Case No. 20-033-EL-BGA

Second Amendment Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need

Submitted by:

Guernsey Power Station, LLC

Guernsey Power Station

January 2020

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January 8, 2020

Via Hand Delivery

Ms. Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: Guernsey Power Station LLC
Case No. 20-033-EL-BGA

Dear Ms. Troupe:

Enclosed for filing in the above-referenced case is a copy of the First Amendment of Guernsey Power Station, LLC for its electric generating facility, Guernsey Power Station, in Valley Township, Guernsey County, Ohio. The Second Amendment requests approval to increase the facility's electric generating output from 1,650 MW to 1,875 MW. In addition, we have provided Staff of the Ohio Power Siting Board ("Board") ten disks and five hard copies of the Second Amendment. Pursuant to Ohio Administrative Code Rule 4906-2-04(A)(3), the Applicant makes the following declarations:

Name of Applicant:
Guernsey Power Station, LLC
whose authorized representative is
Mitchell Garber
Caithness Energy, LLC
565 5th Avenue, 29th Floor
New York, NY 10017

Name/Location of Proposed Facility:
Guernsey Power Station LLC
Valley Township, Guernsey County, Ohio

Authorized Representative Technical:
Mitchell Garber
Vice President, Project Management
Caithness Energy, LLC
565 5th Avenue, 29th Floor
New York, NY 10017
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E:mail: mgarber@caithnessenergy.com

Authorized Representative

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Notarized Statement: See Attached Affidavit of Mitchell Garber, on behalf of Guernsey Power Station, LLC

Sincerely on behalf of
GUERNSEY POWER STATION LLC

Dylan F. Borchers

Enclosure

BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Second Amendment of **Guernsey Power Station LLC** to its Certificate of Environmental Compatibility and Public Need for an Electric Generating Facility in Guernsey County, Ohio	)))))	Case No. 20-033-EL-BGA

AFFIDAVIT OF MITCHELL GARBER

STATE OF NEW YORK :
: ss.
COUNTY OF NEW YORK :

I, Mitchell Garber, being duly sworn and cautioned, state that I am over 18 years of age and competent to testify to the matters stated in this affidavit and further state the following based upon my personal knowledge:

1. I am Vice President, Project Management of Guernsey Power Station LLC ("GPS"). The Guernsey Power Station is a combined cycle power generation facility, is being developed by GPS. I am the primary individual in charge of the construction of the facility for GPS.

2. I have reviewed the Second Amendment Application of Guernsey Power Station LLC to the Ohio Power Siting Board for the Guernsey Power Station.

3. To the best of my knowledge, information, and belief, the information and materials contained in the above-referenced Amendment are true and accurate.

4. To the best of my knowledge, information, and belief, the above-referenced Amendment is complete.

Mitchell Garber

Sworn to before and signed in my presence this 6TH day of January 2020.

GAIL M. CONBOY
Notary Public, State of New York
No. 4964579
Qualified in New York County
Commission Expires 4/2/22

Notary Public

[SEAL]

BEFORE THE OHIO POWER SITING BOARD
Second Amendment Application of Guernsey Power Station LLC
Guernsey Power Station

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ACROYNYMS AND ABBREVIATIONS

the Amendment	the second amendment to the original Ohio Power Siting Board Application for the Guernsey Power Station
the Applicant	Guernsey Power Station LLC
the Application	the application provided to the Ohio Power Siting Board to support a request for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility
the Certificate	Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility
the Facility	the Guernsey Power Station
the Facility Site	the approximately 118-acre location proposed for the Guernsey Power Station in Valley Township, Guernsey County
FERC	Federal Energy Regulatory Commission
the First Amendment	The first amendment to the original Ohio Power Siting Board Application for the Guernsey Power Station
GPS	Guernsey Power Station LLC
MMcf	million cubic feet
MW	Megawatts
OPSB	Ohio Power Siting Board
PJM	the regional electric transmission independent system operator
the Project Area	The 133-acre property consisting of the Guernsey Power Station and temporary work areas
the Second Amendment	the second amendment to the original Ohio Power Siting Board Application for the Guernsey Power Station
SIS	System Impact Study

4906-4-02 Project Summary and Applicant Information

As discussed in Section 4906-13-01 of the original Application for Certificate of Environmental Compatibility and Public Need (the Application) in Case Number 16-2443-EL-BGN to the Ohio Power Siting Board (OPSB), Guernsey Power Station LLC (GPS or the Applicant) plans to own and operate the Guernsey Power Station (the Facility). The Application reflected a Facility net planned generation of 1,650 megawatts (MW), but consistent with the original PJM[1] interconnection application, the Certificate of Environmental Compatibility and Public Need (the Certificate) reflected authorization of a Facility net generation of 1,100 MW. On January 11, 2018, GPS filed an amendment (Case Number 18-0090-EL-BGA; the First Amendment) to authorize increase of the Facility's electric generating output to 1,650 MW. A Certificate was issued granting this increase on March 15, 2018.

Since that time, GPS has determined an additional electric generating output of 225 MW (for a total of 1,875 MW) can result from Facility operation without the need for equipment changes and with no change in the level of environment impact. A System Impact Study (SIS), associated with a PJM interconnection application reflecting the additional 225 MW, has been approved (as provided in Appendix A). This amendment under Case No. 20-033-EL-BGA (the Second Amendment) is intended to allow for OPSB authorization of the additional energy output for the Facility; other aspects of the Facility remain unchanged.

(A) SUMMARY OF THE PROPOSED PROJECT

No change from the prior filings.

[1] PJM is the regional independent transmission organization that coordinates the movement of wholesale electricity in all or part of 13 states (including Ohio) and the District of Columbia. Its name results from its origin serving Pennsylvania (P), New Jersey (J), and Maryland (M).

(1) General Purpose of the Facility

No change from the prior filings.

(2) Facility Description

The Application addressed the Facility, a 1,650-MW natural gas-fired combined cycle electric generating facility to be developed, built, owned, and operated by GPS. Although the initial Certificate authorized the initial 1,100 MW, approval of the First Amendment authorized the full 1,650 MW. The Facility is proposed on a 118-acre property that is located entirely within Valley Township, Guernsey County, Ohio (the Facility Site). No changes to major components of the Facility have occurred since the Application and First Amendment.

This Second Amendment solely addresses the addition of 225 MW of energy generation to the Facility. This additional capacity has been reviewed and accepted by PJM. The maximum capacity of the proposed Facility is 1,875 MW. This does not reflect a design modification or change in equipment but, rather, now allows for conditions of operation that would result in the full output. No change to any other environmental permit or level of impact will result from this increase in generation. PJM has completed a SIS for the incremental energy generation and the study confirmed that it can be accommodated by the electric transmission grid (Appendix A).

(3) Site Suitability

No change from the prior filings.

(4) Project Schedule

The Facility is currently under construction, with a plan for commencement of commercial operation by the fall of 2022.

(B) ADDITIONAL INFORMATION

(1) Description of Future Plans/Plans for Future Additions

No change from the prior filings.

(2) Applicant Information

No change from the prior filings.

4906-4-03 Project Description and Schedule

(A) DETAILED DESCRIPTION OF THE PROJECT AREA

(1) Project Map

No change from the prior filings.

(2) Project Area

No change from the prior filings.

(B) PROPOSED FACILITY DESCRIPTION

No change from the prior filings.

(1) Project Details

No change from the prior filings.

(a) Generation Units

No change from the prior filings, other than the energy increase to 1,875 MW.

(b) Description of Wind Turbine Equipment

No change from the prior filings.

(c) Fuel Quantity and Quality

No change from the prior filings.

(d) Pollutant Emissions

No change from the prior filings.

(e) Water Volume Requirement

No change from the prior filings.

(2) Description of Construction Method and Project Components

(a) Generation Equipment

No change from the prior filings.

(b) Storage Facilities

No change from the prior filings.

(c) Processing Facilities

No change from the prior filings.

(d) Water Supply and Discharge

No change from the prior filings.

(e) Transmission Facilities

No change from the prior filings.

(f) On-Site Electric Components

No change from the prior filings.

(g) Ancillary Facilities

No change from the prior filings.

(h) Meteorological Towers

No change from the prior filings.

(i) Transportation Facilities

No change from the prior filings.

(j) Laydown and Parking Areas

No change from the prior filings.

(k) Security

No change from the prior filings.

(l) Other Installations

No change from the prior filings.

(3) Description of New Transmission Facilities

(a) Electric Transmission Line

No change from the prior filings.

(b) Natural Gas Pipelines

With the additional electrical output, additional natural gas will be consumed. Natural gas consumption will be approximately 300,000 million cubic feet (MMcf) per day of natural gas, or an hourly consumption of approximately 12,500 MMcf. Natural gas pressure requirements have not changed.

(4) Map of Project Site

No change from the prior filings.

(C) DETAILED PROJECT SCHEDULE

(1) Schedule

The Facility is currently under construction, with a projected commercial operation date of October 2022.

(2) Construction Sequence

No change from the prior filings.

(3) Delays

No change from the prior filings.

4906-4-04 Project Area Selection and Site Design

(A) SITE SELECTION PROCESS

(1) Description of Study Area

No change from the prior filings.

(2) Maps of Evaluated Alternate Sites

No change from the prior filings.

(3) Siting Criteria

No change from the prior filings.

(4) Process for Identifying the Proposed Site

No change from the prior filings.

(5) Factors in Selecting the Proposed Site

No change from the prior filings.

(B) FACILITY LAYOUT DESIGN

No change from the prior filings.

(1) Constraints Map

No change from the prior filings.

(2) Facility Layout and Alternatives Considered

No change from the prior filings.

(3) Comments Received

No change from the prior filings.

4906-4-05 Electric Grid Interconnection

(A) INTERCONNECTION TO THE REGIONAL ELECTRIC POWER SYSTEM

No change from the prior filings.

(B) INTERCONNECTION REQUEST

(1) Feasibility Study

The initial system interconnection studies were initiated with PJM in March 2016 for 1,100 MW. As a result, the Facility was assigned queue position AB2-067. The PJM Feasibility Study was completed in August 2016 and the SIS was completed in June 2017.

GPS started a new PJM interconnection application in August 2016 requesting an increase in MW from 1,100 MW to 1,650 MW. This application was assigned queue position AC1-044. The PJM Feasibility Study was completed in March 2017 and the SIS was completed January 10, 2018.

Since that time, it has been determined that additional output can result from operation of the Project, and a new PJM interconnection application was filed on March 26, 2018 requesting an increase in MW from 1,650 MW to 1,875 MW. This application was assigned queue position AD2-189. The PJM Feasibility Study was completed in July 2018 and the SIS was completed September 2019 (Appendix A).

(2) System Impact Study

The SIS for AD2-189, completed in September 2019, is provided as Appendix A. The report is also available on-line on the PJM website (https://www.pjm.com/planning.aspx). PJM determined from the SIS that no additional upgrades of facilities are required. An amended Interconnection Service Agreement has been provided and executed by GPS (as well as corresponding and related changes to the Interconnect Construction Services Agreement). AEP

has allowed the allotted time for their execution of the documents to pass, and PJM filed the documents with the Federal Energy Regulatory Commission (FERC) without AEP's signature on December 3, 2019. FERC has established December 24, 2019 as the deadline for comments. Based on the filing and the non-material nature of the changes, GPS expects FERC to make the amended agreements effective on the February 1, 2020 requested by PJM.

4906-4-06 Economic Impact and Public Interaction

(A) OWNERSHIP

No change from the prior filings.

(B) CAPITAL AND INTANGIBLE COSTS

(1) Estimated Capital and Intangible Costs

No change from the prior filings.

(2) Capital Cost Comparison

No change from the prior filings.

(3) Present Worth and Annualized Capital Costs Comparison to Alternatives

No change from the prior filings.

(C) OPERATION AND MAINTENANCE EXPENSES

(1) Estimated Annual Operation and Maintenance Expenses

No change from the prior filings.

(2) Operation and Maintenance Expenses Comparison

No change from the prior filings.

(3) Present Worth and Annualized O&M Expenses Comparison to Alternatives

No change from the prior filings.

(D) COST OF DELAYS

No change from the prior filings.

(E) ECONOMIC IMPACT

(1) Annual Total Present Worth of Construction and Operation Payroll

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(2) Construction and Operation Employment

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(3) Increase in Local Revenue

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(4) Economic Impact on Local Commercial and Industrial Activities

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(F) RESPONSIBILITY TO THE PUBLIC

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(2) Liability Compensation Plans

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(3) Impact to Surrounding Infrastructure

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(4) Transportation Permits

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(5) Plan for Decommissioning

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(A) COMPLIANCE WITH APPLICABLE REGULATIONS

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(B) AIR QUALITY

(1) Preconstruction

(a) Ambient Air Quality

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(b) Pollution Control Equipment

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(c) State and Federal Performance Standards

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(d) Required Permits

No change from the prior filings.

(e) Air Monitoring Stations and Major Source Mapping

No change from the prior filings.

(f) Compliance Plans

No change from the prior filings.

(2) Construction

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(3) Operation

(a) Description of Air Monitoring Plans

No change from the prior filings.

(b) Estimated Air Concentration Isopleths

No change from the prior filings.

(c) Potential Failure of Air Pollution Control Equipment

No change from the prior filings.

(C) WATER QUALITY

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(1) Preconstruction

(a) Required Permits

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(b) Location of Survey Data Sources

No change from the prior filings.

(c) Description of Data Sampling Stations and Reporting Procedures

No change from the prior filings.

(d) Water Quality of Receiving Stream

No change from the prior filings.

(e) Water Discharge Permit Information

No change from the prior filings.

(2) Construction

(a) Location of Water Monitoring and Gauging Stations

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(b) Aquatic Discharges

No change from the prior filings.

(c) Mitigation Plans

No change from the prior filings.

(d) Changes in Flow Patterns and Erosion

No change from the prior filings.

(e) Description of Equipment for Control of Effluents in Receiving Waters

No change from the prior filings.

(3) Operation

(a) Location of Monitoring Equipment

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(b) Water Pollution Control Equipment and Treatment Process

No change from the prior filings.

(c) Issuance of Required Permits

No change from the prior filings.

(d) Quantitative Flow Diagram

No change from the prior filings.

(e) Water Conservation

No change from the prior filings.

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(1) Preconstruction

(a) Debris and Solid Waste

No change from the prior filings.

(b) Waste Management Plan

No change from the prior filings.

(2) Construction

(a) Debris and Solid Waste

No change from the prior filings.

(b) Waste Management Plan

No change from the prior filings.

(3) Operations

(a) Solid Waste

No change from the prior filings.

(b) Waste Management Plan

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(4) Licenses and Permits

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(E) AVIATION

(1) Surrounding Air Navigation Facilities

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(2) Federal Aviation Administration Filings

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No change from the prior filings.

(A) HEALTH AND SAFETY

(1) Equipment Safety

(a) Public Safety Equipment

No change from the prior filings.

(b) Equipment Reliability

No change from the prior filings.

(c) Safety Manuals

No change from the prior filings.

(d) Public Access

No change from the prior filings.

(e) Emergency Plans

No change from the prior filings.

(2) Impact of Air Pollution Control Equipment Failures

No change from the prior filings.

(3) Noise

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(a) Construction Noise

No change from the prior filings.

(b) Operational Noise

No change from the prior filings.

(c) Noise-Sensitive Areas

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(d) Noise Mitigation Measures

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(e) Existing Ambient Conditions

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(4) Water

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(a) Construction and Operation Impacts

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(b) Impact of Pollution Control Equipment Failure

No change from the prior filings.

(c) Proximate Water Sources

No change from the prior filings.

(d) Compliance with Water Source Protection Plans

No change from the prior filings.

(e) Potential for Flooding

No change from the prior filings.

(5) Geological Features

(a) Site Geology

No change from the prior filings.

(b) Soils and Soil Suitability

No change from the prior filings.

(c) Geotechnical Evaluation Plan

No change from the prior filings.

(6) Potential for High Wind Conditions

No change from the prior filings.

(7) Potential Impact from Blade Shear

No change from the prior filings.

(8) Potential Impact from Ice Throw

No change from the prior filings.

(9) Potential Impact from Shadow Flicker

No change from the prior filings.

(10) Potential Impact to Radio and TV Reception

No change from the prior filings.

(11) Potential Impact to Radar Systems

No change from the prior filings.

(12) Potential Impact to Microwave Communications

No change from the prior filings.

(B) ECOLOGICAL RESOURCES

(1) Existing Ecological Resources

(a) Nearby Resources

No change from the prior filings.

(b) Vegetation, Wetland and Surface Water Survey

No change from the prior filings.

(c) Species Literature Survey

No change from the prior filings.

(d) Additional Ecological Studies

No change from the prior filings.

(2) Potential Construction Impact

(a) Ecological Resource Impact Evaluation

No change from the prior filings.

(b) Mitigation

No change from the prior filings.

(3) Potential Operation and Maintenance Impact

(a) Ecological Resource Impact Evaluation

No change from the prior filings.

(b) Mitigation

No change from the prior filings.

(c) Post-Construction Monitoring of Wildlife Impacts

No change from the prior filings.

(C) LAND USE AND COMMUNITY DEVELOPMENT

(1) Land Use

(a) Land Use Mapping

No change from the prior filings.

(b) Existing Structures

No change from the prior filings.

(c) Land Use Impacts

No change from the prior filings.

(d) Structures to be Removed or Relocated

No change from the prior filings.

(2) Wind Turbine Structure Locations

No change from the prior filings.

(3) Land Use Plans

(a) Formally Adopted Plans for Future Use

No change from the prior filings.

(b) Applicant Plans for Concurrent or Secondary Use of the Site

No change from the prior filings.

(c) Impact to Regional Development

No change from the prior filings.

(d) Compatibility with Current Regional Plans

No change from the prior filings.

(e) Demographic Characteristics

No change from the prior filings.

(D) CULTURAL AND ARCHAEOLOGICAL RESOURCES

No change from the prior filings.

(1) Cultural Resource Mapping

No change from the prior filings.

(2) Cultural Resource Impacts

No change from the prior filings.

(3) Recreational Areas

No change from the prior filings.

(4) Visual Impacts

(a) Project Visibility

No change from the prior filings.

(b) Existing Landscape

No change from the prior filings.

(c) Landscape Alterations

No change from the prior filings.

(d) Visual Impacts

No change from the prior filings.

(e) Photographic Simulations

No change from the prior filings.

(f) Proposed Mitigation Measures

No change from the prior filings.

(E) AGRICULTURAL DISTRICTS

(1) Agricultural Land Mapping

No change from the prior filings.

(2) Potential Impact to Agricultural Land

(a) Acreage Impacted

No change from the prior filings.

(b) Impact of Project Activities

No change from the prior filings.

(c) Agricultural Mitigation Practices

No change from the prior filings.

(F) OTHER CONSIDERATIONS IN PREPARING THE APPLICATION

No change from the prior filings.

Appendix A: Generation Interconnection System Impact Study Report – Queue Position AD2-189

Generation Interconnection System Impact Study Report

For

PJM Generation Interconnection Request Queue Position AD2-189

Kammer-Vassell 765kV

September 2019

Preface

The intent of the System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the Feasibility Study, but the actual allocation will be deferred until the System Impact Study is performed.

The System Impact Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

General

Guernsey Power Station LLC proposes to increase the generation of its previous PJM Projects #AB2-067 and AC1-044, a combined 1650 MW natural gas generating facility in Guernsey County, Ohio by 186 MW (see Figure 2). The point of interconnection is to the proposed Guernsey 765kV substation connecting to AEP's Kammer – Vassell 765kV circuit (see Figure 1). The AD2-189 uprate request is due to additional machine capability and does not reflect any electrical or mechanical changes to the plant. The output of the generating plant is summarized below:

	AB2-067	**AC1-044**	**AD2-189**
Plant Configuration	2 - 1 x 1 CC	1 x 1 CC	increased capability of previous queue positions
Maximum Facility Output (MW)	1,100	550	225
Capacity (MW)	1,100	550	186
Planned Backfeed	September 1, 2019	N/A	N/A
Planned In-Service	September 1, 2020	September 1, 2020	June 1, 2021

Table 1

Point of Interconnection (Guernsey 765kV)

AD2-189 (uprate project) will be interconnected with the AEP transmission system at the proposed Guernsey 765kV switching station to be constructed by PJM Project # AB2-067 & AC1-044.

Note: It is assume that the 765 kV revenue metering and gen lead to be constructed for #AB2-067 will be adequate for the additional generation.

Cost Summary

The AD2-189 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	$ 0
Direct Connection Network Upgrades	$ 0
Non Direct Connection Network Upgrades	$ 0
Allocation for New System Upgrades	$ 0
Contribution for Previously Identified Upgrades	$ 0
Total Costs	**$ 0**

Attachment Facilities

There are no Attachment Facilities are required to support this interconnection.

Direct Connection Cost Estimate

There are no Direct Connection Facilities are required to support this interconnection.

Non-Direct Connection Cost Estimate

There are no Non-Direct Connection Facilities are required to support this interconnection.

Interconnection Customer Requirements

The Generation Interconnection Agreement does not in or by itself establish a requirement for American Electric Power to provide power for consumption at the developer's facilities. A separate agreement may be reached with the local utility that provides service in the area to ensure that infrastructure is in place to meet this demand and proper metering equipment is installed. It is the responsibility of the developer to contact the local service provider to determine if a local service agreement is required.

Requirement from the PJM Open Access Transmission Tariff:

1. An Interconnection Customer entering the New Services Queue on or after October 1, 2012 with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

2. The Interconnection Customer may be required to install and/or pay for metering as necessary to properly track real time output of the facility as well as installing metering which shall be used for billing purposes. See Section 8 of Appendix 2 to the Interconnection Service Agreement as well as Section 4 of PJM Manual 14D for additional information.

Revenue Metering and SCADA Requirements

PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Sections 24.1 and 24.2.

AEP Requirements

The Interconnection Customer will be required to comply with all AEP Revenue Metering Requirements for Generation Interconnection Customers. The Revenue Metering Requirements may be found within the "Requirements for Connection of New Facilities or Changes to Existing Facilities Connected to the AEP Transmission System" document located at the following link:

http://www.pjm.com/~/media/planning/plan-standards/private-aep/aep-interconnection-requirements.ashx

Network Impacts

The queue project AD2-189 was evaluated as a 186 MW (Capacity 186 MW) Summer Peak incremental injection at the proposed Guernsey 765 kV station in the AEP area, and was also was evaluated as a 225 MW (Capacity 186 MW) Winter Peak incremental injection at the proposed Guernsey 765 kV station in the AEP area. Project AD2-189 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD2-189 was studied with a commercial probability of 100%. Potential network impacts were as follows:

Base Case Used

Summer Peak Analysis – 2021 Case

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

None.

Multiple Facility Contingency

(Double Circuit Tower Line contingencies were studied for the full energy output. The contingencies of Line with Failed Breaker and Bus Fault will be performed for the Impact Study.)

None.

Short Circuit

(Summary of impacted circuit breakers)

None.

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

None.

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

None.

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

None.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)

None.

Affected System Analysis & Mitigation

LGEE Impacts:

None

MISO Impacts:

None

Duke, Progress & TVA Impacts:

None

OVEC Impacts:

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None.

Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

None.

Schedule

It is anticipated that the time between receipt of executed agreements and Commercial Operation may range from 12 to 18 months if no line work is required. If line work is required, construction time would be between 24 to 36 months after signing an interconnection agreement.

Note: The time provided between anticipated normal completion of System Impact, Facilities Studies, subsequent execution of ISA and ICSA documents, and the proposed In-Service Date is shorter than usual and may be difficult to achieve.

Conclusion

Based upon the results of this Feasibility Study, the increase of 186 MW Summer Peak and 225.0 MW Winter Peak for PJM Project #AD2-189 natural gas generation to Guernsey Power Station's previous requests (PJM Project #AB2-067 and AC1-044) will not require additional interconnection charges.

Cost Breakdown for Point of Interconnection (Kammer-Vassell 765 kV)		
Attachment Cost	PJM Project AB2-067 will pay for the necessary direct connection work required. Project AC1-044 and AD2-189 will share the same Generator lead to the new 765 kV interconnection switching station being constructed for Project AB2-067.	**PJM Project #AB2-067 to pay for Attachment Facilities**

Table 2

Figure 1: Point of Interconnection (Proposed Guernsey 765 kV Switching Station)

Single-Line Diagram

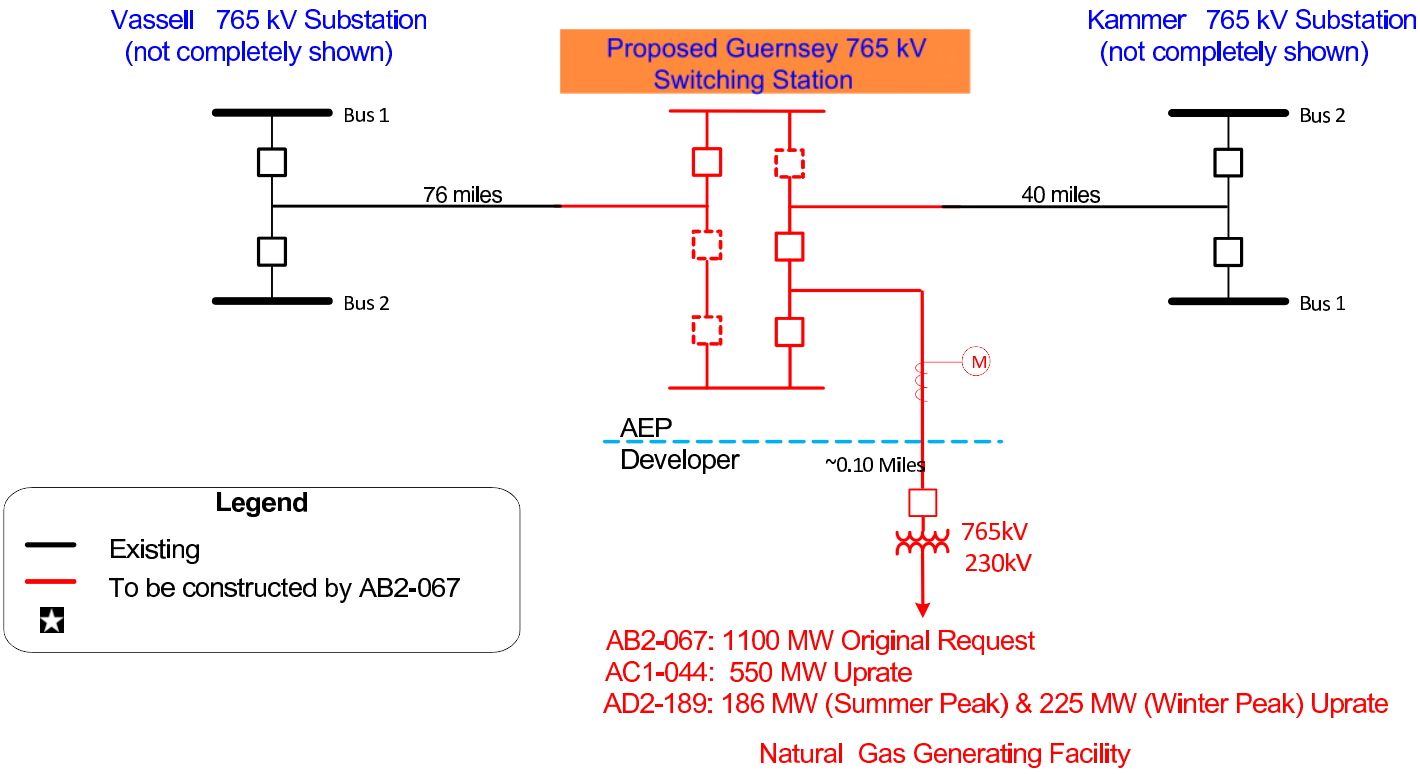

Figure 2: Point of Interconnection
(Proposed Guernsey 765 kV Switching Station)

Attachment 3: Dynamic Simulation Analysis
Executive Summary

Generator Interconnection Request AD2-189 is for a 75.0 MW uprate of the existing thermal generation plants AB2-067 and AC1-044. The uprate increases the Maximum Facility Output (MFO) of the facility from 1800.0 MW to 1875.0 MW due to additional machine capability and does not reflect any electrical or mechanical changes to the plant. AD2-189 consists of 3 × 635 MW single shaft 1x1 combined cycle generators with a Point of Interconnection (POI) on the Kammer – Vassell 765 kV line in the American Electric Power (AEP) transmission system, Guernsey County, Ohio.

This report describes a dynamic simulation analysis of AD2-189 as part of the overall system impact study.

The load flow scenario for the analysis was based on the RTEP 2021 light load case, modified to include applicable queue projects. AD2-189 has been dispatched online at maximum power output, with 0.95 p.u. voltage at the generator bus.

AD2-189 was tested for compliance with NERC, PJM, Transmission Owner and other applicable criteria. Steady-state condition and 26 contingencies were studied, each with a 20 second simulation time period. Studied faults included:

a) Steady state operation;

b) Three phase faults with normal clearing time;

c) Single phase faults with stuck breaker.

No relevant bus faults, tower faults or high-speed reclosing (HSR) contingencies were identified for this study.

There are no delayed (Zone 2) clearing faults as dual pilot protection is employed in the AEP's 765 kV network.

The three phase faults with normal clearing time will be performed under network intact conditions and with prior outage of:

a) AD2-189 POI – Kammer 765 kV circuit,

b) Vassell – Maliszewski 765 kV circuit.

For all simulations, the queue project under study along with the rest of the PJM system were required to maintain synchronism and with all states returning to an acceptable new condition following the disturbance.

For all of the fault contingencies tested on the 2021 light load case:

a) AD2-189 was able to ride through the faults (except for faults where protective action trips a generator(s)),

b) Post-contingency oscillations were positively damped with a damping margin of at least 3%.

c) Following fault clearing, all bus voltages recovered to a minimum of 0.7 per unit after 2.5 seconds (except where protective action isolates that bus).

d) No transmission element tripped, other than those either directly connected or designed to trip as a consequence of that fault.

The active and reactive power capability of Mitchell unit 1 and 2 were updated as listed in Table 5 per the latest model information. The PGEN was set to avoid governor limit errors.

The reactive power capability of AD2-189 meets the leading and lagging PF requirements.

Multiple network non-convergence instances outside of the fault period are observed for contingencies which lead to the loss of the entire AD2-189 facility. These non-convergences are observed at multiple machines around the network. There is no observed impact on the study results due to this non-convergences in the 20 second simulation timeframe.

No mitigations were found to be required.

Summary: Text Second Amendment Application of Guernsey Power Station LLC electronically filed by Teresa Orahood on behalf of Dylan F. Borchers