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

July 21, 2016

RE: PUC Docket No. 4614 - PUC Advisory Opinion Regarding Need of The Narragansett Electric Co. d/b/a National Grid to Construct and Alter Certain Transmission Components in the Towns of Portsmouth and Middletown (Aquidneck Island Reliability Project)

Dear Ms. Massaro,

Enclosed please find for filing the Pre-filed Direct Testimony of Steven Cabral on behalf of the Town of Middletown in the above-referenced docket. Five copies of the testimony are being sent to you via regular mail.

The Town of Middletown will be effecting service upon all parties in the service list via electronic mail.

Thank you for your assistance in this regard.

Sincerely,

Marisa A. Desautel
ec: Service List for Docket No. 4614

BEFORE THE
STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

Re: PUC Docket No. 4614 - PUC Advisory Opinion Regarding Need of The Narragansett Electric Co. d/b/a National Grid to Construct and Alter Certain Transmission Components in the Towns of Portsmouth and Middletown (Aquidneck Island Reliability Project)

DIRECT TESTIMONY
OF
STEVEN M. CABRAL

SUBMITTED ON BEHALF OF
THE TOWN OF MIDDLETOWN

JULY 22, 2016

INTRODUCTION

The Narragansett Electric Company, d/b/a National Grid, filed an application to construct and alter certain of its transmission components in Portsmouth and Middletown, RI, with the Energy Facility Siting Board ("EFSB") on December 29, 2015. The Public Utilities Commission was then designated by the EFSB to render an advisory opinion on that application, which resulted in PUC Docket No. 4614 being opened. The Town of Middletown intervened in Docket No. 4614 and hereby provides direct testimony in support of its position in this docket.

QUALIFICATIONS

Q. Please state your name and business address.

A. Steven M. Cabral, 151 Centerville Road, Warwick, RI 02886.

Q. On whose behalf are you providing this testimony?

A. The Town of Middletown, RI.

Q. By whom are you employed and what is your position?

A. I am employed by Crossman Engineering; I serve as its President.

Q. What are your responsibilities as Crossman Engineering's President?

A. I provide quality control for all projects in the office. I also act as project manager on various transportation and environmental engineering projects, as well as residential, commercial, and municipal projects.

Q. Please describe your education, training, and experience.

A. I have a Bachelor of Science, Master of Science, and PhD in Civil and Environmental Engineering from the University of Rhode Island. I am a Registered Professional Engineer in the states of Rhode Island, Massachusetts, Connecticut, and New Hampshire. I am also a Rhode Island Department of Environmental Management ("RIDEM") Licensed Class III Designer for On-Site Wastewater Treatment Systems.

I am a member of the American Society of Civil Engineers, the National Society of Professional Engineers, the Rhode Island Society of Environmental Professionals, and the Rhode Island Consulting Engineers.

I have thirty-five years of diversified experience in civil, transportation and environmental engineering. Among the many projects I participated in, I have served as a Consultant on an "on-call" basis, and performed independent Development Plan Review services for numerous communities and entities, including Richmond, Exeter, Coventry, Hopkinton, and Barrington, various housing authorities and the RI Department of Transportation.

My past experiences have included engineering design and evaluations on the Civic Center Interchange Project, the Capital Center Project, the Route 6/10 Interchange Project, Ponaganset Middle School Project, Highland Corporate Park, Burrillville Industrial Park and over 1000 infrastructure projects, including utility, roadway and drainage systems. I was also previously employed by the RIDEM for the Freshwater Wetland Program and was responsible for evaluating projects' impacts on freshwater wetland systems.

Q. Have you provided expert testimony previously?

A. Yes, in my capacity as a civil and environmental engineer on behalf of the State of Rhode Island, municipalities and private parties in various courts in Rhode Island.

UNDERSTANDING OF THE PROJECT AND PURPOSE OF TESTIMONY

Q. Are you familiar with National Grid's Aquidneck Island Reliability Project (the "Project")?

A. Yes.

Q. What is your understanding of the Project?

A. According to the documents filed with the EFSB and in this docket, the Project is an infrastructure project being undertaken by National Grid to upgrade several major components of the electrical distribution and transmission system on Aquidneck Island. The Project includes the proposed relocation of the existing Jepson Substation from the easterly side to the westerly side of Jepson Lane. The new site is an 18.77 acre parcel which currently contains part of the existing overhead electric transmission line. A significant portion of the parcel is regulated wetlands and woodlands. The proposed Substation will be built on the easternmost five (5) acre portion of the parcel, immediately adjacent to Jepson Lane and three (3) residential dwellings.

Within this five (5) acre area substation site, significant topographic and landscape changes are planned. Greater than 90% of all wooded areas will be removed and portions of the site will be raised by up to fifteen (15) feet to create a level plateau for the substation construction. The proposed grade changes and fill result in the need for a 440 foot long retaining wall along the western edge of the planned substation. Portions of the wall are within a RIDEM regulated perimeter wetland. The Project plans also depict a twenty (20) foot tall Sound Wall to extend above the fill along the site's southern border. No details of the twenty (20) foot tall Sound Wall were contained in the Project documents.

Q. What is the purpose of your testimony?

A. To outline my civil engineering assessment and visual assessment of the Jepson Substation relocation, and to present my conclusions regarding the application and supporting materials filed with the EFSB and pre-filed testimony of National Grid in Docket No. 4614, on behalf of the Town of Middletown.

Q. What conclusions did you reach?

A. That National Grid failed to demonstrate the need for the Jepson Substation relocation, that National Grid failed to adequately consider alternatives to its proposal, and that the application is technically deficient in several areas.

PROJECT NEED IS NOT SHOWN

Q. What are your conclusions with respect to the need for the Project?

A. My conclusion is that National Grid has not demonstrated why the Jepson Substation relocation is necessary.

The EFSB's Environmental Report, Aquidneck Island Reliability Project, dated December 2015, Revised March 17, 2016, states that National Grid has reviewed the physical condition of the Jepson Substation three (3) times within the past decade and each study recommended upgrading and/or replacing specific equipment and components.

The three (3) studies also conclude, and the EFSB's Environmental Report states, that it is possible to operate and maintain the existing substation in its current location (Section 3.3.2, page 3-7). In contrast, testimony by Endrit Fiku (page 5, line 4) states that reuse of the existing Jepson Substation property was rejected due to size constraints which make it impossible to build the substation in the open space between the existing substation and Jepson Lane. The testimony mentions the existing open space land between Jepson Lane and the existing substation but does not mention the potential to also re-use the significant land within the confines of the existing substation.

Therefore, the viability of keeping the substation on the easterly side of Jepson Lane should be further evaluated by an independent electrical engineer.

ALTERNATIVES WERE NOT ADEQUATELY CONSIDERED

Q. What are your conclusions with respect to whether National Grid considered alternatives to the Jepson Substation relocation?

A. National Grid did not adequately consider other alternatives, as the documents provided do not appear to provide a true alternative construction scheme for using the existing Substation site, impacts and its cost.

Construction of the proposed relocated Jepson Substation will impact natural woodlands, alter stormwater flow, result in wetland filling and create significant visual impacts to adjacent homes and the public way. The relocated Substation also requires the relocation of an existing transmission line which will require removal of approximately thirteen thousand five hundred (13,500) square feet of woodland immediately adjacent to a single family home on the north side of the facility's site.

Q. Do there appear to be alternate sites that will have less impact on the environment and residential homes on Jepson Lane in Middletown?

A. Yes. The stormwater, wetland, environmental, woodland clearing and visual impacts can be significantly reduced or avoided with reconstruction of the facility at the existing substation location and immediately north or west of the substation. These areas contain no natural woodland or wetlands and are set back further from Jepson Lane than the proposed site, which is limited due to natural wetlands.

Q. Do you know why that alternative was not considered?

A. Again, the documents provided by National Grid do not appear to provide a true alternative construction scheme for using the existing Substation site, impacts and its cost.

The conclusion of past studies that state that the substation can by operated and maintained in the existing location contradicts the brief narrative that states that rebuilding the Substation at the existing Substation site is not a viable option. The Needs Assessment Results Summary of the Newport Area (Aquidneck Island) Transmission Study Report, Section 2.1, incorrectly states that the existing Jepson Substation (east side of Jepson Lane) is within the 100-year flood plain and that the flood plain creates reliability concerns. In contrast, the most recent FEMA Flood Maps do not depict the existing Jepson Substation within the 100-year flood plain. The existing site does border a 100 year flood plain and Sisson Pond and is within a Watershed Protection Zone, but common construction measures can mitigate potential impacts, which are mainly associated with stormwater runoff and spill prevention.

Q. Are there wetlands concerns associated with the Jepson Substation relocation?

A. Yes. A significant portion of the parcel is regulated wetlands and woodlands.

Q. How will the Jepson Substation relocation affect those areas?

A. The eastern portion of new Jepson Substation is bordered by a RIDEM regulated freshwater wetland and a regulatory 50-foot perimeter wetland. The Energy Siting Board Environmental Report, page 8-8, states that the Jepson Substation will require one hundred and two (102) square feet of wetland filling, and ten thousand seven hundred and forty five (10,745) square feet of filling within the RIDEM regulated 50-foot Perimeter Wetland. The Site Plans also indicate that approximately four thousand nine hundred (4,900) square feet of wetland will be cleared of tree cover to allow for the temporary line relocation around the new substation site. All direct wetland impacts can be avoided if the new substation was built on the easterly side of Jepson Lane.

DEFICIENCIES IN THE APPLICATION AND SUPPORTING MATERIALS

Q. What are your conclusions with respect to the technical information contained in the application?

A. National Grid's application and supporting materials contain many deficiencies that should be addressed.

Q. What deficiencies did you find?

A. Regarding the noise analysis provided by National Grid, the Jepson Substation Impact Analysis provides a general statement that the sound generated from the proposed transformers will range up to 48 dBA. Since the projected noise level of 48 dBA is close to the 50 dBA allowed by the Town of Middletown's ordinances, it would be reasonable to request actual sound data from a comparable transformer as verification.

Q. Did you review the Project's stormwater management details and plans?

A. Yes. Section 8.3.2 (Hydrology) of the EFSB Environmental Report states that the Project has been designed to mitigate increases in peak runoff rates and provide for water quality treatment consistent with the Rhode Island Stormwater Design and Installation Standards Manual, but a review of the project's Stormwater Plan resulted in numerous technical concerns which contradict that conclusion.

Q. What are these technical concerns?

A. The report implies conformance to the requirements of the RI Stormwater Design and Installation Standards Manual, but numerous design elements do not conform to the stormwater standards. The infiltration basin design is based upon an assumed groundwater depth of nine (9) feet to thirty (30) feet below the ground surface. These depths are estimated from numerous soil borings and test pits. The presence of wetlands is a good indication that the seasonal high water table is not nine (9) to thirty (30) feet deep. The data provided in the Stormwater Report is suitable for structural design, but is not suitable for establishing the seasonal high water table or infiltration rate.

A Class IV Soil Evaluator or Licensed Engineer must determine the seasonal high water table in accordance with RIDEM guidelines. No data in accordance with RIDEM guidelines was included in the analysis.

Also, the use of different methods to compute the time of concentration, which is a critical component when estimating peak runoff rates, under existing and future conditions does not provide a representative peak flow impact analysis. The use of certain ground cover characteristics in the analysis also do not appear to reflect actual conditions and raises concerns for the stormwater analysis results. To mitigate the increased runoff, an infiltration area is proposed, but there are numerous technical issues that need to be addressed with the proposed design.

Q. What are the technical issues with the infiltration area?

A. For example, the Details in the Plan set do not coincide with the design that is modeled in the hydrologic report. The level infiltration system modeled in the hydrologic report differs from the Plans. The grading of the proposed paved areas will promote bypassing of the infiltration system and create the potential direct, untreated discharge into wetlands. The use of an infiltration system requires pretreatment of inflow. No pretreatment appears to be provided. Also, portions of the infiltration system are approximately eleven to twelve (11 – 12) feet above existing ground, yet RIDEM standards do not allow non-residential infiltration systems to be placed in fill.

Q. Are there any other concerns associated with stormwater management in the Jepson Substation relocation?

A. The required 25% pretreatment is not provided; excess discharge will flow uncontrolled over the 15-foot-tall retaining wall; the impact of the wall's numerous weep holes on system discharge should be addressed; test wells are not depicted but are required for long term monitoring; sieve standards of the proposed structural gravel to be used in the storage system is required, in addition to construction compaction requirements. Compaction rates will impact the void rate.

Q. Were there any other deficiencies contained in the application?

A. Yes. The Plans and Details indicate that the rear portion of the land will be elevated by approximately sixteen (16) feet and the towers will reach an additional sixty (60) feet, for a total height above existing ground of seventy six (76) feet. In addition to the Towers, the Plans depict a 20-foot-high Sound Wall along the southern side, but no details or images of the wall are provided.

Q. Is this Sound Wall depicted anywhere in the plans for the Project?

A. None of the future condition illustrations depict the proposed twenty foot (20') high sound wall.

Q. Does the wetlands filling conform to local regulations?

A. Section 518.E states that the Planning Board shall ensure to the maximum extent practicable that naturally vegetated wetland buffers, in general, shall be no less than one hundred (100) feet. The proposed relocation of the Substation to the west side of Jepson Lane will result in the complete removal of an existing one hundred (100) foot wooded buffer and the removal of wooded areas within a regulated wetland. Based upon the extent of land clearing and visual impacts, the proposed option does not conform to the requirements and intent of Section 518. The use of land on the east side of Jepson Lane would not require extensive woodland clearing.

CONCLUSION

Q. Do you have a conclusion regarding the overall impact of the Project?

A. Yes. The Jepson Substation relocation presents a significant visual impact to the roadside character of Jepson Lane. The existing Electric Substation on the east side of Jepson Lane is set back approximately two hundred and thirty (230) feet away from Jepson Lane. This horizontal offset provides an opportunity to create a buffer that enhances the rural character of the roadway, but the proposed Substation relocation reduces the available buffer area by approximately two hundred (200) feet. The result is a drastic visual alteration, as evident in the application images.

In addition to visual impacts, the substation, as designed, will not mitigate the stormwater impacts created by the land alterations. As presented, the project has the potential to increase peak flow rates and runoff volumes and impact water quality. The proposal also permanently alters natural wetland and wetland buffer areas when alternatives (reconstructing Substation on east side of Jepson) may be viable.

Based on these facts, National Grid should be required to prove the need for the Jepson Substation relocation, as well as demonstrate an adequate analysis of alternatives.

Q. Does this conclude your testimony?

A. Yes, it does.