Staff Report of Investigation

Carroll County Energy Generation Facility

Case Number 13-1752-EL-BGN

February 19, 2014





John Kasich, Governor Todd Snitchler, Chairman

In the Matter of the Application by Carroll County Energy, LLC)	Casa Numbar
for a Certificate of Environmental Compatibility and Public)	12 1752 EL DON
Need to Construct an Electric Generation Facility)	13-1/52-EL-DGN

Staff Report of Investigation

Submitted to the OHIO POWER SITING BOARD

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Application by Carroll County Energy, LLC for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility

Case Number 13-1752-EL-BGN

Members of the Board:

Todd Snitchler, Chairman, PUCO David Goodman, Director, ODSA Dr. Ted Wymyslo, Director, ODH David Daniels, Director, ODA Craig Butler, Interim Director, Ohio EPA James Zehringer, Director, ODNR Jeffery J. Lechak, P.E., Public Member Peter Stautberg, State Representative Sandra Williams, State Representative Bill Seitz, State Senator Michael Skindell, State Senator

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To the Honorable Power Siting Board:

In accordance with provisions of the Ohio Revised Code (ORC) Section 4906.07(C), and the Commission's rules, the Staff has completed its investigation in the above matter and submits its findings and recommendations in this staff report for consideration by the Ohio Power Siting Board (Board).

The *Staff Report of Investigation* has been prepared by the Staff of the Public Utilities Commission of Ohio. The findings and recommendations contained in this report are the result of Staff coordination with the Ohio Environmental Protection Agency, the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Natural Resources, and the Ohio Department of Agriculture. In addition, the Staff coordinated with the Ohio Department of Transportation, the Ohio Historic Preservation Office, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the Federal Aviation Administration.

In accordance with ORC Sections 4906.07 and 4906.12, copies of this staff report have been filed with the Docketing Division of the Public Utilities Commission of Ohio on behalf of the Ohio Power Siting Board and served upon the Applicant or its authorized representative, the parties of record, and the main public libraries of the political subdivisions in the project area.

The staff report presents the results of the Staff's investigation conducted in accordance with ORC Chapter 4906 and the rules of the Board, and does not purport to reflect the views of the Board nor should any party to the instant proceeding consider the Board in any manner constrained by the findings and recommendations set forth herein.

Respectfully submitted,

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Klaus Lambeck, Chief Facilities, Sitting, & Environmental Analysis Division

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ACRONYMS

BMP	best management practices
DOW	ODNR Division of Wildlife
FAA	Federal Aviation Administration
kV	kilovolts
MW	megawatts
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OAC	Ohio Administrative Code
OCE	Oregon Clean Energy
ODA	Ohio Department of Agriculture
ODSA	Ohio Development Services Agency
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
Ohio EPA	Ohio Environmental Protection Agency
OHPO	Ohio Historic Preservation Office
OPSB	Ohio Power Siting Board
ORC	Ohio Revised Code
PUCO	Public Utilities Commission of Ohio
SWPPP	Storm Water Pollution Prevention Plan
USFWS	U.S. Fish and Wildlife Service

I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The Ohio Power Siting Board (Board or OPSB) was created in 1972. The Board is a separate entity within the Public Utilities Commission of Ohio (PUCO). The authority of the Board is outlined in Ohio Revised Code (ORC) Chapter 4906.

The Board is authorized to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities as defined in ORC Section 4906.01. Included within this definition are: electric generating plants and associated facilities designed for, or capable of, operation at 50 megawatts (MW) or more; electric transmission lines and associated facilities of a design capacity greater than or equal to 125 kilovolts (kV); and gas and natural gas transmission lines and associated facilities designed for, or capable of, transporting gas or natural gas at pressures in excess of 125 pounds per square inch. In addition, per ORC Section 4906.20, the Board authority applies to economically significant wind farms, defined in ORC 4906.13(A) as wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of five MW or greater but less than 50 MW.

Membership of the Board is specified in ORC Section 4906.02(A). The voting members include: the Chairman of the PUCO who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health (ODH), the Ohio Development Services Agency (ODSA), the Ohio Department of Agriculture (ODA), and the Ohio Department of Natural Resources (ODNR); and a member of the public, specified as an engineer, appointed by the Governor from a list of three nominees provided by the Ohio Consumers' Counsel. Ex-officio Board members include two members (with alternates) from each house of the Ohio General Assembly.

NATURE OF INVESTIGATION

The OPSB has promulgated rules and regulations, found in Chapter 4906 of the Ohio Administrative Code (OAC), which establish application procedures for major utility facilities and wind farms.

Application Procedures

Any person that wishes to construct a major utility facility or economically significant wind farm in this state must first submit to the OPSB an application for a certificate of environmental compatibility and public need (ORC 4906.04 and 4906.20). The application must include a description of the facility and its location, summary of environmental studies, a statement explaining the need for the facility and how it fits into the Applicant's energy forecasts (for transmission projects), and any other information the OPSB may consider relevant (ORC 4906.10(A)(1) and 4906.20(B)(1)).

Within 60 days of receiving an application, the OPSB must determine whether the application is sufficiently complete to begin an investigation (OAC 4906-5-05(A)). If an application is considered complete, the Chairman of the OPSB will cause a public hearing to be held 60 to 90 days after the official filing date of the completed application. At the public hearing, any person

may provide written or oral testimony and may be examined by the parties (ORC 4906.07). Parties include the Applicant, public officials, and any person who has been granted a motion of leave for intervention (ORC 4906.08(A)).

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published not less than 15 days prior to the public hearing. The report sets forth the nature of the investigation and contains the findings and conditions recommended by Staff. The Board's Staff, which consists of career professionals drawn from the Staff of the PUCO and other member agencies of the OPSB, coordinates its investigation among the agencies represented on the Board and with other interested agencies such as the Ohio Department of Transportation (ODOT), the Ohio Historical Society, and the U.S. Fish and Wildlife Service (USFWS).

The technical investigations and evaluations are conducted under guidance of the OPSB rules and regulations in OAC Chapter 4906. The recommended findings resulting from the Staff's investigation are described in the staff report pursuant to ORC Section 4906.07(C). The report does not represent the views or opinions of the OPSB and is only one piece of evidence that the Board may consider when making its decision. Once published, the report becomes a part of the record and is served upon all parties to the proceeding and is made available to any person upon request (4906.07(C) and 4906.10). A record of the public hearings and all evidence, including the staff report, may be examined by the public at any time (ORC 4906.09 and 4906.12).

Board Decision

The OPSB may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need. If the OPSB approves, or modifies and approves an application, it will issue a certificate subject to conditions. The certificate is also conditioned upon the facility being in compliance with standards and rules adopted under the ORC (ORC 4906.10(A) and (B)).

Upon rendering its decision, the OPSB must issue an opinion stating its reasons for approving, modifying and approving, or denying an application for a certificate of environmental compatibility and public need (ORC 4906.11). A copy of the OPSB's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding (ORC 4906.10(C)). Any party to the proceeding that believes its issues were not adequately addressed by the OPSB may submit within 30 days an application for rehearing (ORC 4906.12). An entry on rehearing will be issued by the OPSB within 30 days and may be appealed within 60 days to the Supreme Court of Ohio (ORC 4903.11, 4903.12, and 4906.12).

CRITERIA

The recommendations and conditions in this *Staff Report of Investigation* were developed pursuant to the criteria set forth in ORC Section 4906.10(A), which reads in part:

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) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generation facility, that the 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 the facility will serve the interests of electric system economy and reliability;
- (5) That the facility will comply with Chapters 3704., 3734., and 6111. of the Revised Code and all rules and standards adopted under those chapters and under Sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under Section 4561.32 of the Revised Code, the Board shall consult with the ODOT Office of Aviation of the Division of Multi-Modal Planning and Programs of the Department of Transportation under Section 4561.341 of the Revised Code.
- (6) That the facility will serve the public interest, convenience, and necessity;
- (7) In addition to the provisions contained in divisions (A)(1) through (A)(6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929. of the Revised Code that is located within the site and alternative site of the proposed major utility facility. Rules adopted to evaluate impact under division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternate site; and
- (8) That the facility incorporates maximum feasible water conservation practices as determined by the Board, considering available technology and the nature and economics of the various alternatives.

II. APPLICATION

APPLICANT

Carroll County Energy, LLC (CCE or Applicant) is a subsidiary of Advanced Power AG (Advanced Power). Advanced Power is a Swiss-based, privately-owned company whose intent is to develop, own, and manage power generation and related infrastructure projects throughout Europe and North America. Advanced Power supports its North American development projects through its Boston, Massachusetts office. Advanced Power has an established track record of project development, including more than 13,500 MW of power generation projects and more than \$4.6 billion of limited recourse project financing. Advanced Power has an agreement with General Electric Energy (GE) to develop combined cycle natural gas power plants and utilize GE's turbine technology for Advanced Power's North America power generation projects.

HISTORY OF THE APPLICATION

Prior to formally submitting its application, the Applicant consulted with the Staff and representatives of the Board regarding application procedures.

On August 22, 2013, the Applicant held a public information meeting regarding the proposed combined-cycle natural gas turbine electric generating facility.

On October 29, 2013, the Applicant filed the proofs of publication for the project.

On November 14, 2013, the Applicant filed a motion for waiver regarding the requirement to provide an extensive site study, to provide preliminary grading plans showing vegetative cover information for the site rather than showing existing and removed vegetation cover on the site map, to provide the location of water supply lines and sewage lines in final engineering drawings, and to provide a preliminary grading plan rather than showing grade elevations on the layout map. Staff did not oppose this waiver request and the Administrative Law Judge for this case granted the waiver on December 17, 2013.

The Application for a Certificate of Environmental Compatibility and Public Need was filed on November 15, 2013, and was deemed complete on December 20, 2013. A local public hearing will be held on March 6, 2014 at 6:00 p.m., at the Carrollton High School, Fine Arts Room 252 Third Street NE, Carrollton, Ohio 44615. The adjudicatory hearing will commence on March 13, 2014 at 10:00 a.m., at 180 East Broad Street, 11th Floor Hearing Room 11-C, Columbus, Ohio, 43215.

This summary of the history of the application does not include every filing in case number 13-1752-EL-BGN. The docketing record for this case, which lists all documents filed to date, can be found in the Appendix to this report and online at http://dis.puc.state.oh.us.

PROJECT DESCRIPTION

The Applicant proposes to develop, build, own and operate a new natural gas-fired combinedcycle generating facility with a nominal net output of 742 MW approximately 2.5 miles north of the village of Carrollton, Washington Township, Carroll County, Ohio.¹ The Applicant proposes to enter the PJM Reliability Pricing Model Base Residual Auction in May 2014 for delivery of capacity from June 1, 2017 to May 31, 2018, and to have the facility in commercial operation by May 2017.

Project Area

The proposed facility and ancillary equipment is located on an irregularly shaped parcel of agricultural land, totaling approximately 77 acres and is located entirely within Washington Township, Carroll County. The footprint of the proposed facility and ancillary equipment consist of approximately 17 acres. Access to the facility is from State Route 9 (Kensington Road, NE) approximately 2.5 miles north of the village of Carrollton. The proposed facility, ancillary equipment, and laydown/staging area are shown in the figures contained in this report.

Construction Laydown/Staging Area

The Applicant intends to deliver construction materials directly to the project area. A 23-acre parcel located between the project area and State Route 9 would be used as a temporary construction laydown/staging area for material and equipment storage, construction trailers, and parking. Temporary lighting may be installed during the construction period. The construction laydown/staging area may be in use for the entire construction period, after which the Applicant plans to retain easements for facility access as well as for the associated natural gas and electrical transmission interconnections, which are the subject of separate filings with the OPSB.

Generating Equipment

The proposed facility is comprised of combined-cycle, natural gas-fired, dry-cooled generator equipment capable of 742 MW of output. The proposed facility would utilize two combustion turbine generators (CTG) and a single steam turbine generator (STG). Details of the major equipment required at this proposed facility are provided below:²

Combustion Turbine Generator - The CTGs would consist of GE 7F 5-Series natural gas turbines rated at 2,046 million British thermal units per hour (MMBtu/hr.), higher heat value (HHV), and 209 MW at 59°F, with pipeline natural gas as the exclusive fuel and integrated dry low nitrogen oxides (NO_x) (DLN) burners. The CTGs would utilize inlet air evaporative coolers to maximize output and increase efficiency at ambient temperatures greater than 59°F.

Heat Recovery Steam Generator (HRSG) – Two triple pressure reheat HRSGs would be used to capture the exhaust gas heat from the CTGs. Each HRSG would be equipped with duct burners to provide additional peaking generation capacity. The HRSGs would also incorporate selective catalytic reduction (SCR) and oxidation catalysts systems as best available control technology (BACT) and best available technology emission control technologies.

¹ Application for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility (Application), Carroll County Energy, LLC. November 15, 2013.

² Application, 56-62.

Steam Turbine Generator (STG) – One GE STG capable of generating 342 MW at 59°F would be housed in a building within the proposed facility compound.

Air Cooled Condenser – An air cooled condenser would be utilized to condense the exhaust steam from the STG and return the condensate to the HRSGs in a closed loop system. Cooling is achieved by moving air over the condenser tubes by utilizing a bank of fans.

Step up Transformers – The two CTGs and the STG would each be connected to a transformer that would step up generator output from 18 kV to 345 kV for connection to AEP's existing Tidd to Canton Central 345 kV electric transmission line.

Auxiliary Boiler – An auxiliary steam boiler, rated at 99 MMBtu/hr. would be used as needed to keep the HRSGs warm during periods of facility shutdown and to provide steam to the STG during start-ups.

Air Cooled Heat Exchanger – An air cooled heat exchanger would be utilized to provide cooling for auxiliary equipment. The working fluid for the system would be demineralized water with corrosion inhibitor and freeze protection or a glycol-based solution.

Stand-by Diesel Generator – A 1,491 horsepower diesel engine driven generator capable of producing 1,112 kilowatts of electricity would be provided and designed to safely shut the proposed facility in the event of a forced outage. The generator would provide power to essential services necessary to protect the equipment. Ultra-low sulfur diesel (ULSD) would be utilized and stored in an approximately 500-gallon double containment tank integrated into the equipment skid.

Demineralizer – Demineralized water would be created by on-site water treatment. Demineralized water would be used in the CTG inlet air evaporative cooler and as makeup water to the water/steam cycle. Water would be processed by the demineralizer system through a reverse osmosis process, which would remove the dissolved solids to the level required by the HRSG and STG manufacturer. The effluent from the demineralized system would be sent to the demineralized water storage tank. The demineralized water storage tank would provide demineralized water for condenser hot-well makeup and be of sufficient size to allow for normal facility operations without excessive cycling of the demineralized water system. Demineralizer regeneration waste would be discharged to the wastewater system and treated to meet the specifications of the publicly-owned treatment works (POTW) that would receive wastewater discharges.

Wastewater System – Wastewater would be generated by sanitary sources, equipment drains, evaporative cooler and HRSG blowdown, and reverse osmosis reject. Wastewater, except for sanitary sources, would be collected in a wastewater collection tank and treated before discharging to the existing POTW. Treatment would ensure the discharge would be in accordance with existing National Pollutant Discharge Elimination System (NPDES) discharge requirements for the POTW.

Ammonia Storage Tanks – Aqueous ammonia would be stored at the proposed facility for use in reducing NO_x emissions from the facility. The preliminary design includes two ammonia storage tanks, each a 22.5-foot high, 11-foot diameter double-walled tank with capacity to store 15,000 gallons of 19 percent aqueous ammonia. A containment area, with a berm, around the tanks

would be designed to hold the full volume of an accidental release of one tank, plus a 25-year storm event, with additional freeboard. The tanks would be secured with concrete bollards, which would prevent vehicles from rupturing the tanks. Tank alarms would immediately notify facility personnel in the event of an accidental release, and plastic balls, which would be stored on-site, would be deployed within the containment area in order to further reduce available surface area and to block the wind. This would reduce potential exposure of the facility and personnel to this chemical. Curbing and containment would be used in the ammonia delivery area to prevent accidental release to the environment during ammonia deliveries. The ammonia would be delivered by tanker trucks sourced out from a regional provider.

Air Emission Control and Monitoring Equipment

The Applicant proposes to utilize various technologies in their turbine and emissions systems. In order to minimize emissions of NO_x , the combustion turbines would have dry low NO_x DLN burners. SCR systems would be installed in the HRSG exhausts to further reduce NO_x concentrations. NO_x emissions would increase during limited periods of start-up and shutdown due to less efficient combustion during these times.

The Applicant would use good combustion practices and an oxidation catalyst to control emissions to BACT levels for control of carbon monoxide (CO). This would also minimize volatile organic compounds (VOC) pollution.

Particulate matter (PM / PM_{10} / $PM_{2.5}$) and sulfur dioxide (SO₂) emissions would be controlled through the use of low-sulfur, pipeline-quality natural gas fuel.

A continuous emission monitoring system (CEMS) would be installed within each HRSG exhaust stack to maintain compliance with air permit requirements.

Water Supply, Treatment, Storage, and Discharge

Raw and potable water would be supplied to the site from the either the Carroll County Environmental Services (CCSS) or the Village of Carrollton water treatment plants at a flow rate of up to 0.4 million gallons per day. The water would be stored on-site in a 1.2 million gallon fire and raw water storage tank.

The raw water and potable water from either the CCSS or the Village of Carrollton water treatment plants would be treated. Some of the water would receive demineralization polishing treatment for use in the evaporative cooler and makeup water to the HRSG and steam turbine. Demineralized water would be stored in a 0.5 million gallon demineralized water storage tank.

The wastewater discharge to either the CCSS or the Village of Carrollton water treatment plants would consist of evaporative cooler blowdown, HRSG blowdown, equipment drains, reverse osmosis rejection water, and sanitary wastewater.

Air Cooled Condenser

The proposed facility would use one air-cooled condenser for steam condensing and other plant auxiliary cooling load heat rejection needs. The air-cooled condenser provides heat rejection by moving air through a bank of fans and over condenser tubes.

Electrical System

The proposed facility would interconnect with AEP's existing Tidd to Canton Central 345 kV electric transmission lines located approximately 0.4 miles west of the proposed facility. Electrical power would be generated by the proposed facility at 18 kV and then stepped-up to 345 kV by newly installed transformers located in an associated switchyard adjacent to the power block. From the switchyard, an approximately 0.4 miles new 345 kV electric transmission easement (150-feet wide) would extend across the project area, cross State Route 9, and intersect with the existing AEP right-of-way at a point of interconnection.

The proposed 345 kV electric transmission line interconnection would be the subject of a separate filing with the OPSB. Figure 02-2 of the Application illustrates the location of the proposed transmission line right-of-way and interconnection point, as well as on-site electrical equipment associated with the facility switchyard. The PJM Feasibility Study (Appendix C) was completed in March 2013. The System Impact Study (Appendix D) was initiated in June 2013 and received by the Applicant on November 4, 2013.

Gas Supply

The proposed facility would interconnect with the existing Tennessee Gas Pipeline located approximately 0.4 miles north of the proposed facility via a proposed 10-inch diameter pipeline located within a 75-foot easement. The proposed interconnection gas transmission line corridor is illustrated in Figure 01-1 of the Application. This interconnection point and the associated pipeline extension to the proposed facility is subject of a separate filing (case number 13-2425-GA-BNR) with the OPSB.

Project Timeline

The Applicant proposes to commence construction in February 2015 and begin commercial operation by May 1, 2017.

Applicant's General Commitments

The Applicant has committed to having in place, 30 days prior to a preconstruction conference, complaint resolution procedures to address potential public grievances resulting from project construction and operation. The resolution procedure will provide that the Applicant will work to mitigate or resolve any issues with those who submit either a formal or informal complaint and that the Applicant will immediately forward all complaints to Staff. The Applicant will also provide the complaint resolution procedures to Staff, for review and conformation that it complies with this commitment, prior to a preconstruction conference.

If any changes are made to the project layout after the submission of final engineering drawings, all changes will be provided to Staff in hard copy and as geographically-referenced electronic data. All changes outside the environmental survey areas and any changes within environmentally-sensitive areas will be subject to Staff review and acceptance, to ensure compliance with all conditions of the certificate, prior to construction in those areas.

Within 60 days after the commencement of commercial operation, the Applicant will submit to Staff a copy of the as-built specifications for the entire facility. If the Applicant demonstrates that good cause prevents it from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request an extension of

time for the filing of such as-built specifications. The Applicant will use reasonable efforts to provide as-built drawings in both hard copy and as geographically-referenced electronic data.

As the information becomes known, the Applicant will provide to Staff the date on which construction will begin, the date on which construction was completed, and the date on which the facility begins commercial operation.

Any new transmission line constructed in order to deliver gas and/or electricity from the generation project will become part of a filing with the Board, and must be approved prior to construction of the generation project.

All other Applicant commitments have been addressed by Staff in the appropriate section of this report.









Overview Map 13-1752-EL-BGN Carroll County Energy Facility

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials. This page intentionally left blank

III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the matter of the application of Carroll County Energy, LLC, the following considerations and recommended findings are submitted pursuant to ORC Section 4906.07(C) and ORC Section 4906.10(A).

Considerations for ORC Section 4906.10(A)(1)

BASIS OF NEED

The basis of need as specified under ORC Section 4906.10(A)(1) is not applicable to this electric generating facility.

Recommended Findings

Staff recommends that the Board find that the basis of need as specified under ORC Section 4906.10(A)(1) is not applicable to this electric generating facility.

Considerations for ORC Section 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to ORC Section 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility. Staff has found the following with regard to the nature of the probable environmental impact.

Socioeconomic Impacts

Demographics

The project area is sparsely populated and is not projected to change dramatically. The entire facility is located in Carroll County. In 2012, the estimated population of Carroll County was 28,587, and the estimated population density was 72.4 per square mile.³ The estimated 2012 population of Ohio was 11,544,225, and the estimated population density was 281.9 per square mile.⁴ Further, the population of Carroll County is projected to decrease approximately 0.2 percent between 2010 and 2020.⁵ The proposed facility is unlikely to limit future population growth or have a measurable impact on the demographics of the region.

Land Use

The Applicant proposes to construct the proposed facility on a 77-acre parcel and an adjoining 23-acre parcel. The proposed facility and switchyard would occupy 17 acres, while approximately four acres would be utilized for construction laydown, staging, parking, and access. The project area does not contain any existing structures. Agriculture and woodlots are the only land uses.

Land uses within one mile of the proposed facility are dominated by agriculture and woodlots and comprise approximately 86 percent of the total surrounding land use. Commercial land uses consist of a few small developments to the north, and comprise approximately 9 percent of the surrounding area. The remaining 5 percent of surrounding land uses are scattered residential, utility, lakes, institutional, and recreational. Carroll Hills School is located approximately 0.5 miles to the north and is not expected to be impacted.

Five residences located on Mobile Road NE are located within 1,000 feet of the proposed facility, with the nearest residence located approximately 350 feet to the south. No residential structures are located within the footprint of the project area. Nearby residents are likely to experience temporary noise and traffic impacts associated with construction activities.

Carroll County has no formal land use plans or zoning districts. No formally adopted plans exist for future use of the project area. However, the County Commission, Carroll County Community Improvement Corporation (CIC), and various other groups within the county anticipate and plan for strategic growth within certain areas of the community. The proposed facility is located adjacent to an area that includes non-residential uses and is currently undergoing development by the CIC as a commercial and industrial park.

³ "Ohio County Profile: Carroll County," Ohio Development Services Agency: Office of Policy, Research, and Strategic Planning.

⁴ Ibid.

⁵ Ibid.

With the exception of some residential impacts during construction, the proposed facility is compatible with, and would not permanently impact, surrounding land uses. Staff recommends that the Applicant limit the hours of construction which would increase noise levels, and have a complaint resolution plan in place to address potential construction related conflicts with nearby residences.

The Applicant has committed to avoiding, where possible, or minimize to the maximum extent practicable, any damage to field tile drainage systems and soils resulting from construction, operation, and/or maintenance of the facility in agricultural areas. Damaged field tile systems will be promptly repaired to at least original conditions at the Applicant's expense. If applicable, excavated topsoil will be segregated and restored in accordance with the Applicant's lease agreement with the landowner. Severely compacted soils will be plowed or otherwise decompacted, if necessary, to restore them to original conditions unless otherwise agreed to by the landowner.

Cultural and Archaeological Resources

The Applicant conducted a cultural resource management investigation for the proposed facility prior to submitting the Application. This investigation included a literature review of historical records, a Phase I archaeological survey, and a Historic Architecture Survey for the proposed facility.⁶

The literature and site file review revealed 10 previously documented archaeological sites, seventeen cemeteries, and one recreational park located within a five-mile study area of the proposed facility. No known cultural resources should be impacted by the construction and operation of the proposed facility.

Subsequent archaeological fieldwork consisted of seven survey areas at the project area, totaling approximately 51 acres. Field survey methods included pedestrian walkover surveys and shovel testing at specific locations. Three cultural objects were identified during field testing; one prehistoric artifact and the remains of two structures. No further archaeological investigation was recommended by the Applicant's cultural resources consultant for the artifact location or the structure remains. Should the limits of grading and construction expand to include the structure remains of Structure 2, then the archaeological consultant recommends that further archaeological investigations be performed to determine if that site is eligible for listing on the National Register of Historic Places (NRHP). Staff concurs with this recommendation.

The Applicant performed an architectural survey of the Area of Potential Effect (APE) for this proposed facility. The survey found that there were four properties listed on the NRHP, 94 properties listed on the Ohio Historic Inventory (including the four NRHP properties), and 15 newly identified historic properties within the APE of the proposed facility.⁷ The proposed

⁶ The Phase I archeological survey may be found in the Application, Appendix N; The Historical Architectural survey may be found in the Application, Appendix O.

⁷ The Area of Potential Effect for this proposed facility is defined in the application as all areas within five miles of the facility site that a topography-only, computer-generated view shed model indicated would potentially have a view of part or all of the facility. (Note that the influence of intervening structures and vegetation would be expected to further considerably reduce visibility in some locations).

facility is not likely to adversely affect these structures, due primarily to distance, topography, and extent of existing vegetation in the area.

Recreation Areas

Carroll County Veterans Park is located approximately 0.5 miles west of the laydown/staging area for this proposed facility. Amenities at this 60-acre park include a pool complex, ball fields, and a clubhouse. This park is privately owned, and has an ingress/egress point off of Brenner Road NE, while the proposed facility would have access from Kensington Road NE (State Route 9). Another park, a golf course, and the Carroll County Fairgrounds are located between 1 to 3 miles from the proposed facility. Impacts to these recreational areas are expected to be minimal.

Aesthetics

The construction of the proposed facility would require removal of some mature trees that currently provide screening between property owners. Additionally, the introduction of industrial-grade lighting in the rural setting would introduce aesthetic impacts. Staff notes that the Applicant has provided an artist's rendering of the proposed facility.⁸ The Applicant intends to utilize neutral colored coating and ribbed metal sidings for aesthetic appeal. Several other factors would also aid in the overall minimization and mitigation of aesthetic impacts. First, the proposed facility would be sited in a remote area with low population density. Second, major portions of the proposed facility would be significantly screened due to the Applicant's intent to preserve existing vegetation and tree stands. Finally, potential impacts to nearby residences would be alleviated and addressed by adherence to landscaping and lighting plans.

Visual impact varies depending on the distance between the viewer and the facility, the amount of screening, atmospheric conditions, and the presence of other artificial elements such as utility poles and communication towers. Aesthetic impacts also vary greatly for each viewer and depend on the value of the existing landscape to the viewer and personal attitudes toward the introduction of manmade objects. The introduction of this proposed facility would change the appearance of the current rural setting. The proposed facility and ancillary equipment would be visible from roads and nearby residences. However, significant aesthetic impacts have been avoided by the selection of an area without busy roads and intersections, or other sensitive land uses. Finally, the Applicant intends to allow unused buffering land to return to agricultural production.

Ecological Impacts

Surface Waters

The project would have minimal impacts to surface waters, with approximately 450 square feet of impacts to two wetlands within the footprint of the proposed facility. Impacts to streams would be completely avoided. Construction and operation activities would not require stream crossings or in-water work. Ponds and lakes would not be impacted by the proposed project during construction or operation.

⁸ Application, Figure 02-4 "Facility Renderings"

Additional measures to reduce water quality impacts were indicated in the Applicant's Storm Water Pollution Prevention Plan (SWPPP), as part of the Ohio EPA NPDES permit, to help control potential sedimentation, siltation, and runoff.

Threatened and Endangered Species

The Applicant requested information from ODNR and USFWS regarding state and federally listed threatened and endangered plant and animal species. Additional information was provided through field assessments and review of published ecological information. The following table of federal and state listed species known to occur in Carroll County reflects the results of the information requests, field assessments, and document review.

Birds				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
bald eagle	Haliaeetus leucocephalus	BGEPA & MBTA ⁹	N/A	Known range, no records within 0.5 miles of proposed facility. No tree clearing should occur within 660 feet of a bald eagle nest or within any woodlot supporting a nest tree. Work within 660 feet of a nest or within the direct line-of-site of a nest would be restricted from January 15 to July 31.
loggerhead shrike	Lanius ludovicianus	N/A	Endangered	Known range, suitable habitat includes grasslands and prairies. If this type of habitat would be impacted, construction must be avoided during the species nesting period of April 1 to August 1.

Mammals				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Indiana bat	Myotis sodalis	Endangered	Endangered	Known range, suitable habitat is present; Applicant will need to adhere to seasonal cutting dates of October 1 through March 31.
black bear	Ursus americanus	N/A	Endangered	Known range, due to the mobility of this species, this facility is not likely to impact this species.
bobcat	Lynx rufus	N/A	Threatened	Known range, due to the mobility of this species, this facility is not likely to impact this species.

Suitable habitat for the Indiana bat may be impacted. A tree-roosting species during the nonwinter months, the Indiana bat may be negatively impacted by tree clearing associated with construction and maintenance of the proposed facility. Limiting tree-removal, particularly in areas identified as potential Indiana bat habitat, would help reduce potential impacts to this species. In order to reduce potential negative impacts to the Indiana bat, the Applicant would

⁹ Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

commit to seasonal cutting dates of October 1 through March 31 for removal of suitable Indiana bat habitat trees, if avoidance measures cannot be achieved.

The USFWS has requested additional information from the Applicant regarding the proposed facility and possible impacts to the Indiana bat. The Applicant has provided the USFWS with the requested information, and coordination regarding this species is currently ongoing.

The Applicant will contact Staff, ODNR, and USFWS within 24 hours if state or federal threatened or endangered species are encountered during construction activities. Construction activities that could adversely impact the identified plants or animals will be halted until an appropriate course of action has been agreed upon by the Applicant, Staff, and ODNR in coordination with the USFWS. Nothing in this commitment would preclude agencies having jurisdiction over the facility with respect to threatened or endangered species from exercising their legal authority over the facility consistent with law.

The Applicant states that it will have a Staff-approved environmental specialist on-site during construction activities that may affect sensitive areas, as mutually agreed upon between the Applicant and Staff, and as shown on the Applicant's final-approved construction plan. Sensitive areas include but are not limited to areas of vegetation clearing, designated wetlands and streams, and locations of threatened or endangered species or their identified habitat. The environmental specialist would be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction.

Vegetation

The proposed facility is located primarily within existing agricultural fields. Approximately 20.5 acres of forest would be impacted. Of the 20.5 acres of impacted forest, approximately seven acres would be permanently cleared as part of the footprint of the proposed facility, and the remaining 13.5 acres would be temporarily impacted during construction.

The Applicant has committed to having a streamside vegetation restoration plan that minimizes impacts associated with the clearing of riparian vegetation. At least 30 days prior to the commencement of clearing activities, the Applicant will submit such plan to Staff for review and confirmation that it complies with this commitment.

For both construction and future right-of-way maintenance, the Applicant will limit, to the greatest extent possible, the use of herbicides in proximity to surface waters, including wetlands, along the right-of-way. Individual treatment of tall-growing woody plant species is preferred, while general, widespread use of herbicides during initial clearing or future right-of-way maintenance would only be used where no other options exist. Prior to commencement of construction, the Applicant will submit a plan to Staff for review and confirmation that it complies with this commitment, describing the planned herbicide use for all areas in or near any surface waters during initial project construction and/or future right-of-way maintenance.

Public Services, Facilities, and Safety

Public Services and Traffic

The proposed facility would have new employment in the range of 25 to 30 workers during operations and would not place major demands on local infrastructure. Workers would commute to the project area on a daily basis.

The principal impact on public services would be short-term increases in traffic on routes leading to the proposed facility due to deliveries of equipment and materials during construction. Workers arriving and departing during construction would also increase traffic. Some traffic management during the construction phase may be necessary in the immediate vicinity of the project area to ensure safe and efficient maintenance of existing traffic patterns and usages. Once the proposed facility is operational, related traffic would be minimal and would not be expected to significantly impact local roadways. Potential emergency service requirements would be coordinated with local officials. Local emergency response personnel would be trained to be familiar with the facility's emergency response system.

The Applicant would restrict public access to the facility with appropriately placed warning signs and other necessary measures.

Roads and Bridges

The Applicant's Transportation Management Plan would consider delivery of material and major components assuming final transportation to the proposed facility via road or rail spur from major highways, rail nodes and/or ports in the vicinity of the proposed facility. The proposed facility access plans would be finalized following Power Train Equipment Supplier and Engineering Procurement and Construction Contractor selection and final calculations of the load and dimensional requirements for equipment transportation. Equipment deliveries to the proposed facility would primarily be by truck and would be planned to minimize impact to local traffic patterns.

Rail access to the proposed facility is via the Wheeling & Lake Erie Railway. The nearby rail transfer capability at the port would allow incoming shipments to be loaded onto rail cars at the port. The equipment would be removed from rail cars by crane at two locations. The equipment may be removed from rail cars by crane at an alternative location. All systems, including rail and rail car capacity, crane access and lifting capacity and impact to rail traffic patterns, would be analyzed in a detailed off-loading plan prior to any transportation.

The roadways adjacent to the proposed facility are connected to the US Interstate Highway and Ohio State Highway systems. These routes allow vehicles up to 80,000 lbs. gross weight to be transported without an Ohio Special Hauling Permit. Any truck loaded in excess of 80,000 lbs. gross weight traveling on the US Interstate Highway and Ohio State Highway systems would require an Ohio Special Hauling Permit. Primary access to the proposed facility is available from the interstate highway and state highway systems. Alternative access to the proposed facility is available by the use of village streets, township and county roads, and the state highway system. Use of the alternative route would require local permits with the county in order to haul along the village streets.

As with any rail transportation to the proposed facility, all systems involved in roadway transport, including roadway capacities and clearances, crane access and lifting capacity and

impact to affected road traffic patterns, would be analyzed in a detailed Transportation Management Plan prior to any transportation.

Staff recommends a requirement for the Applicant to develop a final Transportation Management Plan which would include a Road Use Agreement as outlined in the Recommended Conditions of the Certificate. Any damaged public roads and bridges would be repaired promptly to their previous condition by the Applicant under the guidance of the appropriate regulatory agency. Any temporary improvements would be removed unless the appropriate regulatory agency request that they remain.

The Applicant would not dispose of gravel or any other construction material during or following construction of the facility by spreading such material on agricultural land. All construction debris and all contaminated soil would be promptly removed and properly disposed of in accordance with Ohio EPA regulations.

Facility Safety

The proposed facility would be constructed, operated, and maintained in accordance with applicable safety regulations, including Occupational Safety and Health Administration requirements, and industry standards. The facility personnel would be extensively trained to operate the equipment in a safe and reliable manner. The Applicant would secure pertinent federal and state environmental permits, and construct and operate the facility in accordance with all applicable environmental and safety regulations.

An emergency shower/eyewash designed to meet American National Standards Institute (ANSI) Z358.1-2009 standards would be located in proximity to the ammonia storage tank, but outside the containment area. Proper training in emergency shower/eyewash procedures would be provided to Staff and emergency respirators would be available at the proposed facility for use by trained personnel.

The Applicant will incorporate appropriate safety measures and design to prevent and contain any accidental spill of on-site chemicals.

Gas Pipeline Safety

In order to operate the natural gas interconnection and associated equipment safely and reliably, and to minimize the possibility of failure in the gas supply system, the equipment should be built, operated, and maintained to meet the requirements in Title 49 CFR parts 191 and 192, the Federal Minimum Pipeline Safety Standards; part 199 and part 40, the Drug and Alcohol Regulations; the Ohio Revised Code 4905.90 through 4905.96, Natural Gas Pipeline Safety Standards; and the Ohio Administrative Code 4901:1-16, Gas Pipeline Safety.

The Applicant has committed to using inert gases or compressed air for all cleaning of pipes during construction, consistent with the National Fire Protection Association (NFPA) 56 (PS) "Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Pipeline Systems."

Fire Protection System

A complete fire protection/detection system would be provided for the proposed facility. The system would include fixed water fire suppression systems, fire hose stations, hydrants, portable

fire extinguishers, detection and control systems. The system would include an electric motor driven fire water pump and a backup diesel engine driven fire water pump (an approximately 50-gallon double containment oil storage tank would be integrated into the unit). The diesel driven fire water pump would use ULSD. It would be designed and installed in accordance with NFPA standards and insurer's recommendations. All fire protection equipment and systems would be Underwriters' Laboratory approved and comply with requirements of the local fire protection authority and CCE's insurance carrier.

The Applicant will develop an emergency and safety plan to be used during construction that will be developed in consultation with the fire department(s) and emergency personnel having jurisdiction over the area. This plan will be submitted, to Staff, at least 30 days prior to the preconstruction conference, for review and confirmation that it complies with this commitment.

EMF

The electric and magnetic fields (EMF) resulting from the generation equipment are expected to be confined to the site. The magnetic fields generated by the generation equipment are attenuated very rapidly as the distance from the equipment increases.

Geology

Carroll County lies within the unglaciated, dissected Allegheny Plateau section of the Appalachian Plateau Province.¹⁰ The county is characterized by relatively high relief and rugged topography that features narrow ridges, steep slopes, and a high degree of stream dissection.¹¹ The underlying bedrock is mainly sandstone, shale, and limestone, all of which were deposited during the Pennsylvanian period.¹²

Much Carroll County has been extensively surface and underground mined including the area north and south of the proposed facility. Coal mining operations extracted the Middle Kittanning (#6) coal, Upper Freeport (#7) coal, and the Upper Mahoning (#7A) coal in the vicinity of the proposed facility. At the location of the proposed facility, the elevation of the Middle Kittanning (#6) coal is listed as 870 feet above sea level.¹³

The Ohio Department of Natural Resources, Division of Reclamation awarded the Village of Carrollton a Lands Unsuitable Petition, in 1991.¹⁴ This petition rendered the designated acreage in Carroll County, Washington Township, Section 28 unsuitable for the full extraction of the #6 coal. However, an operator could still fully extract the #6 coal by room and pillar or as a surface mining operation. The #7 and #7A coal seams were not included in the Lands Unsuitable Petition. The proposed facility lies within Section 28 of Washington Township. Remnants of abandoned underground coal mining operations exist to the north and south of the project area. The closest mine is less than 0.5 miles south of the project site. There are no maps or mining records to define the extent of these coal mining operations.

¹⁰ "Landforms of Ohio" Bier, James. Ohio Department of Natural Resources, Division of Geological Survey. 1956.

¹¹ Fenneman, Nevin M. "Physiography of Eastern United States," McGraw-Hill Book Company, New York. 1938. ¹² Frost, R.B. "Physiographic Map of Ohio," Oberlin College, The Geographical Press, Columbia University, New York, 1931.

¹³ "Ohio Mines Viewer" Ohio Department of Natural Resources, Division of Mineral Resources Management, http://www.minerals.ohiodnr.gov/abandoned-mine-land-reclamation/mine-locators.

¹⁴ "Village of Carrollton Land Unsuitable Petition." Ohio Department of Natural Resources, Division of Reclamation, Decision Effective October 22, 1991.

Due to the absence of mining records and mine maps defining the extent of the underground coal mining operations, Staff recommends that the Applicant be required to verify the depths of the #7A coal seam. If it is determined that mine voids are present and the subsurface rock would not support the proposed facility, then Staff would recommend that the Applicant be required to develop a subsidence mitigation plan.

The subsidence mitigation plan would provide geotechnical and engineering design recommendations that would be included in the final design of the proposed facility, including but not limited to grouting the mined out cavities. Additionally, the mitigation plan would consider the potential risk for induced subsidence and other mining effects on neighboring properties due to the construction of the proposed facility.

Seismology

There is no recorded seismic activity in Carroll County to report.

Soils and Test Borings

According to the Soil Survey of Carroll County, the Westmoreland series consists of soils that are deep, dominantly gently sloping to steep, well-drained and moderately well-drained soils formed in residuum and colluvium derived from sandstone, siltstone, and shale on uplands and ridgetops.¹⁵ The Berks series consists of moderately steep, moderately deep, well drained soil commonly found on hillsides. Due to the severe slopes where both soils types are found, the Berks and Westmorelands soils are poorly suited for building site development. Less severe slopes of less than 15 percent, like those in the project area, do not present this hazard. Erosion is also a primary concern during construction; however, it can be controlled through appropriate best management practices such as limiting the amount of vegetation removed during construction, mulching, establishing a temporary plant cover on construction sites, and proper installation of sediment and erosion control devices.

The Applicant has conducted shallow test borings (less than 25 feet in depth) at the project site. Soil samples were obtained for further laboratory analysis and identification purposes. As stated in the Geology section above, Staff would recommend that the Applicant be required to verify the depths of the Upper Mahoning (#7A) coal seam, and develop a possible subsidence mitigation plan if mining voids are present.

If blasting is necessary, prior to the use of explosives, the Applicant or explosive contractor would obtain all required local, state, and federal licenses/permits. The Applicant would submit a copy of the license or permit to Staff within seven days of obtaining it from the local authority.

The blasting contractor would utilize two blasting seismographs that measure ground vibration and air blast for each blast. One seismograph would be placed at the nearest dwelling and the other placed at the discretion of the blasting contractor.

At least 30 days prior to the initiation of blasting operations, the Applicant would notify, in writing, all residents or owners of dwellings or other structures within 1,000 feet of the blasting site. The Applicant or explosive contractor would offer and conduct a pre-blast survey of each

¹⁵ "Soil Survey of Carroll County Ohio" United States Department of Agriculture, Soil Conservation Service. In Cooperation with the Ohio Department of Natural Resources, Division of Lands and Soils. 1981.

dwelling or structure within 1,000 feet of each blasting site, unless waived by the resident or property owner. The survey would be completed and submitted to Staff at least ten (10) days before blasting begins.

Noise

Noise impacts from construction activities would include the operation of various trucks and heavy equipment. Many of the construction activities would generate significant noise levels. However, the adverse impact of construction noise would be temporary and intermittent, it would occur away from most residential structures, and most construction activities normally would be limited to daytime working hours.

The Applicant conducted a background ambient noise level study in order to understand the existing noise levels in the vicinity of the proposed facility. The study included measurements at three long term measurement locations. The results of that study showed that for measurement location 1, the equivalent continuous sound level (L_{eq}) for the two-week monitoring period was 42 decibel A-weighting (dBA) for daytime hours and 36 dBA for nighttime hours. For measurement location 2, the L_{eq} for the two-week monitoring period was 52 dBA for daytime hours and 45 dBA for nighttime hours. For measurement location 3, the Leq for the two-week monitoring period was 43 dBA for daytime hours and 38 dBA for nighttime hours.

The Applicant estimated noise levels from the operation of the proposed facility by using SoundPLAN, a software program that can be used to create a three-dimensional acoustical model of the facility and predict noise level impacts to residences in a project study area. Two models were created: a standard model was run with equipment fitted with the manufacturer's typical noise controls, and a mitigated model was run with additional mitigation measures including close-fitted acoustical barriers, acoustically insulated weather hoods, low-noise air cooled condenser and air cooled heat exchangers, acoustical shrouds on transition ducts and boiler sections, and/or increasing the thickness of steel plates used in sidewall construction.

Based on modeling results, the Applicant has established a noise level design goal of 45 dBA at noise sensitive receptors. The standard model shows that the design goal is exceeded at four noise sensitive receptors. The mitigated model shows that the design goal is met at all noise sensitive receptors.

In order to minimize adverse impacts associated with increased noise levels, Staff recommends that the Applicant use the mitigation measures included in the mitigated model and include procedures in its complaint resolution process for resolving noise complaints.

High Winds

The Applicant has evaluated historic data on wind speeds and directions collected by the National Weather Service station at the Pittsburgh International Airport in Coraopolis, Pennsylvania for the years 2008 through 2012. The Ohio EPA selected this weather station as the most representative of the proposed facility. The Applicant does not anticipate adverse consequences from high wind conditions. The Applicant should use measures typically used to mitigate against high winds for cooling stacks and buildings in accordance with local building codes and best engineering practices.

Recommended Findings

The Staff recommends that the Board find that the nature of the probable environmental impact has been determined for the proposed facility, and therefore complies with the requirements specified in ORC Section 4906.10(A)(2), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to ORC Section 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

Site Selection

The Applicant requested and was granted a waiver of the necessity to evaluate all practicable sites and the provision of an alternate site. However, the Applicant has provided an analysis of their site selection process. Among the Applicant's considerations, the greatest regard was the practical necessity to locate the proposed facility in proximity to natural gas pipelines and electrical interconnection points. Shifts away from nearby interconnection points would cause significant delays and likely add excessive costs to project construction, as well as potentially increase project impacts.

The site for the proposed facility was also chosen because of its proximity to a major transportation corridor, State Route 9. Since the proposed facility would not be located immediately adjacent to the highway, the Applicant needed to secure easements for a construction laydown area and access along the east side of State Route 9. In addition, aesthetic impacts on surrounding land uses and avoidance of public recreational areas were evaluated. The Applicant also considered: the avoidance of sensitive ecological and cultural resources, existing geotechnical conditions, water supply and wastewater discharge, suitable buffering space, and overall community support. The Applicant's site selection criteria were formulated to minimize the potential impacts of the proposed facility while achieving the facility's goal of reliable generation of electricity.

Minimizing Impacts

The Applicant has designed and sited the Carroll County Energy facility to minimize potential impacts while meeting the need for the proposed facility. The area surrounding the proposed facility is predominantly agricultural with very sparse residential development. Land use and residential impacts would be minimal. Regional land use plans call for conservation of farmland and economic diversity. The development of a generation facility in the region is consistent with those goals.

The proposed facility would have an overall positive impact on the local economy due to the increase in construction spending, wages, purchase of goods and services, annual lease payments to the local landowners, and local tax revenue.

The site is located within proximity of existing 345 kV electric transmission lines that have available capacity for power to be supplied to multiple distribution systems. Two natural gas transmission lines are located within 0.4 miles of the proposed project and would provide natural gas to fuel the facility. Two water suppliers with adequate capacity to service the proposed facility are also in close proximity to the proposed facility.

Potential noise impacts associated with operation of the proposed facility were modeled by the Applicant. With noise mitigation measures in place, the mitigated model results show that the noise level design goal of 45 dBA at noise sensitive receptors would be met.

There would be temporary and permanent impacts to woodlots and wetlands as a result of this project. Streams, ponds, and lakes would be avoided during construction and operation. The Applicant has committed to seasonal tree cutting dates of October 1 to March 31 for suitable Indiana bat habitat and the development of a streamside vegetation restoration plan.

During construction of the facility, local, state, and county roads would experience a temporary increase in truck traffic due to deliveries of equipment and materials. A final routing plan would be developed through discussions with the appropriate regulatory agency and performed in conjunction with the special hauling permit process for ODOT.

The Applicant has conducted shallow test borings (less than 25 feet in depth) at the project site. Based on Staff's review of this information, it is unclear to Staff if the underlying rock formations would support the weight of the proposed facility. In order to gain confidence that the underlying rock formations would support the proposed facility, Staff would recommend that the Applicant be required to verify the depths of the #7A coal seam. If mining voids are present and the subsurface rock does not support the facility, then a subsidence mitigation plan would need to be developed.

Conclusion

Staff concludes that the project, as proposed, would result in both temporary and permanent impacts to the project area and surrounding areas. Due to the limited potential impacts to land use, cultural resources, streams, wetlands, and noise sensitive receptors, with the Applicant's commitments and Staff's recommended conditions to mitigate these impacts, Staff concludes that the project represents the minimal adverse environmental impact.

Recommended Findings

The Staff recommends that the Board find that the proposed facility represents the minimum adverse environmental impact, and therefore complies with the requirements specified in ORC Section 4906.10(A)(3), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled <u>Recommended Conditions of Certificate</u>.

Considerations for ORC Section 4906.10(A)(4)

ELECTRIC GRID

Pursuant to ORC Section 4906.10(A)(4), the Board must determine that the proposed 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 the facility will serve the interests of electric system economy and reliability.

The purpose of this section is to evaluate the impact of interconnecting the proposed facility into the existing regional electric transmission system. The Applicant proposes to build a 742 MW natural gas fired combined-cycle electric generation facility. The Applicant plans to interconnect via a new three breaker ring bus switching station that would connect the facility to the regional grid via AEP's Tidd-Canton Central 345 kV transmission line.

PJM Interconnection

PJM Interconnection, LLC (PJM) is the regional transmission organization charged with managing the regional transmission system and the wholesale electricity market. In addition, PJM administers the interconnection process of new generation to the system. Generators intending to interconnect to the bulk electric transmission system located in the PJM control area are required to submit an interconnection application for review of system impacts. The Applicant submitted the proposed facility to PJM on August 15, 2012. PJM gave the application a queue position of Y2-050.

PJM studied the interconnection as a new in-line switching station to be located between AEP's Tidd and Canton Central 345 kV substations. The facility_would be connected at 345 kV. The Applicant requested a maximum facility interconnection of 742 MW, of which 672 MW would be capacity. Capacity represents the need to have adequate generating resources to ensure that the demand for electricity can be met at all times. In PJM's case, that means that a utility or other electricity supplier is required to have the resources to meet its customers' demand plus a reserve amount. Suppliers can meet that requirement with generating capacity they own, with capacity purchased from others under contract, or with capacity obtained through PJM's capacity market auctions.

PJM has completed the Feasibility Study and System Impact Study for the facility, which includes local and regional transmission system impacts.^{16,17} These studies summarized the impacts of adding the proposed facility to the regional bulk electric system and identified any transmission system upgrades caused by the proposed facility that would be required to maintain the reliability of the regional transmission system. The Applicant has not yet signed a Construction Service Agreement or an Interconnection Service Agreement with PJM for the proposed facility. Signature on the Interconnection Service Agreement would need to be

¹⁶ "*Feasibility Study*, Queue Number Y2-050" PJM Interconnect. January 13, 2014. http://pjm.com/planning/generation-interconnection/generation-queue-active.aspx.

¹⁷ "*System Impact Study*, Queue Number Y2-050." PJM Interconnect. January 13, 2014. http://pjm.com/planning/generation-interconnection/generation-queue-active.aspx.

obtained before PJM will allow the Applicant to interconnect the proposed facility to the bulk electric transmission system.

Staff reviewed the System Impact Study report prepared by PJM. The study was evaluated for compliance with reliability criteria for 2016 summer peak load conditions.¹⁸ The studies revealed no local or network transmission facilities would be overloaded under normal or contingency conditions.

Transmission Planning Requirements

The North American Electric Reliability Corporation (NERC) is responsible for the development and enforcement of the federal government's approved reliability standards, which are applicable to all owners, operators, and users of the bulk power system. NERC requires planners of the bulk electric transmission system to meet Reliability Standards TPL-001-0.1 through TPL-004-0a under transmission outage conditions for categories A, B, C, and D contingencies.¹⁹ According to NERC, a contingency is an unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch, or other electrical element. Below is a list of the NERC categories and their meanings:

- Category A (no contingencies, normal system conditions);
- Category B (single contingency outage, n-1), the planning authority and transmission planner shall demonstrate that the interconnected transmission system can operate to supply projected customer demands and firm transmission service at all demand levels over the range of forecast system demand;
- Category C (multiple contingency outages, n-1-1), the planning authority shall demonstrate that the interconnected transmission system can operate to supply projected customer demands and firm transmission service at all demand levels over the range of forecast system demand and may rely upon the controlled interruption of customers or curtailment of firm transmission service; and,
- Category D (extreme events resulting in multiple elements removed or cascading out of service), the planning authority shall demonstrate that the interconnected transmission system is evaluated for the risks and consequences of a number of each of the extreme contingencies that are listed in the standard.

¹⁸ "*System Impact Study*, Queue Number Y2-050." PJM Interconnect. January 13, 2014. http://pjm.com/planning/generation-interconnection/generation-queue-active.aspx.

¹⁹ "*Reliability Standards*, Transmission Planning (TPL-001-0.1-TPL-004-0a)" North American Electric Reliability Corporation. January 13, 2014. http://www.nerc.com/pa/Stand/Pages/ReliabilityStandards.aspx.

Local Network Impacts

AEP follows internal transmission planning criteria to plan their system. The planning criterion is required by law. The AEP criterion complies with NERC and RFC standards and PJM planning and operating manuals for the bulk electric system. Below is a table highlighting a portion of AEP's planning criteria.²⁰

AEP Planning Criteria			
System Condition	Voltage Performance	Thermal Performance	
Normal	.95 - 1.05 per unit.8% voltage change not acceptable	100 kV - 765 kV: No facility may exceed its normal rating	
Contingency	 .92 - 1.05 per unit. Voltage change from system normal of 8% or greater is not acceptable 	 N-1, < 344 kV: Not to exceed emergency rating N-1, > 345 kV: Not to exceed its normal rating N-2 or Bus or Breaker Failure, >100 kV: Not to exceed emergency rating 	

The AEP local system was studied during 2016 summer conditions for impacts at both full energy output (742 MW) and the capacity portion (672MW). No problems were revealed while operating at the full output or capacity portion. The below tables show the impacts on the AEP system with the proposed facility in-service.

AEP Local System Impacts

Category A - No Contingencies and System Normal			
Plant Output: Capacity Level - 672 MW	No problems identified		
Plant Output: Full Output - 742 MW No problems identified			
Category B - Single Contingency Outage			
Plant Output: Capacity Level - 672 MW	No problems identified		
Plant Output: Full Output - 742 MW No problems identified			
Category C and D - Multiple Contingency Outages			
Plant Output: Capacity Level - 672 MW No problems identified			
Plant Output: Full Output - 742 MW No problems identified			

PJM Network Impacts

PJM analyzed the bulk electric system (BES) with the proposed facility interconnected to the bulk power system, for compliance with NERC reliability standard TPL-001-0.1 through TPL-

²⁰ "Transmission Planning Reliability Criteria." American Electric Power / PJM, January 9, 2014. http://www.aep.com/about/codeofconduct/OASIS/TransmissionStudies/

004-0a. A 2016 summer peak power flow model was used to evaluate the regional reliability impacts. The regional studies revealed no problems under normal system conditions and during the loss of one or more BES elements. The results of the PJM System Impact Study for the PJM regional footprint are as follows.²¹

PJM Regional System Impacts

Generator Deliverability - System Normal & Single Contingency Outage		
Plant Output: Capacity Level - 672 MW No problems identified		
Category C and D - Multiple Contingency Outages		
Plant Output: Full Output - 742 MW	No problems identified	

Contribution to Previously Identified Overloads

PJM studied overloading that the proposed facility may have earlier projects in the PJM Queue. The results identified no overloads.

New System Reinforcements

No system upgrades are required to mitigate reliability criteria violations.

Short Circuit Analysis

The short circuit analysis study, which is part of the System Impact Study, evaluates the interrupting capabilities of circuit breakers impacted by the proposed wind farm addition. The results identified no short circuit problems.

Stability Analysis

The stability analysis study, which is part of the System Impact Study, evaluates the ability of the power system to withstand disturbances (contingencies) and maintain stable operation of the bulk electric system.²² The study was conducted at 2015 summer light load and peak load conditions, with the proposed facility at maximum output. No stability problems were identified.

Conclusion

PJM analyzed the bulk electric system, with proposed facility interconnected to the transmission grid, for compliance with AEP, NERC, and PJM reliability criteria. The PJM studies indicated no reliability problems on the local or regional BES while operating at full output.

The proposed facility is expected to provide reliable generation to the bulk electric transmission system and is consistent with plans for expansion of the regional power system, and would serve the interests of electric system economy and reliability. The facility would serve the public interest, convenience, and necessity by providing additional electrical generation to the regional transmission grid.

²¹ "System Impact Study, Queue Number Y2-050." PJM Interconnect. January 13, 2014.

http://pjm.com/planning/generation-interconnection/generation-queue-active.aspx.

²² Ibid.

Recommended Findings

The Staff recommends that the Board find that the proposed 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 the facility would serve the interests of electric system economy and reliability. Therefore, the facility complies with the requirements specified in ORC Section 4906.10(A)(4), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled <u>Recommended Conditions of Certificate</u>.

Considerations for ORC Section 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to ORC Section 4906.10(A)(5), the facility must comply with specific sections of the ORC regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

Air

Carroll County, the location of the proposed facility is in full attainment for all six National Ambient Air Quality Standards (NAAQS) criteria air pollutants: ozone, SO2, particulate matter, NOx, CO, and lead. Operational impacts on air quality would be minimized through the use of efficient new gas turbine technology. Emissions of NO_x, CO, and VOC would be controlled through good combustion practices, and the use of DNL burners, oxidation catalyst and SCR systems. SO₂, sulfuric acid (H₂SO₄), and PM/PM₁₀/PM_{2.5} would be controlled through the use of low sulfur natural gas. Greenhouse gas emissions would be controlled through energy efficiency. The air pollutant limits, BACTs, and compliance methods to be used for initial installation of the proposed facility are outlined in the Ohio EPA Final Permit to Install (PTI) (Permit No. P0113762), which is located in Appendix I of this application.

The PTI application for the proposed facility was submitted to Ohio EPA April 2013. Details were provided on the modeling completed to demonstrate compliance with the range of applicable standards, including full compliance with NAAQS and Prevention of Significant Deterioration (PSD) increments. The final PTI permit was issued by the Ohio EPA on November 5, 2013 and serves as the air construction permit and initial operating permit. The Applicant would be required to apply for a Title V air operating permit within 12 months after initial startup. Additionally, the Applicant would need to submit a Title IV Acid Rain Program permit application for emissions of SO₂ and NO_x. The Title IV permit must be submitted at least 24 months prior to beginning operation. The project is scheduled to commence operation in 2017; therefore, the Title IV permit would be submitted in 2015.

Emissions from the proposed facility would be tracked using a CEMS. The CEMS would continuously extract flue gas samples near the exhaust of the heat recovery steam generators and measure flue gas parameters. The CEMS would detect a deterioration of performance before a failure of the catalyst occurs. The unit would not operate if its respective SCR is not functioning properly. Proposed facility emissions under all operating conditions would comply with Ohio EPA permit requirements.

Construction impacts on air quality consist mostly of minor emissions from the construction equipment and from fugitive dust emissions. Construction vehicles would emit insignificant amounts of VOC, SO_2 , CO, NO_x , and particulate matter. These emissions are not expected to cause any significant adverse impacts to air quality.

Fugitive dust rules adopted pursuant to the requirements of ORC Chapter 3704 (air pollution control laws) are applicable to the proposed facility. The Applicant has committed to complying with fugitive dust rules by the use of water spray or other appropriate dust suppressant measures whenever necessary.

Water

Construction of the proposed facility would not require the use of significant amounts of water. Operation of the proposed facility would require the use of a significant amount of water. The water would be obtained through a contract with an existing water supplier in the region. Two water suppliers (CCES and the Village of Carrollton) are currently in negotiations with the Applicant to provide water to the proposed facility. Based on the need for the Applicant to obtain water from a supplier, requirements under ORC 1503.33 and 1501.34 are not applicable to this project. The proposed facility's raw water needs would range from approximately 300,000 gallons per day (GPD) during average operating conditions to 400,000 GPD during peak operating conditions.

The industrial and sanitary wastewater from the proposed facility would be discharged to an existing POTW, consistent with pretreatment requirements and in compliance with the POTW's existing NPDES authorization. During construction, sanitary wastes would be handled using portable units provided and maintained by an independent contractor. During operation of the proposed facility, the Applicant plans to use water pollution control equipment. This equipment includes an in-line pH meter, a neutralization tank for demineralized regenerate waste, an oil/water separator for equipment drains, spill containment areas for bulk chemical storage tanks and unloading areas, in-line flow equalization, and stormwater collection ponds for stormwater management. A waste neutralization tank would receive the regeneration wastes from the water demineralizer system. The neutralization tank equalizes and adjusts the pH of the wastewater by the addition of acid or caustic soda to comply with POTW pretreatment standards.

Wastewater discharge would vary by season, with a peak daily discharge during the summer season of approximately 280,000 gallons and an average daily discharge of approximately 212,000 gallons. When the proposed facility is not operating, wastewater discharge would be primarily limited to sanitary uses.

The Applicant intends to submit a Notice of Intent (NOI) for coverage under Ohio EPA's National Pollutant Discharge Elimination System (NPDES) general permit. The Applicant would submit a SWPPP to Ohio EPA as part of the NPDES permit. This SWPPP would be developed for the project pursuant to Ohio EPA regulations and would conform to the ODNR's Rainwater and Land Development Manual. Prior to operation of the facility, the Applicant would obtain a general NPDES permit for stormwater discharges associated with operation, if necessary.

At least seven days before the preconstruction conference, the Applicant will submit to Staff, for review and acceptance, a copy of all NPDES permits including its approved SWPPP, approved SPCC procedures, and its erosion and sediment control plan. Any soil issues would be addressed through proper design and adherence to the Ohio EPA BMPs related to erosion and sedimentation control.

The Applicant will remove all temporary gravel and other construction staging area and access road materials after completion of construction activities, as weather permits, unless otherwise directed by the landowner. Impacted areas would be restored to preconstruction conditions in compliance with the NPDES permit(s) obtained for the project and the approved SWPPP created for this project.

The Applicant does not anticipate the need for an Army Corps of Engineers Nationwide Permit to construct this project.

Stormwater flows from the developed site would be controlled through the use of on-site Stormwater collection ponds to allow clean stormwater to further settle and to retain peak flows, prior to release. These structures will be identified in the SWPPP.

Solid Waste

The Applicant indicates that solid waste generated from construction activities would include packing materials, office waste, scrap lumber, metals, cables, glass, cardboard containers, and other miscellaneous debris. In addition, during construction and pre-operational cleaning, some solvents and flushing materials would be used. Selective catalytic reduction catalysts would be removed and returned to a catalyst vendor for regeneration, salvage, or disposal. Solid waste that can be neither recycled nor reused would be stored in on-site containers for disposal. Programs would be developed to ensure that potentially hazardous wastes are separated from normal waste, including segregation of storage areas and proper labeling of containers.

All solid waste generated would be trucked off site by licensed contractors in accordance with applicable regulatory requirements and managed in licensed facilities. Any contaminated soils discovered or generated during construction would be handled in accordance with applicable regulations. The Applicant would have a Spill Prevention, Containment, and Countermeasure (SPCC) Plan in place and would follow manufacturers' recommendations for any spill cleanup. The Applicant's solid waste disposal plans comply with solid waste disposal requirements in ORC Chapter 3734, and the rules and laws adopted under this chapter.

Aviation

The nearest airport is Carroll County-Tolson Airport, a county-owned public-use airport. It is located approximately 2.7 miles south of the proposed facility's stakes. The Applicant has made a formal request for review by the Federal Aviation Administration (FAA) and the Ohio Department of Transportation's (ODOT) Division of Aviation for each of the 275-foot stacks. Since that filing, Determinations of No Hazard to Navigation have been received from the FAA. Additional coordination with the FAA and ODOT's Division of Aviation would occur to clarify the marking and lighting requirements for the stacks.

The Applicant has committed to meet all recommended and prescribed FAA and ODOT Office of Aviation requirements to construct an object that may affect navigable airspace. This includes submitting coordinates and heights for all towers exceeding 200 feet AGL for ODOT Office of Aviation and FAA review prior to construction, and the non-penetration of any FAA *Part* 77 surfaces.

The Applicant would also ensure that all applicable structures, including construction equipment, will be lit in accordance with FAA circular 70/7460-1K Change 2, *Obstruction Marking and Lighting*; or as otherwise prescribed by the FAA. This includes all cranes and construction equipment.

In accordance with ORC 4561.32, Staff contacted the Ohio Office of Aviation during the review of this application in order to coordinate review of potential impacts of the facility on local airports. As of the date of the preparation of this report, no such concerns have been identified.

Prior to the commencement of construction activities that require permits or authorizations by federal or state laws and regulations, the Applicant will obtain and comply with such permits or authorizations. The Applicant will provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by the Applicant. The Applicant will provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.

All Staff recommendations for the requirements discussed in this section can be found under the **Air, Water, Solid Waste, and Aviation Conditions** heading of the <u>Recommended Conditions</u> of Certificate.

Recommended Findings

The Staff finds that the proposed facility complies with the requirements specified in ORC Section 4906.10(A)(5), provided that any certificate issued by the Board for the certification of the proposed facility include the conditions specified in the section of this report entitled <u>Recommended Conditions of Certificate</u>.

Considerations for ORC Section 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

Pursuant to ORC Section 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

Public Interaction

The Applicant began public relations work within the project area in 2011 with the commencement of site investigation and acquisition. Formal meetings with county officials and local economic development officers were held in July 2012. The Applicant held a public informational meeting on August 22, 2013 at the Carrollton High School where Applicant representatives engaged the public with maps of the proposed facility and answered questions related to electric generation. The Applicant intends to utilize an on-site construction manager as a contact person for the community during the construction period of the proposed facility. The Applicant plans on allowing community members to tour the facility once it is operational, and specifically would target young people interested in electric generation and careers in the energy field.

A local public hearing has been scheduled for March 6, 2014 at 6:00 p.m. at the Carrollton High School, Fine Arts Room, 252 Third Street Northeast, Carrollton, Ohio 44615. Additionally, an adjudicatory hearing will be held on March 13, 2014 at 10:00 a.m. at offices of the Public Utilities Commission of Ohio, Hearing Room 11C, 180 East Broad Street, Columbus, Ohio 43215.

Financial Data

All estimated capital, intangible and operation and maintenance costs of the proposed facility have been filed under seal.

Economic Impacts

The Applicant prepared a socioeconomic report including analysis of the estimated economic impacts for the State of Ohio and a 22-county Northeast Ohio Region related to the construction of the proposed facility.

The economic impact methodology utilized the IMPLAN software to perform the regional economic analysis and resulting impacts of the proposed facility. The economic impact analysis incorporates the direct spending effects and "multiplier" effects associated with the construction phase and annual O&M spending of the proposed facility. These "multipliers" are classified as construction spending at the proposed facility (direct), purchasing of supplies (indirect), and the spending of the construction workers and the suppliers (induced). The total economic impacts result in a combination of direct, indirect, and induced effects and typically are stated in dollars of output, dollars of labor income, and employment.²³

²³ Application, Appendix M: "Economic Assessment," 15.

Based on the IMPLAN model findings the construction of the proposed facility would generate \$943.8 million in total economic impact in the State of Ohio and Northeast Region.²⁴

The model states that 1,403 jobs would be created over the 28-month construction period.²⁵ During the 30-year operational phase, the proposed facility would contribute \$17 million in annual economic impact, \$9.4 million in gross state product, and 72 jobs.²⁶

Recommended Findings

Staff recommends that the Board find that the proposed facility would serve the public interest, convenience, and necessity, and therefore complies with the requirements specified in ORC Section 4906.10(A)(6), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled <u>Recommended Conditions of Certificate</u>.

²⁴ IMPLAN - Impact analysis for planning uses classic input-output analysis in combination with regional specific Social Accounting Matrices and Multiplier Models to create a localized model to investigate the consequences of projected economic transactions in a specific geographic region. IMPLAN is the most widely employed and accepted regional analysis software for predicting economic impacts.

²⁵ Application, Appendix M: "Economic Assessment," 4.

²⁶ Ibid.

Considerations for ORC Section 4906.10(A)(7)

AGRICULTURAL DISTRICTS

Pursuant to ORC Section 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed facility. The agricultural district program was established under ORC Chapter 929. Agricultural district land is exempt from sewer, water, or electrical service tax assessments. Agricultural land can be classified as an agricultural district through an application and approval process that is administered through local county auditors' offices. Eligible land must be devoted exclusively to agricultural production or be qualified for compensation under a land conservation program for the preceding three calendar years. Furthermore, eligible land must be at least 10 acres or produce a minimum average gross annual income of \$2,500.

No agricultural district land would be disturbed in association with the construction of the proposed facility. The Applicant proposes to temporarily disturb 15 acres of land previously cultivated for agricultural production if utilized as a construction laydown area. Further, 25 acres of land traditionally used for agricultural production would be permanently disturbed to house the proposed facility.

Recommended Findings

The Staff recommends that the Board find that the impact of the proposed facility on the viability of existing agricultural land in an agricultural district has been determined, and therefore complies with the requirements specified in ORC Section 4906.10(A)(7), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to ORC Section 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

Staff has reviewed the Applicant's proposed water balance for the facility. Construction of the proposed facility would not require the use of significant amounts of water. Operation of the proposed facility would require the use of a significant amount of water. Staff acknowledges the Applicant's proposal to receive water supplied through a regulated water supplier, as long as the Applicant's supplier complies with the requirements under ORC 1503.33 and 1501.34.

The proposed facility would use water supplies obtained through a regulated water supplier for process water, fire protection, and domestic uses. The proposed facility design incorporates significant water conservation measures. The use of air cooling, rather than a conventional wet cooling system reduces water intake requirements by up to 93 percent when compared to conventional wet cooling technology. The facility would also incorporate recirculation of process water in order to maximize water conservation.

Recommended Findings

The Staff recommends that the Board find the proposed facility would incorporate maximum feasible water conservation practices, and therefore complies with the requirements specified in ORC Section 4906 (A)(8). Further, the Staff recommends that any certificate issued by the Board for the certification of the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

IV. RECOMMENDED CONDITIONS OF CERTIFICATE

In order to ensure conformance with the proposed plans and procedures as outlined in the case record to date, Staff recommends that the following conditions become part of any certificate issued for the proposed facility. These recommended conditions may be modified as a result of input received subsequent to issuance of this report.

GENERAL CONDITIONS

- (1) The facility shall be installed at the Applicant's site as presented in the application, and as modified and/or clarified by the Applicant's supplemental filings and further clarified by recommendations in this *Staff Report of Investigation*.
- (2) The Applicant shall utilize the equipment and construction practices as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in this *Staff Report of Investigation*.
- (3) The Applicant shall implement the mitigation measures as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in this *Staff Report of Investigation*.
- (4) The Applicant shall conduct a preconstruction conference prior to the start of any construction activities. Staff, the Applicant, and representatives of the prime contractor and all subcontractors for the project shall attend the preconstruction conference. The conference shall include a presentation of the measures to be taken by the Applicant and contractors to ensure compliance with all conditions of the certificate, and discussion of the procedures for on-site investigations by Staff during construction. Prior to the conference, the Applicant shall provide a proposed conference agenda for Staff review. The Applicant may conduct separate preconstruction meetings for each stage of construction.
- (5) At least 30 days before the preconstruction conference, the Applicant shall submit to Staff, for review and acceptance, one set of detailed engineering drawings of the final project design, including the facility, temporary and permanent access roads, any crane routes, construction staging areas, and any other associated facilities and access points, so that Staff can determine that the final project design is in compliance with the terms of the certificate. The final project layout shall be provided in hard copy and as geographically-referenced electronic data. The final design shall include all conditions of the certificate and references at the locations where the Applicant and/or its contractors must adhere to a specific condition in order to comply with the certificate.
- (6) The Applicant shall not commence any construction of the facility until it has a signed Interconnection Service Agreement with PJM, which includes construction, operation, and maintenance of system upgrades necessary to reliably and safely integrate the proposed generating facility into the regional transmission system. The Applicant shall provide a letter stating that the Agreement has been signed or a copy of the signed Interconnection Service Agreement to Staff.

SOCIOECONOMIC CONDITIONS

Staff recommends the following conditions to address the impacts discussed in the **Socioeconomic Impacts** section of the Nature of Probable Environmental Impact:

(7) Prior to commencement of any construction, the Applicant shall prepare a landscape and lighting plan that addresses the aesthetic and lighting impacts of the facility. The Applicant shall consult with adjacent property owners in the development of this plan and provide the plan to Staff for review and confirmation that it complies with this condition.

PUBLIC SERVICES, FACILITIES, AND SAFETY CONDITIONS

Staff recommends the following conditions to address the impacts discussed in the **Public Services, Facilities, and Safety** section of the Nature of Probable Environmental Impact:

- (8) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits. The Applicant shall coordinate with the appropriate authority regarding any temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility. This coordination shall be detailed as part of a final traffic plan submitted to Staff prior to the preconstruction conference for review and confirmation that it complies with this condition.
- (9) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving, hoe ram, and blasting operations, if required, shall be limited to the hours between 10:00 a.m. to 5:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants within the meaning of Rule 4906-5-08(C)(3), OAC, of upcoming construction activities including potential for nighttime construction activities.
- (10) Prior to commencement of construction, the Applicant shall provide the depth of the Upper Mahoning (#7A) coal seam. If it is determined that mine voids are present and the subsurface rock does not support the proposed facility, then the Applicant shall be required to develop a subsidence mitigation plan. The subsidence mitigation plan shall provide geotechnical and engineering design recommendations that shall be included in the final design of the proposed facility, including but not limited to grouting the mined out cavities. Additionally, the mitigation plan shall consider the potential risk for induced subsidence and other mining effects on neighboring properties due to the construction of the proposed facility.
- (11) Should site-specific conditions warrant blasting, the Applicant shall submit a blasting plan, at least 60 days prior to blasting, to Staff for review and confirmation that it complies with this condition. The Applicant shall submit the following information as part of its blasting plan:
 - (a) The name, address, and telephone number of the drilling and blasting company.

- (b) A detailed blasting plan for dry and/or wet holes for a typical shot. The blasting plan shall address blasting times, blasting signs, warnings, access control, control of adverse effects, and blast records.
- (c) A plan for liability protection and complaint resolution.
- (12) The Applicant shall repair damage to government-maintained (public) roads and bridges caused by construction activity. Any damaged public roads and bridges shall be repaired promptly to their preconstruction state by the Applicant under the guidance of the appropriate regulatory agency. Any temporary improvements shall be removed unless the appropriate regulatory agency requests that they remain. The Applicant shall provide financial assurance to the appropriate regulatory agency that it will restore the public roads it uses to their preconstruction condition. If county or township roads are utilized for the construction of this project, then the Applicant shall also enter into a Road Use Agreement with the County Engineer(s) prior to construction and subject to Staff review and confirmation that it complies with this condition. The Road Use Agreement shall contain provisions for the following:
 - (a) A preconstruction survey of the conditions of the roads.
 - (b) A post-construction survey of the condition of the roads.
 - (c) An objective standard of repair that obligates the Applicant to restore the roads to the same or better condition as they were prior to construction.
 - (d) A timetable for posting of the construction road and bridge bond prior to the use or transport of heavy equipment on public roads or bridges.

AIR, WATER, SOLID WASTE, AND AVIATION CONDITIONS

Staff recommends the following conditions to address the requirements discussed in Air, Water, Solid Waste, and Aviation:

- (14) The Applicant shall provide a copy of any floodplain permit required for construction of this project, or a copy of correspondence with the floodplain administrator showing that no permit is required, to Staff within seven days of issuance or receipt by the Applicant.
- (15) Thirty days prior to commencement of construction, the Applicant must notify, in writing, any owner of an airport located within 20 miles of the project boundary, whether public or private, whose operations, operating thresholds/minimums, landing/approach procedures and/or vectors are expected to be altered by the siting, operation, or maintenance of the facility.

APPENDIX

1. DOCKETING RECORD

CASE NUMBER: 13-1752-EL-BGN

DESCRIPTION: Carroll County Energy Generation Facility

FILINGS AS OF: 2/19/14

Date Filed	Summary
02/18/2014	Petition Washington Township's Petition for Leave to Intervene and memorandum in support electronically filed by Mr. Christopher L. Miller on behalf of Washington Township, Carroll County, Ohio
02/13/2014	Proofs of Publication for the county of Stark electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC.
02/05/2014	Notice of Filing of List of Commitments electronically filed by Ms. Miranda R. Leppla on behalf of Carroll County Energy LLC.
02/05/2014	Submittal of Mailing List electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC.
01/08/2014	Service Notice
01/08/2014	Service Notice
01/06/2014	Administrative Law Judge Entry orders the hearings in this matter scheduled at the times and places designated in Finding (7), orders the notices of the application and hearings published by CCE in accordance with Findings (9) and (10), orders Staff to file its Staff Report pursuant to Finding (11), and orders the parties to file their issues list and testimony in accordance with Finding (11) electronically filed by Sandra Coffey on behalf of Greta See, Attorney Examiner, Public Utilities Commission of Ohio
01/06/2014	Administrative Law Judge Entry grants CCE's motion for waivers and motion for protective order and orders the docketing division to maintain under seal the information filed confidentially in this docket on 11/15/2013, for a period of 18 months, until 07/06/2015 electronically filed by Sandra Coffey on behalf of Greta See, Attorney Examiner, Public Utilities Commission of Ohio.
12/26/2013	Notice regarding Filing Fee electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC.
12/26/2013	Certificate of Service electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC.
12/20/2013	OPSB Chair Letter Regarding Compliance electronically filed by Mr. Donald E. Rostofer on behalf of Snitchler, Todd A. Mr.
12/17/2013	Memorandum Staff Memo regarding Motion for Waivers electronically filed by Mr. Devin D Parram on behalf of PUCO.

Date Filed	Summary
11/15/2013	Motion for Protective Order and Memorandum in Support electronically filed by Mr. Stephen M Howard on behalf of Carroll County Energy LLC.
11/15/2013	Application Appendix O: Historic Architecture Survey electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application Appendix N: Phase I Archaeological Survey electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application Appendix M: Economic Assessment electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application Appendix L: Species Correspondence electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application Appendix K: Operational Sound Level Impact Report electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application Appendix J: Baseline Sound Survey Report electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix I: Air Permit electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix H: Stack Height Determinations electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix G: Transportation Management Plan electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix F: Wetland Delineation and Stream Identification Report electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix E: Preliminary Subsurface Exploration Report electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix D: PJM System Impact Study electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix C: PJM Feasibility Study electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix B: Stormwater Management Plan electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Appendix A: Preliminary Plot Plan electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application List of Appendices electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Figures 07-1 through 07-7. electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC

Date Filed	Summary
11/15/2013	Application Figures 06-1 through 06-11. electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application Figures 04-1 through 04-7. electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Figures 03-1 through 03-2. electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Figures 02-1 through 02-7. electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Application Figure 01-1. Facility Location. electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Application for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC.
11/15/2013	Affidavit of Chief Executive Officer for Carroll County Energy LLC electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	Letter of Notification of Submission of the Application for a Certificate of Environmental Compatibility and Public Need for an Electric Generation Facility electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/15/2013	In the matter of the application Cover Page electronically filed by Ms. Miranda R Leppla on behalf of Carroll County Energy LLC
11/14/2013	Motion for Waivers and Memorandum in support electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC.
10/29/2013	Proofs of Publication in The Repository, Stark County, Ohio on August 14, 2013 and The Free Press Standard Carroll County, Ohio on August 15, 2013. electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC
08/07/2013	In the matter of the Letter of Notification by Carroll County Energy LLC electronically filed by Mr. Michael J. Settineri on behalf of Carroll County Energy LLC.



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Case No(s). 13-1752-EL-BGN

Summary: Report of investigation electronically filed by Mr. Adam S Bargar on behalf of Staff of OPSB