



STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: September 18, 2012

AT (OFFICE): NHPUC

ML

FROM: Michael Ladam, Assistant Director, Telecommunications

SUBJECT: DT 12-089 TDS Telecom.
Petition for Authority to Construct and Maintain Telecommunications
Lines Over and Across the Merrimack River in the Town of Boscawen

TO: Commissioners
Debra Howland, Executive Director

On April 9, 2012, TDS Telecom (TDS) filed a petition pursuant to RSA 371:17 seeking approval for licenses to construct and maintain fiber optic communications cables over and across the Merrimack River in the town of Boscawen. The application is for a single water crossing located at:

- The Merrimack River in Boscawen, between utility pole CE21: NET 27/18 on the western side of the river near Commercial Street and utility pole CE1: NET 27/19 on the eastern side of the river near Hannah Dustin Drive.

The Merrimack River at this location is listed as public water in the Department of Environmental Services' official list of public waters and therefore the crossing requires a license pursuant to RSA 371:17. The Boscawen section of the Merrimack River is upstream of Concord and therefore the crossing does not require Army Corps of Engineers approval. TDS states in its petition that no New Hampshire Department of Environmental Services or New Hampshire Department of Transportation permits are needed for this construction.

Review of public need and public impact.

In its petition TDS states that the new line "will help to accommodate the growth demand and to obtain a greater degree of service reliability." TDS further states that the "use and enjoyment by the public of the river will not be diminished in any material respect as a result of the overhead line-crossing."

Review of NESC code requirements.

Staff reviewed the project documentation attached to the petition and found it to be generally in compliance with requirements of the Commission and of the NESC. TDS states that the Merrimack River is suitable for sail boating at this location and the project maintains clearances above the ten-year flood plain required for such waterways. The attached worksheet summarizes the results of Staff's review.

The worksheet highlights several matters requiring attention by TDS:

- a) There is an apparent discrepancy between the petition and the accompanying documents for one of the pole numbers.
- b) The information provided by TDS does not verify a minimum clearance of 75 percent of the distance required at the supports at every point in the span (30 inches between electric neutral and the proposed attachment) required by NESC 235C2b, or a minimum 4 inch clearance between the proposed attachment and any conductor, cable or equipment of adjacent communications attachments at every point in the span required by NESC 235H. As these particular requirements of the NESC are not likely to affect the public rights in the waterway, rather than deny the license Staff recommends these requirements be made conditions of the license to ensure there will be no adverse impact on adjacent utility facilities.
- c) Staff was unable to confirm whether other utility crossings at these locations are licensed and also comply with the NESC. To the extent other utilities or pole owners with attachments beneath the TDS attachments seek a license in the future and it is discovered that those attachments do not meet NESC requirements, TDS may be required to rearrange its attachments.
- d) Although the petition and attachments appear to use National Electrical Safety Code (NESC) standards for the project design, and cite the NESC in describing the project, they do not include an attestation that project construction and maintenance will comply with all NESC requirements.

Recommendations and Conclusions.

Based upon Staff's analysis, the proposed crossings will not substantially affect the public rights in the waters and lands and Staff concludes that TDS has demonstrated a public need for the proposed crossings. Accordingly, Staff recommends that the Commission grant the licenses for the TDS crossing in this petition, with the following conditions:

1. TDS maintain proper clearances between its cables and those adjacent to it at all times across the entire span pursuant to NESC 235C2b and 235H.
2. TDS 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.
3. TDS resubmit the petition to reflect the correct utility pole notation regarding the pole described in the petition as: CE1: NET 27/18.

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 Cable¹ Water Crossing Checklist

Docket #: 12-089

Applicant: TDS

Date: Sep 10, 2012

Analyst: Michael Ladam

Location: Boscawen: Merrimack River

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| | | |
|---|------------|---|
| 1 | Yes | Is water body on DES list: http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf |
| 2 | N/A | If Merrimack River from the MA-NH State line to Concord, NH; Lake Umbagog within NH; or the Connecticut River to Pittsburg, NH., has Army Corps of Engineers approved? |
| 3 | Not Needed | Does petition indicate DOT or DES approvals needed? |
| 4 | N/A | 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? |
| 5 | Note 5 | Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body. |
| 6 | OK | 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. |
| 7 | No | Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC? |
| 8 | Not Known | Are existing attachments licensed? If not, notify existing attachers in writing and request license application. |

¹As defined by NESC 230 F 1e and NESC 230 F 2

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| 9 | OK | If lowest attachment is not licensed, verify minimum water clearances plus one foot per attachment beneath proposed attachment are met under Heavy Load conditions and recommend conditional approval. (e.g if water is not suitable for sailing and there are 2 existing attachments below proposed, add 2 feet to 14 foot clearance requirement and determine if proposed attachment with maximum sag is greater than 16 feet from water surface). If water suitable for sailing, use 10 year flood elevation. |
| 10 | N/A | If lowest attachment is licensed, does make ready indicate lowest attachment will be moved closer to water? (If no, skip to step 15. If yes, what is max sag of lowest attachment at 0 deg F, 0.5 inch ice, 4 psf wind?) |
| 11 | Yes | Is water suitable for sailing? |
| 12 | N/A | If not suitable for sailing is there 14 feet clearance from lowest point in sag of lowest attachment to water surface under Heavy Load conditions? (preferably measured from water surface at 10 year flood elevation, but not required) NESC Table 232-1, 6 |
| 13 | Yes | If suitable for sailing is there appropriate clearance from lowest point in sag of lowest attachment to water surface under Heavy Load conditions at 10 year flood elevation. Size of rivers and streams based upon largest surface area of any 1 mile segment that includes the crossing (circle applicable standard) <ul style="list-style-type: none"> a. Less than 20 acres: 17.5 feet b. Over 20 to 200 acres: 25.5 feet c. Over 200 to 2000 acres: 31.5 feet d. Over 2000 acres: 37.5 feet NESC Table 232-1, 7 and notes 18 and 19. |
| 14 | Yes | Is there a minimum of 40 inches between electric neutral and proposed attachment on each pole? NESC Table 235-5 1a |
| 15 | Not Known | Is there a minimum 75% of distance required at supports at every point in the span (30 inches between electric neutral and proposed attachment) under all conditions? NESC 235C2b |
| 16 | 10.3 ft | What is maximum sag of proposed attachment under Heavy Load Conditions? NESC Table 250-1 |
| 17 | Done | Run tension numbers to verify maximum sag calculation. |

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| 18 | Yes | Is there a minimum 12 inch clearance between proposed attachment and adjacent communications attachments at each pole? NESC 235H1 |
| 19 | Not Known | Is there a minimum 4 inch 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 |
| | | |

NOTE: If the crossing is within 10 feet horizontally of an existing bridge structure that may already limit use of the waterway, a simplified drawing may be submitted with vertical distances measured to the bridge deck. If bridge deck is 15 feet above water surface, water is not suitable for sailing, and height of lowest crossing is above the bridge deck, clearance to water does not need to be measured. In this instance, flood elevation information is not required.

NOTES:

1. Petition refers to the eastern side pole near Commercial Street as Pole CE1: NET 27/18. Drawings refer to this pole as CE1: NET 27/19. TDS should file a corrected petition a/d/or attachment[s].
15. Information not provided.
19. Information not provided.