frcog Franklin Regional Council of Governments

August 28, 2013

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

Re: Northfield Mountain Pumped Storage Project, FERC No. 2485-063
Turners Falls Project, FERC No. 1889-081
Comments on the Revised Study Plan (RSP) submitted by FirstLight August 14, 2013.
Section 3.1 Geology and Soils
Section 3.1.1 *2013 Full River Reconnaissance Study*
Section 3.1.2 *Northfield Mountain/Turners Falls Operations Impact on Existing Erosion and Potential Bank Instability*
Appendix D – Quality Assurance Project Plan (QAPP)
Section 4.0 Studies not Included in the RSP
4.1 Geology and Soils, 4.1.1 Study of Shoreline Erosion Caused by Northfield Mountain Pumped Storage Operations

Dear Secretary Bose:

The Franklin Regional Council of Governments (FRCOG) appreciates the opportunity to submit comments on the above-referenced documents. Although the Revised Study Plan contains the fourth version of the study plans for Section 3.1 Geology and Soils, these study plans still do not meet the standard of technically defensible and rigorous scientific investigations with clearly stated goals, objectives and deliverables. We continue to have no confidence that the data collected as part of these studies can be used in a meaningful way to evaluate the potential impacts project operations have on the natural resources of Franklin County.

Bank erosion is the overarching environmental problem associated with the presence and operation of the Project, one that affects all the other resources listed in the Revised Study Plan – Water Resources; Fish and Aquatic Resources; Terrestrial Resources; Wetlands, Riparian and Littoral Habitat; Recreation and Land Use; Cultural Resources; and Developmental Resources. Once again, we urge FERC to require FirstLight to develop clear and scientifically defensible studies that will provide valid and useful data about the impacts of project operations on riverbank stability and erosion in the Turners Falls Pool.

We have several specific comments on the Revised Study Plan (RSP) that we've included in the attached table. We are not providing additional comments on Appendix D – Quality Assurance Project Plan (QAPP) since this document accompanies Section 3.1.1 2013 Full River Reconnaissance (FRR) Study, which continues to be inadequate for relicensing and compliance purposes. The 2013 FRR should be removed from the relicensing process because, as written in the RSP, the data gathered from this study will not provide scientifically defensible information nor will it provide sound data for the other studies that rely upon it. The Connecticut River Streambank Erosion Committee (CRSEC) initially agreed that it would be efficient to include the 2013 FRR in the relicensing process, but we stressed that 1) the 2013 FRR methodology and the Quality Assurance Project Plan (QAPP) still needed significant improvements and the CRSEC wanted to be involved in the process to refine these documents, and 2) tasks would need to be added to the 2013 FRR to gather data to inform relicensing. The 2013 FRR has not been significantly improved from its 2008 predecessor. The 2013 FRR should be confined to the compliance arena, and FirstLight should be directed to work with the CRSEC to develop an appropriate methodology and QAPP.

We are hopeful that FERC will require FirstLight to significantly modify the study plan presented in RSP Section 3.1.2 Northfield Mountain/Turners Falls Operations Impact on Existing Erosion and Potential Bank Instability to reflect standard fluvial geomorphologic practices and scientifically defensible methodologies. Without sound data, appropriate protection, mitigation and enhancement (PME) measures for the Connecticut River cannot be developed.

We again request that FirstLight be required to evaluate the feasibility of alternatives to address erosion, including a study of the "closed loop" option. We look forward to continuing our active engagement in the relicensing of the Connecticut River hydroelectric projects.

Sincerely,

Ann Banash, Chair
FRCOG Executive Committee

Jerry Lund, Chair
Franklin Regional Planning Board Executive Committee

Tom Miner, Chair
Connecticut River Streambank Erosion Committee

cc: Franklin County Legislative Delegation
US Fish & Wildlife Service
Massachusetts Department of Environmental Protection

Massachusetts Department of Conservation and Recreation
Congressman James McGovern
Town of Gill, MA
Town of Northfield, MA
Town of Montague, MA
Franklin Conservation District
Connecticut River Watershed Council

Attachment: Table of Franklin Regional Council of Governments' Comments on FirstLight's August 14, 2013 Revised Study Plan

Revised Study Plan Section	Summary of FRCOG's Requested Study Plan Modification(s)	FirstLight's Response to Requested Modification(s)	FRCOG's Response to Modification Presented in RSP and Additional Requested Modifications/Recommendations	Applicable Study Plan Criteria[1]
Section 3.1.1 *2013 Full River Reconnaissance (FRR) Study*	2013 FRR study plan is not adequate for compliance or relicensing purposes.	The methodology for the 2013 FRR continues to reflect and reference previous FRR methods, data and conclusions. On page 3-20, Task 6, FirstLight states that the 2013 FRR data will be used for "…comparisons of riverbanks[sic] conditions with past FRRs." and that "The purpose of these comparisons is to evaluate the temporal trends in riverbank erosion and to determine if equilibrium of erosion and stabilization is developing."	We strenuously object to efforts by FirstLight to evaluate temporal trends in erosion using data from previous FRRs. We have meticulously documented our objections to the methodology used by FirstLight for previous FRR in correspondence to FERC. We reaffirm our objections to the findings and conclusions of the 2008 FRR and the references to that study and the use of the 2008 FRR methodology in the 2013 FRR. We assert that the 2013 FRR study plan is still not adequate for compliance or relicensing purposes. See our comments on page 3 of our July 15, 2013 letter.	18 CFR §5.9(b)(1) Goals and Objectives: The goals of FRCOG's study requests and FRCOG's requested modifications to FirstLight's proposed study plans are to determine the environmental impacts from the presence and operation of the licensed facilities on river bank stability, shoreline habitat, agricultural farmland, wetland resources, bed substrate, and water quality in the Turners Falls impoundment. We've listed objectives and specific project tasks in our comments herein and in previous correspondence dated March 1, 2013 and July 15, 2013. 18 CFR §5.9(b)(2) Relevant Resource Management Goals and Public Interest Considerations: The FRCOG's resource management goals and public interest considerations are to ensure that the Connecticut River, which is designated as a Class B river for its entire length in Massachusetts, meets its designated uses of habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. Class B waters must also have consistently good aesthetic value and meet minimum criteria for numerous water quality indicators to achieve compliance with the standards set forth in the regulations. The other resource management goals and public interest considerations are to protect prime farmland soils, which are eroding, and riparian habitat. Eco-based tourism and agricultural operations are important to the economy of Franklin County so maintaining the water quality of the river and protecting scenic landscapes and productive farmland along the river from erosion are extremely important. 18 CFR §5.9(b)(4) Existing Information and Need for Additional Information: There is a need for additional information to identify and fill existing data gaps. Field Geology Services' 2007 investigation provided several good recommendations for future work in section 9.3 of its report which, if implemented, could provide for: a) an improved understanding of the causes of erosion; b) more accurate
	The 2013 FRR methodology does not identify scientifically defensible criteria for determining the **type, stage and spatial extent of erosion**. Build upon the recommendations in Field, 2007 and eliminate the use of subjective, qualitative terms like "little/none", "some" or "extensive."	Table 3.1.1-2 of RSP lists the Stage(s) of Erosion as: potential future erosion; active erosion; eroded; and stable. The spatial extent of erosion is identified in Table 3.1.1-2 as the Extent of Erosion and is classified as: none/little; some; some to extensive; and extensive.	The RSP still uses qualitative, subjective terminology to describe both the spatial extent of erosion and the temporal or stage of erosion. These terms and definitions are not based on a replicable scientific methodology. No citation is given for use of these terms as representative of standard fluvial geomorphological practices. See FRCOG comments in July 15, 2013 letter, pages 4-5 and Attachments.	
		Table 3.1.1-2 includes a new category of Indicators of Potential Erosion that includes terms used by Field, 2007 to describe types of erosion.	FirstLight's erosion classification system (Table 3.1.1-2) has separated the **description of the type of erosion from the type of erosion** as presented in 3.1.1-4 of the RSP (which was taken from Field, 2007) and created a new category – Indicators of Potential Erosion. No description, justification or citation for this new category is provided in the RSP, which makes the purpose of this category unclear and confusing. Inventorying the conditions listed in the Indicators of Potential Erosion Category should be done as part of the effort to identify the **types** of erosion. Listing these bank characteristics as a separate category will only downplay and mask both the type and extent of erosion occurring along the river.	

[1] To eliminate redundancies, we have addressed the study plan criteria that are relevant to our comments once, since the list of study plan criteria are essentially the same for all of our comments. We do not have the technical expertise to address 18 CFR §5.9(b)(7) but feel that the costs for the work we describe would fall within the range of costs FirstLight has already estimated for their proposed study plans described in section 3.1 of the RSP. Other than the study to evaluate the feasibility of a closed loop system, we are not asking for additional studies, just revisions to the studies described in section 3.1 of the RSP.

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	The 2013 FRR methodology does not identify scientifically defensible criteria for determining the **type, stage and spatial extent of erosion**. Build upon the recommendations in Field, 2007 and eliminate the use of subjective, qualitative terms like "little/none", "some" or "extensive."	Table 3.1.1-2 includes a new category of Indicators of Potential Erosion that includes terms used by Field, 2007 to describe types of erosion.	If the goal is to identify the **potential for future bank erosion** as part of the 2013 FRR, then indicators of erosion potential, such as those listed as part of a commonly accepted methodology, such as the Bank Erosion Hazard Index (BEHI)[2] or other reliable method, should be used. This task of identifying the potential for future bank erosion should be described as a separate task in the 2013 FRR not lumped with the tasks associated with identifying the type, stage and extent of current erosion. The category of Indicators of Potential Erosion should be eliminated from the Erosion Classification section of Table 3.1.1-2.	monitoring of erosion; and c) more successful bank stabilization efforts. This document is a good point of reference. As we described in our March 1, 2013 letter to FERC, the Simons & Associates' (2012) documents filed with FERC are qualitative and based on several unstated assumptions that may not be valid. Full River Reconnaissance efforts have been undertaken using varying methodologies, making for difficult comparisons from one report to the other. 18 CFR §5.9(b)(5) Project Nexus: The Turners Falls and Northfield Mountain Pumped Storage projects operate in a peaking mode, with allowable impoundment fluctuations of up to 9 feet, with the intent to continue these fluctuations. FirstLight has also proposed to increase the volume of flow from the Northfield Mountain Pumped Storage Project through the increased use of the upper reservoir, which is expected to result in additional water level fluctuations. Upstream hydroelectric facilities also operate in a peaking mode of operation. Periodically, the upper reservoir at Northfield Mountain and the power canal at the Turners Falls dam need to be dewatered for maintenance purposes. Historically, both procedures have resulted in the discharge of large quantities of sediment. Sediment from shoreline erosion and riverbank failure is one of the major contributors that negatively affect water quality and habitat by increasing the turbidity and sedimentation, and smothering aquatic habitat. Repetitive water level fluctuations and flow alterations caused by hydroelectric peaking operations are known to be a major contributor to shoreline erosion. The Massachusetts Year 2012 Integrated List of Waters shows two river segments, from the VT/NH state line to the Turners Falls dam (MA34-01 & MA34-02) impaired and considered a "Water Requiring a TMDL" due to "Other flow regime alterations", "Alteration in stream-side or littoral vegetative covers" and "PCB in Fish Tissue". In addition, the segment below the Turners Falls dam to the
	The photographic log of the riverbanks compiled during the fluvial geomorphology study (Field, 2007) should be updated during the 2013 FRR.	FirstLight is proposing to reproduce the photo log during the summer 2014.	The photo log should be reproduced during fall 2013 leaf-off conditions as well as the summer of 2014 to more accurately evaluate bank conditions and show how vegetation can mask bank erosion. Leaf-off conditions will also enable comparisons to the 2004 digital image logs.	
Section 3.1.2 *Northfield Mountain/Turners Falls Operations Impact on Existing Erosion and Potential Bank Instability*	We are disappointed that this study does not specifically build upon the findings and recommendations in the Field (2007) report.	FirstLight's revised study plan is essentially the same as the previous three versions.	The fact that this study plan has been revised three times and all four versions have essentially the same flaws and problems speaks to the weakness of FirstLight's methodology. We recommend that FirstLight review TransCanada's Revised Study 3 – Riverbank Erosion Study for guidance on a well-organized, scientifically defensible methodology.	
Task 4a: Install Proposed Water Level Monitors in the Turners Falls Impoundment	We requested that more water level monitors be installed at appropriate locations, including at the fixed recoverable transects and areas where the BSTEM analysis will be conducted.	FirstLight proposes to install one additional gage 6,500 feet upstream of the Northfield Tailrace.	See our comments on pages 6-7 of our July 15, 2013 letter. We reaffirm our opinion that more water level monitors should be installed. In addition, we support the Connecticut River Watershed Council's request for a water level monitor to be installed between the Turners Falls boat barrier line and the tailrace, upstream of the Narrows or French King Gorge.	

[2] http://www.wildlandhydrology.com/assets/Streambank_erosion_paper.pdf http://water.epa.gov/scitech/datait/tools/warsss/pla_box08.cfm http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_025096.pdf

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Task 4a: Install Proposed Water Level Monitors in the Turners Falls Impoundment	Expand data collection to capture a full year.	FirstLight did not expand the data collection period.	The data collection should occur for a full year to provide information on seasonal variations including the spring freshet and low flow periods during the summer months.	confluence with the Deerfield River (MA34-03) is impaired by these causes as well as total suspended solids. <u>18 CFR §5.9(b)(6) Proposed Methodology</u>: Please refer to the comments herein as well as those submitted in our correspondence to FERC dated March 1, 2013 and July 15, 2013.
Task 4 – Field Studies and Data Collection & Task 5 – Data Analysis	We requested that a well-documented data collection methodology be provided for these tasks. The 2013 FRR, as proposed, will not provide adequate and reliable data for Task 5 or Task 6. There is no clear and well documented integrative methodology for these tasks.	FirstLight presented the fourth version of this study plan in the RSP.	This study continues to be fraught with serious flaws despite FirstLight having received extensive comments from stakeholders, including FRCOG, at the stakeholders' meetings on May 15, 2013 and June 14, 2013, and written comments submitted to FERC on July 15, 2013. This speaks volumes about the study's technical and organizational inadequacies. We urge FERC to require that FirstLight completely revise this study and engage a qualified fluvial geomorphologist to assist them in this effort. We urge FERC to require that field data collection for the fixed recoverable transects requested by MassDEP be conducted in accordance with a DEP-approved QAPP. Field work should be conducted in coordination with state regulatory agencies to ensure that the data collected will meet the requirements of these agencies for resource protection. MassDEP and other state regulatory staff should conduct field visits to oversee data collection to confirm the methodology and data collection protocols as established by the QAPP. We recommend that FirstLight review TransCanada's Revised Study 1 – Historical Riverbank Position and Erosion Study; Revised Study 2 – Riverbank Transect Study; and Revised Study 3 – Riverbank Erosion Study for guidance on developing well-organized and scientifically defensible methodology.	
4.1 Geology and Soils, 4.1.1 Study of Shoreline Erosion Caused by Northfield Mountain Pumped Storage Operations	We requested that FirstLight included the Relevant Resource Management Goals (18 CRF Section 5.9(b)(2) listed by NMFS for this study request.	FirstLight did not include our requested modifications.	Please see pages 7-9 of our July 15, 2013 letter and our March 1, 2013 letter. FirstLight should be required to complete a Historical Riverbank Position and Erosion Study exactly like TransCanada's Revised Study 1 in order to provide information useful for resource protection and addressing cumulative impacts. See also our March 1, 2013 letter. We requested that tasks in our Study of Shoreline Erosion Caused by Northfield Mountain Pumped Storage Operations study request be included in FirstLight's 3.1.2 Study Plan.	

Document Content(s)