

RECEIVED  
16 OCT 15 AM 3:15  
DIVISION OF P.U.C.  
MOTOR CARRIERS  
PROVIDENCE, R.I.

PETER V. LACOUTURE

One Financial Plaza, Suite 1430  
Providence, RI 02903-2485  
Direct (401) 709-3314  
Fax (401) 709-3377  
placouture@rc.com

**Via Hand Delivery**

October 14, 2016

Luly E. Massaro  
Commission Clerk  
Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

**Re: The Narragansett Electric Company d/b/a National Grid  
Aquidneck Island Reliability Project  
PUC Docket No. 4614**

Dear Luly:

I am enclosing for filing on behalf of The Narragansett Electric Company d/b/a National Grid an original and six (6) copies of National Grid's Post-Hearing Memorandum.

We are sending electronic copies to the Service List and will provide a hard copy to anyone that requests it. Please acknowledge receipt of this filing on the enclosed copy of this letter and return it with my messenger. Thank you for your cooperation.

Sincerely,

*Peter V. Lacouture*  
(lv)

Peter V. Lacouture

Enclosures

Copy to: Cynthia Wilson-Frias, Esq. (*via hand delivery*)  
PUC Docket No. 4614 Service list (*via e-mail*)

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
PUBLIC UTILITIES COMMISSION**

Issuance of Advisory Opinion to the Energy :  
Facility Siting Board Regarding :  
Narragansett Electric Company d/b/a :  
National Grid's Application to Construct : PUC Docket No. 4614  
and Alter Certain Transmission Components :  
in the Towns of Portsmouth and Middletown :  
(Aquidneck Island Reliability Project) :

**NATIONAL GRID'S POST-HEARING MEMORANDUM**

**1. INTRODUCTION**

The Narragansett Electric Company d/b/a National Grid ("National Grid" or "Company") hereby submits its Post-Hearing Memorandum to the Public Utilities Commission ("PUC") following the public hearing on the Company's Aquidneck Island Reliability Project ("AIRP" or "Project"). In sum, the evidence presented at the public hearing and contained in the record established the following:

- A. that the Project is needed for National Grid to continue to provide reliable electric service to its customers; and
- B. that the Project is cost justified as it is the lowest cost option for National Grid to upgrade the transmission system to improve the reliability of the electric service.

The Division of Public Utilities (the "Division") presented testimony in support of the Project. Neither the Town of Portsmouth nor the Town of Middletown submitted any testimony challenging the need or cost of the Project. However, the Town of Middletown did submit testimony regarding the location of the proposed new substation.

**2. TRAVEL OF THE CASE**

On December 29, 2015, National Grid submitted an application to the Rhode Island Energy Facility Siting Board ("EFSB") for approval of the Project. The Project application was docketed by the EFSB on January 28, 2016. The EFSB held a preliminary hearing on March 24,

2016. On May 2, 2016, the EFSB issued its Preliminary Decision and Order (Order No. 91, May 2, 2016), which designated certain local and state agencies, including the PUC, to submit advisory opinions to the EFSB by November 2, 2016.

As part of the PUC proceedings, National Grid filed prefiled testimony of Endrit Fiku, P.E., Carlos Perez-Perez, and David Campilii, P.E. Middletown filed prefiled testimony of Steven Cabral, Ph.D., P.E. and the Division filed prefiled testimony of Gregory L. Booth, P.E. Subsequently, National Grid filed prefiled rebuttal testimony of Endrit Fiku, Daniel McIntyre, P.E., and Susan Moberg, PWS, CFM. Middletown filed prefiled surrebuttal testimony of Steven M. Cabral on September 14, 2016. On September 20, 2016, National Grid filed an Objection to and Motion to Strike Portions of Town of Middletown's Testimony of Steven M. Cabral or in the Alternative Motion for a Postponement of the Public Hearing. Middletown filed a Response and Objection to National Grid's motion on September 22, 2016.

In addition to the prefiled testimony, National Grid also responded to two sets of data requests from the Division on July 21, 2016 and August 15, 2016. The second set of responses included a Motion for Protective Order for Critical Energy Infrastructure Information contained in the responses.

The PUC public hearing was held on September 27, 2016 where the PUC approved National Grid's Motion for Protective Order and denied National Grid's Objection to and Motion to Strike Portions of Steven Cabral's Testimony, and National Grid's Alternative Motion for a Postponement of the Public Hearing. The parties also presented the witnesses that filed prefiled testimony.

### 3. FACTS

#### A. The Project

AIRP is the transmission portion of National Grid's OnIsland Project. The OnIsland Project is a series of transmission and distribution improvements to the electrical system on Aquidneck Island. The components of the AIRP include:

- i) Rebuild and upgrade of the existing 69 kV 61 and 62 Lines as 115 kV transmission lines between Dexter Substation and Jepson Substation, approximately 4.4 miles, and an additional 0.1 mile extension of the lines over the existing substation to the new Jepson Substation;
- ii) Build a new Jepson Substation on the west side of Jepson Lane;
- iii) Reconfigure Dexter Substation to accommodate the 115 kV upgrade; and
- iv) Relocate the 63 Line to connect to the new Jepson Substation.

The components of the Project are described in greater detail in Section 4 of the Company's Environmental Report which was admitted as National Grid Exhibit-6 (hereinafter "ER"). Maps showing the Project Area are found in Volume 2, Figure 2-2 of the ER.

#### B. Witnesses and Testimony

Mr. Fiku is the National Grid Project Manager for the AIRP and is a Lead Project Manager in the Complex Project Management Department at National Grid. His testimony included an overview of the Project components, the construction schedule, and the estimated Project cost. Testimony of Endrit Fiku, P.E. Page 3, Lines 8 – Page 6 Line 5.<sup>1</sup> Mr. Fiku testified that the Project includes the reuse of the existing right of way. Id. 4:15-21. The transmission line upgrades include replacing the existing wood structures which range from approximately 45 to 65 feet tall with single pole weathering steel structures that will be approximately 86 to 96 feet tall. ER, p. 4-2. This additional structure height is required to achieve code required clearances for the upgraded lines. ER, Section 4.4.

---

<sup>1</sup> Prefiled witness testimony will be cited by name, type of testimony if the witness filed more than one set, and page and line number(s) in the following manner "Fiku Direct, 3:8 – 6:5."

Mr. Perez-Perez, a Managing Engineer in National Grid's Transmission Planning Department, testified about the need for the Project. He explained that based on contingency analysis that used the projected electric load for 2022, a single contingency event could result in overloads at the Dexter Substation, on the 61 and 62 Lines, and at Jepson Substation, which could result in having to shed load on Aquidneck Island. Perez-Perez Direct, 5:13-20; ER, p. 3-5. Based on these studies, the existing facilities on Aquidneck Island were deemed inadequate to meet National Grid, NERC, NPCC, and ISO-NE reliability standards and criteria for the projected load and generation in the area. Perez-Perez Direct, 5:13-20. In addition, National Grid asset condition studies dating back to 2005 have recommended the upgrade and replacement of the equipment at Jepson Substation as it is aging and/or obsolete. ER Section 3.3.2.

Mr. Campilii, a Consulting Engineer in National Grid's Transmission Asset Management Department, testified about the underground alternative to rebuilding and upgrading the existing 61 and 62 Lines overhead, and the operational and maintenance challenges presented by installing underground lines. Transcript of PUC Hearing September 27, 2016 ("TR"), 81:6 – 82:20. In addition, Mr. Campilii testified that the estimated cost to install two underground lines is more than double the cost of the proposed rebuilding and upgrading of the 61 and 62 Lines overhead. TR, 81:12 – 82:2.

Mr. McIntyre's and Ms. Moberg's testimony focused on the proposed new Jepson Substation. Mr. McIntyre is a Principal Engineer in National Grid's Civil/Structural Engineering Department. He testified that it is necessary to maintain the existing substation in service during construction. TR, 89:4-6. His testimony included a review of the alternative sites that were considered, including the reuse of the front (western) portion of the existing substation parcel.

TR, 90:13 – 92:3. As noted in responses to questions from PUC’s Counsel, Cynthia Wilson-Frias, only a limited portion of the existing fenced in area could be used for the new substation equipment, as the equipment in the existing substation has to remain in service until the new substation is in service. TR, 100:16 – 101:9. As summarized in ER Section 5.4.1 and in Mr. McIntyre’s testimony, ultimately the reuse of the existing property was determined to be infeasible due to the limited space available on the existing substation parcel, the complex construction sequence necessary to work around the existing substation, multiple temporary line relocations outside the property limits, outage schedules, the visual impacts on Jepson Lane, the limited setback to the southern abutter, potential safety risks to TNEC employees, and the site is located next to a water supply reservoir. TR, 89:6-24.

Ms. Moberg, the Director of Energy and Environmental Services with Vanasse Hangen Brustlin, Inc., testified that the stormwater provisions identified by Middletown’s witness were not site specific but were design specific, and would therefore be applicable to any site. TR, 120:16-18.

Other witnesses included Gregory L. Booth from PowerServices, Inc. on behalf of the Division and Steven J. Cabral from Crossman Engineering on behalf of Middletown.

#### 4. ANALYSIS AND DISCUSSION

The EFSB has requested that the PUC “render an advisory opinion as to (i) the need for the proposed [Project] and (ii) whether it is cost justified.” EFSB Order No. 91, p. 14.

- A. Whether the Project is needed to maintain the reliability of the transmission system in the area and region to be served?

The need for the Project is addressed in Section 3 and in Appendix A of the ER. In addition, both Carlos Perez-Perez and Gregory L. Booth provided testimony regarding Project need. Perez-Perez Direct, 5:13-20; Booth Direct, 22:6-23; TR, 165:2-22. From their testimony

it is clear that the proposed upgrades are necessary for National Grid to continue to provide reliable electric service to its customers on Aquidneck Island. Upgrading the lines to 115 kV resolves the identified transmission system reliability needs and provides a long term solution to load growth on Aquidneck Island by increasing the load carrying capacity of the transmission system. TR, 59:22 – 60:2. A new 115 kV substation is required for the upgraded lines and resolves previously identified asset condition needs. TR, 66:3-21, 179:13-180:1. Thus, the proposed upgrade and rebuild of the existing lines and the new Jepson Substation are needed.

Neither Portsmouth nor Middletown provided any testimony challenging the need for the Project. Mr. Booth testified that the Project's "transmission option and their substation option are the most cost effective, both short-term cost and long-term cost." TR, 182:7-9.

B. (1) Whether the Project will provide a reliable transmission system at the lowest cost to the consumer? (2) Whether the proposed Project is the most economical alternative?

i) 61 and 62 Lines

Section 5 of the ER contains a detailed analysis of the transmission alternatives considered for the Project. The alternatives included both planning alternatives and route alternatives to the proposed upgrade and rebuild of the existing lines. The planning alternatives include the no build alternative, the non-wires alternative, the 69 kV alternative, and the rebuild and upgrade of the 61 and 62 Lines as 115 kV Lines (preferred option). The no build alternative would not address the identified transmission system needs and was rejected as it is not an acceptable means to maintain a firm and reliable electric supply to Aquidneck Island. ER Section 5.2.1. Mr. Perez-Perez testified that non-wire alternatives, such as battery storage, distributed generation, and energy efficiency, were not feasible due to the amount of load that needs to be reduced and, as noted in the ER, because the need for the new substation is driven by asset conditions and possible thermal overloads at the Jepson 69 kV ring bus which cannot be

addressed through load reductions. TR, 55:17 –56:7; ER, Section 5.2.4. The 69 kV option was rejected for two reasons. First, it does not provide adequate load growth capability on Aquidneck Island. TR, 58:18 – 61:1. Second, the 69 kV option would cost approximately one million dollars more than the preferred option due to the extra transformation required at Dexter Substation. TR, 67:16 – 68:9. As for route alternatives, installing an overhead line through the existing ROW (i) avoided the challenges of routing the overhead lines along East Main Road or West Main Road and (ii) was more than fifty percent less expensive than the least expensive underground route.<sup>2</sup>

Mr. Perez-Perez's conclusions were confirmed by Mr. Booth. Mr. Booth testified that he found:

“the Company's proposed routes and design for the 61 and 62 Line upgrades and the 63 Line relocation to be acceptable. Based on the Company's cost evaluation and my independent estimates provided in Exhibit GLB-2, I find underground alternatives unacceptable due to higher costs and greater environmental impact, particularly if the existing route is utilized.”

Booth Direct, 13:1-5.

ii) Jepson Substation

Having established that rebuilding the existing 61 and 62 Lines as 115 kV lines is the preferred solution, a new substation is required because the existing control house has insufficient space to accommodate required equipment upgrades for new equipment and the asset conditions of the existing substation warrant a new substation. ER, Sections 2.3 and 3.3.2. Mr. McIntyre's testimony included a summary of the alternative locations that were considered for the new substation including the proposed location on the west side of Jepson Lane (preferred option), use of the western portion of the proposed parcel, purchase of agricultural lots that are subject to development restrictions governed by the Farmland Preservation Act, and reuse of the

---

<sup>2</sup> Mr. Booth testified that an installation of an underground system with redundancy would be even more expensive as it would require the installation of 1-2 additional lines. TR, 156:15 – 158:10.



existing substation parcel. TR, 90:13 – 92:3. The preferred option has the least overall impact and is the lowest cost alternative. TR, 104:1-17; McIntyre Rebuttal, Attachment DM-2, Attachment 1F. As noted in Section 5.4.4 of the ER, the use of the western portion of the proposed parcel was rejected due to environmental impacts of crossing the Mother of Hope Brook and the potential visual impact on the neighboring subdivisions. The use of the parcels subject to the development restrictions, referred to as Lots 22 and 26 in the ER, was rejected as the removal of the restrictions through eminent domain requires a demonstration of “extreme need” and the “lack of any viable alternative.” ER, Section 5.4.5. Finally, as explained in more detail in §3.B (page 5) above, the reuse of the existing parcel was rejected because of size constraints, impacts to transmission and distribution lines, construction duration and cost, and limited setbacks to Jepson Lane and abutters. TR, 88:23 – 89:24.

Mr. Booth agreed with the alternative analysis:

... I would absolutely recommend the proposed site. It allows you to build a station without adversely impacting existing facilities. You can bring that station on line, energize it, and start energizing circuits and transferring load and you can do all of that efficiently, effectively, without loss of load being caused by the project itself. It can be done faster, so it's just a cleaner option.

TR, 181:11-18; see also TR, 182:7-9. Mr. Booth explained that constructing a new substation on the existing parcel would be challenging because of construction constraints and the risk of substantial outage interruption to the customers in the area. TR, 168:21 – 169:3. These challenges are in addition to the visual impacts such as substation structures that are approximately 40 feet taller than those in the proposed new substation (approximate total height of 100-110 feet), and limited setbacks to the southern abutter and Jepson Lane. TR, 93:9-20, 114:11-24; McIntyre Rebuttal, Attachment DM-2, Attachment 1F. Mr. Booth explained that based on his estimate, the reuse of the existing substation parcel was two million dollars more

than the preferred option and he noted that his estimate does not include the costs for transmission rearrangements and site preparation. Booth Direct, 16:20 – 17:4. In addition, Mr. McIntyre testified that additional analysis would be required to determine if it is even possible to build a new substation on the existing parcel. TR, 96:17 – 97:9.

Mr. Cabral's testimony did not address the need for the new substation or whether the preferred option is the most economical solution, so his testimony was not relevant to the issue before the PUC. Instead, Mr. Cabral testified that additional analysis on the reuse of the existing parcel should be performed as it may be a viable option. His opinion on viability is limited to deficiencies he noted in the stormwater plans that are part of the Company's pending application before the Middletown Planning Board and the future application to Rhode Island Department of Environmental Management ("RIDEM"). TR, 18:24 – 19:1, 136:14-21. Mr. Cabral never opined that the potential stormwater impacts of the preferred option were insurmountable nor did he address the economics of these impacts. Ms. Moberg noted that Mr. Cabral's comments regarding the RIDEM permits were not site specific to the proposed site and would apply to any location. TR, 120:16-18. Without a connection to the need or economics of the preferred option, Mr. Cabral's stormwater comments are not relevant to the advisory opinion requested by the EFSB.

Mr. Cabral also asserted that the preferred option may not be viable as the Town has the ability to force RIDEM to deny a Freshwater Wetlands application pursuant to Rule 10.04(D)(3) of the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act. Cabral Surrebuttal, 4:120-129. During the hearing, the PUC took Administrative Notice of the 2015 and 2016 amendments to the Freshwater Wetlands Act. The 2015 Amendment, enacted July 10, 2015, deleted the provision of R.I. Gen Laws §2-1-21(a) that

required RIDEM to deny an application that is rejected by a Town. The 2016 Amendment, enacted July 2, 2016, provided RIDEM with an additional six months, for a total of 18 months, from the effective date of the 2015 amendment, to promulgate new regulations. The delay in promulgating new regulations does not affect the General Assembly's decision to eliminate the municipal veto power from the Freshwater Wetlands Act as the 2015 Amendment to R.I. Gen Laws §2-1-21(a) became effective upon enactment.<sup>3</sup>

Based on the testimony provided by all of the witnesses, further analysis of the reuse of the existing substation location is not warranted as this alternative (a) presents far greater impacts to the area than the proposed site and (b) is not the most cost effective solution. Mr. McIntyre testified that additional analysis would be required to determine if the construction of a new substation on the existing substation parcel is even possible. TR, 96:17-19. However, performing additional analysis to determine construction feasibility would add nothing to the need and cost analysis as the parties have acknowledged that the new substation is needed and the testimony from Mr. McIntyre and Mr. Booth confirms that the preferred option is more economical than the reuse of the existing substation site. TR, 104:1-17. In short, further analysis of the reuse of the existing parcel is not necessary because of its established higher cost, construction challenges, and greater visual impacts from the taller structures and limited property line setbacks.

In conclusion, the testimony confirms that the proposed new Jepson Substation is needed for National Grid to continue to provide reliable electric service to the Aquidneck Island area and it is the most economical alternative.

---

<sup>3</sup> See Iselin v. Ret. Bd. of the Emples. Ret. Sys., 943 A.2d 1045, 1050 (R.I. 2008) "An administrative agency is a product of the legislation that creates it, and it follows that '[a]gency action is only valid, therefore, when the agency acts within the parameters of the statutes that define [its] powers.'" quoting In re Advisory Opinion to the Governor, 627 A.2d 1246, 1248 (R.I. 1993); see also F. Ronci Co. v. Narragansett Bay Water Quality Management District Commission, 561 A.2d 874, 879 (R.I. 1989).

5. CONCLUSION

For the reasons summarized above, the proposed upgrade and rebuild of the 61 and 62 Lines as 115 kV Lines and the proposed new substation on the west side of Jepson Lane are the most cost effective alternatives to address the identified need. As summarized above, the upgraded lines are required for load growth and to resolve potential overloads under contingency conditions. The new substation is required for the new lines and to replace the existing aging substation. The stormwater and wetland comments made by Mr. Cabral are not relevant to the PUC's advisory opinion as they do not relate to need or cost, nor do the comments establish that the proposed new substation is not a viable option. For the reasons discussed herein, the PUC should issue an advisory opinion finding that the Project is needed and cost justified.

Dated: October 14, 2016

Respectfully submitted,

The Narragansett Electric Company  
d/b/a National Grid

By its Attorneys,

ROBINSON & COLE LLP

*Peter V. Lacouture (evr)*

*George W. Watson, III*

Peter V. Lacouture  
George W. Watson, III  
One Financial Plaza, Suite 1430  
Providence, RI 02903  
401-709-3314

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of National Grid's Post Hearing Memorandum was delivered to the Service List associated with the Docket via electronic mail this October 14, 2016.

Brenda L. Vucci