

THE NARRAGANSETT ELECTRIC COMPANY

RIPUC Dkt. No. 3732

Supplemental Testimony of

Melissa Scott, P.E.

July 7, 2006

SUPPLEMENTAL TESTIMONY OF MELISSA SCOTT, P.E.

1 INTRODUCTION

2 Q. Please state your name and business address.

3 A. My name is Melissa Scott. My business address is 25 Research Drive, Westborough,
4 Massachusetts 01582.

5 Q. Have you previously filed testimony in this docket?

6 A. Yes. I filed prefiled testimony on behalf of National Grid on April 14, 2006.

7 Q. Have you reviewed the Statement of Position filed on behalf of ISO New England
8 (“ISO”) on June 9?

9 A. Yes, I have.

10 Q. Do you have any comments on the Statement of Position?

11 A. In Attachment B to its Statement of Position, ISO included the letter of approval for the
12 18.4 applications for the 1870N and 1870 reconductoring. It also included the letters of
13 approval for the Transmission Cost Allocation Applications (“TCA”) for the 1870N and
14 1870 reconductoring and other components of the Southern Rhode Island Transmission
15 Project. However, it did not include the November 10, 2004 letter of approval for the
16 18.4 applications for the other components of the Project. Attached as Attachment MS-3
17 is a copy of ISO’s November 10, 2004 letter.

18 Q. Have you also reviewed the prefiled testimony of Gregory L. Booth (“Booth”) filed on
19 behalf of the Division of Public Utilities and Carriers (“Division”)?

20 A. Yes, I have.

21 Q. On page 27 of his testimony, Booth suggests that National Grid did not “discuss fully” in

1 the October 2003 study the alternative of design modifications to allow the line to be
2 operated at 257° F conductor temperature, combined with some capacitor applications.
3 Have any such modifications been made to the Southern Rhode Island Transmission
4 System?

5 A. Yes. Several short term measures have been implemented in Southern Rhode Island as a
6 short term solution for the immediate voltage and thermal loading concerns.

7 Voltage Solution

8 In order to address the immediate voltage concerns, seven distribution station capacitors
9 were installed in Southern Rhode Island by the summer of 2003. Four 34.5 kV 6.3
10 MVar capacitor banks were installed at the West Kingston Substation, two 12 kV 3.6
11 MVar capacitor banks were installed at the Kenyon Substation, and one 34.5 kV 6.3
12 MVar capacitor bank was installed at the Wood River Substation. In addition to the four
13 capacitor banks installed at West Kingston, a Programmable Logic Controller (PLC) was
14 installed to control all six 6.3 MVar capacitor banks located at the West Kingston
15 Substation. The distribution capacitor banks and the PLC are a short term measure that
16 will maintain voltages and prevent slow voltage recovery in the Southern Rhode Island
17 area.

18 Thermal Solution

19 To address the thermal loading concerns, the limiting section of the G-185S line from the
20 Old Baptist Road Tap to the West Kingston Substation was uprated to allow for a higher
21 operating temperature under emergency conditions. The higher operating temperature

1 allowed for an emergency rating increase of 33 MVA. The uprating was completed by
2 the summer of 2005.

3 Q. Why is it now allowable to operate the line at a higher temperature?

4 A. The G-185S line from Old Baptist Road Tap to the West Kingston Substation is 795
5 kcmil Aluminum conductor. The line was originally designed to operate at a maximum
6 of 100° C based on sag clearance concerns. Recently, the Company re-evaluated
7 allowable ratings for all conductor types. Based on NEPOOL System Design Task Force
8 guidelines, the normal ratings allow for maximum equipment loading with no loss of
9 tensile strength above design criteria over a 30 year life. The emergency ratings are
10 defined to involve some loss of tensile strength in excess of design criteria. The line is
11 expected to operate at the emergency ratings for a maximum of 520 hours over a 30 year
12 life. The new company guidelines have defined that the loss of tensile strength under
13 emergency ratings shall be no more than 10%. Based on these guidelines, 795 Aluminum
14 conductor may be operated at a maximum of 95° C under normal conditions and at a
15 maximum of 120° C (248° F) under emergency conditions. Conductor clearances must
16 be maintained under emergency operation. In his supplemental testimony, Mr. Beron
17 explains the actions which National Grid took to allow the operation of the G-185S line
18 at a higher emergency temperature.

19 Q. When were these actions completed?

20 A. These actions were completed in the Spring of 2005.

21 Q. Does this conclude your testimony?

22 A. Yes, it does.

The Narragansett Electric Company

RIPUC Dkt. No. 3732

Witness: Melissa Scott, P.E.

ATTACHMENTS

MS-3 November 10, 2004 letter from Stephen G. Whitley, Senior Vice President and Chief Operating Officer of ISO-New England to Thomas Gentile and Melissa Scott of National Grid



Stephen G. Whitley
Senior Vice President & Chief Operating Officer

November 10, 2004

Mr. Thomas Gentile
Ms. Melissa Scott
National Grid-USA
25 Research Drive
Westborough, MA 01582-0001

Subject: NEP-04-T24, NEP-04-T25, and NEP-04-T26

Dear Mr. Gentile and Ms. Scott:

ISO New England has determined pursuant to Section 18.4 that implementation of the Participant plans identified in the following applications will not have a significant adverse effect on the reliability or operating characteristics of the Participant that submitted the applications or upon the system of any other Participant, subject to satisfaction of any conditions identified below with respect thereto:

The New England Power Company (NEP) Transmission Facilities 18.4 Applications NEP-04-T24, NEP-04-T25, and NEP-04-T26 which comprise the Southwest Rhode Island Reliability Project ("The Project") for transmission upgrades required to address reliability concerns under summer peak load conditions, with in service dates of June 2007, as detailed in Ms. Melissa Scott's October 19, 2004 transmittal to Mr. Stephen Rourke, Chairman - NEPOOL Reliability Committee.

The Project consists of the following 18.4 Transmission Facilities Applications:

1. Extending the 115 kV Line L-190 12.3 miles from the Davisville/Old Baptist Road Tap, located in North Kingstown, Rhode Island, to the West Kingston No. 62 Substation, located in South Kingstown, Rhode Island, utilizing size 795 ACSR conductor, and the installation of one 115 kV 2000A load break switch on the tap. (NEP-04-T24)
2. Installation of a second 2000A 115 kV breaker (#7090) and two (2) 2000A disconnect switches to tie in Line L-190 into the West Kingston No, 62 Substation, located in South Kingstown, Rhode Island, a new 115 kV bus structure, new substation fence, new dead end structures with two (2) motor operated 2000A load break switches for G-185S and L-190 Lines within the expanded substation, and the replacement of existing breaker 7085 and associated disconnect switches, and the retermination of the No. 2 115/34.5 kV transformer to the L-190 Line from the 1870N Line, all at the West Kingston No. 62 Substation. (NEP-04-T25)

3. Reconductoring of the 115 kV L-190 Line portion from the Kent County #22 Substation, located in Warwick, Rhode Island, to the Davisville/Old Baptist Road Tap, located in North Kingstown, Rhode Island, having single circuit tower construction utilizing size 1590 ACSR conductor and the reconductoring of 3.26 miles of the 115 kV L-190 Line portion from the Kent County #22 Substation to the Davisville/Old Baptist Road Tap having double-circuit tower construction utilizing size 1113 ACSR conductor. (NEP-04-T26)

The above plans [consisting of Applications 1. through 3.] are hereby approved for implementation.

Sincerely,

A handwritten signature in black ink, appearing to read "St D Whitley", is positioned to the left of a vertical red line.

Stephen G. Whitley
Senior Vice President and Chief Operating Officer

cc: 18.4 Application