

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E. Room 1-A
Washington, D.C. 20426

Re: Comments on TransCanada Hydro Northeast Inc.'s Updated Study Results for Project No. 1892-026

September 28, 2016

Dear Secretary Bose,

The Upper Valley Subcommittee of the Connecticut River Joint Commissions (CRJC) is writing in response to TransCanada's (TC) Updated Study Reports, filed on May 17, 2016 and August 2, 2016, concerning the hydroelectric project referenced above. Wilder Dam is under the jurisdiction of the CRJC Upper Valley Subcommittee pursuant to the New Hampshire Rivers Management and Protection Act (RSA Chapter 483). The CRJC Upper Valley Subcommittee has been actively engaged in the relicensing process and has a number of concerns and recommendations.

1. Several inconsistencies in the erosion studies (ILP Studies 2 and 3: Riverbank Transect and Erosion Studies - Study Report) cause the Subcommittee to lack confidence in the report contents. For example:

- a. Throughout the Report, reference is made to "normal project operations," yet on page 107 mention is made of activities which result in flows outside normal operating ranges. If "normal project operations" are not the same as actual project operations, is it the right scenario for evaluating the effects of fluctuating water levels on riverbank erosion? Similarly, it is noted on page 106 that the median fluctuation was used for the erosion studies, not the extremes, which would reflect the actual operations and be associated with higher impacts. To evaluate permit conditions in the future, it will be necessary to compare the impacts under today's permitted pool fluctuation and an alternative with a smaller range.
- b. On page ES - 1 it is stated that nearly 40% of the riverbanks in the study area were mapped as unstable, yet on page 79 it is reported that 11% is eroding, 22% is vegetated eroding, 6% is failing armor, 15% is armored and 4% shows healed erosion. This totals 58%. Surely it can be assumed, given the cost and permitting required, that little if any of the 15% that is armored was done so without evidence of erosion.
- c. Throughout the report the Vernon impoundment is referred to as having decreased 8%, yet on page 110 it is stated that "Changes of less than 10%...should be considered within the margin of error given the discrepancies in mapping ..."

This means that it is not appropriate to talk about Vernon as having a decrease in erosion as 8% is within the margin of error.

- d. Boat waves are noted as having the potential to impact erosion more than water level fluctuations, and this reasoning is used to partly explain the increase in erosion rates at the Wilder Dam, yet few motor boats are found very far above the Wilder Dam due to limits on wake speed in the narrow upstream river stretches. Motor boats are far more prevalent on the more southern segments of the river where erosion rates are reported to have declined.
2. The reasoning used by the applicant's contractors to make the case that operation of the hydropower dams does not contribute significantly to riverbank erosion appears to the Subcommittee to be flawed (ILP Studies 2 and 3: Riverbank Transect and Erosion Studies - Study Report). For example:
- a. The Report seems to rely on the fact that since spring floodwaters carrying away the eroded bank material prevent bank stability and enable the cycle to continue, this makes other factors insignificant in the process. However on page 11 of the report it is noted that when a bank is at the threshold of failure, a slight increase in sheer stress or slight decrease in strength can lead to failure. On page 109 it is stated that the sediments in this area are particularly prone to erosion and as a result minor changes have the potential to initiate erosion. The conclusion that the largest factor in riverbank erosion on the Connecticut River is flooding was supported by the Connecticut River Streambank Erosion Study Massachusetts, New Hampshire and Vermont performed for the U.S. Army Corps of Engineers in 1979. However no attempt was made in Studies 2 and 3 to analyze the proportion of bank erosion which would occur with only spring flooding vs bank erosion plus spring flooding. The ACOE study determined that while flooding is the most significant cause of erosion, some control of bank erosion could be achieved by limiting the pool fluctuations associated with hydropower development (Executive Summary).
 - b. On pages 110-111, the Report describes how raising the water level, as was done in 1950 with construction of the Wilder Dam, "creates an unstable situation that leads to bank failure," yet with no explanation goes on to state that the increased rate of erosion is more likely due to natural inflows.
3. Although the applicant's consultants cite the Connecticut River Erosion Inventory performed by the Grafton County Conservation District (Kennedy et al. 1992), it appears that none of the statistical data or site-by-site photographic evidence contained in that Inventory were used in Studies 1, 2 or 3. This data could change both the erosion percentages outlined above, and the conclusions reached in the current studies.

The CRJC Upper Valley Subcommittee requests that the following be included in the renewed permit to address erosion impacts:

1. Require TransCanada to fund a study to determine the most effective way to repair the eroding banks and re-establish a riparian buffer that was here before the dams. A number of

different armoring projects have failed, and some of this is documented in Study 2/3. TC should fund a project to determine how the bank can be stabilized and restored.

2. The new license should be an “adaptive” license that will allow for changes during the period of the license. The new license should not be a license to operate without changes in dam operations for 50 years if changes in those operations are necessary. This will probably mean that there are ongoing studies of the operations of the dams and the license may have to be modified as a result of these future studies. With changing weather patterns and growing knowledge base about fluvial geomorphology, it cannot be considered reasonable to lock permit conditions in place for more than a decade at a time.
3. Consider modifications to the operating parameters of the Wilder Dam. For example, consider the impacts associated with run of the river, and of lowering the maximum elevation to 380 feet and reducing the maximum daily change to 2 feet.
4. Establish a mitigation fund to be used exclusively for repairing and restoring the riverbank including private lands and public infrastructure.

In addition, CRJC Upper Valley Subcommittee provides the following concerns on ILP Study 6—Water Quality Monitoring and Continuous Temperature Monitoring Study Final Study Report:

1. Sampling occurred only during the late spring, summer, and early fall months, thus missing the nutrient and solute loads present throughout the cold weather months, especially spring runoff.
2. The sampling method described in Methods 4.1.4 (page 13) consists of lowering a flexible PVC tube to within 1 meter of the bottom, allowing it to fill with water from various depths within the water column, capping it, pulling it back up and emptying it into a bucket, from which sample bottles were filled. This technique appears to be open to cross contamination from multiple sources.
3. There is concern that that the turbulence during high flow events such as spring runoff could cause elevated mercury (or other so-sequestered toxins’) levels in the river water due to high levels of mercury in the river sediments. Yet mercury was not among the parameters selected for water quality monitoring, nor was spring runoff water sampled.
4. It is disconcerting to realize that the water quality sampling results for dissolved oxygen differed significantly from the first sampling period in 2012, and the sampling done in 2015, which the study report attributed to stratification during a high temperature – low-flow period (see 5.6, page 117-119). One could infer from this that there is so much variability in water quality that a much more diligent sample design should have been used.

Finally, the CRJC Upper Valley Subcommittee supports the recommendations of the Connecticut River Joint Commissions and the peer review comments of Princeton Hydro as they relate to the relicensing of the Wilder Dam.

Thank you for your attention to our concerns.

Sincerely,

James Kennedy, Chair

Document Content(s)

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