

Prefiled Testimony of Dean Benton
March 12, 2012

In The Matter Of Underwater Crossing Of Lake Winnepesaukee
(NH Electric Cooperative, Inc.)
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1 **Q. Please state your full name and occupation.**

2 A. My name is Dean Benton. I am employed as the Plant Supervisor at the New Hampshire Electric
3 Cooperative, Inc. ("NHEC"), 579 Tenney Mountain Highway, Plymouth, New Hampshire, 03264.
4

5 **Q. Are you familiar with the matter which is the subject of this petition?**

6 A. Yes, I am.
7

8 **Q. Please describe the proposed project.**

9 A. The project is intended to provide more reliable electrical service to the residences located on
10 Rattlesnake, Sleeper and Treasure Islands in Lake Winnepesaukee in the Town of Alton. The three
11 islands are in the New Hampshire Electric Cooperative service area and are presently served, this
12 project would replace and re-route the existing cable feeding those islands. The staking sheet which
13 is attached to this prefiled testimony as **Exhibit A** shows a layout of the proposed line reconstruction.
14 The line is planned to begin at NHEC Pole #30124.2/18.1 on the mainland property of the
15 Rattlesnake Island Association in the Town of Alton. From there, the line will run underground for a
16 distance of about 200 feet to the shore line of Lake Winnepesaukee then underneath Lake
17 Winnepesaukee for a distance of about 5800 feet to Rattlesnake Island, and then run another 210 feet
18 underground to a pole #303/22. Easements for construction of this line are attached as **Exhibit B**,
19 **Exhibit C, Exhibit D and Exhibit E.** to this prefiled testimony.
20

21 **Q. Who will install the conduit and cable?**

22 A. The underground cable, conduit, submarine cable and termination vault will be constructed by a
23 certified construction company contracted by NHEC. This contractor has historically proven to meet
24 NHEC construction standards and the Code. Post construction inspections will be conducted by
25 qualified divers on a cyclic basis per inspection and maintenance practices of NHEC.
26

27 **Q. Has a permit been obtained from the Department of Environmental Services?**

28 A. Yes. A copy of the Wetlands and Non-Site Specific Permits from the Department of Environmental
29 Services for the town of Alton is attached as **Exhibit F** to this petition.
30

1 **Q. How many residences does this line service presently?**

2 A. This line presently serves 152 residences on Rattlesnake Island, 66 residences on Sleeper
3 Island and 15 residences on Treasure Island.
4

5 **Q. Are there any abutters on the shore of Lake Winnepesaukee?**

6 A. Yes. The Rattlesnake Island Association owns the land on which will be the new mainland
7 take-off point of the cable. An easement for construction is attached as **Exhibit B**.
8

9 **Q. Are there any abutters on Rattlesnake Island?**

10 A. Yes. The easement is attached at **Exhibit C**.
11

12 **Q. Are there any abutters on Sleeper Island?**

13 A. Yes. The easement is attached at **Exhibit D**.
14

15 **Q. Are there any abutters on Treasure Island?**

16 A. Yes. The easement is attached at **Exhibit E**.
17

18 **Q. Why is this submarine / underground line necessary?**

19 A. The submarine / underground line beneath Lake Winnepesaukee is necessary in order to
20 continue providing service to the residences on Rattlesnake, Sleeper and Treasure Islands. If
21 NHEC does not re-construct this underwater line, the residences on those Islands will be at a
22 greater risk of losing service due to the aging cable in place.
23

24 **Q. Did you consider an overhead line?**

25 A. Yes. However, given the distance which must be traveled between the islands, construction
26 of an overhead line is not feasible. The continued use of submarine cable is the only
27 technically sound solution, will not be obtrusive to the general public, and will minimize the

1 chance that the cable will interfere with the public safety or the public enjoyment of Lake
2 Winnepesaukee or the surrounding shorelines.

3
4 **Q. Do you have anything else you wish to add to your testimony?**

5 A. Yes. I would like to add the following construction details and technical specifications for
6 this project:

7 1. The design, construction and operation of this line will be in compliance with the National
8 Electrical Safety Code. The cable re-installation and re-routing will provide electrical power
9 to 233 residences.

10 2. The primary feed line voltage is 7200 volts.

11 3. There is sufficient capacity on the existing distribution line to serve this load requirement.
12 The typical existing load is 30 amps with a maximum load capacity of 100 amps.

13
14 4. The cable manufacturer is Hendrix. Technical specification sheet is attached as
15 **Exhibit G.** Cable details are as follows:

- 16 a. Cable type - Submarine
17 b. Conductor material is aluminum
18 c. Conductor size is 1/0

19
20 5. The installation process (**Exhibit H**), will include trenching and direct burial of two
21 conduit/cables from mainland pole NHEC pole #30124.2/18.1, (new 30131/8) located off
22 Nowicki Point Road on the property of the Rattlesnake Island Association, two new
23 submarine cables will come down the pole and enter an underground trench and travels into
24 and along the lake floor. One of the cables leaving pole #30124.2/18.1, (new 30131/8) in an
25 underground trench, then resting 2800' on the lake floor, will then go underground to an
26 existing riser pole location on Sleeper Island at NHEC pole #303/8. The second cable in an
27 underground trench, then resting 5800 feet along the lake floor, then in an underground
28 trench, will go to an existing riser pole location on Rattlesnake Island at NHEC pole #303/22.

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1 An additional cable will then come down pole 303/22, travel back off Sleeper Island in the
2 same underground trench, travel 5300' on the lake floor, and then in an underground trench
3 to an existing riser pole location on Treasure Island to pole 30304/14. An additional cable
4 will then come down pole 30304/14, travel back in the same underground trench, travel
5 1360' on the lake floor, and then in an underground trench to an existing riser pole location
6 on Sleeper Island to pole 30304/13. All cable will travel underground until an underwater
7 depth of 6' 0" can be achieved per NHEC Construction Standard IUSUB (**Exhibit I**), and
8 then cable will rest on the lake floor. A minimum of two lengths of cable covers at every
9 shoreline, per NHEC Construction Standard U7-6B (**Exhibit J**) will be installed per design.
10 Cable/conduit will have a minimum of 36" of cover in all trenches. Backfill of trenches will
11 be with sand and removed backfill less rocks.

12 6. Environmental mitigation measures will be installation of silt fence per NHEC
13 Construction Standard URD 1W-1 (**Exhibit K**) and the approved Wetlands Permits as
14 **Exhibit F**.

15 7. Schedule #80 PVC conduit will be used for construction.

16 8. All riser poles on the islands will be existing 35', Class 5, poles, except in the case of
17 Rattlesnake Island, where the riser pole will be an existing 40', class 4 pole.

18 9. Equipment used to install the cable will be a backhoe and barge. Cable will be hand laid
19 by men on the barge. Cable covers will be placed by mechanical means.

20 10. NHEC currently has 53 similar installations within its service territory.

21 11. Response time for customer calls will be within 20 minutes from the Alton District
22 Office.

23 12. Revenue meters are read manually, twice a year.

25 **Q. Does this conclude your testimony?**

26 A. Yes, it does.