

The Narragansett Electric Company
d/b/a National Grid (Rhode Island Reliability Project)

EFSB Docket No. SB-2008-02

Rebuttal Testimony of
David J. Beron, P.E., P.M.P.

June 4, 2009

1 Q. Please state your full name and business address.

2 A. My name is David J. Beron. My business address is 25 Research Drive,
3 Westborough, MA.

4 Q. Have you previously filed testimony in this matter?

5 A. Yes, I filed prefiled testimony in RIPUC Dkt. No. 4029 on February 20, 2009. I
6 understand that the prefiled testimony from RIPUC Dkt. No. 4029 will be
7 incorporated in this proceeding.

8 Q. Have you reviewed Mr. Booth's testimony on behalf of the DPUC?

9 A. Yes. I have reviewed Mr. Booth's testimony and note that he is in general
10 agreement with our study grade estimates for the RIRP overhead lines. However,
11 I would like to respond to a number of points which he raises about our project
12 estimate items or assumptions.

13 Q. Mr. Beron, please respond to Mr. Booth's comments beginning at line 17, page 10
14 regarding inclusion of duplicative access road and mobilization/demobilization
15 costs in the estimates for the proposed Project.

16 A. At the time the 2008 study grade estimates were prepared, we did not have a
17 construction strategy in place, so we conservatively assumed that components of
18 the proposed Project could be done by different contractors. Now that we know
19 that one contractor will perform all of the S171, T172 and 359 construction work,
20 we concur that mobilization/demobilization costs could be overstated. Regarding
21 road costs, Mr. Booth is again correct. We did use standard access road costs in

1 the study grade estimates without detailed consideration of the likely use of the
2 roads for multiple projects.

3 Q. Please respond to Mr. Booth's statement beginning at line 7, page 11 that small
4 job mobilization factors should not apply to the proposed Project.

5 A. While a single contractor will perform the bulk of construction, National Grid's
6 internal construction organization will provide the construction resources for
7 several of the smaller scope components of the proposed Project. These include
8 the Circuit H-17 relocation, Circuit G185N reconductoring, Circuit L190
9 relocation and Circuit G185S relocation. Since these projects may not all occur
10 during a single mobilization, small job mobilization factors were included in the
11 estimates.

12 Q. Please respond to Mr. Booth's statement beginning at line 20, page 11 that he was
13 unable to find any of the three railroad crossings included in the Circuits S171,
14 T172 and 359 estimates.

15 A. The Company's line maps (T-sheets) do show 3 railroad crossings between West
16 Farnum Substation and Kent County Substation, and this information was used by
17 Power Engineers Inc. in preparation of the estimates. What was not clear from
18 the T-Sheets is that all 3 railroad crossings are now abandoned, so Mr. Booth is
19 correct in noting that there are no active railroad crossings.

1 Q. Please respond to Mr. Booth's comment beginning on line 1, page 12 regarding a
2 suspected overstatement of estimated conductor costs associated with the Circuit
3 359 estimate.

4 A. Mr. Booth observed that conductor cost per foot for Circuit 359 and Circuits S171
5 and T172 were similar even though Circuit 359 conductor is considerably smaller
6 (954 ACSR for 359 vs. 1,590 ACSR for S171 and T172). Mr. Booth is correct in
7 that the 954 ACSR cost/foot is overstated. Instead of being approximately 90% of
8 the cost of 1,590 ACSR on a per foot basis, it should be more in the area of 60%
9 of the cost of 1,590 ACSR. This will be corrected in the next iteration of the cost
10 estimates.

11 Q. Please respond to Mr. Booth's observation beginning on line 6, page 12 that the
12 estimated number of Circuit 359 structures is overstated by 31 structures.

13 A. Mr. Booth believes that a more efficient line design would result in the use of
14 fewer structures and therefore result in a lower cost. He is correct that we could
15 have reduced costs somewhat by more focused design optimization. However,
16 the main driver for structure location was placement of new structures adjacent to
17 the existing Circuit 332 structures where possible. This strategy will maintain
18 symmetry across and along the ROW, will reduce visual impacts, and will help to
19 minimize construction access road impacts.

1 Q. Mr. Beron, please respond to Mr. Booth's comment beginning on line 14, page 12
2 that helicopter wire stringing will likely be unnecessary for construction of the
3 reconfigured Circuits S171 and T172.

4 A. We assumed that helicopter wire stringing would be used to minimize the
5 duration of outages during construction on these critical lines that supply local
6 load from multiple connected substations.

7 Q. Mr. Beron, please respond to Mr. Booth's observation beginning on line 16, page
8 12 that right-of-way security and environmental control costs for Circuits S171
9 and T172 are duplicative of costs included in the Circuit 359 estimate.

10 A. He is correct to a limited extent about inclusion of some duplicative right-of-way
11 security costs in the estimates, now that we know that one contractor will be
12 constructing all 3 lines. However, there will be some circuit specific right-of-way
13 security costs since the projects will be constructed in series to some extent. There
14 will also be environmental control costs associated with access to structures on
15 each individual circuit.

16 Q. Please respond to Mr. Booth's observation beginning on line 19, page 12 that site
17 preparation and cleanup costs for each of the (S171 and T172) 115 kV circuits is
18 more than \$490,000 greater than the same cost associated with Circuit 359.

19 A. The reason is that there are taps to six load serving substations and one generator
20 on each of Circuits S171 and T172. The tapping arrangements will be complex,
21 requiring multiple structures at each tap. This greatly increases construction

1 activity at 7 locations on the S171 and T172, and not on the 359 line, resulting in
2 the higher site preparation and cleanup costs.

3 Q. Mr. Beron, please respond to Mr. Booth's observation beginning on line 22, page
4 12 that the estimated cost of relocating Circuit 332 is overstated by 250%.

5 A. I believe that Mr. Booth is making this observation based on the assumption that
6 only 400 feet of Circuit 332 needs to be relocated. The actual length of the
7 relocation is closer to 0.2 miles, which could account for the appearance of an
8 overstated estimate.

9 Q. Mr. Beron, please respond to Mr. Booth's observation beginning on line 4, page
10 13 that the estimated cost of relocating Circuit H-17 is overstated by \$200,000.

11 A. Mr. Booth is correct in noting that the estimate for relocating Circuit H-17 is
12 high. Now that we better understand the scope, the estimate will be reduced more
13 than \$200,000 in the next iteration.

14 Q. Mr. Beron, please respond to Mr. Booth's observation beginning on line 10, page
15 13 that the estimates for Circuits G-185S, L-190 and G-185N are somewhat
16 overstated due to inclusion of the small job mobilization factor.

17 A. Mr. Booth believes that mobilization costs should be covered only once for all
18 components of the proposed Project. We assumed separate mobilization costs in
19 the study estimate phase since the construction plan was unknown at the time.
20 The recently developed construction delivery plan assigns construction
21 responsibility for the smaller 115 kV projects to National Grid's internal

1 construction organization. These projects may not all be completed during one
2 mobilization, so the separate mobilization costs included in the estimates for these
3 projects are reasonable.

4 Q. Mr. Beron, you have agreed with a number of Mr. Booth's adjustments. Do you
5 plan to revise the estimated Project cost to incorporate these adjustments?

6 A. Yes. In addition to Mr. Booth's adjustments and the revised estimate for the West
7 Farnum Substation which Mr. Kopoyan presents in his testimony, we have refined
8 the entire Project estimate. The components of the revised Estimated Project Cost
9 of \$246,900,000 are shown in revised Table 4-2 of the ER which is attached as
10 Attachment DJB-2. The changes in these numbers have caused corresponding
11 changes in Tables 5-2 and 5-4, which are attached as Attachments DJB-3 and
12 DJB-4.

13 Q. Does this conclude your testimony?

14 A. Yes, it does.

Attachments

- DJB-2 Revised Table 4-2 of the ER (Estimated Project Costs)
- DJB-3 Revised Table 5-2 of the ER (Underground Alternative – Estimated Cost)
- DJB-4 Revised Table 5-4 of the ER (Facility Construction Cost Comparison – Proposed Project and Underground Alternative)

Attachment DJB-2

ER Table 4-2 Estimated Project Costs (rev. 6/4/09)

Project Components	Estimated Cost (2009 Dollars)
New 359 345 kV Transmission Line	\$60,600,000
Relocate and Reconstruct S-171 and T-172 115 kV Transmission Lines	\$92,600,000
Reconductor G-185N 115 kV Transmission Line	\$2,200,000
Modify Kent County Substation	\$23,900,000
West Farnum Substation 345 kV Equipment Additions and Upgrades	\$64,900,000
332 345 kV Transmission Line Relocation	\$1,300,000
315 345 kV Transmission Line Relocation	- 0 -
H-17 115 kV Transmission Line Relocation	\$350,000
B-23 115 kV Transmission Line Relocation	\$250,000
G-185S/L-190 115 kV Transmission Line Relocations	\$800,000
TOTAL ESTIMATED PROJECT COST	\$246,900,000

Attachment DJB-3

ER Table 5-2 Underground Alternative – Estimated Cost (rev. 6-4-09)

Project Segments	345 kV Underground Alternative (2009 Dollars)
New 359 345 kV Underground Transmission Line	\$336,400,000
Reconductor S-171 and T-172 115 kV Transmission Lines	\$8,600,000*
Reconductor G185N 115 kV Transmission Line	\$2,200,000
Modify Kent County Substation	\$23,900,000
West Farnum Substation 345 kV Equipment Additions and Upgrades	\$73,200,000
Relocate 332 345 kV Transmission Line	\$0
Relocate H17 115 kV Transmission Line	\$0
Relocate B23 115 kV Transmission Line	\$250,000
Relocate G185S / L190 Transmission Lines	\$800,000
Total Underground Project Cost	\$445,350,000

* For the underground alternative, this project segment includes only reconductoring S171 and T172 from Hartford Ave Substation to the Johnston Tap.
Source: National Grid

Attachment DJB-4

ER Table 5-4 Facility Construction Cost Comparison – Proposed Project and Underground Alternative (rev. 6-4-09)

Project Segments	Project as Proposed 345 kV Overhead Line Estimated Cost (2009 Dollars)	345 kV Underground Alternative (2009 Dollars)
New 359 345 kV Transmission Line	\$60,600,000	\$336,400,000
S-171 and T-172 115 kV Transmission Lines	\$92,600,000*	\$8,600,000*
Reconductor G185N 115 kV Transmission Line	\$2,200,000	\$2,200,000
Modify Kent County Substation	\$23,900,000	\$23,900,000
West Farnum Substation 345 kV Equipment Additions and Upgrades	\$64,900,000	\$73,200,000
Relocate 332 345 kV Transmission Line	\$1,300,000	\$0
Relocate H17 115 kV Transmission Line	\$350,000	\$0
Relocate B23 115 kV Transmission Line	\$250,000	\$250,000
Relocate G185S / L190 Transmission Lines	\$800,000	\$800,000
Total Project Cost	\$246,900,000	\$445,350,000

* This segment of the Project as proposed includes relocation and reconstruction of the S171 and T172 lines from West Farnum Substation to the vicinity of Kent County Substation, including reconductoring both circuits from Hartford Ave Substation to the Johnston Tap. For the underground alternative, this project segment includes only reconductoring S171 and T172 from Hartford Ave Substation to the Johnston Tap.