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# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

**DATE:** April 2, 2013

**AT (OFFICE):** NHPUC

*Dand*

**FROM:** David Goyette, Utility Analyst III - Telecommunications

**SUBJECT:** DT 12-020 New Hampshire Optical Systems, Inc.  
Petition to Cross Railroads in Segment 10

**TO:** Commissioners  
Debra Howland, Executive Director

This is a follow-up regarding the two railroad crossings in Segment 10. The locations of those crossings, which were also described in Staff's December 19, 2012 memo, are as follows:

- Conway: The railroad crossing parallels the easterly side of White Mountain Highway (Route 16) in the vicinity of Hurricane Mountain Road, between utility poles E14/253 – T2/75 and - E not tagged - T2/76 (reference TID 164).
- Conway: The railroad crossing parallels the easterly side of White Mountain Highway (Route 16) in the vicinity of Crawford Hollow Road and Pine Street, between utility poles E15/9 – T2/12 and E15/8 - T2/11 (reference TID 165).

Since the time of its initial memo in this docket, Staff learned, based on information provided by New Hampshire Optical Systems, Inc. (NHOS) and the Department of Transportation, that the land at the TID 165 crossing is owned by Conway Scenic Railroad, and not by the State of New Hampshire. Because it does not traverse State-owned land, the crossing at TID 165 does not require a license pursuant to RSA 371:17.

In addition, since the time of Staff's initial memo, joint pole owners FairPoint and New Hampshire Electric Cooperative have attested to Staff that there is sufficient clearance for NHOS's cable at the crossing in TID 164. FairPoint explained that the railroad track is not located in the center of the span and that only a portion of the sag should be applied to the calculation for clearance. Staff reviewed the technical documents and confirmed FairPoint's measurement for the distance between pole T2/76 and the railroad track is consistent with that of NHOS. Staff then computed the clearance of NHOS's cable, using a sag amount adjusted proportionally by the distance between the railroad track and pole T2/76 to the total distance of the span, and confirmed that the

clearance requirement has been met. Based on this, the clearance issue for the crossing at TID 164 has been resolved.

Also since the time of Staff's initial memo, NHOS filed a correction of its first page of technical documents for TID 165. The revised page corrected the cross street, replacing Hurricane Mtn. Rd., which was incorrectly listed as the cross street in the original filing, with Crawford Hollow Rd.

### **Recommendations and Conclusions**

Based upon Staff's analysis, the proposed crossing at TID 164 will not substantially affect the public's right to use the affected state land and Staff concludes that NHOS has demonstrated a public need for that crossing. Staff recommends that the Commission grant a license for the railroad crossing at TID 164 in NHOS Segment 10, with the following conditions:

1. NHOS will file proposed alterations to this crossing prior to making any such alteration.
2. NHOS maintain proper clearances between its cables and those adjacent to it at all times across the entire span pursuant to NESC 235C2b and 235H.
3. NHOS construct, operate and maintain the attachments at all times in accordance with both the 2002 and 2007 editions of the NESC as required by NH Admin. Code Puc 433.01 and 1303.07.

*Info provided is intended to be used in conjunction with the NESC and does not in any way supersede or replace the NESC. The NESC should always be considered as the primary basis for making clearance determinations.*

## Telecommunications Fiber Optic Cable<sup>1</sup> Railroad Crossing on State Land Checklist

Docket #: 12-020

Applicant: NHOS

Date: 2/19/2013

Analyst: David

Location: Hurricane Mountain Road, Conway (TID 164)  
T2/76 – E14/253 T2/75

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1	Yes	Is Railroad on state land?
2	Not needed	Does petition indicate DOT or DES approvals needed?
3	NA	If DOT or DES approvals needed, ask applicant for contact at applicable state agency and call to determine status of approvals. Are DOT or DES approvals expected?
4	Yes	Compare facts stated in petition to “as built” drawings. Are facts consistent? Check things like pole numbers, span length, location, railroad.
5	No issues found	Compare make ready requirements from pole owner to “as built” drawing. Confirm necessary appurtenances (e.g. guys) are included in drawing and all existing attachments are depicted.
6	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
7	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.
8	Unk	Is lowest attachment 23.5 feet above rail track under Heavy Load conditions?  NESC Table 232-1

<sup>1</sup>As defined by NESC 230 F 1e and NESC 230 F 2

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9	Yes	Is there a minimum of <b>40 inches</b> between electric neutral and proposed attachment on each pole?  NESC Table 235-5 1a
10	Yes	Is there a minimum <b>12 inch</b> clearance between proposed attachment and adjacent communications attachments at each pole?  NESC 235H1
11	3.40 feet, see note.	What is maximum sag of proposed attachment under Heavy Load conditions?  NESC Table 250-1
12	Done	Run tension numbers to verify maximum sag calculation.
13	Yes, see note	If data not available on lowest attachment, is proposed attachment, under Heavy Load conditions, at least 23.5 feet plus 1 foot per attachment below proposed attachment? (e.g if two existing attachments are below proposed attachment, is clearance under Heavy Load of proposed attachment at least 25.5 ft?)
14	Unk, see note.	Is there a minimum 75% of distance required at supports at every point in the span ( <b>30 inches</b> between electric neutral and proposed attachment) under all conditions?  NESC 235C2b
15	Unk, see note.	Is there a minimum <b>4 inch</b> clearance between proposed attachment and any conductor, cable or equipment of adjacent communications attachments at every point in the span under Heavy Load conditions?  NESC 235H2

#### NOTES:

11 and 13. Proposed attachment under heavy load conditions is 24.8 feet above rail. With 2 attachments beneath it, Staff initially believed proposed attachment under heavy load conditions should be 25.5 feet above rail. In response to Staff's inquiry, however, neither NHEC nor FairPoint found any clearance issues at the crossing. FairPoint stated that track is 25% of distance of entire span, and, for that reason, computes distance from its cable to the track using 50% of sag under heavy load conditions. With heavy sag, FairPoint states that its cable is 24'11" above track. Using same logic to compute NHOS's clearance under heavy load conditions, sag of

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3.39' feet becomes 1.7' feet at 25% of distance of entire span, and distance from NHOS cable to track is 26.2 feet.

14. Not provided.

15. Not provided.

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## Telecommunications Fiber Optic Cable<sup>1</sup> Railroad Crossing on State Land Checklist

Docket #: 12-020

Applicant: NHOS

Date: 4/2/2013

Analyst: David

Location: Crawford Hollow Road, Conway (TID 165)  
E15/9 T2/12 – E15/8 T2/11

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1	No	Is Railroad on state land?
2	Not needed	Does petition indicate DOT or DES approvals needed?
3	NA	If DOT or DES approvals needed, ask applicant for contact at applicable state agency and call to determine status of approvals. Are DOT or DES approvals expected?
4	Yes	Compare facts stated in petition to “as built” drawings. Are facts consistent? Check things like pole numbers, span length, location, railroad.
5	No issues found	Compare make ready requirements from pole owner to “as built” drawing. Confirm necessary appurtenances (e.g. guys) are included in drawing and all existing attachments are depicted.
6	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
7	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.
8	Unk	Is lowest attachment 23.5 feet above rail track under Heavy Load conditions?  NESC Table 232-1

<sup>1</sup>As defined by NESC 230 F 1e and NESC 230 F 2

*Info provided is intended to be used in conjunction with the NESC and does not in any way supersede or replace the NESC. The NESC should always be considered as the primary basis for making clearance determinations.*

9	Yes	Is there a minimum of <b>40 inches</b> between electric neutral and proposed attachment on each pole?  NESC Table 235-5 1a
10	Yes	Is there a minimum <b>12 inch</b> clearance between proposed attachment and adjacent communications attachments at each pole?  NESC 235H1
11	1.19 feet	What is maximum sag of proposed attachment under Heavy Load conditions?  NESC Table 250-1
12	Done	Run tension numbers to verify maximum sag calculation.
13	Yes	If data not available on lowest attachment, is proposed attachment, under Heavy Load conditions, at least 23.5 feet plus 1 foot per attachment below proposed attachment? (e.g if two existing attachments are below proposed attachment, is clearance under Heavy Load of proposed attachment at least 25.5 ft?)
14	Unk, see note.	Is there a minimum 75% of distance required at supports at every point in the span ( <b>30 inches</b> between electric neutral and proposed attachment) under all conditions?  NESC 235C2b
15	Unk, see note.	Is there a minimum <b>4 inch</b> clearance between proposed attachment and any conductor, cable or equipment of adjacent communications attachments at every point in the span under Heavy Load conditions?  NESC 235H2

**NOTES:**

14. Not provided.

15. Not provided.