ROBINSON & COLE LLP

PETER V. LACOUTURE

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July 2, 2009

Mr. Nick Ucci
Principal Policy Associate
Energy Facility Siting Board
89 Jefferson Boulevard
Warwick, RI 02888

Re: **Docket No. SB-2008-02**
In re: The Narragansett Electric Company d/b/a National Grid
(Rhode Island Reliability Project)

Dear Nick:

I am enclosing for filing an original and seven (7) copies of National Grid's Responses to the Town of Johnston's Second Set of Data Requests (Regarding Power Engineers, Inc.'s Report) in the above referenced matter.

Please acknowledge receipt of this filing on the enclosed copy of this letter and the Testimony and return them to me. Thank you.

Sincerely,

Peter V. Lacouture

PVL/lgo
Enclosures
Copy to: Elia Germani, Esq. (via Hand Delivery)
Patricia S. Lucarelli, Esq. (via Hand Delivery)
Dr. W. Michael Sullivan
Mr. Kevin Flynn
Leo J. Wold, Esq.
Mr. Steve Scialabba (via Hand Delivery)
Gregory L. Booth, P.E., P.L.S.
Mr. Richard S. Hahn
W. Mark Russo, Esq.
Service List (via electronic mail)

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

In re The Narragansett Electric Company	:	
d/b/a National Grid	:	Docket No. SB-2008-2
(Rhode Island Reliability Project)	:	

National Grid's Responses to the
Town of Johnston's Second Set of Data Requests
(Regarding Power Engineers, Inc.'s Report)

JOHNSTON DATA REQUEST 2-1:

When was Power Engineers, Inc. ("Power Engineers") engaged to develop the report dated June 10, 2009 authored by Joseph M. Drouin, P.E. (the "Report")?

RESPONSE:

Power Engineers was retained by National Grid to act as Owner's Engineer for the Rhode Island Reliability Project. Power Engineers' scope of work includes the preliminary and final detailed overhead transmission line design for the relocations of 115 kV transmission lines T172 (N/S) and S171 (N/S) and the design of new 345 kV transmission line 359. Power Engineers has been serving in this role since December of 2007. From that time, Mr. Drouin has been Project Engineer leading the coordination of all preliminary and detailed overhead transmission designs associated with these lines. Power Engineers developed the detailed transmission right-of-way cross sections that were provided in the Report and conducted the preliminary design calculations necessary to verify the conformance of the transmission line design with the requirements of the National Electrical Safety Code. In May, 2009, National Grid requested that Power Engineers prepare the Report. A copy of the 3 page letter from Mr. Drouin which was part of the Report is attached. Appendices A (Typical cross sections) and B (PLS-CADD Clearance Analysis Design Output Report (465 pages)) are being provided electronically.

Response prepared by or under the supervision of
Joseph M. Drouin, P.E. and David J. Beron, P.E., P.M.P.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

In re The Narragansett Electric Company	:	
d/b/a National Grid	:	Docket No. SB-2008-2
(Rhode Island Reliability Project)	:	

National Grid's Responses to the
Town of Johnston's Second Set of Data Requests
(Regarding Power Engineers, Inc.'s Report)

JOHNSTON DATA REQUEST 2-2:

Please provide all information, documents, reports, memoranda, and/or calculations that National Grid provided to Power Engineers related to the production of the Report.

RESPONSE:

Power Engineers has been responsible for detailed design of the Project since December, 2007. As such, Power Engineers is intimately familiar with the design of the Project. Power Engineers did not request and National Grid did not supply additional information to produce the Report.

Response prepared by or under the supervision of
Joseph M. Drouin, P.E. and David J. Beron, P.E., P.M.P.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

In re The Narragansett Electric Company	:	
d/b/a National Grid	:	Docket No. SB-2008-2
(Rhode Island Reliability Project)	:	

National Grid's Responses to the
Town of Johnston's Second Set of Data Requests
(Regarding Power Engineers, Inc.'s Report)

JOHNSTON DATA REQUEST 2-3:

Please provide any other reports, memoranda, calculations, and/or documents produced by Power Engineers related to the Report and/or Project and/or National Electric Safety Code ("NESC") for the Town of Johnston (the "Town").

REPONSE:

The Report is the only document produced for the Town of Johnston.

Response prepared by or under the supervision of
Joseph M. Drouin, P.E. and David J. Beron, P.E., P.M.P.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ENERGY FACILITY SITING BOARD

In re The Narragansett Electric Company	:	
d/b/a National Grid	:	Docket No. SB-2008-2
(Rhode Island Reliability Project)	:	

National Grid's Responses to the
Town of Johnston's Second Set of Data Requests
(Regarding Power Engineers, Inc.'s Report)

JOHNSTON DATA REQUEST 2-4:

Did National Grid conduct any type of internal peer review regarding whether the Project would meet NESC standards in the Town? If so, please provide any documents, reports, memoranda and/or calculations related to this internal peer review.

RESPONSE:

National Grid is relying on Power Engineers, as Owner's Engineer, to design the Project in accordance with and in compliance with NESC standards. Upon completion of the final design, National Grid will review all Field Issue construction documents produced by Power Engineers for compliance with NESC standards.

Response prepared by or under the supervision of
Joseph M. Drouin, P.E. and David J. Beron, P.E., P.M.P.

CERTIFICATE OF SERVICE

I hereby certify that a copy of National Grid's Responses to the Town of Johnston's Data Requests Regarding Power Engineers, Inc.'s Report was delivered to the Service List associated with the Docket via electronic mail this 2nd day of July, 2009.

Laura Olyl

PROV613874

POWER ENGINEERS, INC.
ENERGY, FACILITIES, COMMUNICATIONS

303 U.S. ROUTE ONE
SUITE 2A
FREEPORT, ME 04032

PHONE 207-869-1200
FAX 207-869-1299

POWER ENGINEERS

June 10, 2009

David Beron
National Grid
25 Research Drive
Westborough, MA 01582

Subject: National Grid Lines T172/2227 - Transmission Right of Way Clearance Report
Town of Johnston, RI

Dear Mr. Beron:

POWER Engineers, Inc. (POWER) has been retained by National Grid (NG) to act as their Owner's Engineer for the New England East West Solutions (NEEWS) transmission reliability upgrade project in the greater Rhode Island and Massachusetts area. In this role, POWER is responsible for the detailed engineering, design, and drafting of the new and existing high voltage and extra high voltage overhead transmission line upgrades associated with NEEWS, along with upgrades required at multiple substation facilities.

The scope of POWER's overhead engineering design includes, amongst several other upgrades, a rebuild of NG's existing 115 kV Line T172(N/S), which extends from Woonsocket S/S in North Smithfield, RI to Drumrock S/S in Warwick, RI, a distance of approximately twenty-one (21) miles. As part of the rebuild of Line T172(N/S), the relocation of multiple existing distribution facilities will be required. In several of these areas, the distribution will be double circuited on self supporting single steel pole structures with Line T172(N/S).

As per the request of the Town of Johnston, RI, POWER developed this preliminary engineering analysis report which highlights the minimum electrical high voltage (115 kV) and distribution voltage (23 kV or less) line clearances provided to the edge of the existing NG rights-of-way (ROW) through the Town of Johnston for both the rebuilt Line T172(N/S) and the double circuited distribution line(s). These clearances were measured against the requirements of the National Electric Safety Code (NESC) 2007 and NG standards.

Included within the appendices of this document, POWER has provided a set of report calculations exported from our engineering software models. These design models were developed utilizing Power Line Systems proprietary transmission line design software package, PLS-CADD.

ANALYSIS PROCEDURES AND ASSUMPTIONS

The proposed 115 kV Line T172(N/S) structure relocations and associated distribution facility relocations located in the Town of Johnston, RI were modeled in PLS-CADD. PLS-CADD performed a detailed, automated analysis of the conductor movement envelopes for

each circuit throughout a defined range of applicable weather conditions. The software then verified that the conductor movement envelopes remained within the bounds of the required input clearances. Preliminary design assumptions used in the analyses are provided below:

Conductor Movement Envelope Weather Conditions

As per the requirements of the NESC 2007 and NG standards, conductor movement envelopes were reviewed for the following weather conditions:

Weather Case	Ambient Air Temperature (°F)	Wind Pressure (PSF)
Everyday	60	0
Blowout	60	6

Design Clearances

Required horizontal design clearances to the edge of NG's existing transmission ROW were based upon the NESC 2007 Code (Rule 234) and NG required horizontal clearances to buildings, plus an applicable buffer (regardless of the existence of a building at the edge of ROW at the time of analysis). The horizontal design clearances are stated below based upon voltage:

Weather Case	Voltage(kV)	Required Clearance to ROW(ft)
Everyday/Blowout	115	11.1 *
Everyday/Blowout	23 or less	8.5**

* Required design clearance includes NESC clearance plus a five (5) ft buffer.
** Required design clearance includes NESC clearance plus a four (4) ft buffer.

Electrical Conductors

All analyses were completed utilizing the following proposed electrical conductors:

Line T172(N/S) (115 kV)
1590 kcmil ACSR (Aluminum Conductor Steel Reinforced) "Falcon"
1590 kcmil ACSS (Aluminum Conductor Steel Reinforced) "Falcon"

Distribution – (23 kV or less)
795 kcmil ACSR (Aluminum Conductor Steel Reinforced) "Drake"

ANALYSIS OUTPUT

Provided in APPENDIX B is the detailed PLS-CADD software analysis output reports resulting from the edge of ROW clearance calculations for the proposed T172(N/S) rebuild and applicable distribution lines. The portion of Line T172(N/S) which falls within the Town of Johnston, RI includes the approximate station limits of 456+30 through 752+65 on the attached reports. The analysis output results provided which do not fall within these limits are outside of the boundaries of the Town of Johnston, RI.

CONCLUSIONS

Under the Everyday and Blowout weather conditions analyzed as defined within this letter, the conductor movement envelopes for all energized cables of the rebuilt Line T172(N/S) and associated double circuited distribution line(s) fall within the requirements of the NESC 2007 design code and NG's standard design procedures.

The design calculations and conclusions as presented in this report are preliminary and contingent upon final design structure layouts. Regardless of any line design modifications which may be required, conductor movement envelopes will be maintained as per the requirements of NESC 2007 and NG standards.

If you have any questions regarding these assumptions, analyses, or results, please feel free to contact me at 207-869-1223.

Sincerely,
POWER ENGINEERS, INC

Joseph M. Drouin, P.E. (Rhode Island #9008)

JOSEPH M. DROUIN
RHODE ISLAND
No. 9008
HOPE
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

June 10, 2009

JD/es
Sent Via: Email
c: Peter Lacouture (R&C)
Scott Ryder (EIG)
Fray Thompson (POWER)
DMS 113517.04.01
SR-02