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March 31, 2014

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
88 First Street, N.E.
Washington, DC 20426

Stakeholder Comments for: FERC Project No. 2485-063, the Northfield Mountain Pumped Storage Project; and FERC Project No. 1889-081, the Turners Falls Hydroelectric Project.

RE: US. Fish and Wildlife Service's Notice of Study Dispute, filed March 13, 2014; and FirstLight's response filed March 28, 2014, as Information Relevant to the US Fish & Wildlife Service Notice of Study Dispute.

Dear Secretary Bose,

Please consider the following comments concerning the necessity of robust study information being required of the license applicant in order for the US Fish and Wildlife Service and stakeholders to be fairly represented in this process. The requested full Study on impingement and entrainment and data arising from examination of Northfield Mountain Pumped Storage Station's operational effects on all life stages of American shad is new information that will also assist FERC in fully considering public resources and the public's interest in a balanced and functioning Connecticut River ecosystem.

On March 13, 2014, the U.S. Fish and Wildlife Service (USFWS) filed a Notice of Study Dispute with the Federal Energy Regulatory Commission (Commission) stating that the Study Plan Determination issued by Commission staff would not elicit adequate information specific to "the effects of Northfield Mountain Pumped Storage Project (NMPS) on certain migratory fish species." FirstLight argued that information from a 1992 entrainment study would be sufficient to stand-in for current relicensing information.

The USFWS's information request was made to fulfill responsibilities in determining the impact of NMPS pumping operations on American shad mortality, from eggs and early-life stages, to juvenile and adult fish. USFWS noted that a "failure to provide this information will compromise the Commission's ability to establish license conditions and the Service's ability to set mandatory conditions under Section 18 of the Federal Power Act (FPA)."

The USFWS further stated:

"A new study of NMPS is needed because operations have changed since the last study was conducted and FirstLight is considering additional changes to project operation that could increase the potential for entrainment at NMPS. With anticipated improvements to fish passage facilities as part of the relicensing process for the Turners Falls Project, those numbers could increase into the hundreds of thousands."

Under Goals and Objectives USFWS stated: “The goal of the Service’s original study request (Appendix A) was to determine the impact of NMPS pumping cycle on entrainment of American shad (including early life stages.)”

Pursuant to a March 26, 2014 teleconference between USFWS, FirstLight, and Commission staff, FirstLight formally responded on March 28, 2014, by supplying a portion of six years of seasonal pumping information from NMPS. FirstLight submitted it as being representative of an overall decrease in plant pumping operations since the original 1992 mortality/entrainment study. FirstLight supplied monthly and daily pumping data for the bracketed years of 1991 – 1993; and then again for 2011 – 2013. In its filing FirstLight stated that, aside from the 1992 study-year data included, the other five years “were arbitrarily selected.”

A preponderance of accepted data shows NMPS operations impacting reaches of river at least as far downstream as Holyoke Dam, 36 miles distant, as well as throughout the Turners Falls Impoundment nearly to Vernon Dam, 20 miles upstream. In the months of June and July NMPS’s unrestricted pumping output of up to 15,000 CFS actually outstrips the Connecticut’s natural flow volume. Studies confirm that entrainment of eggs, juveniles, and adult fish have significant impacts on ensuing year-class strength. They can impact whole-river populations.

Given this understanding, the “arbitrary” pumping years FirstLight has submitted to support limiting the scope of this study appear selective, rather than “arbitrary.” They coincide exactly with the all-time peak years of fish migration on the Connecticut during the early 1990s, and again, with the only shallow bit of improvement for shad migrating into the Turners Falls Impoundment since deregulation in 2000--the years 2011, 2012, and 2013, leading directly into a relicensing application. It should be noted that “arbitrary” is not synonymous with “random.” Random is an accepted scientific parameter.

It is noteworthy that FirstLight selected as its first grouping the years 1991 – 1993 for pumping information. Those years selected can be characterized as skewed, rather than arbitrary or random, in that two of them represent the highest years of fish passage ever recorded (1991, 1992) through Turner Falls Gatehouse. These were record years along the entire river. However, the slight fall-off starting in 1993, began the first extended period where shad returns along the Connecticut River began a steady downward spiral.

The other data set FirstLight offers as “arbitrary” are from the years 2011 – 2013. What is interesting about this “arbitrary” FirstLight data is that it excludes the entire decade--beginning in 2000, when NMPS began operating as a deregulated entity. Then, as today, NMPS could draw, and release—unrestricted, up to 15,000 CFS into the TF Pool, according to market prices and demand. What is powerfully obvious about the years not included in their study data is that 2000 – 2009 represent the worst decade of fish passage at Turners Falls Gatehouse ever, with passage counts dropping to 1% or less some years. Some might describe this as cherry picking data. They arbitrarily picked the only two minor peaks of any note across a very dismal quarter-century of poor upstream shad recruitment.

Good science requires, at minimum, randomly selected figures when data samples are too large. That is not the case here. We are only considering 25 years of data, and only three months from each year. A complete data set should be provided—especially when it is small, as in the present case. Given such a brief span of time, and considering that a FERC license may be in place for 30

or 40 years—data from years 1991 to 2013 should be presented to better understand entrainment, mortality and recruitment of all life stages.

Significantly, as history, in 2010, FirstLight entrained its own turbines at NMPS plant while attempting to clear silt from its upper reservoir. NMPS operations came to an abrupt halt; the US EPA sanctioned them for "polluting the navigable waters of the United States," and no pumping occurred at NMPS from May 1st, until November.

Fish passage at TF Gatehouse in 2010 saw a 400-500% increase over averages for the previous decade that year NMPS remained inoperable. However significant that increase was, it merely represented a return to disappointing fish passage and recruitment levels regularly reached there in the 1980s. The following year, Holyoke Dam saw a 30% increase in fish passage, yet no corresponding increase in shad passage was tallied at TF Gatehouse in 2011.

However Gatehouse fish passage did continue--across the "arbitrary" 3-year data set FirstLight submitted for 2011 – 2013, to show a level of fish passage comparable to the returns achieved in the mid-1980s. By not including pumping files from 2000 – 2009, FirstLight offers just three years of data during which improved fish passage numbers could be shown—but only if passage and recruitment targets are scaled back to the disappointing results of the 1980s.

As "arbitrary" as those selected years of data may be, they only give a snapshot of three "good" years of fish movements and recruitment above Gatehouse toward Northfield and VT/NH habitats. Certainly it's possible that pumping operations get skewed over some years for various reasons. But three years of data--just prior to a relicensing bid, is no substitute for the full set of pumping files. Pumping data beginning from the year of deregulation—2000, to the present, will shed light on the impacts of pumping on entrainment and recruitment across the time frame necessary to help make decisions on issuing a decades-long license.

Ample decision-making studies and data—beyond just the most recent years FirstLight wants to supply, is what are called for in this instance. The remaining pumping data, monthly, daily, along with standard deviations for the years 2000 – 2009, should be supplied in order to protect public resources.

Stakeholders should have an understanding of the plant's potential pumping impacts and a fuller knowledge of the spectrum of its operating regimes since becoming a deregulated entity across three different owners—as there is no guarantee of single, long-term ownership over the term of license.

It is also critical to note that an overall "decrease" in pumping across selective years is just a single factor and may not be as significant to various life-stages of fish survival as the actual days, dates, and times when pumping and entrainment is occurring. This is why the full USFWS entrainment study and a full report of pumping operations are necessary. This is information that is sorely lacking.

Under Existing Information the USFWS states: "In its original study request, the Service noted that, while a number of studies had been conducted over the years, only one study attempted to quantify the number of shad entrained at NMPS."

USFWS further stated that information from a single study conducted in 1992 would be insufficient for determining new protective licensing requirements: "The ichthyoplankton sampling requested by the Service would follow the methodology used in the 1992 study." USFWS further argues: "Existing

information is not sufficient to use in the relicensing proceedings because operations have changed since the last study was conducted and FirstLight is considering additional changes to project operation as part of relicensing and that could increase the potential for entrainment at NMPS."

Nexus to project operation and Effects: "Both the previous licensee (Northeast Utilities Service Company) and FirstLight assume that all fish entrained are lost to the Connecticut River system (i.e., 100% mortality). Without quantification of entrainment of all life stages of American shad, it is not possible to determine what the overall impact of that entrainment is on the shad population. This information relates both directly and indirectly to the Service's statutory responsibilities under Section 18 of the FPA;"

Cost: The US Fish and Wildlife Service notes that a suitable entrainment study that includes early life stages can be conducted at NMPS for well under $50,000. This is a modest expense to attain critical information that is not available elsewhere. Not gathering such information would amount to a failure of due diligence in the current relicensing. A single, 22 year old study is inadequate science on which to base conditions for a license that could impact the Connecticut River ecosystem until 2048—at which time the last data collected will be 60 years old.

I urge you to require the full study of NMPS entrainment on all life stages American shad. The information gathered will enrich and inform decision-making gathered from related shad studies occurring under relicensing, including 3.3.2; 3.3.3; 3.3.6; and 3.3.7. Further, please require that the full spectrum of May, June, and July, pumping files for the years 1991 – present, be released as information critical to making decisions on NMPS's long-term impact on the entire Connecticut River ecosystem.

Thank you for this opportunity to participate in improving license requirements and protecting the Connecticut River ecosystem for future generations.

Sincerely,
Karl Meyer, M.S.

Cc: John Nagle
U.S. Environmental Protection Agency
USFWS Designee: Dispute Resolution Panel

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