The Narragansett Electric Company

d/b/a National Grid (Rhode Island Reliability Project)

RIPUC Dkt. No. 4029

Testimony of

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

February 20, 2009

INTRODUCTION

Q. Please state your name and business address.

A. My name is David J. Beron. My business address is 25 Research Drive, Westborough, Massachusetts 01582.

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

A. I am employed by National Grid USA Service Company as a Lead Project Manager in the Transmission Project Management 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 ("National Grid" 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 21 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 Public Utilities Commission or the Energy Facility Siting Board?

A. Yes, on numerous occasions and in various proceedings; for example, I testified before the PUC on the L-190, E-183 and Southern Rhode Island Transmission Line Projects and before the EFSB in those and numerous other transmission line reconductoring and relocation projects.

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

A. Yes, I am the Project Manager for the Rhode Island Reliability 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 including Project cost, and address alternatives to the Project.

Q. Are you familiar with Narragansett's Energy Facility Siting Board Application dated September, 2008 for the Project, including the Environmental Report ("ER") prepared by Vanasse Hangen Brustlin, Inc. (VHB) and the Visibility and Visual Impact Assessment

prepared by Environmental Design & Research, P.C. (EDR)?

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

DESCRIPTION OF PROJECT

Q. Please describe the components of the Rhode Island Reliability Project?

A. The Rhode Island Reliability Project is a project which will expand and reinforce the existing transmission system in Rhode Island. National Grid proposes to construct a new 345 kV transmission line, and relocate 2 existing 115 kV transmission lines on an existing 21.4 mile right-of-way ("ROW") which extends from the West Farnum Substation in North Smithfield to the Kent County Substation in Warwick.

The Project will establish a second 345 kV transmission supply line to National Grid's existing Kent County Substation. In order to accomplish this, it is necessary to relocate the existing 115 kV transmission lines on the ROW and relocate short segments of other 115 kV transmission lines. To accept the new 345 kV transmission line, the existing West Farnum and Kent County Substations will be expanded and modified.

The individual components of the Project which are listed in Table 4.1 and described in more detail in section 4.3 of the ER include the following:

- Two existing 115 kV transmission lines (S-171 and T-172) in National Grid's existing ROW between West Farnum Substation in North Smithfield and the vicinity of the Kent County Substation in Warwick will be relocated and reconstructed (a distance of approximately 20.0 miles for each line).
- A new 345 kV transmission line (359 Line) will be constructed between the West Farnum Substation and the Kent County Substation in the space on the existing ROW created by relocation of the two existing 115 kV transmission lines (a distance of approximately 21.4 miles).
- Equipment will be installed at Kent County Substation in Warwick to accommodate the new 345 kV transmission line.

- Equipment will be installed at West Farnum Substation in North Smithfield to accommodate the new 345 kV transmission line.
- Sections of the existing S-171 and T-172 115 kV transmission lines between Hartford Avenue Substation in Johnston and the Johnston Tap Point will be reconductored coincident with the reconstruction of the lines (a distance of approximately 1.3 miles for each line).
- The G-185N 115 kV transmission line will be reconductored from Kent County Substation to Drumrock Substation in Warwick (a distance of approximately 1.0 mile).
- Short segments of the H-17 and B-23 115 kV transmission lines and the 332 and 315 345 kV transmission lines will be relocated in the vicinity of West Farnum Substation to accommodate the new 345 kV line and work within the substation.
- Short segments of the L-190 and G-185S 115 kV transmission lines will be relocated to accommodate the equipment additions at the Kent County Substation (a distance of approximately 0.2 miles for each line).

At the EFSB preliminary hearing, we presented a revised Table 4.1 which included the relocation of a short segment of the existing 315 345 kV transmission line in the vicinity of the West Farnum Substation. A revised page 4-2 of the ER including the revised Table 4.1 is attached as Attachment DJB-1. Figure 2-1 from the ER is a project overview map which shows the locations and routes of the proposed transmission system additions and reinforcements that are part of the Rhode Island Reliability Project.

ALTERNATIVES

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

A. A variety of alternatives were considered and evaluated in connection with the Project, including the "No-Build" alternative, alternative overhead routes for the new transmission line, overhead alternatives utilizing the existing ROW, underground transmission line alternatives, alternative system improvements, and non-transmission

alternatives.

The regulations of the EFSB require examination of a "No-Build" alternative; in this case the Company considered alternatives that would not require building the proposed transmission line. As explained in the ER, the proposed transmission system improvements are required to satisfy the transmission planning criteria of National Grid, the ISO-NE, NPCC, and NERC. Thus a "no-action" alternative would not be acceptable. However we did examine non-transmission solutions as "No-Build" alternatives.

National Grid retained ICF Resources LLC (ICF) to prepare a study of non-transmission alternatives. ICF considered the addition of demand resources (including distributed generation), traditional generation supply, and combined heat and power (CHP) supply options as possible alternatives to the Project. After examining the impact of a large total combined penetration of these resources on the overall reliability of the area, ICF found that non-transmission alternatives to the Project were not satisfactory or sufficient in nature to displace or defer the need for the Project. More detail regarding the ICF analysis and conclusion is contained in the prefiled testimony of Kenneth K. Collison from ICF and in Appendix F to the ER.

National Grid also considered electrical alternatives to the Project. These alternatives included (i) construction of a new 345 kV transmission line from Brayton Point to Franklin Square Substation to Hartford Avenue to Kent County Substations and (ii) the construction of two new 115 kV underground lines between Franklin Square Substation in Providence and Sockanossett Substation in Cranston. These alternatives which are described in Sections 5.2 of the ER and are fully discussed in the prefiled testimony of

Mark Stevens, were found to have significant disadvantages as compared to the proposed transmission line.

In addition to the "No-Build", non-transmission alternatives and electrical alternatives, we evaluated alternative overhead routes for the proposed 345 kV transmission line including using National Grid's undeveloped Kent County to Sherman Road ROW and utilizing the network of public streets and highways as an alternate overhead route. These alternatives are discussed more fully in Section 5.4 of the ER. Neither was found to be a preferable routing alternative for the proposed transmission line.

National Grid also evaluated alternate structure types for constructing the propsed transmission line within the existing ROW. These included constructing the new transmission line using "H-Frame" type structures, and constructing the new transmission line or the reconstructed 115 kV lines using "Double-Circuit Davit Arm" type structures. As discussed in ER Section 5.5, we concluded that using the proposed single-circuit davit arm structures for constructing the new transmission line offered more advantages, created fewer impacts, and was a more cost-effective solution than either of the two alternative structure types.

National Grid also evaluated an underground transmission line alternative for the new transmission line. The underground transmission line alternative is detailed in Section 5.6 of the ER, and is more fully discussed in the prefiled testimony of David M. Campilii. After review of several underground routing and technology options, an alternative which consisted of a solid dielectric cable installed along the public roadway network was selected as the most feasible means by which to construct an alternative underground

transmission line. When compared to the proposed overhead transmission line, however, it was determined that the underground alternative was much less desirable based on cost and operational issues.

ESTIMATED PROJECT COSTS

Q. Please discuss the estimated costs of the Rhode Island Reliability Project as proposed by National Grid.

A. National Grid has prepared study grade estimates of the costs associated with the proposed Project. Study grade estimates are prepared prior to detailed engineering and are based upon historical cost data, data from similar projects, and other stated assumptions. The accuracy of study estimates is expected to be ± 25 percent. Estimated costs include costs of materials, labor and equipment. The estimated capital costs associated with the proposed Project total $247,000,000, including two components that were omitted from Table 4-2 in the ER. These components, the relocation of short segments of the 315 and 332 345 kV lines, are included in revised Table 4-2 which is Attachment DJB – 1 to my testimony.

CONSTRUCTION PRACTICES AND SCHEDULE

Q. Please explain the construction practices that National Grid will use in constructing the Project.

A. Our construction practices and process are described in section 4.4 of the ER. Once all necessary permits and licenses have been obtained for the work, National Grid will commence construction of the new transmission line extension. The first activities to take place will be vegetation maintenance/clearing within the ROW as necessary and the

installation of appropriate erosion and sedimentation control devices. These activities are detailed in Section 4.4.1 of the ER. The next step in the construction sequence is to perform access road construction and maintenance, including the construction of temporary swamp mat access roads where required. Improving the access along the ROW 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 commence the installation of foundations and pole structures as described in Section 4.4.3 of the ER. 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. ROW restoration efforts, including final grading and stabilization of disturbed areas, will be completed following the construction operations. Throughout the entire construction process, National Grid 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 National Grid company policies.

Q. What is the schedule for the Project?

A. We expect to commence construction of the various component projects in the third quarter of 2010 and to have the facilities in service by 2012. In the cases of the transmission line relocations or reconductoring projects as well as modifications to existing substations, the timing and sequencing of our specific construction activities is impacted by our ability to take the existing facilities out of service to perform the necessary work. Due to reliability concerns and because the transmission system in

southern Rhode Island is already heavily loaded, our construction timeframes for this work are likely to be limited to Spring and Fall windows, avoiding the high load levels which typically occur in the Summer and Winter.

Q. Does this complete your testimony?

A. Yes, it does.

ER Table 4-2 Estimated Project Costs (rev. 2/20/09)

Project Components	Estimated Cost (2008 Dollars)
New 359 345 kV Transmission Line	$61,900,000
Relocate and Reconstruct S-171 and T-172 115 kV Transmission Lines	$115,600,000
Reconductor G-185N 115 kV Transmission Line	$3,800,000
Modify Kent County Substation	$22,100,000
West Farnum Substation 345 kV Equipment Additions and Upgrades	$63,000,000
332 line relocation	$1,350,000
315 line relocation	$750,000
H-17 115 kV Transmission Line Relocation	$750,000
B-23 115 kV Transmission Line Relocation	$250,000
G-185S/L-190 115 kV Transmission Line Relocations	$500,000
TOTAL ESTIMATED PROJECT COST	**$270,000,000**