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Martha's Vineyard Commission

DRI # 641 Comcast NSTAR Hybrid Undersea Cable

MVC Staff Report – 2013-01-18

1. DESCRIPTION

1.1 Applicant: Comcast Cable (North Central Division); NSTAR Electric Co.; Les Smith - Epsilon Associates (Agent)

1.2 Project Location: The cable will be under the sea floor until it reaches an existing underground manhole at the end of West Chop on Squantum Avenue off of Main Street (Map 29 Lot B-6) and then connects to existing overhead wires in Tisbury.

1.3 Proposal: To install an approximately 4 .5 mile long undersea hybrid fiber optic and electric cable from Falmouth to Martha's Vineyard that will supply both power and fiber-optic cable capability.

1.4 Zoning: N/A

1.5 Local Permits: Conservation Commission

1.6 Surrounding Land Uses: The cable will reach land underground in an existing manhole at the end of West Chop.

1.7 Project History:

- Martha's Vineyard is currently connected to the mainland with four electric submarine cables (#75, #99, #91, and #97), one of which is permanently out of service (#75).
- Cable #75 was installed in 1995 and enters Martha's Vineyard at Oak Bluffs and operated at 7 MVA maximum due to cable manufacturer's defect at time of installation. The cable failed in September 2011 and will not be repaired.
- Cable #99 was installed in 1996 as a replacement for defective Cable #75. It enters Martha's Vineyard at Oak Bluffs with a 17 MVA capacity (Rated 25 kV) and is currently operating. However, it has failed 4 times and been repaired each time
- Cable #91 is an older submarine cable design and was installed in 1986. It enters Martha's Vineyard in Tisbury with a 13 MVA capacity (Rated 25 kV) and is currently operating. It has failed 6 times and been repaired each time
- Cable #97 was installed in 1990 and enters Martha's Vineyard in Tisbury with a 13 MVA capacity (Rated 25 kV) and is currently operating. This cable has never failed.
- There are five GM Electromotive Division Diesel Generators (DGs) on MV, 3 located in Oak Bluffs and 2 located at Airport. Each DG is rated at 2.5 MWe. The number of temporary DGs increases each year.
- Total installed power capacity to Martha's Vineyard is 55 MWe assuming all sources operate. NSTAR must plan for the single-most significant source failing, in this case Cable #99, failure of which would reduce installed capacity to 38 MWe.
- In July 2011, a record loading peak was realized at 54.7 MWe and in July of 2012 a peak of 55.4 MWe was achieved. Load forecasts project peak load climbing to 73 MWe by 2022.

- Massachusetts Ocean Management Plan (MOMP) review: MVC participated in development of the MOMP. The project involves crossing several SSU's (Special, Sensitive or Unique Marine or Estuarine Life and Habitat), particularly eelgrass beds and hard or complex bottoms. The project has been designed to avoid both. MOMP coverage extends to within 1500 feet of shore. The first 1500 feet from land is not included in MOMP and protection of this area falls to the local and regional boards. The HDD (Horizontal Directional Drilling), as proposed, is the preferred method for avoiding eelgrass impacts.

1.8 Project Summary:

- To install an approximately 4 .5 mile long undersea hybrid fiber optic and electric cable from Falmouth to Martha's Vineyard that will supply both power and fiber-optic cable capability. The new cable will be sized to supply 25 MVA at 25 kV which will replace that lost when Cable # 75 failed.
- The purpose is to provide redundant communications and electric services.
- The project proposes horizontal directional drilling (HDD) as the method of cable installation at the Falmouth and Tisbury landing sites. The HDD will be utilized for 3,000 to 3,200 off of West Chop 23'–30' feet beneath the floor of Vineyard Sound. A 1"-3" pilot hole will be followed by a reaming head, then the conduit and cable.
- The rest of the submarine cable between the HDD areas near shore is proposed to be installed via cable-trenching remotely-operated vehicle or hydro-plow.
- The project will also result in redundant upland routes in Tisbury for Comcast Communications services on existing utility poles as well as NSTAR Electric connections on approximately 15 new utility poles extending from an upgraded existing riser station to a connection point on Martha's Vineyard.
- They have completed MEPA review and received a public benefit determination in July 2012. NHESP indicated that shorebirds should be avoided so the installation will have time of year restrictions.

2. ADMINISTRATIVE SUMMARY

2.1 DRI Referral: Pending from Tisbury.

2.2 DRI Trigger: (5.1c) Development in the Water: Ocean. Any development…that is proposed within the waters of Martha's Vineyard, namely: c) The ocean.

2.3 Pre-Application meeting with staff: November 1, 2012

2.4 LUPC: November 26, 2012

2.5 Public Hearing: January 24, 2013. Pre Application Presentation December 6, 2012.

3. PLANNING CONCERNS

3.1 <u>Some Key Issues</u>

- Habitat Time of Year Restrictions: Will the drilling and excavation work be done at times of the year that will not disturb migratory marine or bird life.
- Is there capacity in the conduit for future co-location of cables?
- Will construction or maintenance impact the rural dirt road and/or sand dunes?
- What measures are being taken to ensure the integrity of the environment?

3.2 Environment

- **Vegetation:** Eel grass. The Applicant will utilize Horizontal Directional Drilling (HDD) for 3,000 – 3,200 feet off of Tisbury to avoid Eel Grass beds.
- **Habitat:** The entire undersea cable route passes through mapped NHESP habitat. The Applicant will submit of Notice of Intent (NOI) with NHESP. The Applicant has revised the proposed route to avoid hard complex bottom areas that could harbor habitat. NHESP indicated that shorebirds should be avoided so the installation will have time of year restrictions.
- **Landscaping:** The cable will be underground until it reaches an existing manhole and then connects to existing overhead wires. Approximately 15 new poles may be required within the existing NSTAR Right of Way.
- **Lighting:**
- **Energy/Sustainability:** The hybrid cable will provide redundant connectivity to the Island for both electric and cable connections that have been compromised in the past.
- **Waste Management:**
- **Wastewater / Stormwater:**
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3.3 Transportation

- **Traffic Summary:** LUPC voted that his project does not require a Traffic Study.

3.4 Affordable Housing

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3.5 Economic Impact

- Given the break down history of several of the existing cables and the proliferation of large backup GM Diesel Generators in July and August the provision of redundant connections could help avoid a major loss of power in the future.

3.6 Scenic Values

- **Streetscape:** UP to 15 additional utility poles may be required. The specific sites of these poles are unknown at this time.
- **Building Massing:** N/A

3.7 Local Impact/Abutters

- Should be minimal. NSTAR will provide a police detail during installation.

4. CORRESPONDENCE

4.1 Town Officials:

4.2 Island Organizations:

4.3 Public: Elizabeth Buddy has submitted a letter with several concerns. Elizabeth Buddy submitted a second document on 1/18 with many questions (forwarded to Applicant).