

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

EFSB Docket No. SB-2008-02

Rebuttal Testimony of  
Kenneth K. Collison

June 4, 2009

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

2 A. My name is Kenneth K. Collison. My business address is 9300 Lee Highway, Fairfax,  
3 VA.

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 incorporated in  
7 this proceeding.

8 Q. What is the purpose of your rebuttal testimony?

9 A. The primary purpose of my testimony is to address certain aspects of the testimony of  
10 Gregory L. Booth, filed on April 6, 2009, on behalf of the Rhode Island Division of  
11 Public Utilities and Carriers.

12 Q. Do you disagree with Mr. Booth's overall conclusion?

13 A. No. Similar to Mr. Booth, I support the Rhode Island Reliability Project ("RIRP" or  
14 "Project") over the Non-Transmission Alternatives ("NTAs"), and I agree with Mr.  
15 Booth that the Project is a better long term solution, a more readily achievable solution in  
16 the near term and a lower cost solution. I believe he arrives at the right conclusion  
17 although he misinterprets certain portions of ICF's study. This rebuttal is intended to  
18 clarify some of the issues raised by Mr. Booth regarding ICF's study.

19 Q. Please describe ICF's study.

20 A. As I stated in my February 20, 2009 prefiled testimony in this matter, ICF performed a  
21 study to determine the feasibility of NTAs to the Project. ICF evaluated the NTAs in a

1 two-step process. First, ICF analyzed two separate configurations of the New England  
2 regional transmission system to determine the reliability benefits from the proposed RIRP  
3 transmission additions and upgrades for the first year of its operation, 2013. Next, ICF  
4 analyzed three main NTA scenarios to determine if the reliability benefits of these  
5 scenarios were comparable to that of RIRP. ICF also assessed the ability of the system to  
6 operate reliably if an important generation facility in Rhode Island were out of service.  
7 ICF's study showed that RIRP resolved all line overloads and voltage violations, even  
8 when an important generation facility was out of service. On the other hand, the  
9 corresponding NTAs required to resolve all violations were unrealistic.

10 Q. Please describe the two configurations of the New England regional transmission system  
11 used in the first step of the NTA evaluation.

12 A. ICF developed the two configurations from power-flow models of the New England  
13 transmission system that were representative of a summer peak demand period in 2013.  
14 The first, referred to as the Pre-RIRP Case, represented the New England transmission  
15 system assuming neither RIRP nor any other components of the New England East-West  
16 Solutions (NEEWS) projects was implemented. The second case, referred to as the  
17 Rhode Island Case represented the transmission system assuming the Rhode Island  
18 Reliability Project was implemented. Estimates of expected non transmission resources –  
19 CHP, DSM and generation resources – based on both the technical potential and the  
20 economic potential for these resources, were incorporated into both cases. Chapter 5 of  
21 ICF's Report describes the process used to develop these cases in more detail.

22 Q. What were the three main NTA scenarios examined by ICF?

1 A. The three main NTA scenarios were:

- 2 • NTA Scenario 1: Uniform load reduction in the Rhode Island sub-area. (The Rhode  
3 Island sub-area is defined by the ISO-NE Regional System Plan as the Rhode Island  
4 load and the associated bordering Massachusetts load. This sub-area contains about  
5 2880 MW, which is about 35% more load than the State of Rhode Island load alone.)
- 6 • NTA Scenario 2: Local load reductions at key load points – the Drumrock, Kent  
7 County and Johnston substations – rather than uniform load reductions.
- 8 • NTA Scenario 3: Uniform load reduction in Connecticut as well as in Rhode Island.

9 Q. How much incremental load reduction did ICF estimate would be required to provide  
10 reliability benefits similar to RIRP?

11 A. In NTA Scenario 1 between 1,500 MW and 2,000 MW<sup>1</sup> of incremental demand reduction  
12 had to be implemented to resolve all line overloads in the Pre-RIRP case. In NTA  
13 Scenario 2, all the demand (up to 294 MW of coincident peak load) at Drumrock, Kent  
14 County and Johnston substations were removed. Further, an incremental 1,000 MW of  
15 load reduction had to be applied uniformly in the rest of the Rhode Island sub-area to  
16 resolve all overloads. In NTA Scenario 3, in addition to an incremental uniform load  
17 reduction of 1,000 MW in Connecticut, an incremental uniform load reduction of at least  
18 1,000 MW was required in the Rhode Island sub-area as well. The range of demand

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<sup>1</sup> As mentioned in the response to DPUC data request 2-13, ICF realized that some of the results of the Demand-side Reduction Scenarios described in ICF's Report and in my prefiled testimony were based on power flow cases that were a different vintage from those used in the Reference Scenario. ICF will correct the Report and my testimony to reflect the results from the right set of power flow cases. With this adjustment, the maximum demand reduction required in the Demand-side Reduction Scenarios is approximately 1,500 MW and not 2,000 MW. This does not change the conclusion of ICF's study. That is, there is no satisfactory NTA solution available for the Rhode Island Reliability Project.

1 reduction required in these NTA scenarios represents 40 to 70 percent of the Rhode  
2 Island sub-area's peak demand. This would be the equivalent of blacking out 40 to 70%  
3 of electric customers in the Rhode Island sub-area.

4 In all three NTA scenarios, the important generating unit was kept in operation. Even  
5 more resources would be required in the scenario in which this unit is out of service. The  
6 demand reduction necessary to achieve reliability benefits similar to that of the Project  
7 therefore reflects an unrealistic level of resources.

8 Based on the study, ICF determined that there is no reasonable or realistic NTA scenario  
9 that could provide reliability benefits similar to RIRP and thus defer or displace the need  
10 for RIRP.

11 Q. Please comment on Mr. Booth's view of ICF's study.

12 A. Mr. Booth believes that ICF's estimate of 1,500 MW and 2,000 MW of incremental  
13 demand reduction which is required to provide reliability benefits similar to RIRP under  
14 the NTA Scenarios is incongruent with the National Grid Study<sup>2</sup>. Mr. Booth also  
15 believes that the 1,500 MW and 2,000 MW of incremental demand reduction is the  
16 requirement of generation in Rhode Island to offset the entire New England East-West  
17 Solution project and that ICF is comparing the level of NTA that is required to create the  
18 equivalency to the 345 kV transmission system.<sup>3</sup>

19 Q. Do you agree with Mr. Booth in this regard?

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<sup>2</sup> Booth prefiled, p. 22, ll. 17-20; p. 24, ll. 6-10.

<sup>3</sup> Booth prefiled, p. 23, ll. 1-5; p. 25, ll. 23-24; p. 27, ll. 17-21.

1 A. No, I do not. On the first point, the difference between ICF's study and that of National  
2 Grid, as outlined in Mark Stevens' testimony, has been addressed in National Grid's  
3 response to DPUC data requests 1-12 and 2-20, and has been further explained in the  
4 rebuttal testimony of Mr. Stevens. The ICF and National Grid studies are different, and  
5 draw different conclusions, so the amount of load reduction specified in these studies  
6 should not necessarily be the similar and should not be compared directly.

7 Q. Please continue.

8 A. On the second point, Mr. Booth believes that in the ICF study the estimates represent (1)  
9 the requirement of generation in Rhode Island to offset the entire NEEWS project; and  
10 (2) the level of NTA that is required to create the equivalency to the proposed 345 kV  
11 transmission line. As explained above, ICF compared two configurations of the New  
12 England transmission system – the Pre-RIRP Case in which no component of NEEWS is  
13 implemented, and a Rhode Island Case in which only RIRP is implemented. ICF did not  
14 examine a case in which any other NEEWS component apart from RIRP was  
15 implemented. Therefore ICF could not have estimated the requirement of generation in  
16 Rhode Island to offset the entire NEEWS project. Furthermore ICF did not estimate the  
17 capacity of RIRP. Rather, ICF estimated the demand reduction necessary to provide  
18 reliability benefits that would eliminate the need for the line. Since ICF's analysis  
19 showed that RIRP resolved all violations, ICF required that an NTA that would  
20 effectively eliminate RIRP must also resolve all violations. Therefore ICF applied load  
21 reductions in increments until all violations were resolved in the case without RIRP.

22 Q. Do you have any other comments regarding Mr. Booth's testimony?

1 A. Yes. Mr. Booth mentions that “non-transmission alternatives have not been given full  
2 and appropriate evaluation” and that non-transmission alternatives can be part of a  
3 reliable, broader and longer view of all of the needs, both in Rhode Island and throughout  
4 New England”.<sup>4</sup> ICF incorporated NTA’s including DSM, CHP and central generation  
5 in its analysis. As described in my direct testimony<sup>5</sup>, ICF included “base” NTA resources  
6 expected to be operational during the study period (as per the latest ISO-NE Forward  
7 Capacity Auction). Since violations continued to exist, ICF estimated load reduction  
8 above and beyond the “base” NTA resources already implemented in the case.

9 Q. Does this conclude your testimony?

10 A. Yes.

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<sup>4</sup> Booth prefiled, p. 28, ll. 12-14.

<sup>5</sup> Collison prefiled, p. 7, ll. 10-12; p. 10, ll. 6-10 and 14.