STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

ENERGY FACILITY SITING BOARD

In re The Narragansett Electric Company	:	
d/b/a National Grid and Clear River Energy LLC	:	Docket No. SB-2017-01
(Burrillville Interconnection Project)	:	

Pre-Filed Testimony of

David J. Beron, P.E., P.M.P.

In Support of the Joint Application of

The Narragansett Electric Company d/b/a National Grid

and Clear River Energy LLC

August 24, 2018

EXECUTIVE SUMMARY

David J. Beron is a Principal Project Manager in the Project Management & Complex Construction Department with National Grid USA Service Company. Mr. Beron is the Project Manager for the Burrillville Interconnection Project ("Project"). Mr. Beron's testimony provides an overview of the Project, explains Project details, addresses alternatives to the Project, reviews estimated Project costs, summarizes Project construction and schedule, summarizes outreach, summarizes the advisory opinions, and responds to comments in advisory opinions.

PREFILED TESTIMONY OF DAVID J. BERON, P.E., P.M.P.

INTRODUCTION

Q. Please state your name and business address.

A. My name is David J. Beron. My business address is 40 Sylvan Road, Waltham, Massachusetts 02451.

Q. By whom are you employed and in what position?

A. I am employed by National Grid USA Service Company as a Principal Project Manager in the Project Management & Complex Construction Department.

Q. What is National Grid USA Service Company?

A. National Grid USA Service Company (the "Service Company") is a wholly owned subsidiary of National Grid USA, an energy company specialized in the transmission and distribution of electricity and natural gas. The Service Company provides administrative and technical services (such as engineering, accounting and legal services) to the other subsidiaries of National Grid USA, including The Narragansett Electric Company d/b/a National Grid ("TNEC" or the "Company").

Q. What are your responsibilities as Project Manager?

A. As Project Manager I am responsible for managing all aspects of assigned projects, including developing and gaining approval for project scope, cost estimation, project schedule, project budget and resourcing, compliance with environmental and safety standards and policies, project licensing and permitting, project communications, engineering and design, procurement, construction and commissioning of facilities.

Q. Please describe your education, training and experience.

A. I have a Bachelor of Science Degree in Civil Engineering from the University of Rhode Island and a Masters of Management Degree from Lesley University. I am a registered Professional Engineer in the State of Rhode Island, and a certified Project Management Professional. I have 30 years of professional experience in the areas of engineering, design, and project management of electric utility infrastructure projects.

Q. Have you previously testified before the Energy Facility Siting Board?

A. Yes, on numerous occasions and in various proceedings; for example, I testified on the Interstate Reliability Project ("IRP"), Rhode Island Reliability Project, L-190, E-183 and Southern Rhode Island Transmission Line Projects and on other transmission line reconductoring and relocation projects.

Q. Are you familiar with the Burrillville Interconnection Project (the "Project")?

A. Yes, I am the Project Manager for the Project and am responsible for managing the engineering, design, licensing and other aspects of the Project.

SCOPE OF TESTIMONY

Q. What is the scope of your testimony in this proceeding?

A. In my testimony, I will provide an overview of the Project, explain Project details, address alternatives to the Project, review estimated Project costs, summarize Project construction and schedule, summarize outreach, summarize the advisory opinions, and respond to comments in advisory opinions.

Q. Are you familiar with the Company's and Clear River Energy LLC's ("CRE") Energy Facility Siting Board Application dated February 2017 for the Project, including the Environmental Report ("ER")?

A. Yes, these documents were prepared under my supervision and direction.

DESCRIPTION OF PROJECT

Q. What is the purpose of the Project?

A. The sole purpose of the Project is to connect the CRE's proposed Clear River Energy Center ("CREC") to the New England electric system. ISO-New England ("ISO-NE") performed a feasibility study to explore connection options and concluded that the CREC should be connected by a dedicated 345 kV line into the existing Sherman Road Switching Station located in Burrillville, Rhode Island.

Q. Please describe the components of the Project.

A. The Project is a new 6.8 mile 345 kV transmission line to be designated as the 3052 Line. The Project is broken into three distinct segments of right-of-way ("ROW"). Segment 1 is the first 0.8 mile of the 3052 Line which will be on a new ROW on property controlled by CRE ("CREC ROW") that will run from the proposed CREC facility to the Company's existing ROW ("TNEC ROW"). The remaining two segments of the Project will be located within a 6.0 mile section of the TNEC ROW. Segment 2 is the first 1.6 miles of the TNEC ROW from the intersection with the CREC ROW east towards Clear River. This portion of the ROW is 300 feet wide. Segment 3 is the remaining 4.4 miles of the TNEC ROW from the vicinity of the Clear River to the Sherman Road Switching Station. Segment 3 is 500 feet wide. In order to make space for the new line in Segment 2, the existing 345 kV transmission lines designated as the 341 and 347 Lines will be reconfigured. The 341 Line will be shifted north onto new steel monopole structures and the existing wires and structures of the 341 Line will become the 347 Line in Segment 2.

The old 347 Line will be removed and replaced with new structures and wires for the 3052 Line in Segment 2.

Figure 1-1 "Project Overview Map" of the ER provides an overview of the Project, Figure 2-1 provides a schematic representation of the ROW segments, and Figure 2-2 (Sheets 1-13) provides Project alignment details. Figure 4-1 of the ER provides cross-sectional views of the three ROW segments.

ALTERNATIVES

Q. Please discuss the alternatives that National Grid considered in connection with the Project.

A. Several alternatives were considered and evaluated in connection with the Project, including the No-Action alternative, electrical alternatives, alternative overhead routes, and underground transmission line alternatives.

The no-action alternative was dismissed as it would not address the need to interconnect the proposed CREC to the electric system. National Grid considered two (2) electrical alternatives to the Project: connection to the existing 345 kV transmission lines, and a 115 kV alternative. The connection to one or both of the existing 341 and 347 Lines was rejected by ISO-NE because it presented unacceptable reliability issues and power transfer limitations. The 115 kV alternative was rejected because it would require 115 kV/345 kV transformation at the Sherman Road Switching Station and the additional equipment would limit the future use of the station.

There were two overhead routes considered for this Project. The proposed route is along the existing TNEC ROW. The other route was adjacent to the Algonquin Gas

Transmission Pipeline ROW ("AGT ROW"). This route has the benefit of not requiring the relocation of the existing 341 and 347 Lines to accommodate the new line. However, use of the AGT ROW route would require acquisition of new easement rights along the entire length of the AGT ROW. This option would also require clearing an approximately 150 foot wide ROW and building new access roads along the entire length of the AGT ROW located between CREC and the vicinity of the Sherman Road Switching Station. This alternative was rejected because of the potential project delays and costs from the land acquisition and the increased impacts to the natural and social environments from creating a new 6 mile corridor. These alternatives are discussed more fully in Section 5.4 of the ER.

National Grid has also evaluated alternate structure types for constructing the proposed transmission line within the existing TNEC ROW. The structure alternatives included using single-circuit monopole structures and double-circuit monopole structures. As discussed in ER Section 5.5, the proposed single-circuit H-Frame structures for the new transmission line and monopoles for the shifted 341 Line offered more advantages, created fewer impacts, and was a more cost-effective solution than any of the alternative structure types.

The Company also evaluated three underground transmission line alternative routes for the new transmission line. The underground alternatives included using the Project ROW, the AGT ROW, and public roadways. Ultimately, the public roadways alternative was selected as the most feasible of the underground routes because it presented fewer environmental and property acquisition issues. While the underground alternative met

the identified needs of the Project, it presented significant operational issues, longer restoration times, and voltage control issues that make it technically inferior to the proposed overhead route. Because of the operational issues and significantly higher costs, the underground transmission line was ultimately rejected. The underground transmission line alternatives are detailed in Section 5.6 of the ER.

ESTIMATED PROJECT COSTS

Q. What is the estimated cost of the Project?

A. National Grid has prepared conceptual grade estimates of the Project costs. Conceptual grade estimates are prepared prior to detailed engineering plans using historical cost data, data from similar projects, and other stated assumptions of the Project Engineer. The accuracy of conceptual grade estimates is expected to be -25 percent/+50 percent. Estimated costs include costs of materials, labor, and equipment. The estimated cost of the Project is $47.2 million, as shown in Table 4-2 of the ER. Clear River Energy LLC is solely responsible for all costs of the Project, including future operation and maintenance costs for the new 3052 Line.

CONSTRUCTION PRACTICES AND SCHEDULE

Q. Please explain the construction practices that will be used in constructing the Project.

A. Our construction practices and process are described in Section 4.2 of the ER. The first activities to take place will be vegetation mowing/clearing within the ROWs as necessary, and the installation of appropriate erosion and sedimentation control devices. These activities are detailed in Sections 4.2.1.1 and 4.2.1.2 of the ER. The next step in

the construction sequence is to perform access road and work pad construction and maintenance, including the construction of temporary swamp mat access roads where required. Improving the access along the ROWs, which is described in Section 4.2.1.3 of the ER, will allow construction personnel and equipment to reach work locations in a safe, efficient and environmentally sensitive manner. After access has been improved along the corridor, construction crews will begin construction of the new 341 Line in Segment 2 by installing foundations and pole structures. Following the erection of transmission pole structures, insulators will be installed on the structures. Shield wires and conductors will then be installed using stringing blocks and tensioning equipment. Once the new segment of the 341 Line is completed, the 347 Line will connect to the old 341 Line in Segment 2 and the remaining 347 Line will be removed to make room for the construction of the new 3052 Line. The construction process summarized for the 341 Line will be repeated along the length of the Project ROW for the new 3052 Line. ROW restoration efforts, including final grading and stabilization of disturbed areas, will be completed following the construction operations. Throughout the entire construction process, the Company will retain the services of an environmental monitor whose primary responsibility will be to ensure compliance with all federal, state and local permit requirements and the policies of the Service Company.

Q. What is the schedule for the Project?

A. We expect the Project construction to take between 12-18 months to complete. A high-level Project schedule is contained in Table 4-3 of the ER.

Q. Is this Project similar to the Interstate Reliability Project (IRP) that was constructed in 2015?

A. It is similar in that a component of that project was the installation of a new 345 kV transmission line within the same ROW. However, the IRP was substantially larger than this Project as it included 8.5 miles of improvements within the ROW from Sherman Road Switching Station to the Rhode Island/Connecticut border. Through our experience with IRP we are familiar with the Project area and the abutters to this Project.

OUTREACH

Q. Are you involved in the outreach planning?

A. Yes.

Q. Please summarize the outreach efforts that have been performed to date.

A. We have met with the Town Officials and several landowners and abutters whose property is located near the Project.

On February 1, 2017, I was part of a small group that met with Michael Wood, Town Manager; Joseph Raymond, Building Official; Jeffrey McCormick, Director of Public Works, and Christine Langlois, Deputy Planner to review the Project and the planned outreach for the Project.

We prepared a fact sheet that was mailed to abutters within 200 feet of the Project and to Town Officials in Burrillville in February 2017. The fact sheet was updated in November 2017 to reflect changes to the proposed timeline, and subsequently uploaded to the Project website.

Two National Grid stakeholder outreach representatives went door-to-door from February

27 to March 2, 2017 to inform Project abutters of the Project, answer any questions, drop off Project fact sheets, and provide Project contact information. The representatives left door hangers with the fact sheet at 65 residences where no one was home, and had one-on-one meetings with 24 landowners.

We held an open house at the Burrillville Middle School on March 29, 2017 where members of the Project team were available to answer questions from attendees about all aspects of the Project. Invitations were mailed to Project abutters and town officials. We also placed an announcement in the local paper, the Bargain Buyer. Approximately 45 members of the public attended the open house.

A Project website (http://www.burrillvilleinterconnection.com) was launched in February 2017 to provide the public with easy access to updated Project information. The website includes a description of the Project, map of the proposed line, project fact sheet, and FAQs. We have also setup a toll-free hotline number and Project email address that has appeared on the fact sheet, door hangers, and open house invitation.

Q. Please summarize the outreach that is planned should the Project move forward.

A. If the Project is constructed, we will maintain a comprehensive communication plan, similar to what was utilized during the construction of the IRP, to keep the Town officials and abutters apprised of the construction. These efforts include bi-weekly construction updates to the website as well as emailed notices summarizing the status of construction. Prior to the start of construction, we also plan to hold another Open House meeting in town, mail a construction-oriented Fact Sheet to abutters, and perform additional door-to-door outreach.

ADVISORY OPINIONS

Q. Have you reviewed the advisory opinions that were submitted to the EFSB in this proceeding?

A. Yes. I have reviewed all of the advisory opinions that were submitted to the EFSB. In general, the advisory opinions from the state agencies were supportive of the Project, finding that it is needed, cost justified, and will not substantially impact the natural and social environment. The advisory opinions from the Town of Burrillville were generally negative and each one noted opposition to the proposed Clear River Energy Center.

The Rhode Island Public Utilities Commission ("PUC") was directed to provide an advisory opinion as to whether the Project is needed and whether the Project could be done at the lowest reasonable cost to the consumer. The PUC concluded that "[t]here is a need for the proposed project for the specific purpose of connecting the proposed Clear River Energy Center to the electric transmission system… and the proposal represents the lowest reasonable cost to meet the need." *Public Utilities Commission Advisory Opinion,* Docket No. 4737, p. 6 (March 9, 2018). The PUC also urged the EFSB to have the applicants coordinate their construction schedules.

The Rhode Island Department of Health ("RIDOH") was tasked with issuing an advisory opinion on the potential public health concerns related to electric transmission lines. RIDOH found that the Project will increase the magnetic fields and electric fields along the edge of the ROW, but the "maximum impacts at the edge of the ROWs are considerably lower than the ICNIRP guidelines, and thus are unlikely to be associated with health impacts at or beyond the boundaries of the ROWs." *RIDOH Energy Facility Siting Board*

Advisory Opinion: Burrillville Interconnection Project, p. 8 (March 15, 2018). Ultimately, RIDOH "conclude[d] that electromagnetic fields associated with the proposed Project will have negligible or no impact on public health." Nonetheless, "out of an abundance of caution" RIDOH recommended limiting public access to the areas within the ROW.

The Rhode Island Department of Environmental Management ("RIDEM") was asked to provide an advisory opinion on the impact on fish and wildlife that will be caused by disruption of habitat and whether the Project will present an unacceptable harm to the environment. With respect to disruption of habitat, RIDEM concluded that the Project "will create further clearing of forest in an area of high conservation value." *Department of Environmental Management's Advisory Opinion to the Energy Facility Siting Board Pursuant to the Notice of Designation Issued September 15, 2017*, p.9 (March 14, 2018). With respect to whether the harm is unacceptable, RIDEM noted that "[t]he issuance of a permit indicates that DEM has determined that the nature and scope of the proposed activities are within standards for acceptable environmental impacts established by State and federal laws and regulations." *Id*. at 11. Citing a lack of standards, DEM was unable to render an opinion as to whether the unregulated activities posed an unacceptable harm. *Id.* DEM recommended that if the Project is approved, the EFSB utilize "conditions and requirements" to avoid and minimize impacts to the maximum extent practicable. *Id.*

The Burrillville Planning Board was asked to opine on whether the Project complied with the Town's Comprehensive Plan. The Planning Board opined that the Project was inconsistent with the Comprehensive Plan. The Planning Board relied on the findings in the Fitzgerald & Halladay Report dated December 2017 to support its conclusion that the

impacts from the Project are too great. Jamie Durand will respond to the Planning Board's conclusion and the Fitzgerald & Halladay Report in his testimony. However, I would note that the Planning Board issued a favorable decision for the IRP which was for similar work within the same ROW.

The Burrillville Building Inspector issued an advisory opinion regarding (i) whether the applicant's Soil Erosion and Sediment Control Plan would comply with the ordinance and (ii) whether the proposed Project would meet the requirements of other applicable Burrillville Ordinances. The Building Inspector wrote that "[u]pon cursory examination, the plan should conform to the Burrillville Erosion and Sediment Control Ordinance." *Advisory Opinion To The Energy Facility Siting Board From The Burrillville Building Inspector,* p. 4 (March 10, 2018). The Building Inspector noted that "… if this project is constructed, National Grid will utilize the same conscientious attitude they have utilized in the past, the most recent time being the IRP just mentioned." *Id*. The Building Inspector's answer to the second question regarding whether the Project would meet the requirements of other applicable Burrillville Ordinances focused on the siting of the CREC and the need to consider other alternative locations for the proposed power plant and for the Project.

The Burrillville Zoning Board of Review issued an advisory opinion regarding the request for a special use permit for exemption from construction hour restrictions and whether the proposed Project would meet the requirements of its respective zoning ordinances and whether the required dimensional variance should be granted. The Zoning Board of Review unanimously approved the special use permit for noise relief subject to the following four conditions: (1) no work undertaken on Sundays except in cases where it is

required by RIDOT or for work performed during permitted transmission line outages; (2) no tree clearing, trimming and cutting, earth removal and other such construction practices are exempt from construction hour limits; (3) certain activities that once started must be completed are allowed outside of permitting construction work hours; and (4) any work requiring outages for transmission line connection, cutovers, or wire stringing may take extra time to assure the work will not affect electric service to the local users, as well as any unforeseen activity such as an emergency.

The Zoning Board of Review voted against the requested dimensional variance finding that installing the lines underground is a viable alternative, lack of information detailing CRE's rights to the CREC ROW, and lack of information provided by Invenergy.

Q. What is your response to the PUC's suggestion that the EFSB require TNEC and CRE to coordinate construction schedules?

A. The applicants agree. National Grid and Clear River Energy are prepared to coordinate schedules to the point where clearing of the ROW, which is the first stage of physical construction within the ROW, would not begin until the following conditions have been met: CRE is in receipt of all of the permits and approvals required to complete the Clear River Energy Center; CRE is committed to completing the construction of the Clear River Energy Center; CRE issues a notice to proceed to National Grid; and, TNEC has all of the permits and approvals required to construct the Project. Work performed before this point would generally be limited to engineering and procurement of materials at CRE's sole cost.

Q. The Planning Board Advisory Opinion noted that the lack of a traffic study made it impossible to determine whether existing infrastructure could sustain the proposed

Project. Are you aware of any traffic issues that occurred during the construction of IRP?

A. No traffic issues were encountered during the construction of the IRP. As was done with the IRP, the proposed Project will utilize appropriate traffic control plans and police details as necessary to protect the public and allow for the safe and efficient construction of the Project.

Q. What is your response to the proposed conditions placed on construction work hours by the Burrillville Zoning Board of Review?

A. The plan is for construction to comply with the permitted construction noise hours for the Town of Burrillville. However, we have run into situations where work must continue to complete a concrete pour or line pulling, where the permitting authority requires work to be completed at a certain time, to work within scheduled transmission line outages, or because the project has been delayed by weather. These extended hours are not expected to be a common event. We will keep the lines of communication open with the Town and the abutters so that they are informed of the construction schedule and the activities that are being planned. Similar to IRP, the communications will be by bi-weekly emails and a website. We are not in disagreement with most of the construction hour restrictions recommended by the Zoning Board of Review but we respectfully request the EFSB to overrule the Burrillville Zoning Board of Review's recommended Sunday work limitation as the Company may need to work on an occasional Sunday to address unforeseen construction delays.

Q. What is your response to the Burrillville Zoning Board of Review negative advisory opinion for the requested relief from height restrictions?

A. The requested height relief is consistent with what was requested and approved for IRP and it is needed for the Project to comply with the requirements of the National Electrical Safety Code.

Q. Is it feasible to construct the Project in conformance with the Town's height restriction of 50 feet?

A. No. In order to meet the clearance requirements that are specified in the National Electrical Safety Code to safeguard the public, and to comply with other industry standards and design codes, it is not feasible to construct an overhead 345 kV transmission line with supporting structures that have a height of 50 feet or less. For these reasons, we ask the EFSB to overrule the Burrillville Zoning Board of Review's advisory opinion on National Grid's application for a dimensional variance for the transmission line structures.

Q. What is your response to the RIDOH's recommendation regarding limiting access to the ROW?

A. The majority of the ROW is private property on which public access is already prohibited. The Company believes RIDOH's recommendation is unnecessary in light of its conclusion that the Project will have negligible or no impact to public health. Our expert Dr. Bailey will provide a more detailed discussion of electric and magnetic fields.

Q. Does this complete your testimony?

A. Yes, it does.