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Alan Douglass  
Regulatory Compliance Manager

March 17, 2022

*Via Electronic Filing*

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

Re: Turners Falls Hydroelectric Project (FERC No. 1889), FirstLight MA Hydro LLC, Northfield Mountain Pumped Storage Project (FERC No. 2485), Northfield Mountain LLC, Status Update

Dear Secretary Bose:

As the Federal Energy Regulatory Commission (FERC) is aware from recent filings, over the course of the past several months, the licensees for the above-referenced projects (collectively, FirstLight) have been engaged with federal and state resource agencies, local communities, environmental organizations, Native American tribes, and other stakeholders in renewed discussions on a broad range of issues pertaining to fish passage, stream flows, recreation, and cultural resources related to relicensing of the projects.

On February 28, 2022, FirstLight filed with FERC Agreements-in-Principle (AIP) on Whitewater Boating Releases and Recreation Improvements. In that same letter, FirstLight indicated it had reached conceptual agreement on a Flows<sup>1</sup> and Fish Passage AIP. Please find attached the AIP for Flows and Fish Passage, including the signature pages.

FirstLight and the stakeholders are now negotiating a comprehensive, binding Settlement Agreement that aims to fully resolve all relicensing issues. FirstLight is targeting the summer 2022, for filing the Settlement Agreement and again requests FERC to reserve issuing its Ready for Environmental Analysis Notice until after the Settlement Agreement is filed. FirstLight and the stakeholders needed to adjust the previous Settlement Agreement schedule due to the delay in finalizing the Flows and Fish Passage AIP.

Thank you for your consideration.

Respectfully,

A handwritten signature in black ink that reads "Alan J. Douglass".

Alan Douglass  
Regulatory Compliance Manager

Attachments: AIP for Flows and Fish Passage

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<sup>1</sup> Flows refers to Project operations including bypass flows, base flows, ramping, and water level management.

**TURNERS FALLS HYDROELECTRIC PROJECT  
FERC PROJECT NO. 1889**

**NORTHFIELD MOUNTAIN PUMPED STORAGE PROJECT  
FERC PROJECT NO. 2485**

**AGREEMENT IN PRINCIPLE TO DEVELOP  
A RELICENSING SETTLEMENT AGREEMENT**

**March 17, 2022**

**WHEREAS**, FirstLight MA Hydro LLC and Northfield Mountain LLC (collectively, FirstLight) are the Federal Energy Regulatory Commission (FERC) licensees for the Turners Falls Hydroelectric Project, FERC Project No. 1889 (Turners Falls Project) and Northfield Mountain Pumped Storage Project, FERC Project No. 2485 (Northfield Mountain Project), respectively. Both the license for the Turners Falls Project and the license for the Northfield Mountain Project expired April 30, 2018. The Projects have been operating on annual licenses pursuant to Section 15 of the Federal Power Act (FPA) since that time.

**WHEREAS**, in accordance with the requirements of the FPA and FERC's regulations, FirstLight filed a Final Application for New License (FLA) for the Turners Falls and Northfield Mountain Projects with FERC on April 29, 2016. Because certain environmental studies had not yet been completed as of the statutory deadline for filing of the FLA, FirstLight filed a separate Amended Final License Application for each Project on December 4, 2020 (AFLA), including FirstLight's proposed protection, mitigation and enhancement (PM&E) measures to be included in the new licenses and the scientific and evidentiary basis for those measures.

**WHEREAS**, since filing of the AFLAs, FirstLight has been engaged with federal and state resource agencies, local communities, environmental organizations, Native American Tribes, and other stakeholders to consider agency and stakeholder proposals for additional PM&E measures on a broad range of issues pertaining to fish passage, streamflows, recreation, and cultural resources, with the goal of developing a comprehensive settlement agreement.

**WHEREAS**, FirstLight has been engaged specifically with the Parties to this Agreement in Principle (AIP), including the Massachusetts Division of Fisheries and Wildlife (MDFW), Massachusetts Natural Heritage and Endangered Species Program (NHESP), National Marine Fisheries Service (NMFS), The Nature Conservancy (TNC), and the United States Fish and Wildlife Service (USFWS). The Parties have now achieved conceptual agreement on minimum bypass flows to benefit fisheries resources and their habitats, operational restrictions to benefit downstream fish and wildlife habitat, and project modifications to improve upstream and downstream fish passage, designed to function as part of a framework for FERC's proposed action to be analyzed in the ESA section 7 context, Federal Power Act Section 18 prescriptions and for development of a Final Settlement Agreement facilitating the resolution of all issues relating to the relicensing of the Projects. The Parties are still negotiating certain critical elements such as a protocol for dampening Great River Hydro (GRH) peaking flows, the Cobblestone tiger beetle mitigation plan, and fish passage performance metrics and adaptive management provisions.

**NOW, THEREFORE**, the Parties agree in principle as follows:

## **PART I: OVERVIEW AND INTENT**

- A. The Parties agree to negotiate toward a Final Settlement Agreement based on the terms of this AIP, with the intention reaching a Final Settlement Agreement, if one can be reached, no later than June 30, 2022.
- B. All Parties enter into this AIP without any admission of law or fact. The Parties acknowledge that the Final Settlement Agreement must include other material terms that have not yet been agreed upon (for example impoundment bank erosion) and is subject to agreement on language embracing all of the terms agreed to in principle as set forth in Part II herein.
- C. The Parties recognize that the Final Settlement Agreement and any other related agreements negotiated pursuant to this AIP are subject to formal and final review and approval of the Parties' management, executives, boards of directors, and other leadership, as necessary and appropriate to comply with corporate, municipal and agency requirements. The signatories to this AIP are the principal negotiators for each Party, who represent by their signatures only that:
  - They have informed their respective management or leadership of the terms of this AIP.
  - They have been authorized to negotiate toward a Final Settlement Agreement based in substance on the terms of this AIP.
- D. All Parties recognize and acknowledge that this AIP is not legally binding and does not give rise to any enforceable rights in contract.
- E. Unless and until a Final Settlement Agreement is executed by the Parties, any Party may take any action before FERC or any other agency as that Party unilaterally determines necessary to protect its interests.
- F. In the event that this AIP does not culminate in a Final Settlement Agreement, it shall be null and void. No Party shall use this AIP as evidence of any other Party's position on any issue addressed in this AIP or as evidence that any term should or should not be incorporated into the New Licenses for the Turners Falls and Northfield Mountain Projects.
- G. Nothing in this Agreement shall be construed as a waiver of any state or federal agency authority to carry out its statutory and regulatory mandates, including the requirement for FERC to engage in consultation under Section 7 of the Endangered Species Act. All parties understand that the terms conceptually agreed upon in this document do not circumscribe the authority of the agencies or their analyses under Section 7 of the Endangered Species Act.

## **PART II: PROTECTION, MITIGATION AND ENHANCEMENT MEASURES- OPERATIONS**

### **1 OPERATIONS**

#### **1.1 Project Operations**

##### *1.1.1 Turners Falls Project Operations*

- (a) FirstLight shall operate the Turners Falls Hydroelectric Project in accordance with the following operational flow regime until the third (3<sup>rd</sup>) anniversary of the date of license issuance.

FirstLight has included two timing elements to address the new operational paradigm. From license issuance until the third (3<sup>rd</sup>) anniversary of the date of license issuance, FirstLight shall institute the minimum flows in the bypass and below Cabot Station and Cabot Station up/down ramping in paragraph (a) and (b), as a license condition, and also put processes in place with GRH and ISO-NE to assure success in meeting its obligations for Flow Stabilization restrictions described in paragraph (c). In addition, Station No. 1 upgrades (described later) will be completed during this period. FirstLight also will submit to FERC for approval no later than 1 year after license issuance a project operation, monitoring and reporting plan after consultation with the agencies. On the third (3<sup>rd</sup>) anniversary of the date of license issuance and upon FERC's approval of the project operation, monitoring and reporting plan, FirstLight shall institute the full suite of flow enhancements shown in paragraphs (a), (b) and (c) (i.e., minimum flows in bypass and below Cabot Station, Cabot Station up/down ramping and flow stabilization restrictions). Table 1.1.1-1 summarizes the operations from license issuance through the third (3<sup>rd</sup>) anniversary of the date of license issuance.

**Table 1.1.1-1: Operating Conditions from License Issuance through the third (3rd) anniversary of the date of license issuance: Turners Falls Dam Minimum Flow, Station No. 1 Minimum Flow, below Cabot Station Minimum Flows, Cabot Station Ramping, and Flexible Operations**

1. Date	2. Total Bypass Flow <sup>2</sup>	3. Turners Falls Dam	4. Station No. 1 <sup>4,5</sup>	5. Below Cabot Station Minimum Flow	6. Cabot Station Ramping to Protect Shortnose Sturgeon and Odonates	7. Allowable Deviations from Ramping
01/01-03/31	1,500 cfs or the Naturally Routed Flow (NRF), whichever is less	400 cfs <sup>3</sup>	1,100 cfs	3,800 cfs or NRF, whichever is less (1,500 cfs + 2,300 cfs)	N/A	0 hours of Flexible Operations
04/01-05/15	6,500 cfs or the NRF, whichever is less	4,290 cfs	2,210 cfs	8,800 cfs between midnight and 7 pm or NRF, whichever is less (6,500 cfs + 2,300 cfs)	Up/Down to 2,300 cfs/hour	0 hours of Flexible Operations
05/16-05/31	6,500 cfs or the NRF, whichever is less	4,290 cfs	2,210 cfs	8,800 cfs between midnight and 7 pm or NRF, whichever is less (6,500 cfs + 2,300 cfs)	Up/Down to 2,300 cfs/hour	0 hours of Flexible Operations
06/01-06/15 <sup>1</sup>	4,500 cfs or the NRF, whichever is less	2,990 cfs	1,510 cfs	6,800 cfs or NRF, whichever is less (4,500 cfs + 2,300 cfs)	Up/Down to 2,300 cfs/hour	0 hours of Flexible Operations
06/16-06/30 <sup>1</sup>	3,500 cfs of the NRF, whichever is less	2,280 cfs	1,220 cfs	5,800 cfs or NRF, whichever is less (3,500 cfs + 2,300 cfs)	Up/Down to 2,300 cfs/hour	0 hours of Flexible Operations
07/01-07/15	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less	Up to 2,300 cfs/hour (8 am to 2 pm)	N/A
07/16-07/31	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less	Up to 2,300 cfs/hour (8 am to 2 pm)	
08/01-08/15	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less	Up to 2,300 cfs/hour (8 am to 2 pm)	N/A
08/16-08/31	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less	N/A	
09/01-09/15	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	N/A	N/A
09/16-09/30	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	N/A	
10/01-10/15	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	N/A	N/A
10/16-10/31	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	N/A	
11/01-11/15	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	N/A	N/A
11/16-11/30	1,500 cfs or 90% of the NRF, whichever is less	400 cfs <sup>3</sup>	1,100 cfs	1,500 cfs or 90 % of the NRF, whichever is less	N/A	
12/01-12/31	1,500 cfs or the NRF, whichever is less	400 cfs <sup>3</sup>	1,100 cfs	3,800 cfs or NRF, whichever is less (1,500 cfs + 2,300 cfs)	N/A	N/A

<sup>1</sup>The flow split during these periods is approximately 67% from the Turners Falls Dam and 33% from Station No. 1. If FirstLight conducts further testing, in consultation with the National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS) and Massachusetts Division of Fish and Wildlife (MDFW) and determines that migratory fish are not delayed by passing a greater percentage of the bypass flow via Station No. 1, it may increase the percentage through Station No. 1 upon written concurrence of those agencies. If further testing shows that the flow split could potentially be modified, FirstLight shall consult with American Whitewater (AW), Appalachian Mountain Club (AMC), Zoar Outdoors, Crab Apple Whitewater, Inc and New England FLOW relative to any changes in the flow split and address those entities comments in any filing before FERC or the Massachusetts Department of Environmental Protection (MDEP).

<sup>2</sup>If the NRF is less than 6,500 cfs (04/01-05/31), 4,500 cfs (06/01-06/15) or 3,500 cfs (06/16-06/30) the flow split will still be set at approximately 67% of the NRF from the Turners Falls Dam and 33% of the NRF from Station No. 1 subject to footnote 1. If 90% of the NRF is less than 1,800 cfs (7/1-8/31) or 1,500 cfs (9/1-11/15), FirstLight shall maintain the Turners Falls Dam discharge at 250 cfs or a maximum of 400 cfs, subject to footnote 6. If the NRF is less than 1,500 cfs (11/16-3/31), FirstLight shall maintain the Turners Falls Discharge at 400 cfs subject to footnote 3.

<sup>3</sup>The design maximum capacity of the canal gate is 400 cfs. FirstLight commits to opening the attraction flow gate to its maximum opening and will implement ice mitigation measures to maintain the maximum opening, if necessary, and monitor gate operations to determine if supplemental measures, such as cable heating the gate, are needed to maintain flows at or as close to 400 cfs as possible.

<sup>4</sup>To maintain the flow split, Station No. 1 must be automated, which will not occur until Year 3 of the license. FirstLight proposes to maintain the flow split such that the Turners Falls Dam discharge will be as shown above, or higher flows will be spilled, in cases where the additional flow cannot be passed through Station No. 1.

<sup>5</sup>The Turners Falls Hydro (TFH) project (FERC No. 2622) and Milton Hilton, LLC project (unlicensed) are located on the power canal and discharge into the bypass reach upstream of Station No. 1. The hydraulic capacities of the TFH project and Milton Hilton, LLC project are 289 and 113 cfs, respectively. If the TFH project is operating, FirstLight may reduce its Station No. 1 discharge by 289 cfs. If the Milton Hilton, LLC project is operating, FirstLight may reduce its Station No. 1 discharge by 113 cfs.

<sup>6</sup> The 250 cfs is subject to an inspection of rare plant species in the bypass under Turners Falls Dam spillage flows ranging from 250-400 cfs in the first 4 years after license issuance. The entity conducting the inspection of rare plants will be resolved by the Parties as part of the Comprehensive Settlement Agreement. Pending the results of the study, NHESP may authorize that the Turners Falls Dam discharge be increased up to a maximum of 400 cfs with the portion of the bypass flow coming from Station No. 1 reduced by the corresponding amount. The Parties agree to discuss this issue further as part of Comprehensive Settlement discussions due to competing interests from multi-day through paddlers and flatwater paddlers.

The bypass flows and minimum flow below Cabot Station may be modified temporarily: (1) during and to the extent required by operating emergencies beyond the control of FirstLight; and (2) upon mutual agreement among FirstLight for Projects Nos. 1889 and 2485 and the USFWS, NMFS, MDEP, and MDFW.

- (b) The NRF represents the inflow to the Turners Falls Dam. The NRF is defined as the sum of the Vernon Hydroelectric Project total discharge from 12 hours previous, Ashuelot River United States Geological Survey (USGS) gage flow from 12 hours previous, and Millers River USGS gage flow from 12 hours previous.
- (c) FirstLight shall operate the Turners Falls Project in accordance with the conditions in paragraph (a) and the following operational flow regime beginning on the third (3<sup>rd</sup>) anniversary of the date of license issuance (see Table 1.1.1-2).

**Table 1.1.1-2: Operating Conditions starting on the third (3<sup>rd</sup>) anniversary of the date of license issuance: Turners Falls Dam Minimum Flow, Station No. 1 Minimum Flow, below Cabot Station Minimum Flows, Flow Stabilization, Cabot Station Ramping and Flexible Operations**

1. Date	2. Total Bypass Flow <sup>2</sup>	3. Turners Falls Dam	4. Station No. 1 <sup>4,5</sup>	5. Below Cabot Station Minimum Flow	6. Flow Stabilization to Protect Shad Spawning (4/1-5/15), Puritan and Cobblestone Tiger Beetles, and state listed mussel and plant species (5/16-11/30)	7. Cabot Station Ramping to Protect Shortnose Sturgeon and Odonates	8. Allowable Deviations from Flow Stabilization
01/01-03/31	1,500 cfs or the Naturally Routed Flow (NRF), whichever is less	400 cfs <sup>3</sup>	1,100 cfs	3,800 cfs or NRF, whichever is less (1,500 cfs + 2,300 cfs)	N/A	N/A	0 hours of Flexible Operations
04/01-05/15	6,500 cfs or the NRF, whichever is less	4,290 cfs	2,210 cfs	8,800 cfs between midnight and 7 pm or NRF, whichever is less (6,500 cfs + 2,300 cfs)	Provide NRF ±10% below Cabot Station from 7 PM to Midnight, with deviations up to +/-20% allowed for up to 22 hours.	Up/Down to 2,300 cfs/hour (ramping will take precedence over flow stabilization)	0 hours of Flexible Operations
05/16-05/31	6,500 cfs or the NRF, whichever is less	4,290 cfs	2,210 cfs	8,800 cfs between midnight and 7 pm or NRF, whichever is less (6,500 cfs + 2,300 cfs)	Provide NRF ±10% below Cabot Station from 7 pm to Midnight, with deviations up to +/-20% for up to 18 hours.	Up/Down to 2,300 cfs/hour (ramping will take precedence over flow stabilization)	0 hours of Flexible Operations
06/01-06/15 <sup>1</sup>	4,500 cfs or the NRF, whichever is less	2,990 cfs	1,510 cfs	6,800 cfs or NRF, whichever is less (4,500 cfs + 2,300 cfs)	Provide NRF ±10% below Cabot Station, with deviations up to +/-20% for up to 7 hours	Up/Down to 2,300 cfs/hour (ramping will take precedence over flow stabilization)	0 hours of Flexible Operations
06/16-06/30 <sup>1</sup>	3,500 cfs of the NRF, whichever is less	2,280 cfs	1,220 cfs	5,800 cfs or NRF, whichever is less (3,500 cfs + 2,300 cfs)	Provide NRF ±10% below Cabot Station, with deviations up to +/-20% for up to 7 hours	Up/Down to 2,300 cfs/hour (ramping will take precedence over flow stabilization)	0 hours of Flexible Operations
07/01-07/15	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less	Provide NRF ±10% below Cabot Station, with deviations up to +/-20% for up to 55 hours	N/A	20 hours of Flexible Operations with no more than 7 flex events per month (Jul).
07/16-07/31	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less			
08/01-08/15	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less			
08/16-08/31	1,800 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,550 cfs	1,800 cfs or 90 % of the NRF, whichever is less	Provide NRF ±10% below Cabot Station, with deviations up to +/-20% for up to 27 hours	N/A	26 hours of Flexible Operations with no more than 7 flex events per month (Aug).
09/01-09/15	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	Provide NRF ±10% below Cabot Station, with deviations up to +/-20% for up to 44 hours	N/A	23 hours of Flexible Operations with no more than 7 flex events per month (Sep).
09/16-09/30	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less			
10/01-10/15	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less			
10/16-10/31	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less			
11/01-11/15	1,500 cfs or 90 % of the NRF, whichever is less	250 cfs <sup>6</sup>	1,250 cfs	1,500 cfs or 90 % of the NRF, whichever is less	Provide NRF ±10% below Cabot Station, with deviations up to +/-20% for up to 11 hours	N/A	28 hours of Flexible Operations with no more than 7 flex events per month (Nov).
11/16-11/30	1,500 cfs or 90 % of the NRF, whichever is less	400 cfs <sup>3</sup>	1,100 cfs	1,500 cfs or 90 % of the NRF, whichever is less			
12/01-12/31	1,500 cfs or the NRF, whichever is less	400 cfs <sup>3</sup>	1,100 cfs	3,800 cfs or NRF, whichever is less (1,500 cfs + 2,300 cfs)	N/A	N/A	N/A

1. Date	2. Total Bypass Flow <sup>2</sup>	3. Turners Falls Dam	4. Station No. 1 <sup>4,5</sup>	5. Below Cabot Station Minimum Flow	6. Flow Stabilization to Protect Shad Spawning (4/1-5/15) and Puritan Tiger Beetles (5/16-11/15)	7. Cabot Station Ramping to Protect Shortnose Sturgeon and Odonates	8. Allowable Deviations from Ramping and Flow Stabilization
<p><sup>1</sup>The flow split during these periods is approximately 67% from the Turners Falls Dam and 33% from Station No. 1. If FirstLight conducts further testing, in consultation with the NMFS, USFWS and MDFW and determines that migratory fish are not delayed by passing a greater percentage of the bypass flow via Station No. 1, it may increase the percentage through Station No. 1 upon written concurrence of those agencies. If further testing shows that the flow split could potentially be modified, FirstLight shall consult with American Whitewater (AW), Appalachian Mountain Club (AMC), Zoar Outdoors, Crab Apple Whitewater, Inc and New England FLOW relative to any changes in the flow split and address those entities comments in any filing before FERC or the Massachusetts Department of Environmental Protection (MDEP).</p> <p><sup>2</sup>If the NRF is less than 6,500 cfs (04/01-05/31), 4,500 cfs (06/01-06/15) or 3,500 cfs (06/16-06/30) the flow split will still be set at approximately 67% of the NRF from the Turners Falls Dam and 33% of the NRF from Station No. 1, subject to footnote 1. If 90% of the NRF is less than 1,800 cfs (7/1-8/31) or 1,500 cfs (9/1-11/15), FirstLight shall maintain the Turners Falls Dam discharge at 250 cfs or a maximum of 400 cfs, subject to footnote 6. If the NRF is less than 1,500 cfs (11/16-3/31), FirstLight shall maintain the Turners Falls Discharge at 400 cfs subject to footnote 3.</p> <p><sup>3</sup>The design maximum capacity of the canal gate is 400 cfs. FirstLight commits to opening the attraction flow gate to its maximum opening and will implement ice mitigation measures to maintain the maximum opening, if necessary, and monitor gate operations to determine if supplemental measures, such as cable heating the gate, are needed to maintain flows at or as close to 400 cfs as possible.</p> <p><sup>4</sup>To maintain the flow split, Station No. 1 must be automated, which will not occur until Year 3 of the license. FirstLight proposes to maintain the flow split such that the Turners Falls Dam discharge will be as shown above, or higher flows will be spilled, in cases where the additional flow cannot be passed through Station No. 1.</p> <p><sup>5</sup>The Turners Falls Hydro (TFH) project (FERC No. 2622) and Milton Hilton, LLC project (unlicensed) are located on the power canal and discharge into the bypass reach upstream of Station No. 1. The hydraulic capacities of the TFH project and Milton Hilton, LLC project are 289 and 113 cfs, respectively. If the TFH project is operating, FirstLight may reduce its Station No. 1 discharge by 289 cfs. If the Milton Hilton, LLC project is operating, FirstLight may reduce its Station No. 1 discharge by 113 cfs.</p> <p><sup>6</sup> The 250 cfs is subject to an inspection of rare plant species in the bypass under Turners Falls Dam spillage flows ranging from 250-400 cfs in the first 4 years after license issuance. The entity conducting the inspection of rare plants will be resolved by the Parties as part of the Comprehensive Settlement Agreement. Pending the results of the study, NHESP may authorize that the Turners Falls Dam discharge be increased up to a maximum of 400 cfs with the portion of the bypass flow coming from Station No. 1 reduced by the corresponding amount. The Parties agree to discuss this issue further as part of Comprehensive Settlement discussions due to competing interests from multi-day through paddlers and flatwater paddlers.</p>							



FirstLight agrees that as part of an off-license agreement, it will plan for and begin implementation of the proposed flow stabilization measures in Table 1.2.1-2 upon license issuance, recognizing that it will not be required to demonstrate to FERC or the Parties that it is meeting the flow stabilization requirements in Column 6 of Table 1.2.1-2 until the third (3<sup>rd</sup>) anniversary of the date of license issuance. FirstLight agrees to provide reports to the Parties to demonstrate substantive progress towards implementing the flow stabilization requirements. The Parties agree to determine the frequency of reporting as part of the Comprehensive Settlement Agreement.

In addition, FirstLight will have restricted discretionary flexible operating capability to respond to elevated energy prices (as defined in paragraph (d) below) between July 1 and November 30, as well as unrestricted capability to respond to emergencies, ISO-NE transmission and power system requirements, and other regulatory requirements (as defined in paragraph (e) below).

(d) Flexible operations allow for deviation from the prescribed operating limits (defined as Flow Stabilization and Cabot Station Ramping which are shown in Columns 6 and 7 of Table 1.2.1-2 in paragraph (c)). Such flexible operations are limited to the July 1 to November 30 period and will occur at the discretion of FirstLight and will be limited by a maximum number of hours and events per period as shown in Column 8 of Table 1.2.1-2 in paragraph (c).

(e) If compliance with the prescribed operating limits (defined as Flow Stabilization and Cabot Station Ramping which are shown in Columns 6 and 7 of Table 1.2.1-2 in paragraph (c)) would cause FirstLight to violate or breach any law, any applicable license, permit, approval, consent, exemption or authorization from a federal, state, or local governmental authority, any agreement with a governmental entity, or any tariff, capacity rating requirement, ramping criterion, or other requirement of the ISO-NE or its successors (ISO-NE)<sup>1</sup>, FirstLight may deviate from the prescribed operating limitations to the least degree necessary in order to avoid such violation or breach. In addition, FirstLight may deviate from the operating limits for the following reasons:

- To implement Flood Flow Operations as defined in paragraph (g) below.
- To perform demonstrations of the resources' operating capabilities under ISO-NE rules and procedures. FirstLight will use best efforts to be allowed by ISO-NE to perform these demonstrations at times that will not cause it to deviate from the operating limits, with recognition that the April 1 to June 30 period will be avoided to the maximum extent possible.
- To manage the Turners Falls Impoundment (TFI) to stay within license limits, with recognition that the April 1 to June 30 period will be avoided to the maximum extent possible.
- If compliance with the prescribed operating limitations would cause a public safety hazard or prevent timely rescue.

From license issuance until the third (3<sup>rd</sup>) anniversary of the date of license issuance, FirstLight shall document on an hourly basis for each day any deviations from the Cabot Station Ramping restrictions and the same in the third (3<sup>rd</sup>) anniversary of the date of license issuance to license expiration from the Cabot Station restrictions and Flow Stabilization restrictions. Each day, between April 1 and November 30 any deviations would be recorded in a spreadsheet showing the daily deviations, the reason for the deviation, the number of hours and scope. The Parties agree to determine the frequency of reporting as part of the

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<sup>1</sup>ISO-NE requirements are conditions when ISO-NE requires FirstLight to be fully available and, if necessary, responsive. Some examples include ISO-NE reserve deficiencies (a.k.a. reserve constraint penalty factors) when reserves are depleted on the power grid, for fuel security emergencies or scarcity events, for ISO-NE system (or system) stability (e.g., VAR support), and system over supply (negative prices).

Comprehensive Settlement Agreement. In addition, FirstLight shall provide the total number of deviations and supply it to the USFWS, NMFS, MDFW and MDEP on an annual basis no later than March 1 of each year. Deviations will be tracked as follows:

- Identify Deviations: At the top of each hour, FirstLight will record the maximum and minimum total Project discharge and Cabot Station discharge which occurred over the past hour. The NRF (as detailed in paragraph (b) of the “Operational Regime” section) will be compared with the recorded range of Project discharge in a given hour to identify if a Flow Stabilization deviation occurred over the past hour. The recorded range of Cabot Station discharge will be reviewed each hour to see if a Cabot Station Ramping violation occurred. Any deviation within the hour will be counted in one-hour increments.
  - Categorize Deviations: When a deviation is identified it will be categorized as either Regulatory (as detailed in paragraph (e) of the “Turners Falls Project Operations” in Section 1.2.1 of this Proposal), NRF Allowance (as detailed in paragraph (d) of the “Turners Falls Impoundment Water Level Management” in Section 1.2.2 of this Proposal), or Discretionary (as detailed in paragraph (d) of the “Operational Regime” section of this Proposal).
- (f) Cabot Emergency Gate Use. FirstLight shall use the Cabot Emergency Gates under the following conditions: a) in case of a Cabot load rejection<sup>2</sup>, b) in the case of dam safety issues such as potential canal overtopping or partial breach, and c) to discharge approximately 500 cfs between April 1 and June 15 for debris management. FirstLight shall avoid discharging higher flows through the gates from April 1 to June 15 whenever possible; however, if necessary, FirstLight shall coordinate with NMFS to minimize potential impacts to Shortnose Sturgeon in the area below Cabot Station.
- (g) Flood Flow Operations. FirstLight shall operate the Turners Falls Project in accordance with its existing agreement with the United States Army Corp of Engineers (USACOE). This agreement, memorialized in the *Reservoir and River Flow Management Procedures* (1976), as it may be amended from time to time, governs how the Turners Falls Project shall operate during flood conditions<sup>3</sup> and coordinate its operations with the Licensee of the Northfield Mountain Project (FERC No. 2485).
- (h) The Parties agree that as part of the Final Settlement Agreement they will work to develop a mutually-agreeable protocol to dampen the magnitude of Great River Hydro’s (GRH) Vernon Hydroelectric Project (FERC No. 1904) flexible operations discharges (i.e., peaking releases) below FirstLight’s Turners Falls Project from July 1 through November 30 .

#### 1.1.2 *Turners Falls Impoundment Water Level Management*

- (a) FirstLight shall operate the TFI, as measured at the Turners Falls Dam, between elevation 176.0 feet and 185.0 feet NGVD29.
- (b) FirstLight shall limit the rate of rise of the TFI water level, as measured at the Turners Falls Dam, to be less than 0.9 feet/hour from May 15 to August 15 between the hours of 8:00 am and 2:00 pm for the protection of odonates.

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<sup>2</sup> A load rejection is when the Cabot Station units are suddenly shut off. If this were to occur, the canal could potentially be overtopped. To prevent overtopping, the Cabot Emergency Gates open so that incoming flow down the power canal can be discharged via the Cabot Emergency Gates. Load rejections could occur at any time.

<sup>3</sup> These procedures define a flood as the NRF in excess of 65,000 cfs. However, these procedures implement measures for flood control when the NRF reaches 30,000 cfs.

- (c) The rate of rise of the TFI may be modified temporarily: (1) during and to the extent required by operating emergencies beyond the control of FirstLight; and (2) upon mutual agreement among the Licensees for Projects Nos. 1889 and 2485 and the USFWS, NMFS and MDFW.
- (d) FirstLight is entitled to increase the allowable NRF deviation from  $\pm 10\%$  to  $\pm 20\%$  in order to better manage TFI water levels. The increased flow deviation would be limited by the number of hours shown in Column 6 of Table 1.2.1-2 in paragraph (c) of "Turners Falls Project" in Section 1.2.1 of this Proposal. The allowance for an increased flow deviation outlined in this paragraph is different from the exceptions outlined in paragraphs (d) and (e) of "Turners Falls Project" in Section 1.2.1 of this Proposal. As such, the increased flow deviations outlined in this paragraph shall not count against any time allotment for exceptions outlined in paragraphs (d) and (e) of "Turners Falls Project" in Section 1.2.1 of this Proposal, and similarly operations meeting the exception criteria outlined in paragraphs (d) and (e) of "Turners Falls Project" in Section 1.2.1 of this Proposal shall not count against any time allotment for deviations outlined in this paragraph. Additionally, flow deviations in excess of  $\pm 10\%$  of NRF resulting from conflicting operational requirements shall not count against any time allotment for deviations outlined in this paragraph.

### *1.1.3 Northfield Mountain Pumped Storage Project Operations*

- (a) Flood Flow Operations. FirstLight shall operate the Northfield Mountain Project in accordance with its existing agreement with the USACOE. This agreement, memorialized in the Reservoir and River Flow Management Procedures (1976), as it may be amended from time to time, governs how the Northfield Mountain Project shall operate during flood conditions and coordinate its operations with the Licensee of the Turners Falls Project (FERC No. 1889).
- (b) Upper Reservoir Water Level Management: FirstLight shall operate the Northfield Mountain Project Upper Reservoir between elevation 1004.5 and 920.0 feet NGVD29.

### *1.1.4 Cobblestone Tiger Beetles*

As part of Final Settlement FirstLight agrees to work with the Settlement Parties to develop a Cobblestone Tiger Beetle Mitigation Plan. This plan will not include any requirements that limit the capacity of Cabot Station.

## **PART II: PROTECTION, MITIGATION AND ENHANCEMENT MEASURES- FISH PASSAGE**

### **2 FISH PASSAGE**

#### **2.1 Provisions to Provide Bypass Flows**

##### *2.1.1 Station No. 1- Improve Operating Range of Turbines*

FirstLight will automate the Station No. 1 turbines to throttle the station over a range of flows within 3 years of license issuance.

#### **2.2 Fish Passage Design and Consultation, Fish Passage Efficiency Metrics and Adaptive Management Plans**

The Parties agree to the following:

- For any new fish passage facility described in this AIP, FirstLight will consult and obtain approval from the MDFW, NMFS and USFWS on the facility design and on operation and maintenance procedures. For any new fish passage facility, the Parties will attempt to meet agency design guidelines to the extent practicable.
- As part of the Final Settlement Agreement, the Parties will negotiate upstream and downstream fish passage efficiency and timing metrics for the Projects and include the metrics, if agreed upon, as part of the Final Settlement Agreement. The Parties will also negotiate adaptive management measures to be followed if the agreed upon fish passage metrics are not achieved.

#### **2.3 Downstream Fish Passage**

##### *2.3.1 Intake Protection at the Northfield Mountain Pumped Storage Project Intake/Tailrace*

FirstLight will install a barrier net as conceptually proposed in the Amended Final License Application for the period August 1 to November 15 to protect out-migrating juvenile shad and silver eel, to be operational no later than August 1 of Year 7 after license issuance. The barrier net will be 3/8-inch on the top and 3/4-inch on the bottom. The Parties agree to FirstLight's proposed operational period so long as there is a mechanism for expanding the operational period if daytime pumping operations at the Northfield Mountain Project during the adult alosine fish passage season increase substantially and there is demonstrated additional entrainment. FirstLight will be required to provide the agencies with annual logs of daily operation data with respect to the timing of pumping and generating. FirstLight will also be required to include the Northfield Mountain Project in the study design for effectiveness studies of upstream and downstream fish passage measures at the Turners Falls Project (e.g., deploy receivers at the Northfield Mountain Project lower reservoir intake and sites upstream and downstream of the intake, as well as in the Northfield Mountain Upper Reservoir).

The Parties agree to discuss the possibility of a fund to be used for habitat improvement projects and/or alosine management activities to offset the potential loss of ichthyoplankton through entrainment as part of final settlement discussions.

### 2.3.2 Cabot Intake Protection and Downstream Passage Conveyance

Within 4 years<sup>4</sup> of license issuance, FirstLight will replace the existing trashrack structure with a new full depth trashrack with 1-inch clear spacing. In terms of general design concepts, the Parties agree that the new trashracks will have multiple openings for fish passage and that those openings will include both the top and bottom of the water column. The Parties further agree that they will attempt to maximize the hydraulic capacity of these openings within the constraints of the conveyance mechanisms. The Parties have analyzed a number of alternatives and believe the following conceptual design has merit for future exploration of detailed design alternatives:

*The new trashrack will have multiple surface entrances including a.) between Units 2 and 3; b.) between Units 4 and 5; and c.) at the right wall of the intake (looking downstream) at Unit 6. These openings will be 3-feet-wide by 2-feet-tall and will connect to the existing trash trough located behind the racks. Each opening at the top of the trashrack will have an approximate hydraulic capacity of 24 cfs, and the existing trash trough will convey a total hydraulic capacity of approximately 72 cfs from these openings. The new trashrack will have an additional entrance near the bottom at the left wall of the intake (looking downstream) at Unit 1. This entrance will be approximately 3-feet-wide by 3-feet-tall and will and will connect to a vertical pipe to safely convey fish to the existing trash trough or log sluice. This entrance will be sized to provide a velocity that attracts fish to the bypass relative to the turbine intakes (approximately 5 feet-per-second).*

*In addition to the entrances integral to the new trashrack structure, fish will be conveyed via a new uniform acceleration weir (UAW) and log sluice. The log sluice will be resurfaced to limit turbulence and injury to migrants. A steel panel (or equivalent) will be provided below the UAW to exclude migrants from being delayed in the space below the UAW. Total flow from all downstream passage components at Cabot Station will be at least 5% (685 cfs) of maximum hydraulic station capacity (13,728 cfs). The conveyance at each bypass entrance will be determined during the design phase.*

FL will consult and obtain approval from the Agencies during the design process as described in Section 2.2.

### 2.3.3 Station No. 1 Bar Rack

FirstLight will construct a ¾-inch clear-spaced bar rack at the entrance to the Station No. 1 branch canal the same year (see footnote 6) the Cabot Intake Protection and Downstream Passage Conveyance is built, so as to minimize canal outage time.

### 2.3.4 Plunge Pool below Bascule Gate No. 1

FirstLight will construct a plunge pool downstream of the Bascule Gate No. 1 as part of the construction of the Spillway Lift, to be operational no later than April 1 of Year 9 after license issuance.

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<sup>4</sup> Relative to the Cabot Intake Protection and Downstream Passage Conveyance and the Station No. 1 Bar Rack, the times cited are from license issuance based on the time needed to complete construction. The actual first year of operation of these two facilities will depend on when the license is issued.

## **2.4 Upstream Fish Passage**

### *2.4.1 Anadromous Passage*

#### 2.4.1.1 Spillway Lift

FirstLight will construct a new Spillway Lift at the Turners Falls Dam to be operational no later than April 1 of Year 9 after license issuance irrespective of what quarter the license is issued.

#### 2.4.1.2 Rehabilitate Gatehouse Trapping Facility

FirstLight will rehabilitate the Gatehouse Trapping facility (sampling facility) to be operational no later than April 1 of Year 9 after license issuance.

#### 2.4.1.3 Retire Cabot Ladder and Portions of Gatehouse Ladder

FirstLight will retire the Cabot ladder and the canal portions of the Gatehouse ladder once the new Spillway Lift is operational.

### *2.4.2 Eel Passage*

#### 2.4.2.1 Eel Passage Measures

FirstLight will conduct the following measures:

- Install and operate interim upstream eel passage in the vicinity of the Spillway Ladder within 1 year of license issuance and continue operating until permanent upstream eel passage becomes operational. The location and design of interim eelway(s) will be determined in consultation with the agencies.
- Conduct up to 2 years of eel ramp siting studies, using a similar methodology to relicensing Study 3.3.4 (both years). Siting surveys will be initiated the year the new Spillway Lift becomes operational.
- Based on siting survey results, design, construct, operate, and maintain up to two permanent upstream eel passage facilities at the Turners Falls Project no later than 3 years after completing the final siting survey. The Parties agree that final eel ramp siting will take into account the ability to maintain the facilities in light of spillage conditions at the Project. In particular, the Parties agree not to site any ramps immediately at the foot of any active spillway structures.

**PART III SIGNATURES**

**Organization:** FirstLight MA Hydro LLC and Northfield Mountain LLC (collectively, FirstLight)

By: Justin Trudell

Title: *Justin Trudell*

Signature: Chief Operating Officer

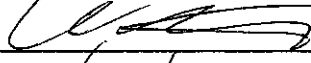
Date: 3/17/2021



Organization: Massachusetts Division of Fisheries and Wildlife

By: Caleb Stator

Title: Chief of Hatcheries

Signature: 

Date: 3/17/2022

**Organization:** Massachusetts Natural Heritage and Endangered Species Program

**By:** Jesse Leddick

**Title:** Chief of Regulatory Review

**Signature:**

A handwritten signature in blue ink, consisting of several loops and a trailing line, positioned to the right of the 'Signature:' label.

**Date:** March 17, 2022

**Organization:** National Marine Fisheries Service

By: Christopher Boelke \_\_\_\_\_

Title: New England Branch Supervisor, Habitat and Ecosystem Services  
\_\_\_\_\_

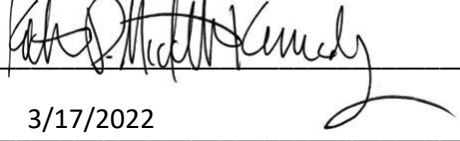
Signature:  \_\_\_\_\_

Date: 3/17/22 \_\_\_\_\_

**Organization:** The Nature Conservancy

By: Katie Kennedy

Title: Applied River Scientist

Signature: 

Date: 3/17/2022

**Organization:** United States Department of the Interior, United States Fish and Wildlife Service

**By:** Audrey Mayer, Ph.D.

**Title:** Field Supervisor, New England Field Office

**Signature:** AUDREY MAYER Digitally signed by AUDREY MAYER  
Date: 2022.03.17 11:38:00 -04'00'

**Date:** 03/17/2022