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July 6, 2012

## Via E-mail and Overnight Delivery

Secretary Richard K. Sullivan, Jr. Executive Office of Energy & Environmental Affairs ATTN: MEPA Office (josephine.wixon@state.ma.us) 100 Cambridge Street, Suite 900 Boston, MA 02114

Re:

Request for Advisory Opinion

FirstLight Hydro Generating Company: Northfield Mountain Pumped

Storage Project and Turners Falls Hydroelectric Project

## Dear Secretary Sullivan:

FirstLight Hydro Generating Company (FirstLight), an indirect subsidiary of IPR-GDF SUEZ North America, Inc., and licensee of the Northfield Mountain Pumped Storage Project ("Northfield Mountain Project", FERC No. 2485) and the Turners Falls Hydroelectric Project ("Turners Falls Project", FERC No. 1889), hereby submits a Request for an Advisory Opinion pursuant to 301 CMR 11.01(6)(a) and M.G.L. ch. 30, § 8. The Request pertains to whether the upcoming relicensing of the Northfield Mountain and Turners Falls Projects by the Federal Energy Regulatory Commission (FERC) subjects either Project to Massachusetts Environmental Policy Act (MEPA) jurisdiction. FirstLight requests your concurrence, based on the facts presented in this letter, that the forthcoming FERC relicensing process and the related State Actions do not require MEPA review.

#### Background

The Northfield Mountain Project and Turners Falls Project are located on the Connecticut River in Franklin County, in the towns of Erving, Gill, Greenfield, Montague and Northfield. Both Projects utilize water from the Connecticut River to generate hydroelectric power.

The Northfield Mountain Project consists of: (a) an upper reservoir and dam; (b) an underground powerhouse; (c) a tailrace; and (d) a lower reservoir known as the Turners Falls Impoundment (Connecticut River). The Turners Falls Project consists of: (a) two concrete

gravity dams separated by an island and appurtenant facilities located on the Connecticut River in the towns of Gill and Montague, MA; (b) a gatehouse controlling flow to the main power canal; (c) the main power canal and a short branch canal; (d) two hydroelectric powerhouses, located on the power canal, known as Station No. 1 and Cabot Station; and (e) a reservoir known as the Turners Falls Impoundment.

The Turners Falls Dam is located at approximately river mile 122 (above Long Island Sound) on the Connecticut River, in the towns of Gill and Montague, MA. The tailrace of the Northfield Mountain Project is located approximately 5.2 miles upstream of Turners Falls Dam, in the town of Northfield, MA. The upper reservoir of the Northfield Mountain Project is located atop Northfield Mountain in Erving, MA.

The Turners Falls Impoundment, created by the Turners Falls Dam (which also serves as the lower reservoir for the Northfield Mountain Project), is approximately 20 miles long, extending upstream through the Connecticut River valley to the base of Vernon Dam, located in Vernon, VT.

More information about the Northfield Mountain and Turners Falls Projects can be found at <a href="http://www.NorthfieldRelicensing.com">http://www.NorthfieldRelicensing.com</a> and on Attachment A.

The current FERC license for the Northfield Mountain Project was issued on May 14, 1968 and expires on April 30, 2018. The current FERC license for the Turners Falls Project was issued on May 5, 1980 and also expires on April 30, 2018. No later than April 30, 2016, two years prior to license expiration, FirstLight is required to file its final license applications with FERC for both Projects.

#### FERC Relicensing Process

FirstLight will apply for FERC license renewal using the Integrated Licensing Process (ILP) as set forth in Part 5 of the FERC's regulations, 18 C.F.R. Part 5. The ILP was developed to integrate the pre-filing consultation with FERC's scoping pursuant to the National Environment Policy Act (NEPA), 42 U.S.C. § 4321, et seq. The process is initiated with the filing of the Pre-Application Document (PAD) and Notice of Intent (NOI), which FirstLight plans to submit to FERC in the fall of 2012.

The major annual milestones in the ILP are as follows:

- 2012: Filing of the PAD and NOI with FERC in the fall.
- 2013: Formal study scoping and planning. In short, this entails developing study plans in consultation with the stakeholders.
- 2014: First field study season.
- 2015: Second field study season and, at the end of the year, file the Preliminary Licensing Proposal or Draft License Application with FERC.

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• 2016: File the Final License Application with FERC and file an application for a Water Quality Certification pursuant to section 401 of the Federal Clean Water Act ("401 WQC") with the Massachusetts Department of Environmental Protection ("MADEP").

#### **State Action**

Prior to FERC issuing a new final license to FirstLight for the Projects, the MADEP must issue a 401 WQC. FirstLight believes that the issuance of a 401 WQC by MADEP could constitute an "Agency Action", specifically issuance of a "Permit" as defined in 301 CMR 11.02.

Although FirstLight expects the MADEP will consult with many other Agencies prior to issuing a 401 WQC, FirstLight has not identified other Permits or Agency Actions that are required as prerequisites for FERC to issue new licenses for the Northfield Mountain or Turners Falls Projects.

### Review Thresholds and Fail-Safe

For MEPA jurisdiction to be triggered, there must be both an "Agency Action", and, except where the Secretary requires "fail-safe" review, the project must exceed the "Review Thresholds" identified in 301 CMR 11.03.

Because the proposed project is the relicensing of existing structures and operations, rather than authorization to construct new projects, FirstLight does not believe any of the Review Thresholds will be exceeded, and as a result, believes that MEPA jurisdiction would not be triggered.

Given the extensive public process associated with the FERC relicensing process itself, it does not appear that fail-safe review under 301 CMR 11.04(1) would be warranted.

#### **Post-FERC Relicensing Construction**

It is possible that the new FERC licenses issued in 2018 will require FirstLight to make physical or operational modifications to the Projects, and it is further possible that those required modifications might exceed Review Thresholds, e.g., modifications to wetlands or waterways to improve habitat functioning may exceed square footage thresholds set forth in 301 CMR 11.03(3)(a).

Because the requirements for Project modifications will not be specified until the FERC licenses have been reissued, they will need to be designed, permitted and constructed after the issuance of the FERC licenses. In FirstLight's view, the possibility that such construction may be required, and the possibility that construction may require Agency Action and exceed Review Thresholds, should not trigger the requirement for MEPA review for the original relicensing. Rather, such subsequent projects should be reviewed for MEPA

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applicability prior to the taking of any Agency Actions that are necessitated by requirements in the 2018 licenses.

## Request for Advisory Opinion

To avoid doubt about the meaning or applicability of 301 CMR 11.00, FirstLight hereby requests the Secretary's Advisory Opinion as to MEPA applicability, including whether the relicensing of the Northfield Mountain Project or the Turners Falls Project by FERC necessitates the prior filing of an Environmental Notification Form (ENF) or an Environmental Impact Statement (EIS) with MEPA prior to the taking of any Agency Actions.

Very truly yours,

Adam P. Kahn

Enclosure: Attachment A

cc: John S. Howard, FirstLight Relicensing Project Manager

Susan M. Babcock, Esq., FirstLight Power Resources Mark J. Wamser, P.E., Gomez and Sullivan Engineers

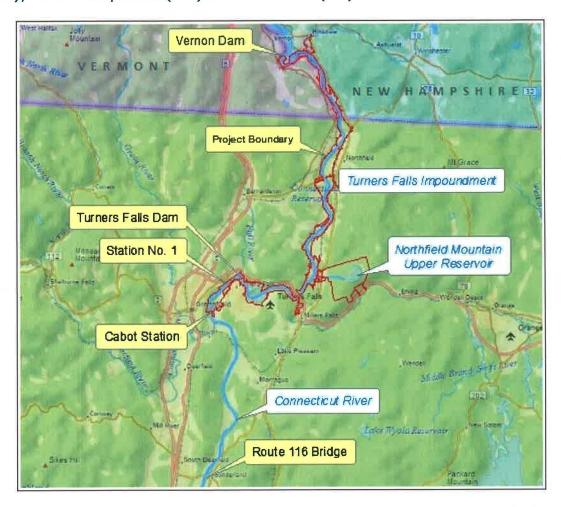
Robert J. McCollum, MADEP

Robert Kubit, MADEP

### Attachment A:

## **Project Locations & Features**

The Turners Falls Hydroelectric Project and Northfield Mountain Pumped Storage Project are located on the Connecticut River in the states of Massachusetts (MA), New Hampshire (NH) and Vermont (VT).



The greater portion of the Turners Falls Project and Northfield Mountain Project, including developed facilities and most of the lands in the Project Boundary are located in Franklin County, MA; specifically, in the towns of Erving, Gill, Greenfield, Montague and Northfield. The impoundment created by the Turners Falls Dam extends northerly into the town of Hinsdale, in Cheshire County, NH, and the town of Vernon, in Windham County, VT.

The Turners Falls Dam is located at approximately river mile 122 (above Long Island Sound) on the Connecticut River in the towns of Gill and Montague, MA. The dam creates an impoundment extending upstream approximately 20 miles to the

base of TransCanada's Vernon Hydroelectric Project Dam in VT/NH. At the Turners Falls Dam is a gatehouse controlling flow into a power canal. Associated with this canal are the development's two hydroelectric generating facilities: Station No. 1 and Cabot Station. Station No. 1 is located approximately one-third of the way down the power canal, while the Cabot Station is located at the downstream terminus of the power canal. Station No. 1 discharges into the Connecticut River approximately 0.9 miles downstream of the Turners Falls Dam.

The Northfield Mountain Project is a pumped-storage facility that utilizes the Turners Falls Impoundment as its lower reservoir. The tailrace of the Northfield Mountain Project is located approximately 5.2 miles upstream of Turners Falls Dam, on the east side of the impoundment. The Northfield Mountain Project includes a man-made upper reservoir situated atop Northfield Mountain, to the east of the tailrace. Water is typically pumped from the Turners Falls Impoundment to the upper reservoir at night, while generation occurs during the day. When generating, water is passed via an underground pressure shaft to an underground powerhouse. An underground tailrace tunnel then delivers water to the Turners Falls Impoundment.

## **Project Facilities**

# **Turners Falls Hydroelectric Project (FERC No. 1889)**

Key features of the Turners Falls Hydroelectric Project are the Turners Falls Dam and associated impoundment, a gatehouse, a power canal, two generating stations (Station No. 1 and Cabot Station), and a bypassed reach. Each feature is described below.

### **Turners Falls Dam**

The Turners Falls Dam consists of two individual concrete gravity dams, referred to as the Gill Dam and Montague Dam, which are connected by a natural rock island known as Great Island. The 630-foot-long Montague Dam is founded on bedrock and connects Great Island to the west bank of the Connecticut River. It includes four bascule type gates and a fixed crest section which is normally not overflowed. When fully upright, the top of the bascule gates are at elevation 185.5 feet mean sea level (msl).

The 493-foot-long Gill Dam connects Great Island to the east bank of the Connecticut River, and includes three tainter spillway gates. When closed, the elevation atop the tainter gates is at elevation 185.5 feet msl.

## **Turners Falls Impoundment**

Turners Falls Impoundment extends upstream approximately 20 miles to the base of TransCanada's Vernon Dam in Vernon, VT. To provide storage capacity for the Northfield Mountain Pumped Storage Project, the Turners Falls Impoundment elevation may vary, per the current FERC license, from a minimum elevation of 176.0 feet msl to a maximum elevation of 185.0 feet msl; a 9 foot fluctuation as measured at the dam. The Turners Falls Impoundment is not a level pool; rather, it is sloped between Turners Falls Dam and Vernon Dam. The slope of the water surface profile steepens as the magnitude of flow increases.

## **Gatehouse**

The gatehouse is located on the west of the Connecticut River. It forms the abutment for connecting the Montague spillway with the shoreline and is equipped with headgates controlling flow from the Turners Falls Impoundment to the power canal. The gatehouse houses 14 gates controlling flow to the power canal.

#### **Power Canal**

The power canal is approximately 2.1 miles long and ranges in width from approximately 920 feet in the Cabot forebay (downstream end of canal) to 120 feet in the canal proper. The power canal has a design capacity of approximately 18,000 cubic feet per second (cfs).

#### Station No. 1 and Cabot Station

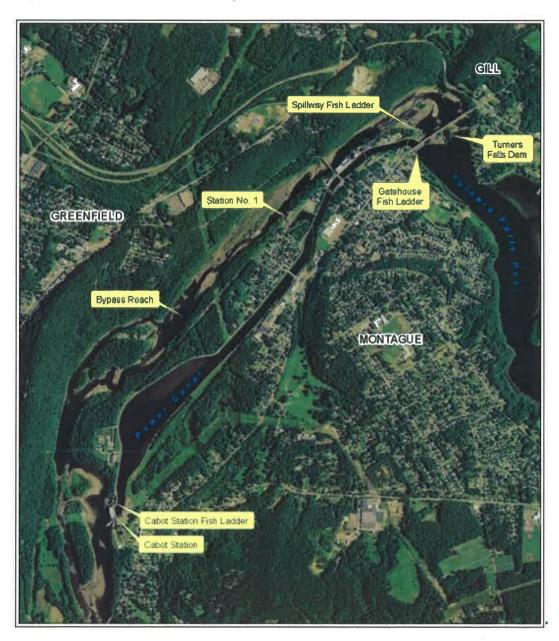
FirstLight has two hydroelectric facilities located on the power canal, including Station No. 1 and Cabot Station. Station No. 1 operates under a gross head of approximately 43.7 feet, and has an approximate total electrical capacity and hydraulic capacity of 5,693 kilowatts (kW) and 2,210 cfs, respectively. Cabot Station is located at the downstream terminus of the power canal. The powerhouse houses six vertical, Francis type, single runner turbines. Cabot Station has a total station electrical capacity of 62.016 megawatts (MW) or roughly 10.336 MW/unit. The station has a total hydraulic capacity of approximately 13,728 cfs or roughly 2,288 cfs/unit.

### **Bypass Reach**

The canal bypasses approximately 2.7 miles of the Connecticut River. Fall River, located near the head of the bypass channel, discharges into the bypass reach. Station No. 1 discharges into the bypass reach approximately 0.9 miles downstream of the Turners Falls Dam.

## **Fish Passage Facilities**

The Turners Falls Project is equipped with three upstream fish passage facilities, including (in order from downstream to upstream): the Cabot fishway, the Spillway fishway, and the Gatehouse fishway.



Fish passing through the Cabot fishway enter the power canal; from there, they swim 2.1 miles upstream to the Gatehouse fishway. Fish bypassing the Cabot fishway move upstream via the bypassed reach where they will ultimately encounter the Turners Falls Dam. Fish arriving there are passed upstream via the Spillway fishway into the upper terminus of the power canal, below the gatehouse. Here, they rejoin fish that have passed to this point via the Cabot Ladder. From the

upstream end of the power canal, all fish are passed above the gatehouse via the Gatehouse fishway. The Gatehouse fishway delivers fish into the Turners Falls Impoundment to continue their journey up the Connecticut River.

The Connecticut River Atlantic Salmon Commission (CRASC) establishes an annual schedule for the operation of upstream fish passage facilities at the Connecticut River dams. The schedules are based on the projected movement of migratory fish and may be adjusted in season to address actual observations.

## **Downstream Fish Passage Facilities**

The downstream fish passage facilities are located at Cabot Station, at the downstream terminus of the power canal. Assuming no spill is occurring at Turners Falls Dam, fish moving downstream pass through the gatehouse (which has no racks) and into the power canal. Downstream fish passage facilities at Cabot Station consist of: reduced bar-spacing in the upper section of the intake racks; a broadcrested weir developed specifically to enhance fish passage at the log sluice; the log sluice itself, which has been resurfaced to provide a safe passage route; abovewater lighting; and a sampling facility in the sluices.

In addition to downstream passage facilities at Cabot Station, a guide net is installed below the Northfield Mountain Pumped Storage Project tailrace to reduce entrainment of emigrating salmon smolt into the Northfield intakes during pumping operation. The CRASC also establishes an annual schedule for the operation of downstream fish passage facilities at the Connecticut River dams.

# Northfield Mountain Pumped Storage Project (FERC No. 2485)

Key features of the Northfield Mountain Pumped Storage Project are the upper reservoir dam, intake channel, powerhouse, and tailrace tunnel.

## **Upper Reservoir Dam**

The crest of the upper reservoir's Main Dam is at elevation 1010 feet msl. There are three dikes known as the North, Northwest, and West Dikes, and are constructed in a similar manner and to the same crest elevation as the Main Dam.

# **Upper Reservoir Storage Capacity**

Per the current FERC license for the Northfield Mountain Pumped Storage Project, the upper reservoir may operate between 1000.5 feet msl and 938 feet msl, which equates to a useable storage capacity of approximately 12,318 acre-feet. The upper reservoir was constructed to accommodate an elevation of 1004.5 feet msl as approved by FERC in 1976. In addition, the reservoir retains useable storage

capacity down to elevation 920 feet msl. Located southwest of the upper reservoir is the intake channel that conveys water to the powerhouse.



#### **Powerhouse**

The underground powerhouse contains four reversible pump/turbines operating at gross heads ranging from 753 to 824.5 feet. The electrical capacities of the units are as follows: Unit 1: 267.9 MW, Unit 2: 291.7 MW, Unit 3: 291.7 MW and Unit 4: 267.9 MW, for a total station nameplate capacity of 1,119.2 MW. Historically, the total station capacity was 1,080 MW (270 MW/unit); however, Units 2 and 3 recently underwent efficiency improvements with the replacement of the turbine runner, and rewind of the motor-generator.

When operating in a pumping mode, the approximate hydraulic capacity is 15,200 cfs (3,800 cfs/pump). Alternatively, when operating in a generation mode, the approximate hydraulic capacity is 20,000 cfs (5,000 cfs/turbine).

Water flows between the Powerhouse and the Turners Falls Impoundment via the Tailrace Tunnel.