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June 17, 2009

Fred Ayer, Executive Director
Low Impact Hydropower Institute
34 Providence St.
Portland, ME 04103

Subject: Final Application Reviewer Report for the Vernon Hydroelectric Project

Dear Fred:

Attached please find my reviewer's report on the application by TransCanada Northeast for certification of the Vernon Hydroelectric Project by the Low Impact Hydropower Institute (LIHI). Please contact me with any questions or concerns.

Best regards,

s//Gabriela

Gabriela Goldfarb

Attachment: as described.

**Review of Low Impact Hydropower Institute Application
for Low Impact Hydropower Certification:
Vernon Hydroelectric Project (FERC 1904)**

Introduction. This report reviews the application submitted by TransCanada Hydro Northeast (applicant) to the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification of the Vernon Hydroelectric Project (project or facility) located on the Connecticut River in Cheshire County, New Hampshire, and Windham County, Vermont.

Regulatory context. The Federal Energy Regulatory Commission (FERC) relicensed the project in 1979. In a 1992 license amendment FERC authorized replacement of the circa 1909 dam's four remaining original three-wheel turbines. The new authorization would have increased the generating capacity of the project from 24.4 megawatts (MW) to 44.4 MW and raised the total hydraulic capacity of the project from 15,530 cubic feet per second (cfs) to 20,930 cfs. However, the owner at the time never installed the turbines, and the project changed ownership, eventually being acquired by the applicant in 2005. After the acquisition the applicant applied to FERC for another license amendment to replace the antiquated and inoperable turbines. Instead of installing two 14.0-MW units, as authorized in the 1992 amendment, the applicant asked to replace the four existing inoperable 2.0-MW turbines with four new 4.0-MW units.

The following agencies were consulted prior to the filing of the amendment, and none objected to the project: United States Department of Interior Fish and Wildlife Service (DOI/USFWS), New Hampshire Department of Environmental Services (NHDES), New Hampshire Fish and Game Department (NHFGD), Vermont Department of Fish and Wildlife (VDFW), Vermont Agency of Natural Resources (VANR), New Hampshire Division of Historic Resources (NHDHR), Vermont Division of Historic Preservation (VTDHP), US Army Corps of Engineers (USACE), an advisory committee to the Connecticut River Joint Commissions, and the Town of Hinsdale Conservation Commission. The following agencies provided post-filing comments expressing concerns about natural resource issues and providing recommendations: DOI/USFWS, VANR, NHDES, and the Connecticut River Watershed Council.

FERC issued a license amendment approving the change in 2006. The change decreased the project's total authorized generation capacity from 44.4 MW to about 32.4 MW. The maximum authorized hydraulic capacity decreased from 20,930 cubic feet per second (cfs) to 17,130 cfs; however, the change increased hydraulic capacity compared to the existing conditions by 1600 cfs. The added generation first generated electricity in 2008, and did not change the facility's mode of operation.

Project and site characteristics. The project, located at river mile 142 on the Connecticut River, consists of a concrete gravity dam (a 500-foot-long overflow spillway with 10-foot high flashboards, a 100-foot-long gated sill block with two 20-foot-high by 50-foot-long tainter gates, and a 336-foot-long non-overflow section) and powerhouse. The project operates as a daily cycling generating facility with limited storage and has a minimum flow requirement, set in the 1979 relicensing, of 1250 cfs. The Environmental Assessment associated with the 2006 license amendment describes the flow regime as follows:

“Flows in this reach of river are highly regulated by upstream hydroelectric projects, except under high flow conditions. Typically when flows are less than the project’s hydraulic capacity, the project operates in a daily cycle run-of-river mode, where daily inflow matches daily outflow. Generation can vary in the day between the required minimum flow and full capacity if flows are available. The minimum flow at the project is 1,250 cfs or inflow, whichever is less.”

The 401 Certification issued for the license amendment notes:

“The Applicant operates the Vernon Hydroelectric Project on a daily cycle, receiving inflow from upstream hydroelectric storage and un-regulated inflow. The Applicant stated that water level fluctuations greater than two feet occur infrequently in the Vernon impoundment, as the normal reservoir operating range is 218-220 ft above mean sea level.”

The powerhouse structure and dam contain 10 Francis type turbines. Units 1 through 7 operate at 133.5 RPM and units 9 and 10 operate at 75 RPM.

Resource agency letters commenting on LIHI certification application. LIHI received three letters from resource agencies in opposition to the project’s certification in February 2009. The commenting agencies were: U.S. Fish and Wildlife Service (USFWS), VDFW, and Massachusetts Department of Fish and Game (MADFG). The letters, and a response from the applicant, are attached as Exhibit A. The resource agency letters express the opinion that the project does not meet LIHI’s criteria on a number of counts and therefore should not be certified. Their concerns, and the applicant’s responses, are summarized in the table below:

Issue	Agency Concerns	Applicant Response
Peaking operations	Flow fluctuations due to peaking operations are harmful to fish and wildlife and should render facility ineligible for LIHI certification.	Acknowledges impacts from peaking operation, cites Vernon’s particular susceptibility to fluctuations from natural inflows, consideration of a pump storage project’s effect on downstream pool, flow coordination efforts with downstream project, and absence of agency comment concerning flow fluctuations or impacts to habitat, organisms, or endangered species during the 2006 FERC license amendment and associated Clean Water Act Section 401 Certification issuance (“2006 proceedings”)

Issue	Agency Concerns	Applicant Response
Minimum flows	Mandated flow of 1250 cfs set during 1979 relicensing does not meet current conservation, Aquatic Base Flow, or Montana-Tennant standards, and predate LIHI's requirement for post-1986 review.	Agencies did not raise the minimum flow issue during the 2006 proceedings, and a company review of actual discharges in 2008 showed they were at or above 1700 cfs 98.27% of the time.
Lack of eel, riverine fish passage	Anadromous fish passage is generally acceptable, but there is no passage for eel or downstream passage for riverine fish.	Agencies did not raise eel or riverine fish passage issues during the 2006 proceedings.
Impacts of new turbines on fish passage	Agencies have requested evaluations of the impacts of the new turbines on passage effectiveness but studies have not been done, so it is premature to confer LIHI certification.	Agencies participated in extensive discussions with the applicant about impact of new turbines on shad and salmon, NHDES approved a fish passage monitoring plan submitted to FERC [since approved], agencies agreed to allow the applicant to conduct fish mortality studies prior to effectiveness studies, but effectiveness studies are now scheduled for 2009, high water and lack of returning shad prevented other relevant studies, applicant evaluated attractiveness of the fish ladders and established a protocol for seasonal operations.

Resource agencies had the opportunity to review the project in the context of the 2006 license amendment and associated water quality certification, and did recommend measures to address impacts of the repowering. The focal points for resource agencies' recommendations are best summarized by the plans they required:

- 1) A plan to monitor the effectiveness of upstream fish passage of Atlantic salmon and other anadromous fish during operation of the new units;
- 2) A plan to monitor the effectiveness of the downstream fish passage in accordance with the Connecticut River Atlantic Salmon Commission's strategic plan for the restoration of Atlantic salmon to the Connecticut River;
- 3) A flow release monitoring plan;
- 4) An operations compliance plan;
- 5) A dissolved oxygen and water temperature monitoring plan; and
- 6) A turbine installation-related debris removal plan.

None of the agencies asserted in their February 2009 letters, or in recent telephone conversations, that they deem the applicant to be in violation of its FERC license or Clean Water Act 401 Certification. Agency staff expressed frustration, however, that their participation in the 2006 license amendment process would be considered by LIHI to satisfy the requirement for post-1986 resource agency review of the project.

Regarding the flows issue, the reasons agency staff gave to explain the lack of increased minimum flow recommendations at the time of the 2006 proceedings were fairly consistent: it was communicated to staff that flows were “off the table” in the context of a repowering amendment; addressing the impacts of peaking flows at one facility would not have a significant impact on the river system given unchanged flows at upstream and downstream projects; and that the appropriate time to address the flow issue would be in 2018, when Vernon and several other projects would come up for relicensing and flows and other impacts could be addressed more comprehensively. (See also the discussion below under “Section A. Flows” and the records of contacts at the end of this document.) Flows are expected to be the major issue during relicensing.

Regarding fish passage, agency staff consulted during this application review said that they had concerns at the time they wrote the February 2009 letters to LIHI that progress had stalled with respect to requested anadromous downstream passage-related studies. By the time of this LIHI review, resource agency staff reported that they had arrived at an agreement with the applicant to move those studies forward. While the agencies’ February 2009 letters addressed issues related to downstream passage of anadromous fish, downstream passage for riverine fish, and upstream and downstream passage for eel, in conversation staff did not raise eel or downstream riverine fish passage as a concern.

For the record, during the previous opportunity for agencies to make recommendations for the project, namely the 1992 license amendment, agencies focused on concerns about construction impacts to water quality and fish passage, as well as two kinds of operational impacts. One was the potential for deterioration in the effectiveness of upstream passage due to increased volume of discharges from the new turbines proposed for installation. The other was potential adverse effect on downstream passage of Atlantic salmon smolts; the concern was that the increased capacity of the new turbines (turbines that were ultimately not installed) would lead to reduced spillage, in turn increasing the likelihood of fish entrainment and turbine-related mortality.

Recommendation. Based on my review of information submitted by the applicant, my review of additional documentation, and my consultations with resource agency staff, I believe the Vernon Hydroelectric Project meets all of the criteria to be certified and I recommend certification.

Low Impact Certification Criteria

A. Flows

- 1) **Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation**

and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?

YES

NHDES issued the project a Clean Water Act Section 401 Certification (401 Certification) in July 2006 on behalf of the States of New Hampshire and Vermont in conjunction with the 2006 license amendment. The 401 Certification explicitly acknowledged that the activity would “cause hydrologic modifications to the Connecticut River, including changes in flow regime upstream and downstream from the Vernon Dam beyond that which occurs under un-regulated conditions.”

The 401 Certification’s statement that “[t]he Applicant, under the existing (1979) federal license, provides a year-round minimum flow release 1,250 cubic feet per second through the Vernon powerhouse for the protection of aquatic life immediately downstream from the powerhouse” is followed by a condition that requires the filing of an operations plan developed in consultation with NHDES, Vermont Department of Environmental Conservation (VTDEC), NHFGD, and USFWS. The plan was required to detail, among other things, the applicant’s approach to complying with the required minimum flow release. The agencies reviewed the plan, and NHDES issued its approval in April 2008, acknowledging the applicant’s compliance with the relevant 401 Certification requirements; FERC issued its “Order Approving Flow Operations And Monitoring Plan” in September 2008.

In foregoing the opportunity to issue revised flow requirements at the time of the 2006 license amendments, the resource agencies effectively let stand the 1979 flow requirements. While resource agency staff contacted during this LIHI application review raised concerns about the circa 1979 minimum flow requirement (see above “Resource agency letters commenting on LIHI certification application”), all confirmed that the applicant is in compliance with required flow conditions.

If YES, go to B.

PASS.

B. Water Quality

1) Is the Facility either:

- a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or**
- b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?**

YES

Resource agency staff contacted about this application confirmed the applicant's compliance with water quality-related requirements of its 401 Certification.

If YES, go to B2.

2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?

YES

Waters both upstream and downstream of the project are listed for an array of pollutants. However, the 401 Certification raises only temperature and dissolved oxygen as possible concerns related to the project, stating that the project's impoundment:

"...reduces water velocities and increases hydraulic residence time of the Connecticut River in the area of the Activity beyond that which occurs under un-impounded conditions. These conditions may promote variable water quality conditions, particularly regarding water temperature and dissolved oxygen. In addition, these conditions can foster the development of aquatic plant communities, including phytoplankton, which can influence other water quality parameters such as pH and water clarity."

The 401 Certification required the applicant to prepare a plan to monitor dissolved oxygen and water temperature in the river to ensure compliance with New Hampshire and Vermont Class B surface water quality standards. The applicant is to report results annually, and take steps to revise project operations to remedy any relevant violations of state water quality standards revealed by the monitoring. The applicant consulted with NHDES and VTDEC in the plan's preparation, and received NHDES approval (on behalf of both states). FERC approved the plan in January 2009. Agency staff consulted for this review did not raise concerns about the applicant's compliance with respect to these water quality issues.

If YES, go to B3.

3) If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?

YES

According to the agency staff consulted for this LIHI application review, the applicant is in compliance with its 401 Certification and therefore deemed not to be in violation of state water quality standards.

If YES, go to C.

PASS.

C. Fish Passage and Protection

1) Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?

YES

Resource agency staff and other stakeholders consulted for this review stated that the applicant is in compliance with fish passage prescriptions; some of those contacted expressed a degree of frustration over the pace of progress in undertaking certain studies. The most recent prescriptions were for the preparation of separate upstream and downstream passage plans required by resource agencies in the 2006 amendment proceedings.

Upstream passage. In June 2008 FERC approved the applicant's plan (filed January 2008) to monitor the effectiveness of upstream fish passage of Atlantic salmon and other anadromous fish during operation of the new units. The facility has a 984-foot fish ladder constructed in 1981 and designed to pass 40,000 adult Atlantic salmon and 750,000 adult American shad annually. The monitoring plan details the requirements for a field evaluation study to compare actual flows to those predicted by an earlier computational fluid dynamics study. A primary goal of the studies was to assess whether a disruptive eddy that could adversely affect upstream passage would be created by the new turbines, necessitating a change in project operations. A written summary of a February 2009 meeting between the applicant and fishery agency staff¹ indicates that at least one component of the required study had been completed and operational protocols developed as a result. (The meeting summary further notes that those results and protocols had not been filed with FERC or the agencies, and that the applicant's representative agreed to do so by March 2009. At the time of this writing no such filing could be found, and the applicant's representative could not be reached for clarification. The assumption for this review is that upstream passage compliance is in order. Any information to the contrary will be provided during the LIHI Governing Board's consideration of the application.)

Downstream passage. In May 2009 FERC approved the applicant's downstream passage plan (submitted January 2008 and amended April 2008) to monitor the effectiveness of downstream fish passage in accordance with the Connecticut River Atlantic Salmon Commission's strategic plan for the restoration of Atlantic salmon to the Connecticut River. The plan reflected a contentiously achieved agreement between the applicant and the resource agencies about stepwise measures to evaluate fish passage with the new turbines operating; the agencies wanted a comprehensive assessment of passage effectiveness from the outset, while the applicant wished

¹ The summary of the meeting between the applicant and resource agency staff (USFWS, NHFG, VDFW, MADFG) was included in the applicant's April 2009 submittal to FERC of its turbine survival study report; the February 2009 meeting addressed a range of fishery issues at various TransCanada projects.

to first assess turbine survival. The applicant committed to the following in its April 2008 letter to FERC accompanying its submittal of revisions to the plan:

1. If a turbine survival study of the new units is less than 95%, representing the highest percentage presently through existing units, an effectiveness evaluation focusing on the out-migrating population that chooses Unit 5-8 as the passage route will be conducted. If turbine survival through the new turbines is at least 95%, no additional studies would be conducted.

2. Additional monitoring proposed for juvenile American shad is to conduct visual assessments, from the surface and underwater, of their movement in the forebay. Agency representative will take part in the assessment with TransCanada and conclusions drawn will determine whether additional monitoring need be considered. This assessment will be conducted in the fall when shad migrate. We expect the agencies will inform us of when shad downstream migration appears to be occurring.

The applicant conducted the turbine survival study in May 2008. In February 2009 the applicant met with resource agencies to discuss a previously-circulated agency draft of the study results. The applicant explained in an April, 2009 letter to FERC:

As a result of... slightly lower than expected survivability results, all parties at the [February 2009] agency consultation meeting, including TransCanada, agreed that a comprehensive assessment of route selection, lower guidance efficiency and bypass (fishpipe and fishtube) passage effectiveness for emigrating Atlantic salmon smolts similarly to the 1995 and 1996 studies, but with the new units active [sic]. A copy of the Study Plan for the 2009 downstream passage season is attached to this letter. The results of this study will be filed with the Commission following agency consultation and review before December 31, 2009. Combined with the results of the 2008 turbine survival study and the upcoming 2009 study should produce [sic] a comprehensive evaluation of the impact of the new units on downstream passage.

The study plan for 2009 addresses the concerns about passage-related studies raised by resource agency staff in letters to LIHI earlier this year. In May 2009 FERC issued its “Order Approving Plan to Monitor Effectiveness of Downstream Fish Passage Pursuant to Article 403” retroactively approving the turbine survival study proposed in the applicant’s 2008 downstream passage study plan as well as the new comprehensive passage study slated for this year (the “Study Plan to Monitor the Emigration of Radio Tagged Atlantic Salmon Smolts at Vernon Hydroelectric Project, Spring 2009” submitted by the applicant to FERC in April 2009 along with results of the 2008 turbine survival study results).

If YES, go to C5.

5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?

NOT APPLICABLE

There are no mandatory fish passage prescriptions for riverine fish.

If NOT APPLICABLE, go to C6.

6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?

YES

Entrainment of anadromous fish is addressed in the context of fish passage measures; see above.

If YES, go to D

PASS.

D. Watershed Protection

1) Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline

NO

If NO = go to D2

2) Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1., and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?

NO

If NO = go to D3

3) Has the facility owner/operator established through a settlement agreement with appropriate stakeholders and that has state and federal resource agencies agreement an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation)

NO

If NO = go to D4

4) Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.

YES

In consultations conducted for this review two stakeholders raised concerns about erosion from the face of Vernon dam downstream to Turner dam (Connecticut River Watershed Council and the Windham Regional Commission, a planning agency representing local governments). The project's 401 Certification and 2006 FERC license amendment required the applicant to file an Erosion Monitoring Plan; FERC approved the plan in January 2009. The new plan complements an existing monitoring regime in place since 1995, and focuses on potential new impacts arising from the operation of the new turbines. Resource agency staff contacted for this review said they did not have concerns about erosion, or about the applicant's compliance with the plan.

An article of the 1979 license makes brief reference to a requirement that "all authorized uses and occupancies of project lands and waters...[be] consistent with shoreline aesthetic values," and there are also a number of requirements related to recreation requirements (see section F, below).

If YES = Pass, go to E

PASS.

E. Threatened and Endangered Species Protection

1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?

YES

The only federally listed wildlife species occurring in the vicinity of the project at the time of the 2006 license amendment was the threatened bald eagle; the federal government delisted the bald eagle in 2007. There is also one state-listed threatened plant in the project vicinity, *Hypericum ascyron* or Great St. John's-wort. This plant, and numerous state-identified "rare" plants are protected by a 1988 "Special Habitats" Cooperative Agreement to protect ecologically significant sites at the Project entered into by a previous project owner and the Nature Conservancy; the agreement was assigned to the applicant at the time of license transfer and remains in place.

If YES, go to E2.

2) If a recovery plan has been adopted for the threatened or endangered species pursuant

to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?

NOT APPLICABLE

If NOT APPLICABLE, go to E3.

- 3) If the Facility has received authority to incidentally *Take* a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?**

NOT APPLICABLE

If NOT APPLICABLE, go to E5.

- 5) If E.2. and E.3. are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?**

YES

As noted above, a plan is in place to protect the known habitat in the vicinity of the project of the plant listed as threatened by the State of Vermont.

If YES, go to F.

PASS.

F. Cultural Resource Protection

- 1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?**

YES

Officials from the New Hampshire and Vermont state historic preservation offices confirmed that the applicant is in compliance with the requirements of its Historic Properties Management Plan.

If YES, go to G.

PASS.

G. Recreation

- 1) **If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?**

YES

Public use of the site is provided at state and applicant-owned boat launch, picnic, and recreation areas. The project's 1979 FERC license required the then owner to implement a number of recreation improvements, including boating enhancements, provision of potable water to recreation areas, and maintenance of natural areas. There were no recreation-related requirements that accompanied the 2006 license amendment.

If YES, go to G3.

- 3) **Does the Facility allow access to the reservoir and downstream reaches without fees or charges?**

YES

The applicant does not charge fees for access to the reservoir or downstream area.

If YES, go to H.

PASS.

H. Facilities Recommended for Removal

- 1) **Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?**

NO

If NO, facility is low impact.

PASS.

FACILITY IS LOW IMPACT

RECORD OF CONTACTS

Date of Conversation: May 8, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: John Warner, USFWS
Telephone/email: 603-223-2541
Areas of Expertise: Natural resources

Vernon is a peaking project with flows set in 1979. When agencies raised the flow issue in the context of a 1990s license amendment to increase capacity by installing new turbines the company argued the agencies could look only at the incremental change in flows. [TC's predecessor never installed the new turbines] and in the most recent proceeding, the 2006 license amendment by TC [to finally replace the turbines] the company asked to reduce capacity from authorized levels [because it was asking to install smaller turbines than the approved 1992 amendment obtained by the previous owner]. TC argued that because of the limited range of the pool there is no major change resulting from the installation of the new units. Agencies reviewed this non-capacity amendment [that is, an amendment that would not increase capacity beyond a level already authorized], and made the call that flow issues would be addressed in the context of relicensing in 2018, that FERC would not find it germane if the agencies tried to open the issue. Flows will be the major issue in 2018 when multiple projects on the Connecticut River are up for relicensing; eliminating peaking at one spot would not have helped if the rest of the system is peaking. Regarding the water quality certification's silence on flows, many WQCs don't address project flows. TC's upper CT River Lakes land protection was very positive. The mercury agreement was not of major significance.

Date of Conversation: May 11, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Gabriel Gries, NH Department of Fish and Game
Telephone/email: Gabriel.Gries@wildlife.nh.gov
Areas of Expertise: Natural resources

In an email Mr. Gries wrote:

I am not as familiar with the details of the Vernon Project as staff of the VT F+W Department and the USFWS are. As such, I would defer to their letters regarding this issue and any verbal comments you may obtain from them.

Date of Conversation: May 12, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Greg Comstock, NH Dept. of Env. Svcs. Watershed Mgmt Bureau
Telephone/email: (603) 271-2983
Areas of Expertise: Natural resources

Supervised the staffer, Paul Piszczek, since retired, who wrote the water quality certification for the license amendment. Has not been following the project since the position was vacated and cannot comment on it.

Date of Conversation: May 12, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Jay McMenemy, VT Agency of Natural Resources, Dept. of Fish and Wildlife
Telephone/email: 802-885-8855
Areas of Expertise: Natural Resources

TC installed new turbines that were smaller than what had been authorized so project “sort of slid through” regulatory review. Regarding fish passage, what agencies wanted [at the time of the TC’s license amendment to install the turbines] was to perform a detailed study of salmon smolt migration. TC wanted to do a study of survival rates instead, and then perform the smolt migration study only if survival wasn’t high enough. Results of survival study were 10% mortality and 5% injury – results that were not as good as TC thought. Migration study is being done now, but lost another year. Report is due this summer/fall. Acknowledged that license language is vague enough to allow for disagreements. TC was also supposed to study shad, which are a hard species to study. TC agreed to do a visual study with cameras, but didn’t do it last fall as expected, and didn’t notify until agency asked for the results in the winter that the study hadn’t been done; now have to wait till fall 2009. Regarding flow, the licensed amounts are antiquated. Agency staff were given to understand that flows were not open for discussion at the time of the 2006 license amendment.

Date of Conversation: May 12, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Rod Wentworth, VT Department of Fish and Wildlife
Telephone/email: 802-241-3700
Areas of Expertise: Natural resources, hydropower review

Vernon is different than Fifteen Mile Falls. The project has not been through relicensing; that is due in 2018 (along with two other TC-owned projects, Bellows and Wilder). TC got amendments approved for turbine replacement. Vernon’s flows and operations do not meet today’s standards. The time to address those issues is during relicensing, but agency sign off on the 2006 amendment should not be seen as endorsement of those flows. Concern that LIHI would give this project a green seal of approval.

Date of Conversation: May 13, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: David Deen, Connecticut River Watershed Council
Telephone/email: 802-869-2792
Areas of Expertise: Natural resources.

TC has not committed any willful violations, and are meeting their obligations. The company has yet to complete the flow study for fish migration; the change of turbines changed the flows. TC has started on smolt and shad studies. Delays are the result of TC not allocating adequate staff resources to complete the work; too much work to do for one person. A major downstream issue is erosion from the face of Vernon dam to Turner dam. CRWC was frustrated that New Hampshire was unwilling to take up the issue in the context of the license amendment for installing the new turbines.

Date of Conversation: May 13, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Jeff Cueto, VT ANR
Telephone/email: 802-241-3758
Areas of Expertise: Natural resources

Flow requirements date from 1979 relicensing and are not in compliance with current conservation flow standards. Decision was made however not to open the flow issue at the time of the license amendment for installation of the new turbines since TC did not propose expansion of capacity beyond the previously-approved amount; the agencies were willing to put it off until relicensing in 2018. The sense was that trying to open up the flow issue in the context of the amendment would have prompted litigation.

Date of Conversation: May 14, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Jim Matteau, Windham Regional Commission
Telephone/email: 802-257-4547
Areas of Expertise: Regional planning

Vernon Dam issue of concern because of erosion concerns in the Turner Falls pool below Vernon, though the commission supports increased electricity generation. Should speak with staffer John Bennett.

Date of Conversation: May 14, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: John Bennett, Windham Regional Commission
Telephone/email: 802-257-4547
Areas of Expertise: Regional planning

Commented to FERC on license amendment, citing concerns about erosion and support for any recommendations made by VANR and USFWS regarding fish passage. With respect to erosion, asked FERC to require measures to minimize potential increase to downstream erosion impacts

in cooperation with downstream Turner Falls and Northfield projects. Operators all point at each other as source of erosion. The 401 certification written for the amendment got TC off the hook.

Date of Conversation: May 15, 2009
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Edna Feighner, NH Dept of Cultural Resources, Div. Historic Resources
Telephone/email: 603-271-2813
Areas of Expertise: Cultural and historical resources

Involved in the license amendment. Surveys were performed, no major issues arose. FERC is the most sensitive of all federal agencies to cultural resource issues. TC is very forthcoming, complies with all requests.

Date of Conversation: May 18, 2008
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Caleb Slater, Massachusetts Department of Fish and Game
Telephone/email: (508) 389-6331
Areas of Expertise: Natural resources

TC projects are not “green” in his view; the reason company is applying for LIHI certification is inclusion in Mass. DOER. Has no regulatory role, issues outlined in letter to LIHI.

Date of Conversation: May 27, 2008
Application Reviewer: Gabriela Goldfarb, Consultant
Person Contacted: Devin Colman, Vermont Division of Historic Preservation
Telephone/email: 802-828-3043
Areas of Expertise: Cultural resources

Everything seems to be in order regarding the Vernon project, with the filing of the Historic Properties Management Plan and its implementation, TC is following through on their obligations.
