Northfield Mountain Station
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John S. Howard
Plant Manager

March 14, 2012

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Northfield Mountain Pumped Storage Project (FERC No. 2485)
Revised Sediment Management Plan - USEPA Comments of February 16, 2012

Dear Secretary Bose:

FirstLight Power Resources Services, LLC, on behalf of FirstLight Hydro Generating Company (collectively "FirstLight"), owns and operates the Northfield Mountain Pumped Storage Project (Project No. 2485) located along the Connecticut River near Northfield, MA. On July 15, 2011, FirstLight filed with FERC a Sediment Management Plan (Plan) for the Project. FirstLight began implementing the Plan in 2011 and, on December 1, 2011, filed a report with FERC which summarized the efforts conducted to date. In the December 1, 2011 report, FirstLight also stated that it was in the process of making technical improvements and revisions to its sediment sampling methodology.

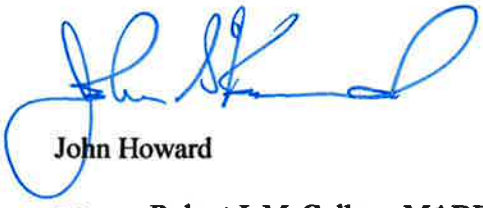
On December 6, 2011, FERC acknowledged receipt of the December 1, 2011 report and specified that FirstLight should file the revised Sediment Management Plan by February 15, 2012 after consultation with the MA Department of Environmental Protection (MADEP) and the United States Environmental Protection Agency (USEPA). A draft of the revised Plan was provided to the MADEP and USEPA by letter dated December 22, 2011. The MADEP submitted comments on the Plan to FirstLight on January 17, 2012. As of February 15, 2012, the USEPA had not provided comments.

On February 15, 2012, FirstLight filed with FERC the revised Sediment Management Plan. The revisions included improved methods to continuously measure suspended sediment concentrations and addressed the comments of the MADEP.

The USEPA submitted comments on the revised Plan to FirstLight on February 16, 2012. A copy of this comment letter is attached in Appendix A. The comments primarily relate to the technical nature of the sampling methodology and the USEPA's statement that a Quality Assurance Project Plan (QAPP) be developed by FirstLight prior to sampling; a responsiveness summary for those comments is provided in Appendix B. FirstLight will consult with the USEPA regarding its comments, and will file a further revision to the Plan if significant revisions are required beyond the steps identified in Appendix B. FirstLight does not believe a further revision to the Plan is warranted at this time.

If you have any questions or concerns, please contact me at 413-659-4489.

Sincerely,



John Howard

cc: Robert J. McCollum, MADEP Western Regional Office
Michael Fedak, USEPA Region 1
Adam Kahn, Foley Hoag
Mike Swiger, Van Ness Feldman
Mark Wamser, Gomez and Sullivan Engineers

APPENDIX A – USEPA COMMENT LETTER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

FEB 16 2012

Mr. John S. Howard, Plant Manager
FirstLight Power Resources
Northfield Mountain Station
90 Millers Falls Road
Northfield, MA 01360

Re: Northfield Mountain Pumped Storage Project (FERC No. 2485)
Sediment Management Plan – Proposed Technical Changes to Sampling Methodology

Dear Mr. Howard:

EPA has received and reviewed FirstLight Power Resources' ("FirstLight") December 22, 2011 submission of the above-referenced document. The document was supplemented by a copy of FirstLight's December 1, 2011 submission of the bathymetric survey and turbidity monitoring data collected during 2011 to FERC. The document calls for the continuation of bathymetric surveys of the upper reservoir to assess sediment deposition and continuous monitoring of total suspended solids at the intake to the Northfield Mountain Pumped Storage Facility and at the Turner's Falls pool to assess total suspended solids ("TSS") levels during a range of operating conditions.

Page 8 of the Updated Plan reiterates the potential future options to include, among other things, the periodic dredging of the upper reservoir and changes to the frequency, rate, or magnitude of upper reservoir drawdowns to avoid future problems. EPA reiterates its position regarding the increased frequency of drawdowns that was stated in its June 10, 2010 (sic) letter. It also reiterates its recommendation that FirstLight also evaluate the feasibility of the installation of a physical barrier across the bottom of the intake channel designed to prevent the migration of sediments during future drawdowns of the upper reservoir required to facilitate repairs.

EPA's specific comments on the proposed sampling plan are as follows:

1. A Quality Assurance Project Plan ("QAPP") must be in place before sampling and data analyses commence. Additionally, Standard Operating Procedure ("SOP") documents need to be developed for the various LISST sampling devices. Sampling and analysis plan development should not be an "iterative" process.

2. QAPP and SOP documents should be developed with assistance from EPA New England Regional Laboratory's Quality Assurance Branch.

3. None of the LISST sampling devices have detection limits below 10 milligrams/liter ("mg/l"). All initial calibration measurements for the river cross section must be

accompanied by laboratory analyses for TSS with a lower detection limit. Standard Method 2540D has a detection limit of 4 mg/l and should be used for this analysis.

4. The data analysis plan must be supplemented to include the following elements:

    - Location of data
    - Data backup plan
    - Monthly analysis of data
    - Data Quality Control/Validation procedures
    - Location of calibration reports along with validation reports
    - Location of laboratory analysis data along with validation reports
    - Laboratory analyses must be accompanied by the requisite QA data including standard reference material for calibration, field and lab blanks, matrix spikes and duplicate samples.

5. It is unlikely that a single year of data (2012) will be sufficient to determine long-term trends. 2012 may not be a representative year for sediment transport based on weather, flow alteration, construction activity, etc...

6. What are the calibration procedures for the LISST samplers? These measurements need to be bracketed monthly with laboratory analyses. What are the standard errors associated with these samplers?

Finally, the December 22, 2011 Updated Plan does not call for the submission of a final report until December 1, 2015. The submitted report shall include schedules for the implementation of the recommended procedures, protocols, and alternatives. EPA Administrative Order Docket No. 10-016 will remain open until the approved measures are implemented.

If you have any questions regarding these comments, please contact Michael Fedak at 617/918-1766. Legal questions should be directed to Michael Wagner at 617/918-1735.

Sincerely,

Denny Dart, Manager
Water Technical Unit
EPA Region 1

cc: Robert McCollum, MassDEP WRO

APPENDIX B – RESPONSE TO USEPA COMMENTS ON REVISED PLAN

The following provides a summary of comments received in a letter dated February 16, 2012 from the USEPA regarding the revised Sediment Management Plan, and a description of how these comments will be addressed by FirstLight.

1. **A Quality Assurance Project Plan ("QAPP") must be in place before sampling and data analyses commence. Additionally, Standard Operating Procedure ("SOP") documents need to be developed for the various LISST sampling devices. Sampling and analysis plan development should not be an "iterative" process.**

   FirstLight will develop a QAPP and SOP in cooperation with the USEPA.

2. **QAPP and SOP documents should be developed with assistance from EPA New England Regional Laboratory's Quality Assurance Branch.**

   FirstLight will develop a QAPP and SOP in cooperation with the USEPA.

3. **None of the LISST sampling devices have detection limits below 10 milligrams/liter ("mg/l"). All initial calibration measurements for the river cross section must be accompanied by laboratory analyses for TSS with a lower detection limit. Standard Method 2540D has a detection limit of 4 mg/l and should be used for this analysis.**

   According to the LISST equipment manufacturer, the minimum detection limit is extremely dependent on the particle size; the detection limit decreases as particle size decreases. Based on qualitative observations during the recent flood event in 2011 associated with Tropical Storm Irene, the sediment deposited in the floodplain was very fine-grained. The nature of the suspended sediment in the Connecticut River would likely cause the minimum detection limit to be lower than 10 mg/l. For laser diffraction equipment, the detection limit is dependent on the sediment grain size because the laser light scattering is proportional to the surface area of the particles that are in the beam at the time of the measurement. Since the total surface area relative to total mass or volume of particles is larger for small particles than for large particles, it means that the signal-to-noise ratio for a given concentration of small particles is better than for the same concentration of large particles.

   FirstLight does intend to collect verification information to ensure the accuracy of the continuously collected data. In addition to the continuous monitoring, FirstLight proposes to use the LISST-SL to collect independent point measurements across a range of flows to compare against and verify the continuous data. However, water samples for TSS laboratory analysis using Method 2540D or comparable methods are not proposed. The United States Geological Survey (USGS) advises that suspended sediment concentration and total suspended solids (TSS) data collected from natural

waters are not comparable with each other and should not be used interchangeably (Gray, et al., 2000[1]). The need for independent laboratory analyses will be discussed further with USEPA.

4. **The data analysis plan must be supplemented to include the following elements:**

   - **Location of data**
   - **Data backup plan**
   - **Monthly analysis of data**
   - **Data Quality Control/Validation procedures**
   - **Location of calibration reports along with validation reports**
   - **Location of laboratory analysis data along with validation reports**
   - **Laboratory analyses must be accompanied by the requisite QA data including standard reference material for calibration, field and lab blanks, matrix spikes, and duplicate samples.**

   FirstLight will develop a QAPP and SOP in cooperation with the USEPA which addresses the above comment.

5. **It is unlikely that a single year of data (2012) will be sufficient to determine long-term trends. 2012 may not be a representative year for sediment transport based on weather, flow alteration, construction activity, etc...**

   FirstLight concurs. As stated in the Plan, "*FirstLight may continue sampling in 2013 and 2014 consistent with 2012, but based on 2012 results may propose modifications to the sampling program.*" The representativeness of the 2012 data will be considered in making this determination.

6. **What are the calibration procedures for the LISST samplers? These measurements need to be bracketed monthly with laboratory analyses. What are the standard errors associated with these samplers?**

   According to the manufacturer of the sampling equipment, a concentration calibration is performed in the laboratory prior to shipping, which is good for the life of the instrument as long as the optical surfaces are clean and the instrument has not been subject to mechanical shock during transport and installation that has caused the optics to go out of adjustment (misalignment). The instruments also perform automatic background measurements with clean water and these can then be compared to the factory background measured prior to shipping as a check.

   As noted in the response to comment 3, suspended sediment concentration and TSS data are not comparable with each other and should not be used interchangeably. The need for independent laboratory analyses will be discussed with USEPA. In addition to the continuous monitoring, FirstLight proposes to use the LISST-SL to collect independent point measurements across a range of flows to compare against and verify the continuous data. Standard error is dependent on particle size and will be explained further in the QAPP, to be developed.

[1] Gray, J. R., et al. (2000). Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data (Water-Resources Investigations Report 00-4191). Reston, VA: US Geological Survey.