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March 15, 2017

Via US Mail and PDF E-mail
Rene Pelletier, PG
Assistant Director
Water Division
New Hampshire Department of Environmental Services
29 Hazen Drive
PO Box 95
Concord, NH 03302-0095

Re: SEC Docket No. 15-04 – Application of Public Service Company of New Hampshire d/b/a Eversource Energy for a Certificate of Site and Facility for the Construction of a New 115 kV Transmission Line from Madbury Substation to Portsmouth Substation (Seacoast Reliability Project);
Comments of Counsel to the Public to NH Department of Environmental Services

Dear Mr. Pelletier,

Enclosed, please find comments by the ESS Group submitted on behalf of Counsel for the Public in the above referenced docket before the New Hampshire Site Evaluation Committee related to the Department of Environmental Services' review of the Applicant's applications for wetlands and water quality permits. The enclosed comments are submitted as a follow up to oral comments made at a meeting between Counsel for the Public and its consulting experts, the ESS Group, and NHDES staff, Dori Wiggin and Gregg Comstock, on February 15, 2017. Please include these comments in the NHDES files for the pending permit applications.

Copies of the enclosed comments are also being submitted to the Applicant and the full service list in the relevant SEC docket in the interest of full disclosure. If you have any questions about the comments, please do not hesitate to contact me.

Thank you for taking these comments into consideration as part of the Department's ongoing review of permit applications submitted by the Applicant in connection with SEC Docket 15-04.

Sincerely,

Christopher G. Aslin, Assistant Attorney General
Counsel for the Public

CGA/llm
Enclosure

cc: Barry Needleman, Esq., McLane Middleton P.A.
Dori Wiggin, NHDES (via PDF e-mail only)
Gregg Comstock, NHDES (via PDF e-mail only)
Service List – Docket No. 15-04 (via PDF e-mail only)

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M E M O R A N D U M

TO:	Chris Aslin, Counsel for the Public	DATE:	March 15, 2017
FROM:	Payson Whitney Stephanie Wilson	ESS PROJECT NO.:	N510-000.01
SUBJECT:	**Seacoast Reliability Project—Little Bay Crossing Comments for Submission to NHDES**		
COPY TO:			

Based on our review to date of the information provided to the record for the Seacoast Reliability Project, ESS has prepared the following list of comments for submission to NHDES as a follow-up to our meeting on February 15, 2017. The comments are organized by technical topic area. We also provide some comments specific to the information presented in the Applicant's Joint NHDES-USACE wetlands permit application and their 401 Water Quality Certification request.

Sediment Sampling, Testing, and Analysis

Sampling

- The locations and spacing of the vibracores for the sediment sampling effort is considered reasonable and appropriate for routing assessments, but the discrepancy between penetration depth and planned sediment disturbance depth should be adequately explained by the Applicant.
- Several of the vibracores taken in September 2016 and April 2014 were not advanced to the full planned burial depth of the cable with no explanation as to why full depth sampling was not achieved.
    - April 2014 Sampling: The vibracore logs submitted in response to the Counsel for the Public's first set of data requests indicate that penetration to the full depth of the planned installation was not achieved at a number of locations. Therefore, sediment conditions in this portion of the route are apparently not fully characterized.
        - There are notations about refusal or loss of material in the field data sheets, but they are not included in the vibracore logs. What was the nature of the refusals?
        - Does the fact that the vibracore reached refusal in clay sediments mean that there is potential that the jet plow will not be able to install the cable to the planned depth of burial?
    - September 2016 Sampling: Several of the 12 vibracores taken in September 2016 were not advanced to the full planned burial depth of the cable and therefore do not provide representative data of the entire sediment column that would be disturbed by the jet plow device. Two vibracores had core penetration/recovery that were less than 25% of the planned lengths. Also similar to the April 2014 sampling, no explanation of why the vibracores did not reach full planned penetration is provided.
- It is not clear if the nature of the sediment column between the sediment-water interface and the planned depth of burial is understood due to the shallow depth of the vibracores submitted. It is important to understand the sediment types that will be fluidized by the jet plow—both for evaluation of potential impacts and for the installer to achieve the required burial depth.

- Does the cable installer expect that the full depth of burial will be achieved in the areas where cores hit refusal prior to the planned 4 or 8 foot burial depth?
- Will alternative methods for burial be permitted for use if sediment conditions prevent burial to the required depth by either jet plow or diver jetting[1]?

- The Applicant should provide a justification for splitting the long cores into 4 foot segments for analysis, particularly in areas that will require deeper burial (8 feet).
  - The text indicates that there was no stratification evident (page 6); however, cores collected from C-8, C-9, and C-11 are described as having a distinct difference in sediment type across the length of the core (Table 2).
  - Why were the cores not split at the observed change in sediment type and analyzed separately, as proposed in the sampling plan?
  - Core C-10 penetration reached only 24 inches below the sediment-water interface and sediment is noted as uniform fine sand. Why did this core not reach the intended 96 inch penetration depth?

Testing and Analysis

- The results of the chemical testing of the sediment were compared to the NOAA Effects Range-Low (ER-L) and Effects Range-Median (ER-M), which is common practice, and appropriate, for evaluating concentrations of analytes in sediments for potential environmental impacts.
- The laboratory testing found concentrations of arsenic in the sediment that were similar to those found in Little Bay by the EPA's National Coastal Condition Assessment Program. The Applicant's report compares its results to the ER-L and ER-M for both the upper layer only and the entire recovered core length. The jet plow will mix the entire sediment column during the installation, therefore use of the entire core length for the evaluation of impacts is appropriate.
- The 12 locations for the September 2016 vibracores are not the same as those used in the sediment dispersion model, which could lead to differences in the sediment size fractions identified using grain size analysis in 2016 and the size fractions estimated from visual vibracore observations that were used as part of the sediment dispersion model provided in Appendix 35.
- In the areas of proposed 8 foot burial where the vibracores hit refusal prior to 4 feet, the Applicant should provide an evaluation as to whether there is any reason to believe the deeper (unsampled) material (reported in the application to be typically clay material) is chemically different from the upper (sampled) material that was recovered and analyzed, particularly if there is evidence of arsenic concentrations being higher in finer material sediments (i.e., silt/clay).

Ecological Risk Assessment

- An Ecological Risk Analysis was performed by GEI Consultants and is included at Appendices A1 and A2. The watermark on the GEI memoranda indicates the documents are draft reports. The final version of the reports should be provided for the record.

[1] ESS was involved in a submarine cable project where very stiff clays prevented the jet plow from being used for the installation and a trench had to be mechanically dredged to facilitate cable installation. The use of dredging as a backup means of installation in this area was identified prior to installation and included in the project's permits as an approved method in the event the plow proving run indicated the jet plow would not be able to install the cable to the required burial depth.

- The draft memoranda conclude that the reported sediment chemical concentrations result in no potential for ecological effects from the constituents of concern. The Ecological Risk Analysis performed by GEI Consultants is considerably less detailed than those ESS has performed and reviewed for other submarine cable projects; however, similar conclusions were made.

Appendix 13: Joint NHDES USACE Wetlands Permit Application

- There appear to be inconsistencies in the description of impacts provided in the Environmental Fact Sheet. For example, the application makes the following apparently contradictory statements:

  > "Little Bay, including the Cable Area, provides habitat for shellfish, benthic infauna, lobsters and horseshoe crabs, and fish. The only permanent impacts will be limited to concrete mattresses used in locations near the shorelines if shallow bedrock prohibits cable burial to its full depth." [PDF Page 45]
  >
  > "There will be no permanent impact to tidal wetlands." [PDF Page 45]

  If NHDES or the USACE considers Little Bay a tidal wetland, there will be permanent impacts due to concrete mattresses and these impacts should be accounted for in the application.

- The bottom area that could be impacted by cable lay barge anchors and chain sweep of the installation vessel can and should be quantified in some manner. This has been provided for other submarine cable installation projects under environmental review. Page 6-39 states:

  "Potential temporary impacts along the Little Bay crossing include:

  - Direct disturbance of the sediment surface from cable installation along each cable trench (quantifiable) and from anchoring of the installation vessel (not quantifiable)"

  Since bottom impacts related to anchor use have been quantified and described for other projects, a similar evaluation should be provided for this Project.

Appendix 14: NHDES Section 401 Water Quality Certification Request

- Page 11 of the Appendix states, "In the areas where diver burial of the cables will take place within silt curtains, the suspended sediments will ultimately be redeposited within the entire enclosure forming a layer of unconsolidated material averaging approximately 1.2 (west) to 1.4 (east) inches thick although deposition will be greater directly over the trenches and thinner closer to the silt curtains. " This statement is inconsistent with the ASA Report (Appendix 35, p. 40) which indicates that average deposition ranges from 3.7-4.3 inches. The Applicant should confirm the correct value.

- Page 11 – "Env-Wq 1703.11 states: "(b) Class B waters shall not exceed naturally occurring conditions by more than 10 NTUs."

  It is unclear whether the turbidity standard of 10 NTU above natural occurring conditions will be exceed based on model results, which are reported in mg/l. The Applicant should explain the relationship between NTU and mg/l (i.e., no direct correlation), as well as define ambient conditions.

Applicant's Proposed Water Quality Monitoring Program

- The Applicant proposes monitoring suspended solids at locations 1,000 feet upcurrent and downcurrent of the cable installation. This is a large separation distance from the cable installation and may not pick up the effects of the plume from cable installation activities based on a review of the Applicant's sediment dispersion model. Based on our experience, performing water quality monitoring at a distance of 500 feet upcurrent and downcurrent of the operating jet plow is

consistent with similar monitoring performed in other states and is more likely to capture potential exceedances of the water quality standard, if they occur.

- The proposed water quality criteria for suspended sediment from the cable installation is based on NTUs. Since the sediment dispersion modeling presents concentrations in mg/L, NHDES could consider a water quality threshold based on mg/L. As an example, a threshold of 200 mg/L above ambient conditions at a point 500 feet down-current of the operating jet plow could be used as the compliance criteria, which is similar to that used by environmental agencies in other states for dredging and jet plow installations. NHDES could further require that if concentrations measured 500 feet down-current of the operating plow exceed concentrations at the up-current background station by more the 200 mg/L, NHDES is to be notified as soon as possible and reasonable and feasible jet plow operation mitigation measures are to be implemented.
- The Applicant states, "If it is determined that the impact station results are outside the range of natural variability, then the marine contractor will be required to modify their operation of the jet plow for the subsequent installation(s)." The Applicant should provide detail on how the monitoring team will ensure that sampling the impact stations aligns (in time) with sampling at the reference station to make the comparison for a particular period of time and the types of operation modifications that could be implemented.
- Since the fate and transport of chemical constituents in the sediment resulting from the jet plow operation has been raised as a concern by stakeholders, NHDES could consider requiring monitoring of chemical constituents in the water column in samples collected 500 feet up-current and down-current of the operating jet plow. Compliance could be determined by requiring that concentrations of constituents specific to the water quality limits for Little Bay not exceed either the specified water quality limits or 1.3 times the highest ambient background level measured during the same sampling day at the up-current background station at the same depth as the down-current sample, which is similar to that used by environmental agencies in other states for dredging and jet plow installations.
- NHDES could also consider requiring the Applicant to provide NHDES with an analysis comparing the installation monitoring results with the suspended sediment model predictions to determine if the model provided a reasonable prediction of the conditions that occurred during the installation.

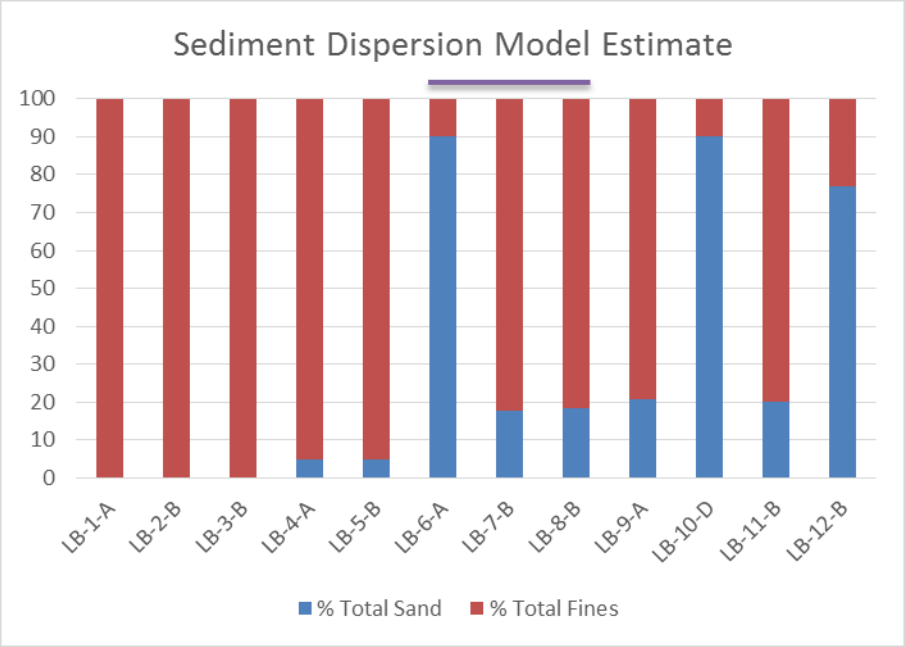
Appendix 34 Natural Resource Impact Assessment

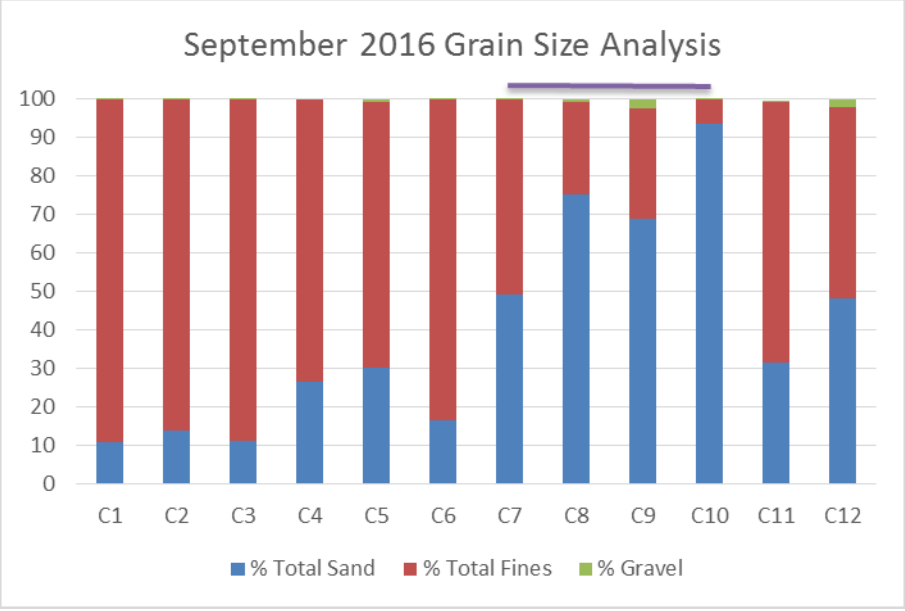
- The Application is unclear as to the length of existing cable that will be removed from the seabed of Little Bay. The anticipated length should be quantified and accounted for in the description of potential impacts to the bottom of Little Bay.
- The Applicant should explain whether the potential exists for the concrete mattresses to become exposed at low tide. Similarly, will placement of concrete mattresses in the shallow portions of Little Bay result in excess scour of the shoreline? Does the potential exist for ice scour to cause movement of the concrete mattresses?
- The Applicant should explain if the potential exists for the turbidity plume to create a barrier to the movement/dispersal of fish, particularly diadromous species that may utilize the shallow portions of the Bay where modeling indicates that the plume extends the entire depth of the water column (surface to bottom).

Appendix 35 Sediment Dispersion Model

- The models and methods used for the analysis of expected tidal currents in Little Bay and predicted suspended sediment concentration and deposition resulting from operation of the jet plow, diver burial, and dredging at the two landfalls are typical of those used by ESS and others for evaluating the potential effects related to submarine cable installation in both marine and estuarine environments.
- The results of the modeling are also similar to our experience in that they show that predicted suspended sediment concentrations and deposition induced by these operations is at its highest in the near-bottom portion of the water column near the operating device and lower concentrations and deposition thickness travel some distance from the cable alignment based on tidal current conditions. The results also show the suspended sediment concentrations return to ambient conditions within several hours of completion of installation operations, which has also been our experience—both with predictive modeling and field monitoring during submarine cable installations.
- The sediment dispersion modeling report indicates that the model assumed that 25% of the material volume in the trench would be suspended into the water column by the jet plow and 50% of the material volume in the trench would be suspended into the water column by the diver operated jetting tools. These percentages are consistent with ESS experience in modeling similar submarine cable installations and are considered to be conservative based on anecdotal descriptions ESS has received from divers and from the results of monitoring of actual suspended sediment concentrations performed by ESS during submarine cable installation where suspended sediment concentrations down-current from the operating jet plow were less than predicted by the model.
- The model predicts that the majority of the suspended sediment deposition will occur along the path of the jet plow and diver jetting, which matches our experience with similar projects. While some suspended sediment will be carried by Little Bay currents away from the cable trench, the predicted cumulative deposition thickness from installation of the three cables is largely 0.5 mm or less in an area of 87.9 acres around the three submarine cables. Table 3-9 in the report shows that the predicted area of cumulative sediment deposition from jet plow installation of the three submarine cables (including that which occurs over the cable trenches) is 144.5 acres, which represents a very small percentage of Little Bay.
- The report states that sediment modeling was based on sediment sampling performed for the project in April 2014. Page 7 of the report states that the sediment grain size information was “extracted from vibracore data logs” and that the “qualitative descriptions of each vibracore sediment sample were converted into fractions of sand, silt, and clay”. It has been our experience that the size fractions used in sediment dispersion modeling are developed using the results of laboratory grain size analysis so that the size fractions are based on quantitative data rather than someone’s observations of sediment type, which could vary from person to person. This is the first time we have seen visual observations of sediment type used to classify sediment size fractions for use in sediment dispersion modeling.
- ESS compared the grain size distributions provided in Appendix 35, Table 3-2 with the grain size analysis results provided in Table 3 of the 2016 sediment sampling report to determine the % Sand and % Total Fines in each. As shown in the graphs below, the grain size analysis results indicate a higher percentage of sand in the sediment than the 2014 visual observations, which could reduce the predicted suspended sediment concentrations and/or the deposition of suspended sediment

away from the jet plow trench. The purple line indicates the samples that are located in the Little Bay deep channel. Based on this comparison, it is possible the sediment dispersion modeling may over predict the levels of suspended sediment concentration and deposition resulting from jetting installation of the submarine cable in Little Bay, which would therefore be conservative.





- The Applicant should consider performing another run of the model using the grain size analysis results from the September 2016 sampling or from additional sampling that includes the entire depth of sediment disturbance from the jet plow.

- The modeling considers predicted suspended sediment concentrations from the jet plow and diver jetting separately, which is appropriate if the two operations will not occur simultaneously. The order of operations is not clear and should be more fully described in the Application record. If both jet plow and diver jetting will occur simultaneously, the cumulative effect on suspended sediment concentration increases above ambient should be addressed in Appendix 35.
- The Applicant should explain how the predicted sediment deposition thicknesses compare to the natural deposition rates in this part of Little Bay.