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July 16, 2021

Ms. Tanowa M. Troupe, Secretary
Ohio Power Siting Board
180 E. Broad Street, 11th Floor
Columbus, OH 43215

Re: OPSB Case No. 21-793-EL-BGA
Harrison Power LLC

Dear Ms. Troupe:

Accompanying this letter is the first amendment application by Harrison Power LLC for its Harrison Power Project (“the Facility”). The Facility received a certificate from the Ohio Power Siting Board (“Board”) on June 21, 2018 in Case No. 17-1189-EL-BGN for a net planned generation of 1,050 megawatts (“MW”). Through this amendment application, Harrison Power is requesting the Board’s authorization to increase its nameplate capacity by 35 MW to a maximum of 1,085 MW. Other aspects of the original application remain unchanged.

In accordance with Ohio Adm.Code 4906-2-04, I would like to make the following declarations:

Name of the applicant:

Harrison Power LLC
800 Town & Country Blvd., #500
Houston, TX 77024

Name and location of the proposed facility:

Harrison Power Plant
Village of Cadiz
Harrison County, Ohio



Legal Counsel

Ms. Tanowa Troupe, Secretary

July 16, 2021

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Name of the authorized representatives:

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Notarized Statement:

See attached Affidavit of Raj Suri
Authorized Officer of Harrison Power LLC

Very truly yours,

/s/ Michael J. Settineri

Michael J. Settineri
Attorney for Harrison Power LLC

Enclosure

**BEFORE
THE OHIO POWER SITING BOARD**

**In the Matter of the First Amendment of
Harrison Power LLC to its Certificate of
Environmental Capability and Public
Need for an Electric Generating Facility
in Harrison County, Ohio**

)
)
)
)
)

Case No. 21-793-EL-BGA

OFFICER'S AFFIDAVIT

STATE OF TEXAS)
COUNTY OF Fort Bend)

SS:

Now comes Raj Suri, the Authorized Officer of Harrison Power LLC, having been first duly sworn, declares, and states as follows:

1. I am the Authorized Officer of Harrison Power LLC which is developing the Harrison Power Plant in the Village of Cadiz, Harrison County, Ohio.

2. I have reviewed the first amendment application of Harrison Power LLC to its Certificate of Environmental Capability and Public Need to Construct an Electric Generation Facility issued in Case No. 17-1189-EL-BGN.

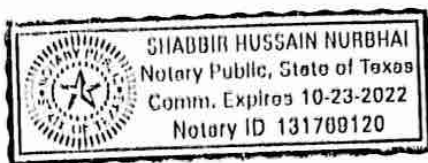
3. To the best of my knowledge, information, and belief, the information and statements contained in the first amendment application are true and correct.

4. To the best of my knowledge, information, and belief, the first amendment application is complete.

Signature: _____

Raj Suri
Authorized Officer
Harrison Power LLC

Sworn to before me and signed in my presence this 15th day of July, 2021.



Notary Public

My Commission Expires 10/23/2022

BEFORE THE OHIO POWER SITING BOARD
First Amendment Application of Harrison Power LLC
Harrison Power Project

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- No updated Figures

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- No updated Figures

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- No figures

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- No updated Figures

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- No updated Figures

LIST OF APPENDICES

Appendix A – Generation Interconnection System Impact Study Report

ACROYNYS AND ABBREVIATIONS

the Amendment	the first amendment to the certificate granted by the Ohio Power Siting Board Application for Harrison Power in Case No. 17-1189-EL-BGN
the Applicant	Harrison Power 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	Harrison Power
the Facility Site	The location proposed for Harrison Power in the Village of Cadiz, Harrison County
HPL	Harrison Power LLC
MHPS	Mitsubishi Hitachi Power Systems
MW	megawatts
OPSB	Ohio Power Siting Board
PJM	the regional electric transmission independent system operator
SIS	System Impact Study

4906-4-02 Project Summary and Applicant Information

As discussed in the most recent Application for Certificate of Environmental Compatibility and Public Need (the Application) in Case Number 17-1189-EL-BGN to the Ohio Power Siting Board (OPSB), Harrison Power LLC (HPL or the Applicant) plans to own and operate the Harrison Power Project (the Facility). The Application reflected a Facility net planned generation of 1,050 megawatts (MW). Since that time, HPL has received the System Impact Study (SIS) and further authorizations from PJM for an additional 35 MW. As shown in Appendix A, PJM has accepted HPL's uprating of the Facility by an additional 35 MW to a maximum of 1,085 MW. This Amendment is intended to allow for OPSB authorization of the additional capability for the Facility; other aspects of the Facility remain unchanged, although minor adjustments (such as to construction schedule, the addition of new partners in the Facility development, changes reflected in the current air permit issued for the Facility as described herein, and ongoing updates to drainage and other design that will be reflected in the pre-construction filings) are noted where applicable.

(A) SUMMARY

No change from the most recent filing, other than participation of additional parties in the development of the Facility, as further discussed in Section 4906-4-02(B)(2).

(1) General Purpose of the Facility

No change from the most recent filing.

(2) Description of the Facility

The Application addressed the Facility, a 1,050-MW natural gas-fired combined cycle electric generating facility to be developed, built, owned, and operated by HPL. The Facility is proposed on property that is located entirely within the Village of Cadiz, Harrison County, Ohio

(the Facility Site). No changes to major components of the Facility have occurred since the Application.

This Amendment solely addresses the addition of 35 MW of recognized Facility capacity. This additional capacity has been reviewed and accepted by PJM. The maximum capacity of the proposed Facility for which the Amendment is requested is 1,085 MW. This does not reflect a design modification or change in equipment but, rather, now allows for conditions of operation that would result in increased performance. 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 most recent filing.

(4) Facility Schedule

No change from the most recent filing, other than a delay of construction. Construction is currently anticipated to commence during the fourth quarter of 2021.

(B) ADDITIONAL INFORMATION

(1) Future Plans

No change from the most recent filing.

(2) Applicant Information

No change from the most recent filing. The applicant remains Harrison Power LLC. To assist in the development of the Facility, Advanced Power has joined the Facility team. Advanced Power is an international developer of independent power projects. Advanced Power develops and invests in power generation and related infrastructure projects in North America and Europe, and continually assesses market conditions to identify opportunities to bring additional energy facilities

on-line. Advanced Power has developed more than 2,600 MW of generation in the United States and Europe, including Carroll County Energy and South Field Energy, both located in Ohio.

4906-4-03 Project Description and Schedule

(A) DETAILED DESCRIPTION OF THE PROJECT AREA

(1) Project Map

No change from the most recent filing.

(2) Project Area

No change from the most recent filing.

(B) PROPOSED FACILITY DESCRIPTION

(1) Project Details

No change from the most recent filing, other than the increase in output that is the subject of this Application. Emission information is consistent with the current air permit issued for the Facility.

(2) Description of Construction Method and Project Components

No change from the most recent filing, other than the increase in output that is the subject of this Application. Note that the Facility's current air permit application was adjusted prior to final permit issuance to specify use of the Mitsubishi Hitachi Power System (MHPS) M501JAC turbines, eliminate duct firing, and reflect increased performance capability.

(3) Description of New Transmission Facility

No change from the most recent filing.

(4) Map of Project Site

No change from the most recent filing.

(C) DETAILED PROJECT SCHEDULE

(1) Schedule

No change from the most recent filing, other than the delayed financial close and construction.

(2) Construction Sequence

No change from the most recent filing.

(3) Delays

No change from the most recent filing.

4906-4-04 Project Area Selection and Site Design

(A) SITE SELECTION PROCESS

(1) Description of Study Area

No change from the most recent filing.

(2) Maps of Evaluated Sites

No change from the most recent filing.

(3) Siting Criteria

No change from the most recent filing.

(4) Process for Identifying the Proposed Site

No change from the most recent filing.

(5) Factors in Selecting the Proposed Site

No change from the most recent filing.

(B) PROJECT LAYOUT

(1) Constraints Map

No change from the most recent filing.

(2) Project Layout and Alternatives Considered

No change from the most recent filing.

(3) Comments Received

No change from the most recent filing.

4906-4-05 Electric Grid Interconnection

(A) ELECTRIC GRID INTERCONNECTION

No change from the most recent filing.

(B) FACILITY INTERCONNECTION WITH REGIONAL POWER GRID

(1) Generation Interconnection Request Information

The initial system interconnection studies were initiated with PJM in October 2016 for 1,050 MW. As a result, the Facility was assigned queue position AC1-103. The PJM Feasibility Study was completed in April 2017 and the SIS was completed in March 2018.

Since the maximum net output of the Facility has the potential to exceed 1,050 MW, HPL started a new PJM interconnection application in October 2017 requesting an increase in MW sales from 1,050 MW to 1,085 MW. This application was assigned queue position AD2-005. The PJM Feasibility Study was completed in November 2018, the SIS was completed June 2019, and the combined Facilities Study was completed in December 2020 (Appendix A).

(2) Interconnection Studies

All applicable interconnection studies for queue positions AC1-103 and AD2-005 are provided in Appendix A and are also available on the PJM website (<http://pjm.com/planning.aspx>).

4906-4-06 Economic Impact and Public Interaction

(A) OWNERSHIP

No change from the most recent filing, other than the addition of Advanced Power to the Facility team.

(B) CAPITAL AND INTANGIBLE COSTS

(1) Capital and Intangible Costs

No change from the most recent filing.

(2) Capital Cost Comparison

No change from the most recent filing.

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

No change from the most recent filing.

(C) OPERATION AND MAINTENANCE EXPENSES

(1) Estimated Annual Operation and Maintenance Expenses

No change from the most recent filing.

(2) Operation and Maintenance Expenses Comparison

No change from the most recent filing.

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

No change from the most recent filing.

(D) COST OF DELAYS

No change from the most recent filing.

(E) ECONOMIC IMPACT

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

No change from the most recent filing, other than the delayed construction date.

(2) Construction and Operation Employment

No change from the most recent filing.

(3) Increases in Local Revenue (Public Entities)

No change from the most recent filing.

(4) Economic Impact on Local Commercial and Industrial Activities

No change from the most recent filing.

(F) PUBLIC RESPONSIBILITY

(1) Public Information Program

No change from the most recent filing.

(2) Liability Compensation Plans

No change from the most recent filing.

(3) Impacts to Surrounding Infrastructure

No change from the most recent filing.

(4) Transportation Permits

No change from the most recent filing.

(5) Plan for Decommissioning

No change from the most recent filing.

4906-4-07 Air, Water, Solid Waste, and Aviation Regulations

(A) COMPLIANCE WITH APPLICABLE REGULATIONS

No change from the most recent filing.

(B) AIR QUALITY

(1) Preconstruction

(a) Ambient Air Quality

The Facility's current information is reflected in its most recent air permit.

(b) Pollution Control Equipment

No change from the most recent filing.

(c) Regulatory Applicability

No change from the most recent filing.

(d) Required Permits to Install and Operate Air Pollution Sources

No change from the most recent filing.

(e) Monitoring Stations and Major Source Mapping

No change from the most recent filing.

(f) Demonstration of Regulatory Compliance

No material change from the most recent filing; the Facility's current information is reflected in its most recent air permit.

(2) Construction

No change from the most recent filing.

(3) Operation

(a) Description of Air Quality Monitoring Plans

No change from the most recent filing.

(b) Estimated Air Concentration Isopleths

The Facility's current information is reflected in its most recent air permit and air permit review.

(c) Potential Failure of Air Pollution Control Equipment

No change from the most recent filing.

(C) WATER QUALITY

No change from the most recent filing.

(1) Preconstruction Water Quality

(a) Required Permits

No change from the most recent filing.

(b) Location of Data Sources

No change from the most recent filing.

(c) Description of Data Sampling Stations and Reporting Procedures

No change from the most recent filing.

(d) Water Quality of Receiving Stream

No change from the most recent filing.

(e) Water Discharge Permit Information

No change from the most recent filing.

(2) Construction Water Quality

(a) Monitoring Equipment

No change from the most recent filing.

(b) Aquatic Discharges

No change from the most recent filing.

(c) Mitigation Plans

No change from the most recent filing.

(d) Flow Pattern and Erosion Changes

No change from the most recent filing.

(e) Monitoring Equipment for Control of Effluent

No change from the most recent filing.

(3) Operation Water Quality

(a) Monitoring Equipment Locations

No change from the most recent filing.

(b) Water Pollution Control Equipment and Treatment Process

No change from the most recent filing, other than refinements to the location of proposed detention on the Facility Site.

(c) Permit Issuance

No change from the most recent filing.

(d) Quantitative Flow Diagram

No change from the most recent filing.

(e) Water Conservation

No change from the most recent filing.

(D) SOLID WASTE

(1) Preconstruction

No change from the most recent filing.

(2) Construction

No change from the most recent filing.

(3) Operations

No change from the most recent filing.

(4) Licenses and Permits

No change from the most recent filing.

(E) AVIATION

(1) Surrounding Air Facilities

No change from the most recent filing.

(2) Federal Aviation Administration Filings

No change from the most recent filing.

4906-4-08 Health and Safety, Land Use, and Ecological Information

(A) HEALTH AND SAFETY

(1) Equipment Safety and Reliability

(a) Equipment Safety

No change from the most recent filing.

(b) Equipment Reliability

No change from the most recent filing.

(c) Safety Manuals

No change from the most recent filing.

(d) Restricted Public Access

No change from the most recent filing.

(e) Safety Planning

No change from the most recent filing.

(2) Impact of Air Pollution Control Equipment Failures

No change from the most recent filing, other than the elimination of duct burners, as reflected in the current air permit.

(3) Noise

No change from the most recent filing.

(4) Water

No change from the most recent filing.

(5) Geological Features

(a) Site Geology

No change from the most recent filing.

(b) Soils and Soil Suitability

No change from the most recent filing.

(c) Plans for Test Borings

No change from the most recent filing.

(6) High Winds

No change from the most recent filing.

(7) Blade Shear Impacts

No change from the most recent filing.

(8) Ice Throw Impacts

No change from the most recent filing.

(9) Shadow Flicker Impacts

No change from the most recent filing.

(10) Interference with Radio/TV Reception

No change from the most recent filing.

(11) Interference with Military/Civilian Radar Systems

No change from the most recent filing.

(12) Interference with Microwave Communication Paths

No change from the most recent filing.

(B) ECOLOGICAL RESOURCES

(1) Existing Ecological Resources

(a) Mapping

No change from the most recent filing.

(b) Literature Survey

No change from the most recent filing.

(c) *Field Survey Results*

No change from the most recent filing.

(d) *Additional Ecological Studies*

No change from the most recent filing.

(2) *Ecological Resource Impacts During Construction*

No change from the most recent filing.

(3) *Ecological Resource Impacts Post-Construction, Operation, and Maintenance*

No change from the most recent filing.

(C) *LAND USE AND COMMUNITY DEVELOPMENT*

(1) *Land Use Information and Impacts*

(a) *Mapping*

No change from the most recent filing.

(b) *Structure Locations*

No change from the most recent filing, other than the construction of a small, unoccupied warehouse structure within 250 feet subsequent to the most recent filing.

(c) *Land Use Impacts*

No change from the most recent filing.

(d) *Structures to be Removed or Relocated*

No change from the most recent filing.

(2) *Land Use Plans*

No change from the most recent filing.

(D) CULTURAL AND ARCHAEOLOGICAL RESOURCES

(1) Cultural Resource Mapping

No change from the most recent filing.

(2) Cultural Resource Impacts

No change from the most recent filing.

(3) Recreation Areas

No change from the most recent filing.

(4) Visual Impacts

No change from the most recent filing.

(E) AGRICULTURAL DISTRICTS AND POTENTIAL AGRICULTURAL IMPACTS

No change from the most recent filing.

(1) Agricultural Land Mapping

No change from the most recent filing.

(2) Potential Impact to Agricultural Lands

(a) Acreage Impacted

No change from the most recent filing.

(b) Potential Construction, Operation, and Maintenance Impacts

No change from the most recent filing.

(c) Agricultural Mitigation Practices

No change from the most recent filing.

Appendix A
Generation Interconnection
System Impact Study Report

***Generation Interconnection
System Impact Study Report***

For

***PJM Generation Interconnection Request
Queue Position AD2-005***

Nottingham 138 kV

June 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: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) 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 a generator interconnection 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 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

Harrison Power, LLC proposes to increase the MFO and Capacity of PJM Project #AC1-103, by 35.0 MW. The new MFO and Capacity are listed in Table 1 below. The proposed natural gas generating facility will be located in Cadiz, Ohio (see Figure 2). The plant will consist of two (2) 1x1 combined cycle units. The point of interconnection will be a direct connection to AEP's Nottingham 138 kV substation (see Figure 1).

Queue #	MFO (MW)	Capacity (MW)
AC1-103	1050.0	1026.0
AD2-005	35.0	35.0
Total	1085.0	1061.0

Table 1

The requested in service date is April 1, 2022.

Attachment Facilities

Point of Interconnection (Nottingham 138 kV Substation)

AD2-005 is an uprate to the AC1-103 project and will interconnect with the AEP transmission system at the Nottingham 138 kV substation.

Note: It is assumed that the 138 kV revenue metering system, gen lead and Protection & Control Equipment that will be installed for #AC1-103 will be adequate for the additional generation requested in AD2-005. A final review will be done during the construction of the AC1-103 project to determine if relay settings need to be revised for the increased generation of AD2-005.

Interconnection Customer Requirements

The cost of Harrison Power's generating plant and the costs for the line connecting the generating plant to Harrison Power's switching station are not included in this report; these are assumed to be Harrison Power's responsibility.

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 AC1-103 was evaluated as a 1026.0 MW (Capacity 1026.0 MW) injection into the Nottingham 138 kV substation in the AEP area. Project AC1-103 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AC1-103 was studied with a commercial probability of 100%. Potential network impacts were as follows:

Base Case Used

Summer Peak Analysis – 2021 Case

Contingency Descriptions

The following contingencies resulted in overloads:

None

Generator Deliverability

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

None

Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

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

(Results of the steady-state voltage studies should be inserted here)

None

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None

Stability and Reactive Power Requirement

(Results of the dynamic studies should be inserted here)

No mitigations required

Affected System Analysis & Mitigation

LGEE Impacts:

None

MISO Impacts:

None

Duke, Progress & TVA Impacts:

None

OVEC Impacts:

None

Delivery of Energy Portion of Interconnection Request

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.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

Not Applicable

New System Reinforcements

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

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)

(Summary form of Cost allocation for transmission lines and transformers will be inserted here if any)

None

Schedule

The Construction Schedule detailed in the AC1-103/AD2-005 AEP and FE ICSAs will be used for this additional 35.0 MW request.

Figure 1: Point of Interconnection (Nottingham 138 kV Substation)
Single-Line Diagram

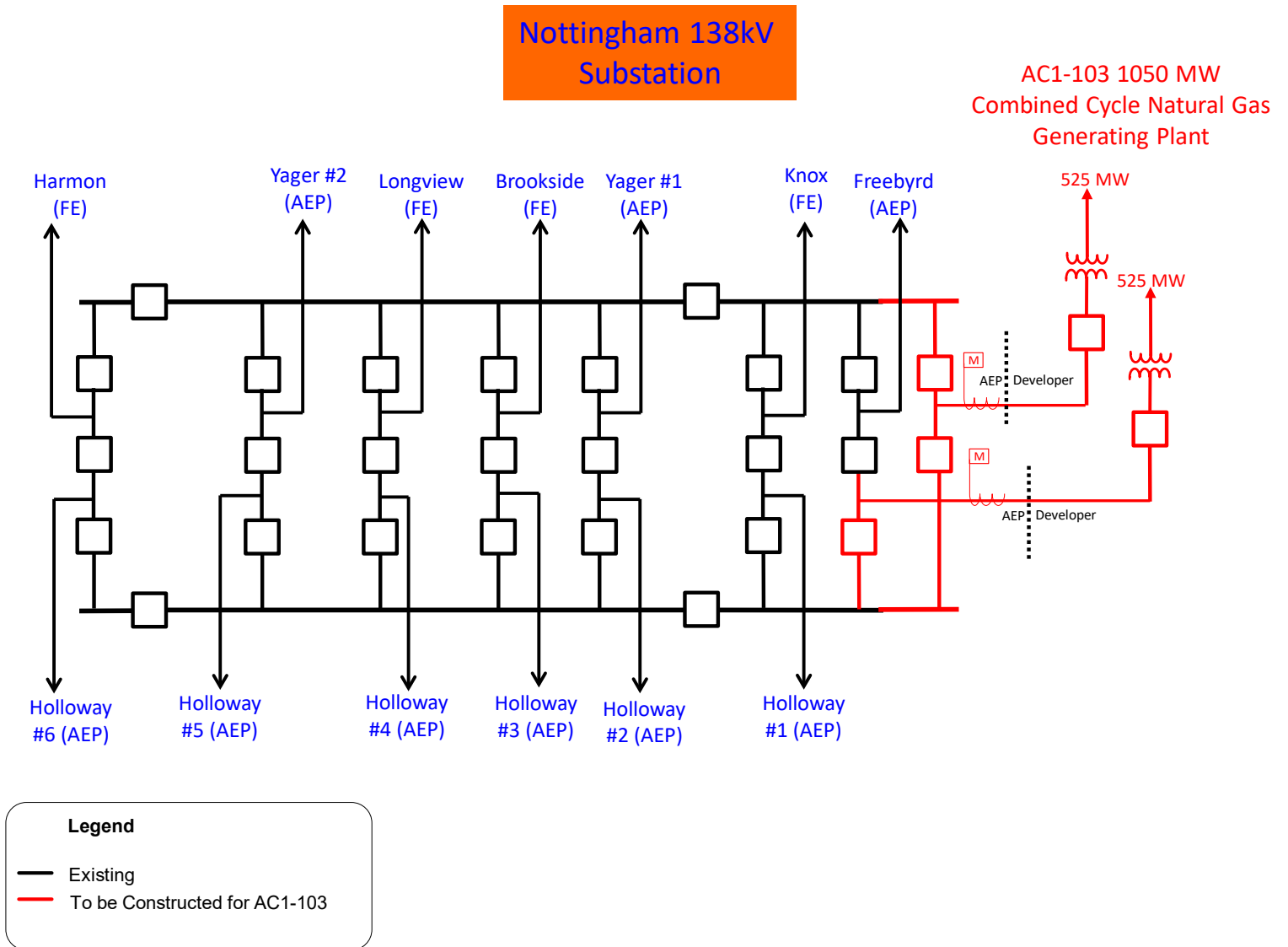
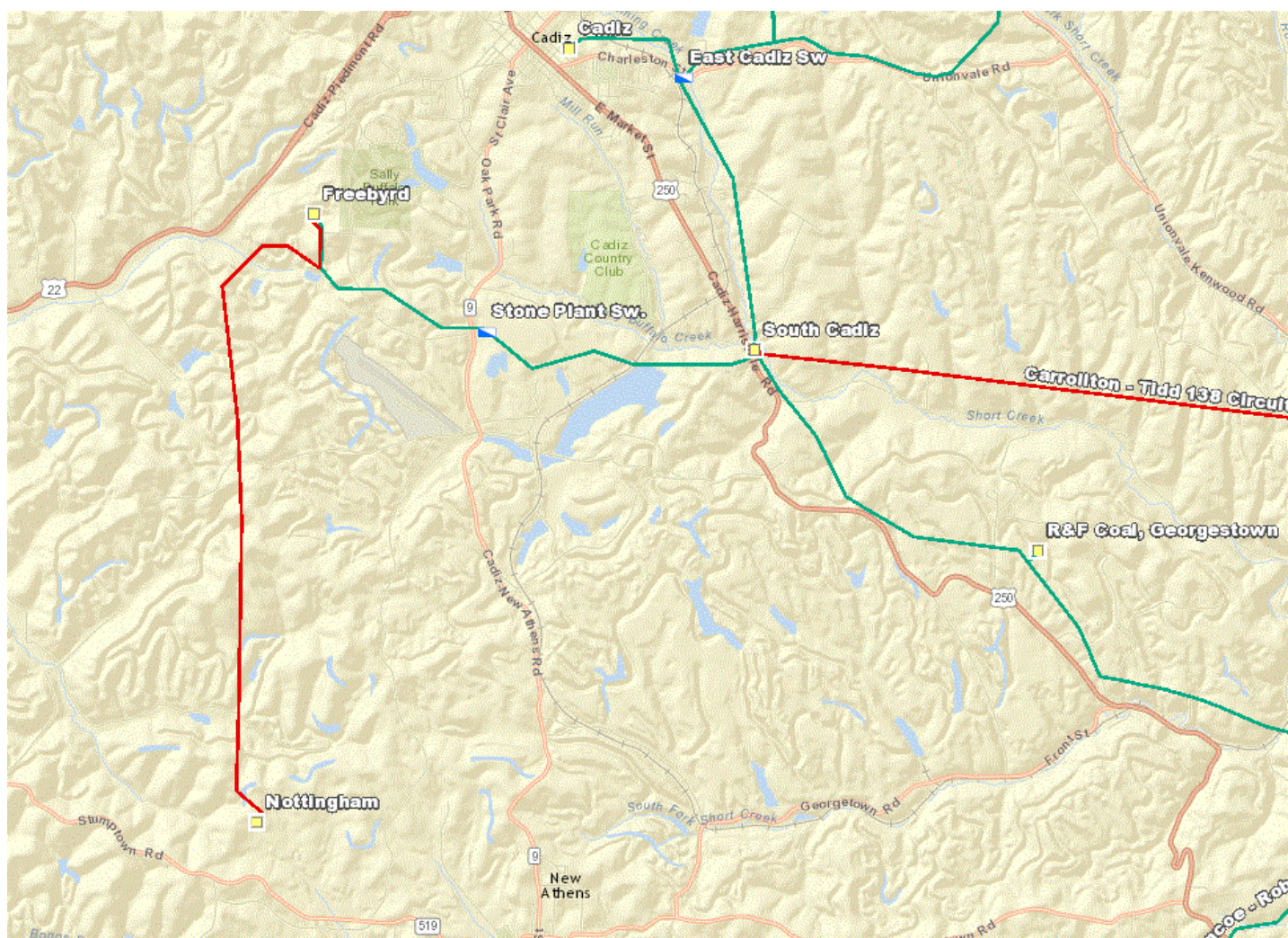


Figure 2: Point of Interconnection (Nottingham 138 kV Substation)



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Summary: Application In the Matter of the First Amendment of Harrison Power LLC to its Certificate of Environmental Capability and Public Need electronically filed by Ms. Anna Sanyal on behalf of Harrison Power LLC