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STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: February 28, 2012
AT (OFFICE): NHPUC

David

FROM: David Goyette, Utility Analyst III - Telecommunications

SUBJECT: DT 13-037 New Hampshire Optical Systems, Inc.
Petition to Cross Public Waterways for Segment 18

TO: Commissioners
Debra Howland, Executive Director

On February 7, 2013, New Hampshire Optical Systems, Inc. (NHOS) filed a petition, pursuant to RSA 371:17, seeking approval for licenses to construct and maintain fiber optic cables over 6 public waterways in a section of its cable line that begins in Nashua and ends in Portsmouth. On February 21, 2013, NHOS filed revised versions of technical documents included with the petition. According to NHOS, the project, referred to as the Network New Hampshire Now (NNH Now) Middle Mile Network, is broken up into segments across the state. The petition seeks approval for crossings in Segment 18 of its project.

The locations of the crossings in this petition are as follows:

• Windham: Beaver Brook crossing parallels the easterly side of Haverhill Road (Route 111), between utility poles E3A/57 – T3136/6 and E236/56 – T3136/5 (reference TID 236).

• Plaistow: Little River crossing parallels the southerly side of Main Street (Route 121), between utility poles E103/21 – T3/30 and E103/22 – T3/31 (reference TID 243).

• Plaistow: Little River crossing parallels the westerly side of Plaistow Road (Route 125), between utility poles E117/76 – T not tagged and E117/75 – T not tagged (reference TID 244).

• Nashua: Nashua River crossing east of Main Street, approximately 100 feet north of adjacent pole on Pearson Avenue between utility poles E926/18 – T not tagged and E201/9-1 – T not tagged (reference TID 310).

• Salem: Spicket River crossing parallels the northerly side of Bluff Street

Extension, between utility poles E261/13 – T5701/12 and E261/14 – T5701/13 (reference TID 318).

• Salem: Widow Harris Brook crossing parallels the northerly side of Bluff Street Extension, between utility poles E279/7 – T5701/7 and E279/8 – T5701/8 (reference TID 319).

Each river crossed by the cables in this petition is listed as a public water in the Department of Environmental Services' official list of public waters and therefore requires a license pursuant to RSA 371:17.

Review of public need and public impact

In its cover letter NHOS states that it has been contracted to construct and manage the NNH Now middle mile fiber network, which will expand the availability of broadband to areas of NH with limited or no internet service. According to NHOS, construction of the fiber is necessary to meet reasonable requirements of service to the public. NHOS states in its petition that no environmental permits are required for the crossings. NHOS submits that the licenses petitioned for "may be exercised without affecting the rights of the public in the public waters of each river. Minimum safe line clearances above the water surface and affected shorelines will be maintained at all times. The use and enjoyment by the public of each waterway will not be diminished in any material respect as a result of the overhead line crossing."

Review of NESC code requirements

According to the petition, the crossings will be designed, constructed, maintained and operated according to the National Electrical Safety Code (NESC). Staff reviewed documents and data provided by NHOS, including detailed diagrams, descriptions, and maps of the crossings. Staff confirmed the information provided in the filing regarding the NHOS attachments complies with the requirements of the NESC. The attached worksheets summarize Staff's review.

As noted on the worksheets, the information provided by NHOS did 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.

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 NHOS attachments seek a license in the future and it is

discovered that those attachments do not meet NESC requirements, NHOS may be required to rearrange its attachments. In the event NHOS is required for any reason to relocate an attachment, it should be required to file the proposed alteration prior to making such alteration.

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 NHOS has demonstrated a public need for the proposed crossings. Accordingly, Staff recommends that the Commission grant licenses for the six crossings in NHOS Segment 18, 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.

#1

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[1] Water Crossing Checklist

Docket #: DT 13-037

Applicant: NHOS

Date: 2/19/2013

Analyst: David

Location: Beaver Brook, Hudson/Windham (TID 236)
E3A/57 T3136/6 – E236/56 T3136/5

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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	NA	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	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?
5	Yes	Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body.
6	Yes	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	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
8	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.

[1]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	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	Unk	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	No	Is water suitable for sailing?
12	Unk	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	NA	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) 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	Unk, see note	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	7.34	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.

18	Yes	Is there a minimum **12 inch** clearance between proposed attachment and adjacent communications attachments at each pole? NESC 235H1
19	Unk, see note	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:

15. Not provided.
19. Note provided.

#2

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Telecommunications Fiber Optic Cable[1] Water Crossing Checklist

Docket #: DT 13-037

Applicant: NHOS

Date: 2/28/2013

Analyst: David

Location: Little River, Plaistow (TID 243)
E103/21 T3/30 - E103/22 T3/31

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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	NA	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	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?
5	Yes	Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body.
6	Yes	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	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
8	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.

[1] 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	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	Unk	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	No	Is water suitable for sailing?
12	Unk	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	NA	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) 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	Unk	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	5.72	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.
18	Yes	Is there a minimum **12 inch** clearance between proposed attachment and adjacent communications attachments at each pole? NESC 235H1
19	Unk, see note	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:

15. Not provided.
19. Not provided.

#3

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[1] Water Crossing Checklist

Docket #: DT 13-037

Applicant: NHOS

Date: 2/19/2013

Analyst: David

Location: Little River, Plaistow (TID 244)
E117/76 T not tagged - E117/75 T not tagged

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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	NA	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	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?
5	Yes	Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body.
6	Yes	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	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
8	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.

[1] 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	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	Unk	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	No	Is water suitable for sailing?
12	Unk	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	NA	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) 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	Unk, see note	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	5.99	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	Unk, see note	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:

15. Not provided.
19. Note provided.

#4

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Telecommunications Fiber Optic Cable[1] Water Crossing Checklist

Docket #: DT 13-037

Applicant: NHOS

Date: 2/28/2013

Analyst: David

Location: Nashua River, Nashua (TID 310)
E 926/18-1 T not tagged – E201/9-1 T not tagged

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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	NA	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	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?
5	Yes	Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body.
6	Yes	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	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
8	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.

[1]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	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	Unk	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	No	Is water suitable for sailing?
12	Unk	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	NA	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) 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	Unk, see note	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	5.07	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.

18	Yes	Is there a minimum **12 inch** clearance between proposed attachment and adjacent communications attachments at each pole? NESC 235H1
19	Unk, see note	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:
15. Not provided.
19. Note provided.

#5

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[1] Water Crossing Checklist

Docket #: DT 13-037

Applicant: NHOS

Date: 2/19/2013

Analyst: David

Location: Spicket River, Salem (TID 318)
E261/13 T5701 – E261/14 T570/13

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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	NA	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	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?
5	Yes	Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body.
6	Yes	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	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
8	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.

[1]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	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	Unk	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	No	Is water suitable for sailing?
12	Unk	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	NA	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) 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	Unk, see note	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	4.41	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.

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.

18	Yes	Is there a minimum **12 inch** clearance between proposed attachment and adjacent communications attachments at each pole? NESC 235H1
19	Unk, see note	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:

15. Not provided.
19. Note provided.

#6

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[1] Water Crossing Checklist

Docket #: DT 13-037

Applicant: NHOS

Date: 2/28/2013

Analyst: David

Location: Widow Harris Brook, Salem (TID 319)
E279/7 T5701/7 – E279/8 T5701/8

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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	NA	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	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?
5	Yes	Compare facts stated in petition to "as built" drawings. Are facts consistent? Check things like pole numbers, span length, location, water body.
6	Yes	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	Yes	Does petition attest the proposed crossing is designed and will be built and maintained in accordance with the NESC?
8	Unk	Are existing attachments licensed? If not, notify existing attachers in writing and request license application.

[1]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	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	Unk	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	No	Is water suitable for sailing?
12	Unk	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	NA	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) 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, see note	Is there a minimum of **40 inches** between electric neutral and proposed attachment on each pole? NESC Table 235-5 1a
15	Unk, see note	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	2.15	What is maximum sag of proposed attachment under Heavy Load Conditions? NESC Table 250-1

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.

17	Done	Run tension numbers to verify maximum sag calculation.
18	Yes	Is there a minimum **12 inch** clearance between proposed attachment and adjacent communications attachments at each pole? NESC 235H1
19	Unk, see note	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:

14. 40" between NHOS attachment and electric drops.

15. Not provided.

19. Note provided.