

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

Via Hand Delivery

March 26, 2013

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

**Re: The Narragansett Electric Company - d/b/a National Grid -
Interstate Reliability Project (Docket No. 4360)**

Dear Luly:

I am enclosing for filing on behalf of The Narragansett Electric Company d/b/a National Grid nine (9) copies of National Grid's response to PUC Record Requests 1 and 3.

We are sending electronic copies to the Service List. 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



PVL/blv

Law Offices

BOSTON

PROVIDENCE

HARTFORD

NEW LONDON

STAMFORD

WHITE PLAINS

NEW YORK CITY

ALBANY

SARASOTA

www.rc.com

Enclosures

Copy to: Cynthia G. Wilson-Frias, Esq. *(via hand delivery)*
Mr. Alan Nault *(via hand delivery)*
John J. Spirito, Esq. *(via hand delivery)*
Mr. Steven Scialabba *(via hand delivery)*
Christy L. Hetherington, Esq. *(via hand delivery)*
Mr. Gregory L. Booth, P.E., P.L.S. *(via Federal Express delivery)*
Docket 4360 Service list *(via e-mail)*

12155398-v1

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

IN RE: ISSUANCE OF ADVISORY OPINION :
TO THE ENERGY FACILITY SITING BOARD :
REGARDING THE NARRAGANSETT ELECTRIC : DOCKET NO. 4360
COMPANY D/B/A NATIONAL GRID'S APPLICATION :
TO CONSTRUCT AND ALTER MAJOR FACILITIES :
(INTERSTATE RELIABILITY PROJECT) :

National Grid's Responses to the
PUC's First Set of Record Requests
(Hearing Date 3/5/2013)

REQUEST RR-1 (National Grid): Please provide the standards National Grid used for the weather resistance of the transmission lines proposed in the current matter. Please provide the various codes that would apply and the standards/ratings applied by National Grid.

RESPONSE: In the "Rules Prescribing Standards for Electric Utilities" (Effective Date September 21, 2004) (the "Rules"), the Rhode Island Division of Public Utilities and Carriers has defined "Standard Practice" as being guided by the National Electrical Safety Code and the National Electric Code (Rules § VIII-A.) Section VIII-B of the Rules requires public utilities to construct, install, operate and maintain their facilities in accordance with standard practice as defined in the Rules.

For the Project, National Grid incorporated these requirements as part of the engineering design basis. As further clarified in the ER (p. 4-18), the Project will be designed, built, and maintained in accordance with the National Electrical Safety Code ("NESC") and other applicable electrical safety codes. The facilities will be designed in accordance with sound engineering practices using established design codes and guides published by, among others, the Institute of Electrical and Electronic Engineers ("IEEE"), the American Society of Civil Engineers ("ASCE"), the American Concrete Institute ("ACI"), and the American National Standards Institute ("ANSI").

The proposed facilities must meet the design codes and standards noted above, which are based on the following weather conditions:

Response prepared by or under the supervision of
Joe Drouin, P.E.

Design Case	Ambient Temperature (°F)	Wind Speed (mph)	Wind Pressure (lbs/ft²)	Conductor Radial Ice Thickness (in)
NESC Heavy (Rule 250B)	32	40	4	0.5
NESC Extreme Wind (Rule 250C)	60	105	28	0.0
NESC Extreme Ice with Concurrent Wind (Rule 250D)	15	40	4	0.75

In addition to the above noted design standard/code requirements, new overhead transmission facilities for the Project will be designed per the National Grid defined weather condition below. This weather case is above and beyond the design requirements of the NESC and is imposed by National Grid in an attempt to further reinforce the overhead transmission system against severe weather events.

Design Case	Ambient Temperature (°F)	Wind Speed (mph)	Wind Pressure (lbs/ft²)	Conductor Radial Ice Thickness (in)
National Grid Heavy Ice	30	28	2	1.5

Along with these weather cases, National Grid considers a variety of structure installation conditions, to include all shield wires and overhead transmission conductors attached to the structure, along with cable stringing conditions for construction and broken wire design cases. For each analysis, the applicable loads imparted upon a structure are multiplied by the code required overload factors, while the structure strength is multiplied by the code required strength reduction factor. This approach provides a predefined factor of safety for the structure performance for each of these design cases.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

IN RE: ISSUANCE OF ADVISORY OPINION :
TO THE ENERGY FACILITY SITING BOARD :
REGARDING THE NARRAGANSETT ELECTRIC : DOCKET NO. 4360
COMPANY D/B/A NATIONAL GRID'S APPLICATION :
TO CONSTRUCT AND ALTER MAJOR FACILITIES :
(INTERSTATE RELIABILITY PROJECT) :

National Grid's Responses to the
PUC's First Set of Record Requests
(Hearing Date 3/5/2013)

REQUEST RR-3 (National Grid): For all NEEWS related elements which have begun construction, please provide the Study Grade Estimate, the Construction Grade Estimate, the costs to date and the projected or actual completion costs.

RESPONSE: See attached table entitled "National Grid – NEEWS Projects – Cost Estimate Summary." The additional costs in excess of the estimates for the Rhode Island Reliability Projects are, in large part, a result of additional rock coring and rock and boulder removal for foundations beyond what was anticipated. Overall, the National Grid NEEWS Projects are expected to be completed at a cost that is within 3.5% of the construction grade estimates.

**National Grid
NEEWS Projects
Cost Estimates Summary**

Project Description	Study Grade Estimates	Construction Grade Estimates	Total Spending To-Date (Through February 2013)	Final Cost or Estimated Cost at Completion
T-7 Reconductoring and Related Projects				
Reconductor T7 Line in MA	\$18,620,000	\$19,380,000	\$11,123,960	\$11,123,960
Reconductor T7 Line in RI	\$5,750,000	\$5,995,000	\$4,343,338	\$4,343,338
Pawtucket #1 Substation Relay Addition	N/A	\$100,000	\$59,709	\$59,709
SUBTOTAL		\$25,475,000	\$15,527,007	\$15,527,007
Advanced NEEWS Projects				
Pawtucket Substation Upgrades	N/A	\$700,000	\$804,056	\$804,056
Brayton Point 115 kV Substation Upgrades	N/A	\$250,000	\$52,663	\$52,663
Chartley Pond 115 kV Substation Upgrades	N/A	\$550,000	\$1,192,162	\$1,192,162
Drumrock I-187 and J-188 Line Drop Upgrades	N/A	\$200,000	\$64,462	\$64,462
Kent County 345-115 kV Substation Phase I	N/A	\$43,420,000	\$39,669,616	\$39,669,616
West Farnum 115kV Substation Upgrades	N/A	\$10,900,000	\$9,048,335	\$9,048,335
SUBTOTAL		\$56,020,000	\$50,831,294	\$50,831,294
Berry Street Substation and Related Projects				
315 OPGW MA/RI to Riverside Jct	N/A	\$1,500,000	\$1,010,813	\$1,210,000
315 OPGW Riverside Jct to W Farnum	N/A	\$1,300,000	\$260,353	\$940,000
New 345/115 kV Plainville Substation	N/A	\$52,000,000	\$38,819,466	\$38,919,466
ANP Bellingham Substation - 303 Line Relaying	N/A	\$250,000	\$217,289	\$367,289
327 Line Relay Upgrades at Brayton Point Substation	N/A	\$700,000	\$550,355	\$600,355
303 Tap to Plainville Substation	N/A	\$3,800,000	\$2,185,842	\$2,185,842
C181N Tap to Plainville Substation	N/A	\$4,900,000	\$3,363,223	\$3,363,223
315 Line Entries at Berry St. Substation	N/A	\$3,700,000	\$1,862,632	\$1,862,632
315 Line OPGW Berry St to MA/RI	N/A	\$1,550,000	\$1,989,533	\$2,390,000
303 Line OPGW Berry St. to ANP Bellingham Substation	N/A	\$2,900,000	\$3,341,306	\$4,275,000
ADSS ANP Bellingham to Hopedale	N/A	\$1,400,000	\$77,395	\$150,000
South Wrentham Substation 115 kV Upgrades	N/A	\$1,000,000	\$1,938,452	\$1,938,452
SUBTOTAL		\$75,000,000	\$55,616,658	\$58,202,259
Rhode Island Reliability Projects				
New 359 345kV Line	\$60,600,000	\$69,000,000	\$80,592,508	\$84,095,558
332 Line Relocation	\$1,300,000	\$4,000,000	\$10,775,131	\$10,775,131
H17 Line Relocation	\$350,000	\$500,000	\$1,158,002	\$1,158,002
G185S Line Relocation Kent County	\$400,000	\$600,000	\$1,002,634	\$1,002,634
L190 Line Relocation at Kent County	\$400,000	\$600,000	\$1,080,587	\$1,080,587
Relocate S-171 115kV Transmission Line	\$42,300,000	\$49,000,000	\$59,042,833	\$60,763,029
Relocate T-172 115kV Transmission Line	\$42,300,000	\$49,000,000	\$77,751,413	\$77,800,989
S171S Line Reconductor	\$4,000,000	\$5,000,000	\$4,155,615	\$4,164,832
T172S Line Reconductor	\$4,000,000	\$5,000,000	\$3,304,616	\$3,766,611
Relocate 23kV 2227 & 2230 Lines	N/A	\$2,000,000	\$3,633,412	\$3,633,412
G185N Line Reconductoring	\$2,200,000	\$2,800,000	\$3,858,318	\$3,858,318
K189 Line OPGW	N/A	\$500,000	\$1,523,968	\$1,523,968
ADSS Drumrock - Fibertech	N/A	\$400,000	\$21,186	\$96,186
Kent County 345-115 Substation Phase II	\$23,900,000	\$26,000,000	\$20,634,246	\$21,234,464
Hartford Ave 115kV Substation Upgrades	N/A	\$6,000,000	\$7,687,562	\$7,737,562
Franklin Square 115kV Substation Upgrades	N/A	\$1,700,000	\$611,040	\$611,040
Drumrock Substation Upgrades	N/A	\$11,500,000	\$18,913,648	\$18,917,991
Manchester St Substation Add DTT Functionality	N/A	\$800,000	\$15,830	\$15,830
SUBTOTAL		\$234,400,000	\$295,762,548	\$302,236,145
West Farnum 345kV GIS Substation and Associated Projects				
West Farnum 345kV Sub Expansion	\$64,900,000	\$74,800,000	\$51,831,499	\$55,313,559
B23 Line Relocation at West Farnum	\$250,000	\$600,000	\$623,753	\$646,317
315 Relay Upgrades at Brayton Point Substation	N/A	\$600,000	\$422,065	\$422,065
SUBTOTAL		\$76,000,000	\$52,877,317	\$56,381,940
GRAND TOTALS		\$466,895,000	\$470,614,824	\$483,178,645

Prepared on March 19, 2013

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing was sent via email transmission to all persons listed on the Service List attached hereto on this ____ day of March, 2013.

Docket No. 4360 - Narragansett Electric Co. d/b/a National Grid – Advisory Opinion to EFSB regarding need and cost-justification for proposed RI Interstate Reliability Project Service List as of 1/17/13

Name/Address	E-mail Distribution	Phone
Peter V. Lacouture, Esq. Robinson & Cole LLP One Financial Plaza Suite 1430 Providence, RI 02903-2485	placouture@rc.com	401-709-3314
Ms. Bess B. Gorman, Esq. Assistant General Counsel and Director Legal Department, National Grid 40 Sylvan Road Waltham, MA 02451	Bess.Gorman@us.ngrid.com	781-907-1834
Leo Wold, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Lwold@riag.ri.gov	401-222-2424
	Chetherington@riag.ri.gov	
	Jmunoz@riag.ri.gov	
	Dmacrae@riag.ri.gov	
John Spirito, Esq. Division of Public Utilities and Carriers	Jspirito@ripuc.state.ri.us	
	Sscialabba@ripuc.state.ri.us	
	Acontente@ripuc.state.ri.us	
	Tkogut@ripuc.state.ri.us	
Marion S. Gold, Administrator RI Office of Energy Resources One Capitol Hill Providence, RI 02908-5850	Marion.Gold@energy.ri.gov	401-574-9119
	Joyce.discuillo@energy.ri.gov	
	Christopher.Kearns@energy.ri.gov	
Jared Rhodes, Chief Statewide Planning Program One Capitol Hill Providence, RI 02908	Jrhodes@doa.ri.gov	401-222-5772
	knelson@doa.ri.gov	
Gregory Booth, President Power Services, Inc. UtilityEngineering, Inc. 1616 East Millbrook Road, Suite 210 Raleigh, NC 27609	gbooth@powerservices.com	919-256-5901
Eric J. Krathwohl, Esq. Rich May, P.C. 176 Federal Street Boston, MA 02110-2223	Ekrathwohl@richmaylaw.com	617-556-3857
	Ebigelow@richmaylaw.com	
	Kcollins@richmaylaw.com	
Kevin Flynn, Esq. ISO New England Inc. One Sullivan Road Holyoke, MA 01040-2841	Kflynn@iso-ne.com	413-535-4177

File an original & nine (9) copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick RI 02889	Lmassaro@puc.state.ri.us	401-780-2107
	Cwilson@puc.state.ri.us	401-941-1691
	Anault@puc.state.ri.us	
	Dshah@puc.state.ri.us	
	Nucci@puc.state.ri.us	
Town of North Smithfield Debra A. Todd, Town Clerk James J. Lombardi III, Town Solicitor	Dtodd@nsmithfieldri.org	401-767-2200 Ext. 326
	nssolicitor@cox.net	
Town of Burrillville Ms. Louise Phaneuf, Town Clerk Mr. Timothy Kane, Esq., Town Solicitor	lphaneuf@burrillville.org	401-568-4300 Ext. 114
	kanelawoffice@aol.com	