



December 15, 2016

## New Hampshire Department of Environmental Services

### Response to Comments

#### WQC # 2016-FERC-001

<b>Activity Name</b>	Eastman Falls Hydropower Project (FERC No. 2457; NH Dam No.087.10)
<b>Activity Location</b>	Franklin, Hill, Sanbornton, and New Hampton, NH
<b>Affected Surface waters</b>	Pemigewasset River, Winnepesaukee River, Merrimack River
<b>Owner/Applicant</b>	Public Service Company of New Hampshire d/b/a Eversource 780 North Commercial Street Manchester, NH 03105

On October 31, 2016, the New Hampshire Department of Environmental Services (NHDES or DES) released a draft water quality certification (WQC # 2016-FERC-001) for public comment regarding the continued operation of the Eastman Falls Hydropower Project (FERC No. 2457) by Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH). The public comment period ended on December 2, 2016. Comments were received from PSNH and the Upper Merrimack River Local Advisory Committee (UMRLAC). NHDES' response to comments are provided below. In some cases, comments have been paraphrased. A copy of the original comments may be obtained from NHDES upon request (contact Owen David at Owen.David@des.nh.gov).

### **RESPONSE TO COMMENTS**

#### **A. Comments received from PSNH**

**Comment A.1:** The town of Sanbornton should be included in the Introduction.

**NHDES Response: Changes made.** *The town of Sanbornton was added to the Introduction.*

**Comment A.2:** The description of the Activity in Finding D-1, includes a discussion of maintaining a level of +/- 1 foot when flashboards are lowered. This text is missing from Condition E-8.b. PSNH adds that flashboards are lowered when river flows exceed approximately 6000 cfs.

**NHDES Response: Changes made.** *Condition E-8.b.was revised as requested.*

**Comment A.3:** Finding D-12 states that a water conservation plan is not required but Condition E-15 requires registration under the NHDES Water Use Registration and Reporting program (WURRP). PSNH is already registered under this program.

**NHDES Response:** *No changes made. Finding D-12 acknowledges that the Activity is registered under the WURRP and that a water conservation plan is not required. Since PSNH is already registered with the WURRP, Condition E-15 just requires PSNH to continue to register, measure and report all withdrawals and discharges associated with the Activity, as required under the WURRP.*

**Comment A.3:** With regards to condition E.8.c. (Impoundment Refill Procedures), PSNH stated the following: “Although the NHDES concurs with the USFWS’ recommended standard procedure whereby 90% of the inflow would be passed downstream and 10% would be used to refill the impoundment, PSNH is unclear how passing only 502 cfs, which is almost 90 cfs higher than the existing 410 cfs minimum flow, when inflows are above 502 cfs, is going to adversely affect upstream and downstream resources. PSNH understands the impetus behind the USFWS recommendation for the 90/10 proposal is to protect the state threatened Brook Floater mussel located downstream. However, as the report prepared by Normandeau Associates included in Section 7.5 of the Initial Study Report and distributed to stakeholders on May 8, 214, states: “*the Pemigewasset River between Eastman Falls Dam and the confluence with the Winnepesaukee River in Franklin, New Hampshire has suitable habitat to support several species of freshwater mussel (Unionidae), including brook floater. Brook floater specimens were found at several locations where suitable habitat was found. Brook floater was the second most abundant species collected during the survey; the numerically dominant species found was eastern elliptio.*” The Normandeau study concludes: “*This survey showed that brook floaters are common in the Pemigewasset River below Eastman Falls Dam where suitable habitat exists.*” This demonstrates that current operations have not negatively impacted the Brook Floater mussel in this segment of the Pemigewasset River, and, as a result, PSNH does not believe that providing 502 cfs during refill will negatively impact mussels. In addition, FERC’s Environmental Assessment concludes that using the 10% refill rule at an inflow of 650 cfs would result in a refill timeframe of over 4.5 days, where PSNH’s proposed method would take just under 2 days and maintain a steady downstream flow of 502 cfs. PSNH’s proposed refill approach is also consistent with refill requirements that have been required in WQCs for other recently licensed projects<sup>2</sup> owned by PSNH.”

**NHDES Response:** *No changes made. NHDES consults with and values the expertise of staff at the NHFGD and USFWS for issues regarding fisheries, protection of endangered or threatened species, etc. As stated in Finding D-16, both of these agencies support the USFWS’ standard refill procedure of passing 90% of the inflow and retaining 10% for refill of the impoundment (i.e., the 90/10 refill protocol) because of the presence of brook floater mussels (a State-listed endangered species) downstream. Finding D-16 further states that passing 90% of the inflow during pond refill is expected to help prevent dramatic reductions in downstream flow that may occur if PSNH’s proposed refill procedure was allowed. Such dramatic changes in flow could adversely impact the brook floater mussels.*

*With regards to historical refill practices, and as stated in Finding D-1, it is unclear from the information submitted by PSNH how much flow was released and how much was retained in the past when the impoundment was refilled. Even if historical refill practices were similar to what PSNH currently proposes, it’s possible that the State-endangered brook floater mussel population downstream of the project could be even more abundant if the USFWS 90/10 refill protocol was implemented..*

*Although Condition E-8.c. specifies the 90/10 refill protocol, it allows for modifications with prior approval of NHDES, USFWS and the NHFGD. As stated in Finding D-16, NHDES will consider other*

*refill procedures if it can be demonstrated to the satisfaction of NHDES, NHFGD and the USFWS that it will be protective of aquatic life, and, in particular, the brook floater mussels.*

*With regards to refill procedures at other hydropower projects, each are evaluated based on their own merits. Since conditions vary from site to site, it is not uncommon to have different refill procedures. As stated in Finding D-16, "... in instances where there are significant resources in the impoundment that would benefit from a quicker refill, the USFWS has deviated from its standard protocol".*

**Comment A.4:** With regards to condition E.8.d. (Drawdown Rates), PSNH stated the following: "PSNH acknowledges that the agencies prefer a maximum drawdown rate of approximately 6 inches per day, to the extent practicable. However, PSNH notes that utilizing that approach for a typical maintenance drawdown of seven feet, would require two weeks to achieve. This would make scheduling maintenance activities and coordinating around associated effects of rainfall and runoff events extremely difficult."

**NHDES Response: No changes made.** *NHDES understands that there may be instances where a maximum drawdown rate of 6 inches per day is not practicable. This is why Condition E.8.d allows exceptions to the 6 inch per day drawdown rate "...if required by operating emergencies beyond the control of the Applicant or for short periods upon approval by NHDES".*

#### **Comment A.5**

With regards to Finding D-20 and Condition E-13 concerning water quality monitoring, PSNH stated the following:

"The initial portion of Finding D-20 regarding water quality monitoring partially recites the relicensing history with respect to requests for water quality monitoring studies during the relicensing period. Following this recitation, DES finds that water quality monitoring should be conducted by the Applicant to confirm that the activity is not causing or contributing to water quality violations for dissolved oxygen, temperature, pH, total phosphorus and chlorophyll-a in the impoundment and downstream of the Eastman Falls dam. In addition, vertical profiles of dissolved oxygen and temperature should be taken in the impoundment to determine if it stratifies because stratification can result in low levels of dissolved oxygen in the impoundment and tailrace. Finally, DES notes that it will clarify what is meant by "worst case" conditions and directs the Applicant to condition E-13.

Condition E-13 Water Quality Monitoring Plan (WQMP) requires the Applicant to submit a water quality monitoring plan for approval to determine if the Activity is causing or contributing to violations of state surface water quality regulations. The WQMP includes, but is not limited to: (1) the pre-identification of a dryer than normal summer (July 1 through September 30) when river flow is at or below three times the 7Q10 flow and water temperatures are approximately 25 degrees Celsius or greater (i.e. near worst case conditions); (2) the deployment of continuous monitoring, multi-parameter dataloggers to measure dissolved oxygen (concentration and percent saturation), water temperature and pH from a site in the impoundment and a site downstream of the dam; (3) collection of two vertical profiles in the impoundment for dissolved oxygen and water temperature (in one foot increments from the surface to the bottom) on two days when dataloggers are deployed and conditions are near worst case; and (4) collection of 12 grab samples (once a week for 12 weeks when the dataloggers are deployed) in the impoundment for total phosphorus and chlorophyll-a. Quality assurance provisions and data standards are also required. To determine if water quality has changed, similar sampling may be required every five years. If the results indicate that the Activity is causing or contributing to violations of surface water quality standards, NHDES may require implementation of mitigation measures and additional monitoring to confirm that mitigation measures have resulted in attainment of surface water quality standards.

The Applicant objects to this condition on the grounds that a comprehensive, jointly funded cost-sharing effort by the federal government, through the United States Army Corps of Engineers; DES and various communities in the Upper Merrimack and Pemigewasset River watershed clearly supports a conclusion that the Activity does not result in violations of applicable state water quality standards. This study met, for all practical purposes, the study requirements of Condition E-13. The identified purpose of this study was to extend the evaluation of instream water quality in the main stem Pemigewasset River and Merrimack River upstream to Lincoln, NH, close to the headwaters. An additional goal of this significant study effort was to create a time dependent model of flow and water quality to guide a variety of activities and decisions.

CDM Smith, ranked 22nd on Engineering News-Records 2015 Top 500 Design Firms list and 13th on their 2015 Top 200 Environmental Firms list, was contracted to perform the study. All activities were performed by members of the CDM team, comprised of CDM and its subcontractors Normandeau Associates Inc. of Bedford, NH; University of Massachusetts School for Marine Science and Technology (SMAST) of New Bedford, MA; and MWH Laboratories of Monrovia, CA. The approved field sampling program and plan included impoundment studies, continuous dissolved oxygen and temperature monitoring and low and high flow water quality surveys. Both the ACOE Franklin Falls Dam in Franklin and the Applicant's Eastman Falls Dam in Franklin were included in the study plan. Data quality objectives were established for the sampling program, including collecting water quality, sediment and impoundment data sufficient for extending water quality and hydrologic/hydraulic models from Manchester, NH to Lincoln, NH. Program components included impoundment studies from June to October, 2009; Continuous Monitoring from July to September, 2009 and two low flow events, Low Flow Event #1 on July 27, 2010 and Low Flow Event #2 on September 21, 2010.

For the impoundment studies, once a month for five months, sampling teams took vertical profiles of dissolved oxygen and temperature and water samples for total phosphorus and chlorophyll-a analyses at three stations within both the Franklin Falls Dam and the Eastman Falls Dam impoundments. Samples were generally collected from the top five feet of the water column and at one site within each impoundment an additional depth sample was taken from the bottom 25% of the water column and analyzed for total phosphorus. At each location a profile of dissolved oxygen and temperature was recorded to assess impoundment stratification. Each of the five monthly impoundment studies included periods of both above and below average flows. Streamflow during the fourth survey was between 7Q10 and two times 7Q10 at Franklin (i.e. worst case conditions). No stratification of the impoundments was observed during the five impoundment surveys, including the Survey 4 worst case condition in the Franklin Falls/Eastman Falls area. All readings for dissolved oxygen were above the state standard of 5 mg/L or 75% saturation, including the Survey 4 worst case condition in the Franklin Falls/Eastman Falls area.

Continuous dissolved oxygen monitoring was conducted upstream and downstream of the Franklin Falls and Eastman Falls Dams from mid-July to mid-September 2009. Data was collected during this period at 15 minute intervals. Field crews performed routine maintenance throughout this monitoring period and downloaded data frequently. The stations upstream and downstream of the Franklin Falls and Eastman Falls dams continuously recorded levels above the dissolved oxygen percent saturation standard of 75% and the concentration standard of 5 mg/L. Notably, as indicated in Figures 3-4: Representative Dissolved Oxygen Trends Upstream of Dams and Figure 3-6: Representative Dissolved Oxygen Downstream of Dams, both the percent saturation and concentration of dissolved oxygen are well within the state standards, as opposed to being close to violation levels.

Two low flow surveys were conducted (July 27, 2010 and September 21, 2010) to capture the conditions of the river during a single day event. Low flow targets were established at each of the four main stem USGS streamflow gages as three times the 7Q10. For low flow survey #1 (July 27, 2010) streamflow conditions were near or above the low flow event target at two gauges and at or below the target at two gauges. In the Eastman Falls area (Merrimack at Franklin) flows were below the low flow event target at 2.2 times 7Q10 (see Table 4-5 and Figure 4-3, Merrimack at Franklin). For low flow survey #2 (September 21, 2010) streamflow conditions were at or slightly above the low flow event target at two gauges and below the low flow event target at two gauges. In the Eastman Falls area (Merrimack at Franklin) flows were below the low flow event target at 1.3 times 7Q10 (see Table 4-14 and Figure 4-5 Merrimack at Franklin).

Concentrations of dissolved oxygen measured during the two low flow surveys ranged from 5.7-5.8 mg/L. No field readings or Winkler samples showed concentrations less than the NH Class B water standard of 5 mg/L. In only two locations during the first event was the dissolved oxygen concentration measured to be lower than the NH Class B saturation standard of 75% - both locations were downstream of wastewater treatment plants and neither was in or near the Eastman Falls impoundment. There were several locations with saturation percentages below 75% during the second low flow survey, but none of these locations were in or near the Eastman Falls impoundment.

Additionally, during both low flow studies, field teams took measurements when sampling at locations where the water was slow moving and deep. Measurements in the Eastman Falls impoundment upstream of the Franklin Falls dam indicated both saturation and concentration well above the state standards. Concentration and saturation varied minimally throughout the water column. Upstream of the Eastman Falls dam there was some evidence of stratification during the first low flow study. Dissolved oxygen concentration at the surface was 5.8 mg/L and dropped to 5.3 mg/L (both above the state standard of 5.0 mg/L) at a depth of 12 feet, and temperature declined from 25.2°C and declined to 23.3°C at a depth of 25 feet near the bottom. Not surprisingly, at both locations, saturation and concentration were somewhat lower during low flow survey #1, when temperatures were higher.

With respect to phosphorus and chlorophyll-a, the results were similar. Phosphorus levels upstream of the Winnepesaukee and Pemigewasset confluence were generally below 0.025 mg/L (the EPA guidance value for impoundments, not a New Hampshire state standard), with the exception of the headwaters in Lincoln. Chlorophyll concentrations ranged from 1 to 12 ug/L within impoundments, 0.4 to 21 ug/L in mainstem riverine samples and 0.2 to 4 ug/L in tributary samples. In the area of the Eastman Falls project, the New Hampshire state standard of 15 ug/L was not exceeded. It was noted that chlorophyll-a levels generally decline after dams, indicating that while there is growth in the impoundments, the system is flushing itself in ways that prevent long term accumulation. This decline was not observed downstream of the Franklin Falls dam, possibly because it is within the Eastman Falls impoundment.

The results of the comprehensive study described in detail above, in which DES was an active participant, clearly indicate that the area in the vicinity of the Applicant's Eastman Falls Project is currently in compliance with New Hampshire state water quality standards. As a result, FERC Staff concluded that additional post licensing water quality monitoring could affirm the results of the ACOE's 2009 study, but would not document any new effects on water quality.

However, DES claims that the study conditions were not worst case "enough", even though a determination was made that the low flow study standards had been met and the low flow study could proceed. Via draft Condition E-13, DES hypothesizes that at some difficult, if not impossible to identify even worse case conditions in the future, additional monitoring may result in the identification of surface water quality violations. Neither the ability to hypothesize a low flow and high temperature situation in

which water quality standards might be violated, nor the potential for water quality to change over time justifies the excessive sampling and monitoring requirements of draft Condition E-13 in this situation, where the data from a study DES funded and participated in demonstrates compliance.

Applicable federal and state laws require both current and future compliance and have legislatively established penalties that apply in the event of violations. Furthermore, there is no federal or state statutory authorization for DES to require future monitoring in connection with the issuance of a 401 Water Quality Certificate to ensure that the Applicant will be in compliance with standards that have not yet been implemented for the applicable water body, such as total phosphorus or chlorophyll-a. Although the Applicant does not believe that any additional monitoring is appropriate based on the facts set forth above, the Applicant would accept a limited additional study for a three day (72 hour) period during a low flow condition (i.e. when river flow is at or below the 7Q10 flow<sup>3</sup> and water temperatures are approximately 25 degrees Celsius or greater) at some point during the summer period July 1 through September 30, provided that if such study again demonstrates compliance, the Applicant's study obligations will be considered complete and no additional studies will be required."

"<sup>3</sup>DES prescribes a low flow condition of three times the 7Q10 or less. The 7Q10 is calculated to be 222 cfs which equates to a prescribed condition of 666 cfs, a flow that is exceeded almost 40% of the time in August. If further studies are deemed warranted, the trigger flow should be at or near the 7Q10 flow."

**NHDES Response: Changes made.** *DES believes that the water quality monitoring is appropriate for the following reasons:*

*a. NHDES is very familiar with the U.S. Army Corps of Engineers study and monitoring report<sup>1</sup> ( i.e., the USACE 2012 report) referred to by PSNH and even assisted with some of the river sampling (but not at Eastman Falls hydropower project). As correctly stated by PSNH, one of the goals of the study is to create a time dependent model of flow and water quality on the Upper Merrimack and Pemigewasset Rivers. Hence, data was primarily collected to calibrate and validate the model under various conditions, including low and high flows. Of course, the data also provided an indication of existing water quality at the time samples were taken. The primary purpose was not specifically to determine if the various hydropower projects complied with surface water quality standards at all times or to determine the effect of hydropower operation on water quality standards.*

*b. With regards to water quality at the time samples were taken for the USACOE 2012 monitoring and data report, NHDES concurs that no exceedances of dissolved oxygen criteria , chlorophyll-a, or nutrient thresholds were observed. Although the data may suggest compliance, NHDES believes that more data is needed to confirm that Eastman Falls hydropower project does not cause or contribute to surface water quality violations for the following reasons:*

- For example, impoundment monitoring conducted in 2009 (section 2 of the USACOE 2012 report) was conducted when river flows were generally above average during the study which likely resulted in water quality (i.e., temperature, dissolved oxygen, nutrients and chlorophyll-a) being better than what would have been measured during a drier summer with lower flows. As reported in USACE 2012 report, although there was no evidence of stratification in the impoundments during the 2009 impoundment study, flows were above average for the summer (except for a part of September) which "likely increased flushing of the impoundments and prevented stratification at locations that may stratify under normal or below average summer*

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<sup>1</sup> *Upper Merrimack and Pemigewasset River Study: Field Program 2009-2012 Monitoring Data Report*". New England U.S. Army Corps of Engineers. Prepared by CDM Smith. December 2012.

*streamflow conditions” (Section 2.6.1, p 2-26). NHDES expressed these concerns in its October 29, 2015 comment letter to FERC.*

- *Similarly, Section 2.6.2, p. 2-27 of the USACE 2012 report states that the lack of evidence of significant algal growth in the lower impoundments “suggests that the higher than average flows in the impoundments in the summer of 2009 prevented excessive growth that could result in stressed dissolved oxygen conditions.”*
- *The low flow monitoring conducted on 9/21/2010, was conducted during cool water temperatures ( 17 to 18° C in the Eastman Falls impoundment) which likely resulted in higher dissolved oxygen measurements (see page 4-46 of the 2012 USACOE report).*
- *The dissolved oxygen profile in the Eastman Falls impoundment collected during the relatively low flow (approximately 2.2 times the 7Q10), relatively high water temperature (approximately 23.4 to 25°C) event on 7/27/ 2010 , indicated possible stratification and the potential for excursions of the minimum dissolved oxygen criteria of 5.0 mg/L (the minimum dissolved oxygen was approximately 5.3 mg/L – see page 4-46 of the 2012 USACOE report).*
- *The data reported in the 2012 USACOE report is now over five years old.*
- *FERC licenses are typically granted for 30 to 40 years.*

*c. With regards to the assertion that NHDES does not have the right to require monitoring for standards which have not yet been implemented for the applicable water body, such as total phosphorus or chlorophyll-a, NHDES disagrees. Regarding section 401 water quality certifications, RSA 485-A:12, III states that “Certification shall include any conditions on, modifications to, or monitoring of the proposed activity necessary to provide assurance that the proposed discharge complies with applicable surface water quality standards.” Although total phosphorus and chlorophyll-a thresholds are not included in state surface water quality standards (Env-Wq 1700) they are used to assess waters to help determine if the narrative nutrient criteria (Env-Wq1703.14) is being met and to help explain dissolved oxygen results (i.e., low dissolved oxygen associated with diurnal fluctuations could be due to algal growth caused by high nutrient concentrations).*

*Upon reassessment of the data reported in the USACOE 2012 report, and in an effort to address some of the concerns expressed by PSNH while still being protective of water quality, the following revisions were made to the water quality monitoring requirements in condition E-13:*

- *E-13.b.2) was revised to require deployment of dataloggers for 30 days instead of 3 months during a summer that includes periods when flows are approximately at the 7Q10 low flow and water temperatures are relatively high. A period of 30 days should be sufficient to collect the data needed to assess compliance during low flow/high temperature conditions and to provide a sense of how the Activity affects water quality before, during and after periods of low flow.*
- *E-13.b.4) was revised to be consistent with E-13.b.2 (i.e., the number of weekly samples of total phosphorus and chlorophyll-a to be collected when the dataloggers are deployed was reduced from 12 to 4).*
- *E-13.d. was revised to provide clarification of when NHDES would likely require additional sampling [i.e., NHDES may require additional monitoring no sooner than five years from the previous sampling effort if results indicate the potential for water quality violations with relatively little change in water quality (i.e., water quality standards have been marginally met)].*

**Comment A.6:** With regards to condition E-9.b. (monitoring requirements for impoundment and flow management), PSNH stated the following: “This condition states “the Applicant shall submit to NHDES a summary of the monitoring data (i.e., impoundment level, generation output, flow conditions, as well as waste gate and flashboard settings) for the previous calendar year with appropriate tables, graphs and text to facilitate review and verification of compliance. This requirement is unreasonable and burdensome.

Providing 365 days of 24-hour data is not practical or feasible. PSNH proposes to implement monitoring and reporting as defined in the Operation Compliance Plan (Section 3.0) which is modeled after requirements for the Merrimack River Project and includes an annual letter documenting any “significant” deviations from the approved Operations and Compliance Monitoring Plan.”

**NHDES Response: Changes made.** *NHDES disagrees that this condition is unreasonable and burdensome because the information required in condition E-9.b is necessary for NHDES to determine compliance with this certification and is very similar to what PSNH proposed<sup>2</sup> in the Final License Application (FLA) dated December 18, 2015 . For example, the FLA states that records of operations, run-of-river flows, and water levels will be maintained electronically and made available upon requests. The main differences appear to be that PSNH proposes to provide this information upon request and without any specifics on how it would be submitted whereas condition E-9.b requires an annual “...summary of the monitoring data (i.e., impoundment level, generation output, flow conditions, as well as waste gate and flashboard settings) for the previous calendar year with appropriate tables, graphs and text to facilitate review and verification of compliance.”*

*Under PSNH’s proposal, NHDES could require submittal of the data on an annual basis; therefore there is no difference in that respect.*

*Under PSNH’s proposal, it is unclear what PSNH would submit to demonstrate compliance (if requested by NHDES). To make it clear that NHDES would expect more than just raw data, condition E-9.b requires a summary of the data with appropriate summary tables, graphs and text to facilitate review and verification of compliance. This should not be difficult to prepare since most, if not all of the data is already “maintained electronically”. Once the format is standardized, the report can be easily updated from year to year.*

*For example, among other information that may be required, submittals could include graphs showing the pond elevation, river flow and power generation (or at least when power was generated) vs time (near continuous) for each month. Elevations corresponding to +/- 0.2 feet, +/- 0.5 feet and +/- 1.0 feet from the top of the flashboards should also be shown. Where deviations, and the reasons for the deviations, were not in accordance with condition E-8.b, and, if applicable, E-8.c and E-8.d, those areas should be highlighted and a summary provided of the reasons for the deviations, the duration of the deviations and a description of corrective actions taken to prevent such deviations from reoccurring. Records of when the waste gate was opened and when flashboards were lowered should also be maintained and provided if requested. NHDES is willing to consider other ideas on how to present the data.*

*To be consistent with the discussion above, condition E-9.b was revised as follows:*

*“By April 1 of each year (beginning the first April after the FERC license renewal for the Activity becomes effective), the Applicant shall submit to NHDES a summary report for the previous calendar year with appropriate summary tables, graphs, text and supporting documentation that demonstrates compliance with (and, if applicable, any excursions of the project operation requirements specified in the OCMP (see condition E-11) regarding condition E-8 of this*

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<sup>2</sup> From section 3 in Appendix B (Operation Compliance Monitoring and Maintenance Plan) of the Final License Application submitted on December 18, 2016: “PSNH will continue to monitor generation, impoundment levels, and inflows at the Project. A pressure-sensitive headwater sensor is in place at the dam and provides impoundment levels. Records of operations, run-of-river flows, and water levels will be maintained electronically. These records can be retrieved and be made available upon request; PSNH will provide copies of monitoring data (i.e., headwater level, generation output, and flow conditions) to the FERC, NHDES, USFWS, and NHF&G to verify compliance.

*certification. Where excursions occurred, the summary shall indicate when the excursion occurred, the duration of the excursion and a description of corrective actions taken to prevent such excursions from reoccurring.”*

## **B. Comments received from the Upper Merrimack River Local Advisory Committee (UMRLAC)**

**Comment B.1:** “We support the licensee’s proposal, reflected in 401 condition E-8(a) and E-8(b), which requires run-of-river operations within  $\pm 0.2$  foot of the target pond elevation of elevation 307 feet msl.

a. We agree that a  $\pm 0.2$  foot operating band going forward is reasonable and supportive of aquatic health in the river, and we support this as the normal operating range. We understand that pond fluctuations outside of this range may rarely occur due to annual flashboard failure and replacement, or emergencies beyond Project control.

b. It is not entirely clear how FERC, NHDES, or others will be able to confirm that the licensee is complying with operating conditions (beyond self-reported records) since there are no USGS flow gages upstream or downstream of the Project. The closest USGS flow gage is the Merrimack River USGS gage at Franklin Junction, which has influences from the Winnepesaukee River. There also isn’t a USGS gage on the impoundment to track water levels.

***NHDES Response: Changes made.** Determination of compliance will be in accordance with condition E-9 of the Certification. The method used to estimate inflow is described on p.4-23 of the Final License Application which states: “River flow data at the Eastman Falls Project are measured by subtracting the flow at the U.S.Geological Survey (USGS) 01081000 gage on the Winnepesaukee River from USGS 01081500 gage on the Merrimack River, and is prorated to compensate for the drainage area between the Eastman Falls Dam and the USGS gage.” Also, please see NHDES’ response to comment A.6 above which includes revisions to condition E-9.b.*

**Comment B.2:** UMRLAC supports USFWS and NHDES’s recommendation to require the PSNH to follow the USFWS standard protocols for refilling impoundments, reflected in 401 condition E-8(c).

“a. UMRLAC believes that Eversource’s proposal for providing a flow of 502 cfs (0.5 cfsm, approximately equal to the August median monthly flow in most unregulated New England streams and rivers) is generally not supportive of the Pemigewasset River’s natural flow regime, particularly outside of the summer months. Pemigewasset River flow impacts will also considerably alter the upper Merrimack River’s flow regime.

b. Impoundment refill procedures following flashboard failure will likely be most frequently implemented immediately following high springtime flows. Eversource’s proposal would reduce Pemigewasset River flows to mid-summer levels in the winter or spring months. The winter and spring months are a critical spawning and incubation period for many aquatic species that are adapted to (and perhaps dependent upon) naturally high flows during this period. For immobile or slow-moving species such as the state-endangered brook floater, incubating fish eggs, or other macroinvertebrates, temporary flow reductions during key periods like this can interrupt life cycles or result in mortality due to stranding or dewatering.”

If an alternative refill procedure other than the USFWS standard protocol is pursued, UMRLAC would like to be consulted as part of the alternative protocol development.

***NHDES Response: No changes made.** Please see NHDES’ response to comment A.3 above. NHDES will do its best to include UMRLAC in discussions regarding alternative refill procedures.*

**Comment B.3:** UMRLAC supports the drawdown rate methodology in 401 condition E-8(d).

**NHDES Response:** *No changes made. No response necessary.*

**Comment B.4:** We support the USFWS fishway prescriptions for American eel, including upstream and eventual downstream passage measures after eels have been documented using the upstream passage facilities.

**NHDES Response:** *No changes made. No response necessary.*

**Comment B.5:** “UMRLAC encourages USFWS and NHDES to consider the possibility for future fishway prescriptions if and when upstream passage is completed at Eversource’s Hooksett and Garvins Falls facilities on the Merrimack River. Though we are not aware of the final passage numbers, river herring returns on the Merrimack River (and to Amoskeag Dam in Manchester) this year may have been high enough to require upstream passage measures at the Hookset development. This would leave only one dam (Garvins Falls) requiring fish passage before anadromous fish are able to reach Eastman Falls Dam.

**NHDES Response:** *No changes made. No response necessary.*

**Comment B.6:** UMRLAC generally supports NHDES’ water quality monitoring conditions as described in condition E-13. UMRLAC is wondering, however, if NHDES can elaborate on the rationale of re-evaluating the water quality conditions once every five years. We appreciate NHDES recognizing that water quality conditions can change over the course of such a long license period, and suggest a revision of the NHDES recommended sampling frequency protocol. We do have four recommendations:

- a. UMRLAC suggests revising condition E-13(c) to require at least three consecutive years of water quality monitoring immediately following license implementation, since the licensee will likely not know whether ‘near worst case’ conditions will occur during a given summer until it is already happening. If the trigger conditions outlined in condition R-13(b)-2 do not occur in the first three post-license years, then monitoring should continue each year until the near-worst case condition occurs and is appropriately monitored.
- b. We recommend that follow-up water quality sampling throughout the operating license term be repeated for three consecutive years every ten years (i.e., three years on, seven years off), rather than once every five years. We believe that sampling in three consecutive years, even if there is a longer break in-between sampling periods, may provide more sufficient coverage of the range of water quality and chemical conditions. It may take several five-year cycles to develop a similarly representative sample and understanding of what the measurements represent, by taking samples one year in five.
- c. We recommend that NHDES request consultation on sampling and datalogger locations to ensure that the loggers are placed in appropriate and representative locations in case there are differences between dissolved oxygen levels from spilled water versus turbine discharge. This may require two downstream sampling locations.
- d. We request that Eversource or NHDES make the water quality data and summary report publically available in an electronic format via a website that UMRLAC and members of the public can access and review if they are interested.

**NHDES Response:** *No changes made. Please see NHDES’ response to comment A.5 above. Although more data is always welcome, NHDES believes the water quality monitoring requirements in condition E-13 (as amended) will be adequate to determine compliance in this case.*

*NHDES will consider any recommendations UMRLAC may have with regards to sampling sites.*

*Requests for electronic copies of the water quality summary report required in condition E-13.b.8 may be made to NHDES or PSNH. This document will also likely be available on the FERC elibrary (<https://www.ferc.gov/docs-filing/elibrary.asp>).*

**Comment B.7:** “UMRLAC requests to be consulted and allowed to review and comment draft versions of license implementation plans before they are made final. Specifically, we request the opportunity to review and comment on the following plans while they are in development:

- a. Operation compliance monitoring plan (OCMP)
- b. Invasive species management and monitoring plan (ISMMP)
- c. Water quality monitoring plan (WQMP)
- d. Fishway operation and maintenance plan
- e. Fishway effectiveness monitoring plan
- f. Any other license implementation other plans that will be developed following license issuance.”

**NHDES Response:** *No changes made. NHDES will do its best to let UMRLAC know when drafts of the above plans are submitted.*