and materials. Traffic coordination and management will be required to minimize impacts associated with access to and from the facility, road or lane closures, increased traffic, slow moving truck traffic and vehicular crossing of U.S. 33.

Once operation of the plant commences, AEP-Ohio plans for employees to enter the site from the east via U.S. 33, and contractors and delivery vehicles will access the site from the west off Sandy Desert Road, south of U.S. 33. U.S. 33 is two lanes in this area, with additional left and right turn lanes in both directions at the intersections of Great Bend Road and Sandy Desert Road. AEP-Ohio intends to have Great Bend Road permanently closed to the public from the intersection of Sandy Desert Road on the southwestern portion of the site, to the intersection with U.S. 33 to the northeast. It is not anticipated that permanently closing a portion of Great Bend Road will disrupt local traffic flow, as the closed portion of the road is on AEP-Ohio's property and residences will not be present on the property following the commencement of construction. AEP-Ohio states that Sandy Desert Road will be improved in order to provide an adequate local link from areas west of the project site to U.S. 33, and in order to handle vehicular traffic associated with the construction and operation of the plant. Long-term traffic impacts include the increase in traffic associated with the operation and maintenance of the plant facility, permanent closure of a portion of County Road 338A (Great Bend Road), access to and from the plant along U.S. 33 and Township Road 371 (Sandy Desert Road) south of U.S. 33, and placing a new access road off Township Road 371 north of U.S. 33 for the landfill. In addition to increased vehicular traffic, impacts associated with entering and exiting the plant site, slow truck traffic along U.S. 33, and vehicular crossing of U.S. 33 to and from the landfill site will need to be addressed. Access to the landfill will require a new permanent access road be constructed for the landfill and stacker area on the east side of Sandy Desert Road and directly across from Township Road 706. No changes are planned to State

Route 338 east of the landfill site. AEP-Ohio will coordinate with township, county and state traffic and local law enforcement officials in order to minimize impacts during operation of the proposed facility.

Increased barge traffic will impact existing recreation and barge river traffic on the Ohio River. AEP-Ohio has incorporated suggested revisions from the U.S. Army Corps of Engineers (USACE) regarding the number of moored barges, turning points and dock alignment into its USACE permit application. The applicant will continue to coordinate with USACE to minimize impacts associated with river navigation and traffic control.

Cultural Resources and Land Considerations

AEP-Ohio had intensive archaeological investigations of the project area conducted to identify significant archaeological sites. Based on the findings of the archaeological investigations, the Ohio Historic Preservation Office (OHPO) has determined that five sites located within the project property are eligible for inclusion on the National Register of Historic Places (NRHP) including earthen burial mounds. AEP-Ohio has located the plant, parking, and road configurations so as to minimize impacts to two historic sites on the project property. AEP-Ohio's proposed landfill footprint will be located so as to minimize impacts to archaeological sites previously recommended as eligible for the NRHP, including earthen burial mounds. The OHPO has further determined that without avoidance or defined mitigation, the project would have an adverse impact on three sites. To address these potential adverse impacts, AEP-Ohio, OHPO, and the USACE are negotiating a Memorandum of Agreement. The final Memorandum of Agreement is expected to address the preservation of significant archaeological sites during both construction and operation of the proposed facility through avoidance or mitigation. AEP-Ohio's compliance with the Memorandum of Agreement will ensure that impacts to cultural resources on-site are minimized.

Architectural reconnaissance of the project site and surrounding properties was conducted on and around the site in 2005. No significant adverse impacts to architectural resources on the applicant's property or adjacent properties are expected.

AEP-Ohio is not aware of any official land use plans in Meigs County addressing future use of the proposed site or surrounding land use with which the proposed project might conflict. Aside from increased traffic on local roads, AEP-Ohio is not anticipating potential adverse impacts on local public services from the increased labor force, presuming that workers residing within driving distance of the site will be employed for construction and operation of the plant. There would be intermittent increases in noise during construction of the proposed project. Pile driving and blasting may be required during construction and will be limited to daytime hours only. Operational noise levels are not expected to be detectable by any of the nearest sensitive receptors.

The project site is approximately 1,248 acres and is owned by AEP-Ohio. The two primary natural land features on the site are woods and agriculture. The landfill site is hilly and heavily wooded and will require extensive earthwork preparation for the landfill and permanent access road. A portion of the project property falls within the 100-year floodplain of the Ohio River. However, the footprints of the majority of proposed structures are above the 100-year floodplain. Impacts to the 100-year floodplain can be expected from construction of the barge unloading facilities and permanent haul road. Approximately 50,000 cubic yards of rip-rap will be installed below the high water mark for bank stabilization and erosion control.

There are approximately 20 residences located within one mile of the site in Ohio. Two residences are located immediately west of the proposed plant site, with additional residences located along Great Bend Road to the west, and to the northeast of the landfill site. No incorporated areas in Ohio are within five miles of the proposed site.

Sensitive land uses in Ohio within five miles of the site include two churches and six cemeteries. Martin Cemetery is located on an adjacent property to the northwest of the plant site. Bicknell and Pioneer Cemeteries are located approximately 2,000 feet west of the site. There will be no plant structures at these locations. The two churches and remaining three cemeteries are located approximately two miles or greater to the north and west of the site. In Ohio, no schools, parks or recreation facilities are within five miles of the proposed site, so sensitive land use impacts should be minimal.

The only major commercial or industrial land use in Ohio within approximately five miles of the project site is a gravel pit. There are some smaller commercial operations in the area, including gasoline sales, grocery, nursery, logging, and a self-storage facility. Local goods and services businesses should generally benefit from the increased activity associated with construction of the proposed plant.

The proposed site does not contain any Agricultural District land. Approximately 560 acres of land currently or recently farmed will be removed from agricultural production as a result of the construction and operation of the proposed Great Bend facility. AEP-Ohio currently has no plans to resume agricultural activities on any portion of this land after construction of the plant.

Other Impacts

One mechanical draft cooling tower will be constructed on the east side of the plant site. The tallest project structures include the heat recovery steam generator stacks (175 feet), the thermal oxidizer stack (198 feet), the flare stack (200 feet), and the gasifier vents (290 feet). No concerns associated with the heights of the project's structures were

identified by the Ohio Office of Aviation. AEP-Ohio will, however, have to file for permits with the Federal Aviation Administration (FAA) as several of the structures at the facility are expected to exceed 200 feet in height.

To connect the proposed generating facility to the existing Sporn-Waterford 345-kV transmission line, AEP-Ohio proposes to construct two new 345-kV electric transmission lines. The new transmission lines, and any impacts associated with them, will be the subject of a separate proceeding that is currently pending before the Board (Case No. 06-309-EL-BTX, *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for a Certificate of Environmental Compatibility and Public Need to Construct a 345-Kilovolt Transmission Line Loop for the Great Bend Facility*).

AEP-Ohio estimates that approximately 1,900 professional and skilled-trades workers will be required to construct the proposed facility and 125 workers will be required to operate the facility. AEP-Ohio estimates the capital and intangible costs for the project will total approximately \$1.2 billion.

AEP-Ohio has included in the project plans monies necessary for the planting of grass, shrubbery and other aesthetic improvements of the site although finalized landscaping plans for the proposed site have not been completed.

Staff has studied the applicant's description and analysis of the ecological, social, and economic impacts which will result from the construction and operation of the proposed Great Bend IGCC electric generating facility at the proposed site. The Staff report list several recommended conditions to any certificate awarded to address and minimize the ecological, social, and economic impacts associated with the construction and operation of the proposed facility. Based on its review of the application, the Staff recommends that the Board find that the nature of the probable environmental impacts of the proposed facility has been determined and that the application with required conditions includes provisions to minimize adverse environmental impacts (Staff Exhibit 1 at 16-36).

As part of the Stipulation, AEP-Ohio and Board Staff agree that adequate data on the proposed Great Bend IGCC plant has been provided to the Board and Staff to determine the basis of the nature of the probable environmental impact of the proposed facility as required by Section 4906.10(A)(2), Revised Code. The parties also agree that adequate data has been provided to the Board and Staff to determine that, with the required conditions, the facility represents the minimum adverse environmental impact, considering the available technology and nature and economics of the various alternatives, and other pertinent considerations as required by Section 4906.10(A)(3), Revised Code (Joint Exhibit 1 at 4-5).

C. Impact of Facility on the Electric Grid and Public Interest, Convenience and Necessity (Sections 4906.10(A)(4) and (6), Revised Code)

The proposed Great Bend IGCC project is a generation facility which will require interconnection with the electric transmission grid. The proposed Great Bend IGCC project will need to interconnect to the existing Sporn-Waterford 345-kV transmission line. AEP-Ohio has notified the Board that the companies plan to file a certification application for the transmission lines in Case No. 06-309-EL-BTX, *In the Matter of the Application of Columbus Southern Power Company and Ohio Power Company for a Certificate of Environmental Compatibility and Public Need to Construct a 345-Kilovolt Transmission Line Loop for the Great Bend Facility*.

Staff concluded in its investigation that the Great Bend facility would serve the public interest, convenience, and necessity by providing additional electrical generating capacity to AEP-Ohio customers and to the electric wholesale power markets serving Ohio. Several independent studies have concluded that Ohio and surrounding states are in need of additional generation capacity as electric reserve margins are at historical lows. Construction of the proposed facility would help address this need.

Noise

AEP-Ohio conducted a reconnaissance of the area to evaluate the effect of construction and operation noises, identify site boundaries and local noise sensitive-areas. During construction, noise would vary considerably depending on type, number and duration of machines operated at different phases of construction. Noise sources would include such items as earth moving equipment, erection of equipment, truck traffic, and installation of generating facility equipment. AEP-Ohio performed an analysis to determine the operational sound levels emanating from the major sound-producing equipment within structures at the proposed Great Bend facility. Applicant notes that the area near the site is sparsely populated, with the nearest residential property being approximately 2,500 feet from the nearest noise generator. By AEP-Ohio's calculations, the expected increase in sound levels to the nearest noise sensitive area will be 0.1 decibels (dBA)⁷ to the east, 2.2 dBA to the west and a maximum of 1.3 dBA to the south with a threshold of perceived increase in noise of 3 dBA. Accordingly, the increase in noise associated with the operation of the proposed facility should not be perceptible within the study area.

⁷ Sound levels measured on the "A" weighted curve which represents the frequency range most sensitive to the human ear.

Electric and magnetic fields

According to the application, construction of the proposed generation facility will elevate electric and magnetic fields (EMF); however, the EMFs are confined to the site and will be attenuated to near background levels at the battery limits line. The circuit in the near vicinity of the project is not located close to residential, commercial or institutional buildings.

Electric Power Grid - PJM Interconnection LLC Analysis

The proposed Great Bend facility will be interconnected to the regional bulk electric transmission system operated by the regional transmission organization, PJM Interconnection LLC (PJM). PJM administers the interconnection process of new generation to the system. All proposed generation interconnections to the bulk electric transmission system are required to submit an interconnection application to the transmission system operator for its review and acceptance. American Electric Power Company, Inc., (parent corporation to AEP-Ohio) as a member of PJM, submitted the proposed project to PJM on January 31, 2005. PJM has completed or is in the process of completing certain interconnection studies on the proposed facility. American Electric Power Company, Inc. has not yet signed an Interconnection Service Agreement or Construction Service Agreement with PJM for the proposed facility. These agreements must be executed before AEP-Ohio can interconnect the Great Bend facility to the bulk electric transmission system.

The North American Electric Reliability Council established national reliability standards for the bulk electric system which requires the bulk electric transmission system to meet certain reliability standards under transmission outage conditions. PJM analyzed the bulk electric system with the proposed new facility interconnected to the bulk power system and conducted a feasibility study and system impact study of the possibility of delivering the full 600 MW output from the proposed facility to the rest of the PJM regions during peak load periods. PJM found that with a pre-contingency outage, under normal system conditions, the 345-kV Waterford-Muskingum circuit exiting Waterford Energy Center is overloaded by approximately 11 percent of its normal rating. However, this overload can be alleviated by reconductoring approximately one mile of the circuit out of Waterford and changing line risers at Muskingum. The proposed Great Bend IGCC project will also be connected to the Muskingum-Sporn double circuit line in the same manner as the Waterford interconnection.

Further, it was determined that with a single contingency outage, delivering the full 600 MW output from the proposed Great Bend IGCC facility during peak load periods caused an outage of the Waterford-Muskingum 345-kV line and caused the 345-kV/138-kV transformer at Sporn to overload by 13.2 percent. The overload was mitigated by

replacing the transformer at Sporn with a new transformer of higher rating. The transformer at Sporn was replaced in June 2006.

PJM's analysis also demonstrated that in a multiple contingency outage situation, all problems experienced were resolved through re-dispatch, curtailment of firm transmission service, or controlled interruption of customers.

PJM Generator and Load Deliverability Results

PJM also conducted a generator delivery test to verify that, under normal transmission conditions, the proposed generator can provide its full capability and energy output to the system during peak load periods and will not be limited by the dispatch of other capacity resources. The load deliverability test is performed to verify that energy can be delivered from one PJM area to another PJM area without experiencing a capacity deficiency. The generator delivery test revealed one issue with the introduction of the proposed Great Bend facility. The proposed facility caused an outage of the Belmont-Harrison 500-kV circuit and caused Allegheny Power's Kammer 765/500 kV transformer to overload two percent above its emergency rating. The problem can be resolved by either replacing the existing 1500 MVA transformer with three single-phase transformers each rated at 600 MVA and replacing other substation equipment as required or limiting the output from the proposed facility during peak load periods.

Short Circuit and Stability Analysis

The short circuit study evaluates the interrupting capabilities of circuit breakers located at the proposed plant site and other circuit breakers impacted by the proposed generation addition. The results showed no problems.

The stability analysis evaluates the proposed generating unit's ability to perform satisfactorily during post-contingency power oscillation damping and verifies that the system will remain stable during contingency conditions with the generator connected to the bulk electric grid. Results of the stability study showed that under normal system conditions, with all transmission facilities in service, dynamic performance of the system is acceptable. However, the study found that if there was an outage of the Waterford-Muskingum River 345-kV line, there would be problems at the Sporn substation. These problems would cause the Great Bend facility, as well as other generators, to become unstable. This instability can be avoided by limiting the output of the proposed Great Bend facility to 620 MW. PJM notes that the stability analysis may change as more details of the facility become available.

Staff has reviewed each of the interconnection requirements and studies. Staff recognizes that as the studies indicate, some transmission system upgrades will be

required with the addition of the proposed Great Bend IGCC facility to the bulk power system in order to maintain transmission system reliability and transmission outage protection. Staff also notes that the recommendation to replace the 765 kV/500 kV Kammer transformer is an economic upgrade (rather than a system reliability upgrade). Staff reasons that if the Kammer transformer upgrade is not installed, such would not cause the bulk electric transmission system to be unreliable but would prevent the Great Bend facility from operating at full power during peak load times and, thus, require AEP-Ohio to buy wholesale power. Further, Staff notes that the one issue found in the System Impact Study, the Sporn transformer, has already been completed. Staff considers the re-conductoring of the Waterford plant a minor system upgrade. Given that there were no problems revealed from the short circuit and stability studies, and the results and recommendations of the other PJM analysis, the Staff believes that the Great Bend facility will provide reliable generation to the bulk electric transmission system and should have minimal impact on the reliability of the local or regional transmission system. Thus, the Staff believes, and recommends that the Board find, that the proposed facility is consistent with plans for expansion of the regional power system, will serve the interests of electric system economy and reliability, and serve the public interest, convenience, and necessity by providing additional electric generation to the regional transmission grid and improve the region's historically low electric reserve margins.

In the Stipulation, AEP-Ohio and the Staff agree that adequate data on the Great Bend IGCC project has been provided to the Board and Staff to determine that the proposed facility will serve the public interest convenience and necessity, as required by Section 4906.10(A)(6), Revised Code (Joint Exhibit 1 at 5).

D. Air, Water and Solid Waste (Section 4906.10(A)(5), Revised Code)

Air quality permits, for air pollution control, which are issued pursuant to Chapter 3704, Revised Code, will be required for construction and operation of the proposed Great Bend IGCC facility. According to the application, operation of the generation facility will emit nitrogen oxide, carbon monoxide, sulfur dioxide, particulate matter, sulfuric acid mist and volatile organic compounds. The projected emission rates of such pollutants during operation subject the facility to Prevention of Significant Deterioration review under federal Clean Air Act regulations.

In September 2006, AEP-Ohio submitted its application for a PTI permit from the Ohio EPA. The PTI application is pending review by the Ohio EPA. The PTI application also includes review of particulate emissions from the facility during operation. The proposed generation facility will have several sources of particulate emission which include the cooling tower, sulfur recovery system, crusher building baghouse, reclaim station baghouse, combustion turbines, and auxiliary boiler. Accordingly, the facility will be subject to Ohio particulate emission regulation under Chapter 3745-17, O.A.C., entitled Particulate Matter Standards.

During construction and operation of the proposed Great Bend IGCC, AEP-Ohio expects fugitive dust to be emitted. To control fugitive dust during construction, vehicle speed will be restricted and water spray suppression will be implemented, as necessary. The coal-handling system will be an enclosed conveyor system with enclosed transfer points. AEP-Ohio states that dust suppression methods will be implemented and forced air dust collection systems installed and good compaction and handling practices utilized.

AEP-Ohio's source for water for the proposed Great Bend facility is the Ohio River. Accordingly, the proposed project is subject to Sections 1501.33, Revised Code, entitled New or Increased Consumptive Uses Prohibited Without Permit; Application; Exemptions, and Section 1501.34, Revised Code, entitled Approval or Application for Permit; Denial or Modification; Revocation or Suspension; Reinstatement; Petition for Investigation of Withdrawal of Water Resources; Permittee's Annual Report. AEP-Ohio states that maximum water withdrawal is estimated to be approximately 12,000 gallons per minute (gpm) with average water withdrawal rates during operation estimated from 5,100 to 8,672 gpm. AEP-Ohio will also be required to obtain a water withdrawal permit from Ohio Department of Natural Resources prior to operation of the facility.

Construction of the proposed facility will have both temporary and permanent impacts on wetlands and surface waters. This will necessitate compliance with the requirements in Chapter 6111, Revised Code (water pollution control), including application for an individual Clean Water Act Section 401 Water Quality Certification from Ohio EPA. Construction of the generation facility will not affect any streams or wetlands. The construction of the landfill will cause more than one-half acre of wetlands and approximately 8,000 linear feet of streams to be filled. AEP-Ohio will manage potential water pollution through compliance with an National Pollution Discharge Elimination System (NPDES) construction storm water permit and its Storm Water Pollution Prevention Plan (SWPPP) which includes the use of runoff diversion and collection devices, and the use of sedimentation basins to hold and treat runoff prior to discharge into the Ohio River. Construction contractors will be required to follow spill prevention, control and countermeasure (SPCC) plans. A sewage treatment plant is planned for use during operation of the facility and may be available for use during construction. If the sewage treatment plant is not available during construction, sanitary waste will be collected on a weekly basis for off-site treatment and disposal.

The proposed Great Bend facility will also require AEP-Ohio to obtain an NPDES permit for operation of the facility, and to develop operational SPCC and ground water protection plans. The applicant will manage storm water and process wastewater through two systems for discharge to the Ohio River and various process/equipment including oil/water separators, settling basins, an ammonia removal system, a metals reduction system, a biological treatment system, and a waste solids dewatering systems. Leachate

and runoff from the landfill area will be collected in a single settlement pond, for monitoring and discharge to a nearby tributary. The wastewater discharge stream from the generation facility (include cooling tower blowdown, contact wastewater, gasification process wastewater, sewage treatment plant, coal pile runoff/leachate, and demineralizer waste flow) will be routed to a separate settlement pond system, via several channels. The applicant anticipates that the combined wastewater discharge will average approximately 4.8 million gallons per day.

Solid and hazardous waste requirements necessitate that AEP-Ohio comply with the requirements set forth in Chapter 3734, Revised Code, during construction through the use of licensed landfills for disposal of construction debris that can not be re-used or recycled. Disposed non-hazardous waste will include items such as non-recyclable metals, paper, wood, glass, and plastics. Hazardous wastes will include waste oils, waste vehicle fluids, paints, thinners, solvents, oily rags, oil absorbent materials, welding materials and lead acid batteries. AEP-Ohio plans to recycle these materials when possible or dispose of them through collection services provided by an authorized hazardous waste management company.

AEP-Ohio proposes to construct a facility landfill approximately one-half mile north of the generation facility (within the project site) primarily for the disposal of slag and sulfur waste products that cannot be sold. Construction of the landfill will require the removal of numerous trees and other vegetation from approximately 66 acres of upland forest, including seven acres of forest area identified by the ODNR as high quality oak-hickory forest. AEP-Ohio intends to sell any valuable timber removed from the landfill site and the remaining woody material will either be chipped and left on site, or removed to an approved landfill. AEP-Ohio will be required to obtain a permit to install an industrial solid waste landfill, pursuant to Chapter 3745-29, O.A.C.⁸ AEP-Ohio has not yet filed its application for the landfill permit. The on-site landfill will be used to accommodate unsold slag and sulfur from the gasification process. The applicant projects that during operation of the facility slag will be produced at a rate of approximately 529 tons per day, and sulfur will be produced at a rate of approximately 213 tons per day. Additional solid wastes, some potentially hazardous, will be generated in lesser quantities and disposed of in the landfill including waste carbon (containing mercury), filter candles, catalysts, filters, oils, batteries and refuse from offices and plant operations, or through an authorized waste management organization.

Pursuant to Section 4561.32, Revised Code, Staff coordinated with the Ohio Office of Aviation to evaluate potential impacts the facility may have on local airports. There are two airports located within approximately two miles of the proposed Great Bend facility site, the Ravenswood Jackson County airport and the Ravenswood Seaplane Base in West

⁸ The Ohio EPA has issued for comment new regulations for Beneficial Industrial Waste at Chapter 3745-525, O.A.C., however, these rules have not been finalized and therefore, are not yet effective.

Virginia. The Office of Aviation did not raise any concerns with the proposed facility's impact on Ohio airports. However, because structures at the facility are anticipated to exceed 200 feet in height, it will be necessary for AEP-Ohio to file for permits from the Federal Aviation Administration (FAA) prior to construction of the facility. The FAA will coordinate with the West Virginia Aeronautics Commission regarding potential impacts on public airports in West Virginia.

Operation of the proposed facility will also require an Acid Rain permit, a Nitrogen Oxide Budget permit, potential Mercury Rule permits, a Title V Operating Permit, and potential Clean Air Interstate Rule permits.

The Staff reviewed AEP-Ohio's description of the compliance requirements included in the application pursuant to Chapters 3704, 3734, and 6111, Revised Code. The Staff also investigated the compliance requirements of the proposed facility pursuant to Sections 1501.33 and 1501.34, Revised Code. Based on its review of the application, Staff concludes that the Great Bend facility will comply with the requirements of Section 4906.10(A)(5), Revised Code (Staff Report at 41).

As part of the Stipulation, the applicant and Board Staff agree that adequate data on the proposed Great Bend generation facility has been provided to the Board and Staff to determine that the proposed facility will comply with Chapters 3704, 3734, and 6111, Revised Code, Sections 1501.33, 1501.34 and 4561.32, Revised Code and, all regulations adopted thereunder, as required by Section 4906.10(A)(5), Revised Code (Joint Exhibit 1 at 5).

E. Agricultural Districts and Agricultural Lands (Section 4906.10(A)(7), Revised Code)

Classification as agricultural district land is achieved through an application and approval process administered through the local county auditor's office. According to the application, the Meigs County Auditor's office has no record of agricultural districts within the proposed project site. Accordingly, construction of the proposed project will not have an impact on designated agricultural district land.

In addition, Staff evaluated the proposed project's impact on agricultural production. The Staff notes that the southern portion of the site, approximately 560 acres, has recently been used for agricultural production. AEP-Ohio does not expect any farming to continue on the property after construction of the Great Bend facility. Staff recommends that, as required under Section 4906.10(A)(7), Revised Code, the Board find that the impact of the project on the viability of existing farmlands and agricultural districts has been determined (Staff Exhibit 1, at 48).

In the Stipulation, the parties agree that adequate data on the Great Bend project has been provided to the Board and Staff to determine the proposed project's impact on the viability of existing agricultural districts under Chapter 929 of the Revised Code as required by Section 4906.10(A)(7), Revised Code (Joint Exhibit 1 at 5).

F. Water Conservation Practice (Section 4906.10(A)(8), Revised Code)

AEP-Ohio expects to withdraw water from the Ohio River in order to supply its process water needs. The system will be designed to achieve a maximum raw water intake capacity of approximately 12,000 gallons per minute (gpm) with average water withdrawal expected to range from 5,100 to 8,672 gpm depending on ambient temperatures, characteristics of the coal utilized, and suspended solids in the Ohio River. This water will be used for slurry preparation, slag handling, fire protection, and makeup water. The Great Bend IGCC project employs several water conservation/reduction processes to reduced water demands including generating capacity via combustion turbines as compared to steam turbines; using a mechanical draft cooling tower and re-using water in several stages of the process (such as cycling of cooling tower blowdown and recycling grey water blowdown from the gasifiers) to minimize the facilities overall water requirements.

In addition, potable water will be needed for personal use by employees at the facility. During construction, the maximum potable water needs are estimated to be approximately 44,000 gallons per day; however, during operation of the facility the maximum potable water demands are expected to be approximately 22,000 gallons per day.

Staff recommends that, the Board find that the Great Bend project will comply with Section 4906.10(A)(8), Revised Code (Staff Exhibit 1, at 49). Furthermore, in the Stipulation, the parties agree that adequate data on the Great Bend project has been provided to the Board and Staff to determine that the project incorporates the maximum feasible water conservation practices considering the available technology and the nature and economics of various alternatives as required by Section 4906.10(A)(8), Revised Code (Joint Exhibit 1 at 6).

IV. Recommendations in the Staff Report and the Stipulation:

As part of the Staff Report, Board Staff recommended that any certificate issued by the Board for the construction of the proposed Great Bend IGCC facility include 36 specific conditions (Staff Exhibit 1 at 50-55). In the Stipulation, AEP-Ohio and the Staff believe that ample evidence has been provided to demonstrate that construction of the Great Bend IGCC project as proposed with required conditions, meets the applicable statutory criteria of Sections 4906.10(A)(2) through (8), Revised Code (Joint Exhibit 1, at 7-8). Further, as part of the Stipulation, AEP-Ohio and the Staff agree and recommend that the Board issue

a certificate for the proposed site, subject to conditions nearly identical to the 36 conditions set forth in the Staff Report. As set forth in the Stipulation, AEP-Ohio agrees to:

- (1) Construct the proposed Great Bend IGCC generation facility at AEP-Ohio's proposed site as presented in the application filed on March 24, 2006, as clarified by supplements filed on July 14, 2006.
- (2) Utilize the equipment and construction practices as described in the application, as modified by the supplements filed on July 14, 2006, replies to data requests, and the conditions in the Stipulation.
- (3) Implement the mitigative measures described in the application, the supplements filed on July 14, 2006, and the conditions in the Stipulation.
- (4) Obtain and comply with all applicable permits and authorizations as required by federal and state entities for any activities where such permit or authorization is required prior to the commencement of construction and/or operation of the facility. A copy of each permit or authorization, including the original application and any associated terms and conditions, shall be provided to the Staff within seven days of issuance or receipt by the Applicant.
- (5) Properly install and maintain erosion and sedimentation control measures at the project site in accordance with the following requirements:
 - (a) During construction of the facility, seed all disturbed soil, except within cultivated agricultural fields that will remain in production following project completion, within seven days of final grading (or as soon thereafter as weather conditions permit) with a seed mixture acceptable to the appropriate County Cooperative Extension Service. Denuded areas, including spoils piles, shall be seeded and stabilized within seven days, if they will be undisturbed for more than 21 days. Reseeding shall be done within seven days of emergence of seedlings as necessary until sufficient vegetation in all areas has been established.

- (b) Inspect and repair all such erosion control measures on site at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period, and maintain controls until permanent vegetative cover has been established on disturbed areas.
 - (c) Obtain National Pollutant Discharge Elimination System permits for storm water discharges during construction of the facility. A copy of each permit or authorization, including terms and conditions, shall be provided to the Staff within seven days of receipt. Prior to construction, the construction Storm Water Pollution Prevention Plan (SWPPP) shall be submitted to the Staff for review and acceptance.
- (6) Employ the following construction methods in proximity to any significant watercourses, except at specific locations where Board Staff has approved construction:
 - (a) Delineate all significant watercourses, including wetlands, by fencing, flagging, or other prominent means;
 - (b) Ensure that all construction equipment avoids significant watercourses, including wetlands;
 - (c) Prohibit the storage, stockpiling and/or disposal of equipment and materials in sensitive areas;
 - (d) Locate all structures outside of identified significant watercourses, including wetlands;
 - (e) Divert all storm water runoff away from fill slopes and other exposed surfaces to the greatest extent possible, and direct such runoff instead to appropriate catchment structures, sediment ponds, etc., using diversion berms, temporary ditches, check dams, or similar measures;
 - (f) Work with Staff, prior to construction, to prepare a detailed map indicating each significant watercourse on

the site (and its associated buffer zone), in order to specify the areas where construction activities will be avoided under this condition. The map will also designate other sensitive areas where construction activity should be avoided, consistent with other conditions in this Stipulation. An initial version of the map shall be developed within 90 days of the Board's adoption of this Stipulation, or such alternative time as the parties agree; the initial version of the map will be updated closer to the time of construction, unless the parties agree that no update is required.

- (7) Employ best management practices when working in the vicinity of environmentally-sensitive areas, as specified in the detailed map in Condition (6)(f) above. This includes, but is not limited to, the installation of silt fencing (or similarly effective tool) prior to initiating construction near streams and wetlands. The installation shall be done in accordance with generally accepted construction methods and shall be inspected regularly.
- (8) Develop an erosion and sedimentation control plan and submit its plan to Staff for review and approval. AEP-Ohio intends to incorporate an erosion and sedimentation control plan into its construction SWPPP.
- (9) Submit detailed maps and engineering designs for the proposed relocation of Streams 13, 14, and 15 [as designated in AEP-Ohio Ex. 1, Figure 3-B] to Staff for review and approval prior to construction. The designs shall include appropriate consideration of substrate, habitat, riparian buffers, and channel morphology, based on the condition of the existing streams, and shall be fully capable of attaining Class 3 headwater stream status within two years of completion. Where Staff, Ohio EPA, and AEP-Ohio agree that proposed stream restoration to Class 3 status is not feasible, providing permanent protection for other high quality headwater streams in the area may be considered as a substitute mitigative measure. This condition may be met through compliance with AEP-Ohio's Section 401 permit, if it contains different requirements for stream relocation.
- (10) Investigate opportunities to further reduce to the greatest extent possible, or even eliminate, the impacts of the proposed landfill site on streams, wetlands, and forested areas, in the course of developing

its landfill application for submittal to the Ohio EPA, which may include adjustments to the proposed shape and location of the landfill footprint, the location of ancillary facilities, etc.

- (11) Dispose of all contaminated soil and all construction debris in approved landfills in accordance with Ohio EPA regulations.
- (12) Conduct mist netting to determine if the Indiana bat is present at the site. If Indiana bats are captured during the net surveys, AEP-Ohio shall immediately notify Staff for coordination. If the net surveys do not capture Indiana bats, AEP-Ohio may remove the trees but shall do so between September 16 and April 14, unless specific pre-approval is granted by Staff. Staff will consult with the Fish and Wildlife Service in granting pre-approval.
- (13) (a) Restrict activity within 600 feet of any osprey nest during the nesting season (April-October); and (b) construct and maintain an artificial osprey nesting platform on the southeast portion of the property, following consultation with and acceptance by Staff. The activity restriction in subdivision (a) above is not intended to preclude traffic on State Route 33, landscaping activities to create a rip-rap ditch for drainage in an area northwest of the cooling tower location, installation of the plant perimeter fencing or construction of a parking area whose eastern edge may come within 600 feet of the osprey nesting site.
- (14) Develop a mussel relocation and monitoring plan, in consultation with the Ohio Department of Natural Resources (ODNR). The plan shall be submitted to Staff for its review and approval prior to any construction activities within the Ohio River.
- (15) Enter into an agreement, prior to the commencement of construction, to preserve in perpetuity at least 66 acres of wooded area, including a portion with oak-hickory forest. The wooded area selected for preservation may be located within the Great Bend site or within another property immediately adjacent to the Great Bend site. A copy of the agreement shall be provided to Staff for its review and approval prior to its execution.
- (16) Create and maintain a 50-foot wide riparian buffer along the barge dock and unloading area following the completion of construction activities. This condition may be met through compliance with AEP-

Ohio's compliance with the Ohio EPA's Section 401 Water Quality Certification (Section 401) permit, if it contains different requirements for riparian buffers. The buffer shall consist of appropriate native tree species as recommended by ODNR, Division of Forestry and/or Division of Natural Areas and Preserves.

- (17) Create an additional 0.86 acres of wetland by expanding two existing on-site wetlands (Wetlands A and D). This Condition may be met through compliance with the AEP-Ohio's Section 401 permit, if it contains different requirements for wetland mitigation. Annual follow-up monitoring and evaluation of these wetlands shall be required, as directed by Staff and Ohio EPA 401 personnel.
- (18) Improve the channel and riparian habitat of Stream 1 [as designated in AEP-Ohio Ex. 1, Figure 3-C] between U.S. 33 and the Ohio River. This condition may be satisfied through compliance with AEP-Ohio's Section 401 permit, if it contains different requirements for Stream 1 improvements. Annual follow-up monitoring and evaluation of these stream corridor improvements shall be required, as directed by Staff and Ohio EPA 401 personnel.
- (19) File a separate Board application specific to the Carbon Capture and Storage (CCS) equipment, process, and pipeline prior to construction in the event that AEP-Ohio elects to begin CCS for this facility.
- (20) Have an environmental specialist on-site at all times that construction (including vegetation clearing) is being performed in or near a sensitive area such as a designated wetland, stream, river or in the vicinity of identified threatened/endangered species or their identified habitat. This includes all clearing of the proposed landfill site.
- (21) Construct secondary containment facilities for any liquid chemical or oil storage facilities, or equipment containing significant amounts of liquid chemicals or oils. The containment facilities should be sized in order to accommodate storage facility or equipment contained volumes, plus freeboard.

- (22) Not to commence construction of the project until it has a signed Interconnection Agreement with PJM, which includes the construction, operation and maintenance of system upgrades necessary to reliably and safely integrate the proposed generating facility into the regional transmission system.
- (23) Make all necessary filings and obtain any necessary approvals from the Federal Aviation Administration prior to construction of structures that make the filings necessary. A copy of each filing and approval shall be provided to the Board Staff within seven days of issuance or receipt by AEP-Ohio.
- (24) Conduct any construction of facilities within the floodplain in accordance with good engineering practices and in a manner consistent with the minimum flood protection criteria of the National Flood Insurance Program.
- (25) Submit a detailed landscape plan of the entire project site to Staff for review and approval prior to construction. The Applicant will consult with the Ohio Historic Preservation Office (OHPO) for input on screening methods and techniques appropriate to minimize impacts to adjacent sensitive historic sites.
- (26) Submit a map of the route of the potable water pipeline, if it remains in the plant design, to Staff for its review and approval prior to construction of the generating facility.
- (27) Evaluate the potential to resume farming on suitable unused portions of the property after construction is completed.
- (28) Provide a copy of the final Memorandum of Agreement (MoA), signed by the consulting parties (AEP-Ohio, OHPO, and United States Army Corps of Engineers), as well as all associated documents, to Staff for review prior to construction. In the event that the final MoA is different from the draft provided to Staff on November 13, 2006, or if another form of agreement is reached by all of the consulting parties, then all revisions shall be submitted immediately to Staff to enable coordination with the consulting parties.
- (29) Submit all reports pertaining to archaeological data recovery work and findings associated with sites 33Ms23, 33Ms391, and 33Ms545, [as

designated in AEP-Ohio Ex. 1, Phase 1A Cultural Resources Investigation, Table 1] as specified in the MoA, to Staff prior to the commencement of construction unless otherwise agreed to by Staff.

- (30) Coordinate all traffic issues with the appropriate entities prior to construction so as to minimize potential traffic impacts on the surrounding community during construction and operation of the facility. Entities shall include the Meigs County Engineers Office, Lebanon Township, Ohio Department of Transportation, and local law enforcement officials.
- (31) Minimize adverse impacts along Great Bend Road west of the plant, AEP-Ohio shall consider restricting truck traffic, with access to and from the site being from U.S. 33. Additionally, AEP-Ohio shall forward a copy of any subsequent traffic studies performed for the project to Staff for review prior to construction.
- (32) Limit pile driving and blasting to daylight hours.
- (33) Conduct a pre-construction conference (prior to the start of any project work) with Staff in attendance to discuss how environmental and other concerns will be satisfactorily addressed.
- (34) Submit to Staff for review and approval, at least 30 days before the pre-construction conference, one set of detailed drawings for the proposed project, including all laydown areas and access points so that the Staff can determine that the final project design is in compliance with the terms of the certificate.
- (35) Provide to the Staff the following information as it becomes known:
 - (a) The date on which construction will begin;
 - (b) The date on which construction was completed;
 - (c) The date on which the facility began commercial operation.
- (36) That the certificate shall become invalid if AEP-Ohio has not commenced a continuous course of construction of the Great Bend IGCC generation facility within five years of the date of journalization of the certificate.

Joint Exhibit 1 at 8-18.⁹

V. Conclusion:

According to the Stipulation, the parties recommend that based upon the record, and the information and data contained therein, the Board should issue a certificate for construction, operation, and maintenance of the proposed Great Bend project as described in the application filed with the Board on March 24, 2006, and supplemented on July 14, 2006 subject to the 36 conditions listed in the Stipulation (Joint Exhibit 1 at 2). Although not binding upon the Board, stipulations are given careful scrutiny and consideration, particularly where no party is objecting to the stipulation.

Based upon the record in this proceeding, the Board finds that all the criteria established in Section 4906.10(A), Revised Code, are satisfied for the construction, operation, and maintenance of the Great Bend IGCC project, as set forth in the application and subject to the conditions set forth above in this Order and in the Stipulation. Accordingly, based upon all of the above, the Board approves and adopts the Stipulation filed in this matter on March 9, 2007, and hereby issues a certificate to AEP-Ohio for the construction, operation, and maintenance of the Great Bend IGCC project as proposed in its application filed March 24, 2006, and supplemented on July 14, 2006 subject to the 36 conditions set forth in Section IV of this Order.

FINDINGS OF FACT AND CONCLUSIONS OF LAW:

- (1) The project is a "major utility facility" as defined in Section 4906.01(B)(3), Revised Code.
- (2) AEP-Ohio is a "person" under Section 4906.10(A), Revised Code.
- (3) On March 24, 2006, as supplemented on July 14, 2006, AEP-Ohio filed its application for a certificate for the Great Bend IGCC project.
- (4) Industrial Energy Users-Ohio and Ohio Energy Group filed motions to intervene in this case. By entry issued June 14, 2006, their respective motions for intervention were denied.

⁹ The conditions in the Stipulation are substantially identical to the 36 conditions recommended by Staff in the Staff Report (Staff Exhibit 1, at 50-55) except to the extent that the parties have negotiated the addition of Condition 6(f); allowed the Section 401 permit to supplement the requirements of Conditions 9, 16, 17, and 18; clarified the activity restriction of Condition 13(a); and specified the minimum acreage to be established as wooded area on the site in Condition 15.

- (5) On May 22, 2006, AEP-Ohio filed a request for a 90-day extension of the application completeness review to allow AEP-Ohio to complete its investigation of the cultural artifacts and resources found at the project site. By entry issued June 14, 2006, AEP-Ohio's request for an extension was granted.
- (6) On August 18, 2006, the Board notified AEP-Ohio that its application was complete.
- (7) On September 15, 2006, AEP-Ohio filed its certificate of service of the certified application on local officials, libraries, and public agencies in accordance with Rules 4906-5-06 and 4906-5-07, O.A.C.
- (8) By entry issued September 28, 2006, a local public hearing was scheduled for December 12, 2006, in Pomeroy, Ohio, and an adjudicatory hearing was scheduled for December 14, 2006, in Columbus, Ohio.
- (9) On November 27, 2006, the Staff report was filed, recommending that a certificate be issued for the project subject to the 36 conditions listed in the report.
- (10) On November 2, and December 1, 2006, AEP-Ohio filed the proofs of publication of the newspaper notices regarding the project as required by Rule 4906-5-08, O.A.C.
- (11) Pursuant to Rule 4906-5-08(B)(3), O.A.C., the applicant must provide notice of the proposed project to affected property owners. The Great Bend project site is owned by AEP-Ohio and, therefore, there are no affected property owners to which notice must be provided.
- (12) A public hearing was held on December 12, 2006, at Meigs High School in Pomeroy, Ohio. Twelve witnesses offered testimony in favor of the proposed project and one witness testified in opposition to the proposed project.
- (13) The adjudicatory hearing commenced on December 14, 2006 and was continued until January 30, 2007.
- (14) On March 9, 2007, AEP-Ohio and the Board Staff filed a Stipulation.

- (15) The record establishes the nature of the probable environmental impact from construction, operation, and maintenance of the project as required by Section 4906.10(A)(2), Revised Code.
- (16) The record establishes that the project, subject to the conditions set forth in this Order and the Stipulation, 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, as required by Section 4906.10(A)(3), Revised Code.
- (17) The record establishes that the project, subject to the conditions set forth in this Order and the Stipulation, is consistent with plans for expansion of the regional power grid and will serve the interest of electric system economy and reliability, as required by Section 4906.10(A)(4), Revised Code.
- (18) The record establishes that the project, subject to the conditions set forth in this Order and the Stipulation, complies with Chapters 3704, 3734 and 6111, Revised Code, and Sections 1501.33, 1501.34, and 4561.32, Revised Code, and all rules and regulations there under, to the extent they apply, as required by Section 4906.10(A)(5), Revised Code.
- (19) The record establishes that the project, subject to the conditions set forth in this Order and the Stipulation, will serve the public interest, convenience, and necessity, as required by Section 4906.10(A)(6), Revised Code.
- (20) The record contains adequate data on the project for the Board to determine the project's impact on the viability of any land in an existing agricultural district established under Chapter 929, Revised Code, as required by Section 4906.10(A)(7), Revised Code.
- (21) The record contains adequate data on the project for the Board to determine that the project incorporates maximum feasible water conservation practices considering available technology and the nature and economics of various alternatives, as required by Section 4906.10(A)(8), Revised Code.
- (22) The record evidence provides sufficient factual data to enable the Board to make an informed decision.

- (23) A certificate containing the 36 conditions set forth in this Order and in the Stipulation should be issued for the construction, operation, and maintenance of the proposed Great Bend IGCC project.

ORDER:

It is, therefore,

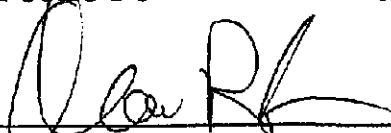
ORDERED, That the Stipulation filed on March 9, 2007, in this matter is approved and adopted. It is, further,


ORDERED, That a certificate be issued to AEP-Ohio for the construction, operation, and maintenance of the Great Bend IGCC generation project in accordance with the findings of the Order. It is, further,

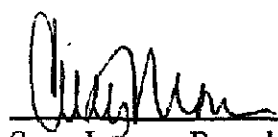
ORDERED, That the certificate contain the 36 conditions set forth in Section IV of this Opinion, Order, and Certificate. It is, further,

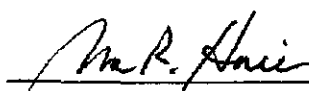
ORDERED, That a copy of this Opinion, Order, and Certificate be served upon all interested persons of record in this proceeding. It is, further,

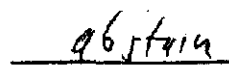
THE OHIO POWER SITING BOARD

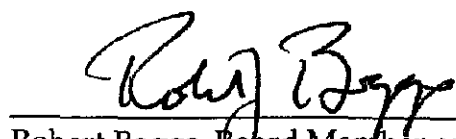


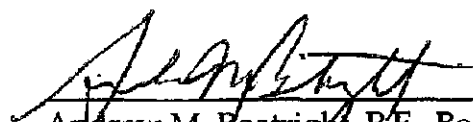
Alan R. Schriber, Chairman of the
Public Utilities Commission of Ohio

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

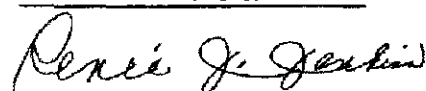
Robert Boggs, Board Member and
Director of the Ohio Department
of Agriculture

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

GNS/vm

Entered in the Journal

APR 23 2007



Renee J. Jenkins
Secretary