5440 Hydro Inc.
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WATER QUALITY CERTIFICATION

In Fulfillment of

Section 401 of the United States Clean Water Act (33 U.S.C 1341) and NH RSA 485-A:12, III and NH RSA 485-A:12, IV

WQC # 2015-FERCX-001

Activity Name	Redevelopment and Operation of the Brooklyn Hydropower Dam (FERC No. 13806-; NH Dam No. D182003)
Activity Location	Northumberland, NH
Affected Surface waters	Upper Ammonoosuc River (see section D-6 for specific waterbodies)
Owner/Applicant	5440 Hydro Inc. 717 Atlantic Avenue Boston, MA 02111
Appurtenant State permit(s) (and any amendments):	Wetlands Permit # 2014-02100
Applicable Federal permit(s):	This Certification applies to the following federal licenses or permits: Federal Energy Regulatory Commission (FERC) Order Granting Exemption from Licensing (10 MW or less) issued August 14, 2015

A. INTRODUCTION

5440 Hydro, Inc. (Applicant) is proposing to redevelop the Brooklyn Dam (Dam) located on the Upper Ammonoosuc River in Northumberland, NH which includes the refurbishment of the existing dam and the operation of the dam as a hydropower project (Activity). A more complete description of the Activity is provided in item D-1 of this Certification.

This 401 Water Quality Certification (401 WQC or Certification) documents laws, regulations, determinations and conditions related to the Activity for the attainment and maintenance of NH surface water quality standards, including the provisions of NH RSA 485-A:8 and NH Code of Administrative Rules Env-Wq 1700, for the support of designated uses identified in the standards.

B. 401 CERTIFICATION APPROVAL

Based on the facts, findings and conditions noted below, the New Hampshire Department of Environmental Services (DES) has determined that there is reasonable assurance that construction and operation of the Activity will not violate surface water quality standards. DES hereby issues this Certification, subject to the conditions in Section E of this Certification, in accordance with Section 401 of the United States Clean Water Act (33 U.S.C. 1341), RSA 485-A:12,III.

C. STATEMENT OF FACTS AND LAW

C-1. Section 401 of the United States Clean Water Act (33 U.S.C. 1341) states, in part: "Any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate...that any such discharge will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of this title.....No license or permit shall be granted until the certification required by this section has been obtained or has been waived...No license or permit shall be granted if certification has been denied by the State..."

C-2. Section 401 further states, in part "Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with any applicable effluent limitations and other limitations...and shall become a condition on any Federal license or permit subject to the provisions of this section."

C-3. §401(d) of the CWA provides that: "Any certification provided under this section [401] shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with [enumerated provisions of the CWA]...and with any other appropriate requirement of State law set forth in such certification."

According to EPA 401 Guidance[1], "Under § 401(d) the water quality concerns to consider and the range of potential conditions available to address those concerns, extend to any provision of state or tribal law relating to the aquatic resource. Considerations can be quite broad so long as they relate to water quality. The U.S. Supreme Court has stated that, once the threshold of a discharge is reached (necessary for § 401 certification to be applicable), the conditions and limitations in the certification may address the permitted activity as a whole."[2]

C-4. NH RSA 485-A:12, III, states: "No activity, including construction and operation of facilities, that requires certification under section 401 of the Clean Water Act

[1] *Clean Water Action Section 401 Water Quality Certification: A Water Quality Protection Tool for States and Tribes.* U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds. 2010.

[2] *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 712 (1994).

and that may result in a discharge, as that term is applied under section 401 of the Clean Water Act, to surface waters of the state may commence unless the department certifies that any such discharge complies with the state surface water quality standards applicable to the classification for the receiving surface water body. The department shall provide its response to a request for certification to the federal agency or authority responsible for issuing the license, permit, or registration that requires the certification under section 401 of the Clean Water Act. Certification shall include any conditions on, modifications to, or monitoring of the proposed activity necessary to provide assurance that the proposed discharge complies with applicable surface water quality standards. The department may enforce compliance with any such conditions, modifications, or monitoring requirements as provided in RSA 485-A:22."

C-5. NH RSA 485-A: IV states: "No activity that involves surface water withdrawal or diversion of surface water that requires registration under RSA 488:3, that does not otherwise require the certification required under paragraph III, and which was not in active operation as of the effective date of this paragraph, may commence unless the department certifies that the surface water withdrawal or diversion of surface water complies with state surface water quality standards applicable to the classification for the surface water body. The certification shall include any conditions on, modifications to, or monitoring of the proposed activity necessary to provide reasonable assurance that the proposed activity complies with applicable surface water quality standards."

C-6. NH RSA 485-A:8 and Env-Wq 1700 (Surface Water Quality Regulations), together fulfill the requirements of Section 303 of the Clean Water Act that the State of New Hampshire adopt water quality standards consistent with the provisions of the Act.

C-7. Env-Wq 1701.02, entitled "Applicability", states that:

"(a) These rules shall apply to all surface waters.
(b) These rules shall apply to any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters."

C-8. Env-Wq 1703.01 Water Use Classifications.

(a) State surface waters shall be divided into class A and class B, pursuant to RSA 485-A:8, I, II and III. Each class shall identify the most sensitive use which it is intended to protect.

(b) All surface waters shall be restored to meet the water quality criteria for their designated classification including existing and designated uses, and to maintain the chemical, physical, and biological integrity of surface waters.

(c) All surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.

(d) Unless the flows are caused by naturally occurring conditions, surface water quantity shall be maintained at levels adequate to protect existing and designated uses.

C-9. Env-Wq 1702.46 defines surface waters as "surface waters of the state" as defined in NH RSA 485-A:2, XIV and waters of the United States as defined in 40 CFR 122.2.

NH RSA 485-A:2, XIV defines "surface waters of the state" as "perennial and seasonal streams, lakes, ponds and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses and other bodies of water, natural or artificial."

40 CFR 122.2 defines "waters of the United States".

C-10. NH RSA 482-A:2, X. defines "Wetlands" as "[a]n area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

C-11. Env-Wq 1702.17 "Biological Integrity" means the ability of an aquatic ecosystem to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.

C-12. Env-Wq 1702.17 "Designated uses" means those uses specified in water quality standards for each water body or segment whether or not such uses are presently occurring. Based on a review of RSA 485-A:8 and Env-Wq 1700, and as reported in the New Hampshire Consolidated Assessment and Listing Methodology[3], designated uses include Aquatic Life, Fish and Shellfish Consumption, Primary and Secondary Contact Recreation, Drinking Water After Adequate Treatment and Wildlife.

C-13. Env-Wq 1702.18 defines a discharge as:

"a. The addition, introduction, leaking, spilling, or emitting of a pollutant to surface waters, either directly or indirectly through the groundwater, whether done intentionally, unintentionally, negligently, or otherwise; or
b. The placing of a pollutant in a location where the pollutant is likely to enter surface waters."

3 See http://des.nh.gov/organization/divisions/water/wmb/swqa/2012/index.htm

C-14. Env-Wq 1702.23 "Existing uses" means those uses, other than assimilation waste transport, which actually occurred in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.

C-15. Env-Wq 1702.39 defines a pollutant as: "pollutant" as defined in 40 CFR 122.2. This means "dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water."

C-16. The term "discharge", as applied under section 401 of the Clean Water Act means the potential for a discharge. It does not need to be a certainty, only that it may occur should the federal license or permit be granted. Further, the discharge does not need to involve the addition of pollutants (such as water released from the tailrace of a dam). As the U.S. Supreme Court has stated "[w]hen it applies to water, 'discharge' commonly means a 'flowing or issuing out'" and an addition of a pollutant is not "fundamental to any discharge" [4].

C-17. Env-Wq 1703.13 entitled "Temperature", states the following:

> "(a) There shall be no change in temperature in class A waters, unless naturally occurring.
> (b) Temperature in class B waters shall be in accordance with RSA 485-A:8, II, and VIII.
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> NH RSA-A:8,II states the following for Class B waters "[A]ny stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class."
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> NH RSA-A:8,VIII states the following: "In prescribing minimum treatment provisions for thermal wastes discharged to interstate waters, the department shall adhere to the water quality requirements and recommendations of the New Hampshire fish and game department, the New England Interstate Water Pollution Control Commission, or the United States Environmental Protection Agency, whichever requirements and recommendations provide the most effective level of thermal pollution control."

C-18. Env-Wq 1703.14, entitled "Nutrients", states that

> "a. Class A waters shall contain no phosphorous or nitrogen unless naturally occurring.

[4] Information in this paragraph is from page 4 of the following guidance document: *Clean Water Action Section 401 Water Quality Certification: A Water Quality Protection Tool for States and Tribes*. U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds. 2010. The Supreme Court case that is referred to is *S.D. Warren Co. v. Maine Board of Environmental Protection et al*, 547 U.S. 370, 126 S. Ct. 1853 (2006).

b. Class B waters shall contain no phosphorous or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.
c. Existing discharges containing either phosphorous or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards.
d. There shall be no new or increased discharge of phosphorous into lakes or ponds.
e. There shall be no new or increased discharge(s) containing phosphorous or nitrogen to tributaries of lakes or ponds that would contribute to cultural eutrophication or growth of weeds or algae in such lakes and ponds."

C-19. Env-Wq 1703.19, entitled "Biological and Aquatic Community Integrity", states that

"a. The surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region; and
b. Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function."

C-20. Env-Wq 1703.21 (a)(1) states that "Unless naturally occurring or allowed under part Env-Wq 1707, all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that injure or are inimical to plants, animals, humans or aquatic life."

C-21. Env-Wq 1703.07 through 1703.11 contain standards relative to dissolved oxygen, bacteria, benthic deposits, oil and grease, and turbidity.

C-22. Antidegradation provisions are included in Env-Wq 1702 and Env-Wq 1708.

a. Env-Wq 1702.02 states that "Antidegradation" means a provision of the water quality standards that maintains and protects existing water quality and uses.
b. Env-Wq 1708.02 states that "Antidegradation shall apply to: (a) Any proposed new or increased activity, including point source and nonpoint source discharges of pollutants, that would lower water quality or affect the existing or designated uses;(b) Any proposed increase in loadings to a waterbody when the proposal is associated with existing activities; (c) Any increase in flow alteration over an existing alteration; and (d) Any hydrologic modifications, such as dam construction and water withdrawals."
c. Antidegradation applies to all parameters as evidenced by Env-Wq 1708.08 (a) (Assessing Waterbodies) which states " The applicant shall characterize the existing water quality and determine if there is remaining assimilative capacity for each parameter in question."
d. According to Env-Wq 1708.04 (b), "A proposed discharge or activity shall not eliminate any existing uses or the water quality needed to maintain and protect those uses".

e. Env-Wq 1702.03 states that "Assimilative capacity" means the amount of a pollutant or pollutants that can safely be released to a waterbody without causing violations of applicable water quality criteria or negatively impacting uses.
f. Env-Wq 1708.08 describes the process for assessing waterbodies to determine if there is remaining assimilative capacity for each parameter in question.
g. Env-Wq 1708.09 Significant or Insignificant Determination states :(a) Any discharge or activity that is projected to use 20% or more of the remaining assimilative capacity for a water quality parameter, in terms of either concentration or mass of pollutants, or volume or flow rate for water quantity, shall be considered a significant lowering of water quality. The department shall not approve such a discharge or activity unless the applicant demonstrates that the proposed lowering of water quality is necessary to achieve important economic or social development, in accordance with Env-Wq 1708.10, in the area where the waterbody is located.
h. Env-Wq 1708.01 (b) states: "For significant changes in water quality, where the quality of the surface waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the department finds, after full satisfaction of the intergovernmental coordination and public participation provisions that, in accordance with Env-Wq 1708.10, allowing lower water quality is necessary to accommodate important economic or social development in the area in which the surface waters are located. In allowing such degradation or lower water quality, the department shall assure water quality adequate to fully protect existing uses. Further, the department shall assure that the highest statutory and regulatory requirements shall be achieved for all new and existing point sources and that all cost effective and reasonable best management practices for nonpoint source control shall be implemented".
i. Env-Wq 1708.01 (c) states: "For insignificant changes in water quality, where the quality of the surface waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected. In allowing such degradation or lower water quality, the department shall assure water quality adequate to protect existing uses fully. Further, the department shall assure that the highest statutory and regulatory requirements shall be achieved for all new and existing point sources and that all cost effective and reasonable best management practices for nonpoint source control shall be implemented".

C-23. Env-Wq 1708.05 - Protection of Water Quality in ORW.

(a) Surface waters of national forests and surface waters designated as natural under NH RSA 483:7-a, I, shall be considered outstanding resource waters (ORW).
(b) Water quality shall be maintained and protected in surface waters that constitute ORW, except that some limited point and nonpoint source discharges may be allowed providing that they are of limited activity which results in no more than temporary and short-term changes in

water quality. "Temporary and short term" means that degradation is limited to the shortest possible time. Such activities shall not permanently degrade water quality or result at any time in water quality lower than that necessary to protect the existing and designated uses in the ORW. Such temporary and short term degradation shall only be allowed after all practical means of minimizing such degradation are implemented.

C-24. Env-Wq 1708.07 Protection of Water Quality in High Quality Waters.

(a) Subject to (b) below, high quality waters shall be maintained and protected, except that insignificant changes in water quality, as determined by the department in accordance with Env-Wq 1708.09, shall be allowed.
(b) Degradation of significant increments of water quality, as determined in accordance with Env-Wq 1708.09, in high quality waters shall be allowed only if it can be demonstrated to the department, in accordance with Env-Wq 1708.10, that allowing the water quality degradation is necessary to accommodate important economic or social development in the area in which the receiving waters are located.
(c) Economic/social benefits demonstration and alternatives analysis shall not be required for authorization of an insignificant lowering of water quality. However, in allowing a lowering of water quality, significant or insignificant, all reasonable measures to minimize degradation shall be used.
(d) If the water body is Class A Water, the requirements of Env-Wq 1708.06 shall also apply.

C-25. Env-Wq 1702.06 states ""Best management practices" means those practices which are determined, after problem assessment and examination of all alternative practices and technological, economic and institutional considerations, to be the most effective practicable means of preventing or reducing the amount of pollution generated by point or nonpoint sources to a level compatible with water quality goals."

C-26. RSA 483 regarding Designated Rivers, states the following:

RSA 483:4, XVIII. "River corridor" means the river and the land area located within a distance of 1,320 feet of the normal high water mark or to the landward extent of the 100 year floodplain as designated by the Federal Emergency Management Agency, whichever distance is larger.

RSA 483:8-a, III. The duties of such committees shall be:
(a) To advise the commissioner, the advisory committee, the municipalities through which the designated river or segment flows, and municipalities within tributary drainage areas on matters pertaining to the management of the river or segment and tributary drainage areas. Municipal officials, boards, and agencies shall inform such committees of actions which they are considering in managing and regulating activities within designated river corridors.
(b) To consider and comment on any federal, state, or local governmental

plans to approve, license, fund or construct facilities that would alter the resource values and characteristics for which the river or segment is designated.

RSA 483:10-b. Withholding of Section 401 Certification. – The general court finds that the development of any dam or channel alteration activities within a natural river or segment or the development of any new dam within a rural or community river or segment, except as provided in RSA 483:9-a, II and RSA 483:9-b, II, will alter the physical and chemical characteristics of that river and will constitute violation of the water quality standards established under RSA 485-A:8. The commissioner shall deny certification of any federally licensed or permitted activity on such designated rivers or segments under section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

RSA 483:12-a State Action; Notification of Rivers Coordinator; Petition for Review

I. Any state agency considering any action affecting any river or segment designated under this chapter shall notify the rivers coordinator prior to taking any such action. Such agency shall forward to the rivers coordinator for review and comment copies of all notices of public hearings, or, where a public hearing is not required, a copy of the application for issuance of a permit, certificate, or license within the designated river or corridor under RSA 485-C, RSA 485-A, RSA 483-B, RSA 12-E, RSA 270:12, RSA 482, RSA 482-A, RSA 149-M, RSA 430, or RSA 147-A. If an agency is notified by the rivers coordinator that a proposed activity would violate a protection measure under RSA 483:9, 483:9-a, 483:9-aa, or 483:9-b, such agency shall deny the application.

C-27. NH RSA 488:3 regarding registration of withdrawals and discharges states the following:

I. No person shall withdraw or discharge a cumulative amount of more than 20,000 gallons of water per day, averaged over any 7-day period, or more than 600,000 gallons of water over any 30-day period, at a single real property or place of business without registering the withdrawal or discharge with the department. Transfers of such volume of water shall also be registered. Registration shall be in addition to any required permits.

II. No registration shall be transferred to another person without written notification to the commissioner.

C-28. NH RSA 485:61 regarding Rules for Water Conservation, states the following:

I. The department shall adopt rules, pursuant to RSA 541-A, for water conservation practices for water users. These rules shall strike a reasonable balance between environmental, energy, and economic impacts and be consistent with current industry standards and practices for different types of water users.

II. The water conservation rules in paragraph I of this section shall apply to all new permit applicants and applications for water withdrawals subject

to the provisions of RSA 485:3, RSA 485:48, RSA 485-C:21 and section 401 of the Clean Water Act.

III. Water conservation rules shall be consistent with applicable state or federal rules and regulations. Water Conservation Rules were adopted May 14, 2005 codified as Env-Wq 2101.

C-29. Env-Wq 2101.24 entitled Water Conservation Plan Required, states that

> "(a) The applicants for approval of a source that would be a conservation source shall submit a water conservation plan that demonstrates compliance with the applicable provisions of Env-Wq 2101.05 through Env-Wq 2101.22 in accordance with the following:"
>
> > "(5) For a new withdrawal from a surface water associated with a project requiring a 401 Water Quality Certification, the water conservation plan shall be submitted prior to or in conjunction with the application for a 401 Water Quality Certification pursuant to Section 401 of the federal Clean Water Act;
> > (6) For a new withdrawal from a surface water that requires water quality certification pursuant to RSA 485-A:12, IV, the water conservation plan shall be submitted prior to or in conjunction with the certification request".

Env-Wq 2101.23, entitled Waivers, allows DES to grant waivers of certain provisions in Env-Wq 2101 provided the person requesting the waiver submits a written request to DES that includes the information specified in Env-Wq 2101.23(d).

C-30. In 2010, DES published guidance (hereinafter called the 2010 instream flow guidance or 2010 ISF guidance) for estimating instream flow requirements for the protection of aquatic life for situations. The guidance is available at: http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-3.pdf.

C-31. Section 303(d) of the Clean Water Act (33 U.S.C. 1313(d)) and the regulations promulgated thereunder (40 C.F.R. 130.0 – 40 C.F.R. 130.11) require states to identify and list surface waters that are violating state water quality standards (i.e., Section 303(d) List) that do not have an approved TMDL. For these water quality-impaired waters, states must establish Total Maximum Daily Loads (TMDLs) for the pollutants causing the impairments and submit the list of impaired surface waters and TMDLs to EPA for approval. TMDLs include source identification, determination of the allowable load and pollutant reductions (by source) necessary to meet the allowable load. Once a TMDL is conducted, the pollutant/surface water is transferred to the list of impaired waters with approved TMDLs (known as Category 4A waters). The Section 303(d) List is, therefore, a subset of all impaired waters. The most recent Section 303(d) list of impaired waters is the 2012 Section 303(d) List. A list of all impaired waters is available at http://www2.des.state.nh.us/WaterShed_SWQA/WaterShed_SWQA.aspx

C-32. On December 20, 2007, EPA approved the Northeast Regional Mercury TMDL[5] which addressed mercury impairments in all New Hampshire fresh surface waters.

C-33. When a surface water does not meet water quality standards (i.e., when it is impaired), the addition of pollutants causing or contributing to impairment is prohibited in accordance with the following:

Env-Wq 1703.03 (a) states that "The presence of pollutants in the surface waters shall not justify further introduction of pollutants from point or nonpoint sources, alone or in any combination".

NH RSA 485-A:12 (I) (Enforcement of Classification) states that "After adoption of a given classification for a stream, lake, pond, tidal water, or section of such water, the department shall enforce such classification by appropriate action in the courts of the state, and it shall be unlawful for any person or persons to dispose of any sewage, industrial, or other wastes, either alone or in conjunction with any other person or persons, in such a manner as will lower the quality of the waters of the stream, lake, pond, tidal water, or section of such water below the minimum requirements of the adopted classification".

C-34. The Applicant applied for a case-specific exemption from licensing by the Federal Energy Regulatory Commission (FERC) for a small hydroelectric power project under 18 CFR§ 4 Subpart K.

C-35. 18CFR§ 4 Subpart K, provides procedures for exemption on a case-specific basis from all or Part I of the Federal Power Act, including licensing for small hydroelectric power projects as defined in § 4.30(b)(29).

C-36. Pursuant to Section 23(b)(1) of the Federal Power Act (FPA), §817(1), a non-federal hydroelectric project must (unless it has a still-valid pre-1920 federal permit) be licensed if it: (1) is located on a navigable water of the United States; (2) occupies lands of the United States; (3) utilizes surplus water or water power from a government dam; or (4) is located on a stream over which Congress has Commerce Clause jurisdiction, is constructed or modified on or after August 26, 1935, and affects the interests of interstate or foreign commerce.

C-37. 18 CFR § 4.30(b)(31). Small hydroelectric power project means any project in which capacity will be installed or increased after the date of notice of exemption or application under subpart K of this chapter, which will have a total installed capacity of not more than 10 MW, and which:

(i) Would utilize for electric power generation the water power potential of an existing dam that is not owned or operated by the United States or by an

[5] Northeast Regional Mercury Total Maximum Daily Load. Connecticut Department of Environmental Protection, Maine Department of Environmental Protection, Massachusetts Department of Environmental Protection, New Hampshire Department of Environmental Services, New York Stated Department of Environmental Conservation, Rhode Island Department of Environmental Management, Vermont Department of Environmental Conservation, New England Interstate Water Pollution Control Commission. October 24, 2007.

instrumentality of the Federal Government, including the Tennessee Valley Authority; or

(ii) (A) Would utilize for the generation of electricity a natural water feature, such as a natural lake, waterfall, or the gradient of a natural stream, without the need for a dam or man-made impoundment; and

(B) Would not retain water behind any structure for the purpose of a storage and release operation.

C-38. 18 CFR § 4.106. Any case-specific exemption from licensing granted for a small hydroelectric power project is subject to the following standard terms and conditions:

(b) The construction, operation, and maintenance of the exempt project must comply with any terms and conditions that the United States Fish and Wildlife Service, the National Marine Fisheries Service, and any state fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish or wildlife resources or otherwise to carry out the purposes of the Fish and Wildlife Coordination Act, as specified in exhibit E of the application for exemption from licensing or in the comments submitted in response to the notice of exemption application.

C-39. NH RSA 482-A (Fill and Dredge in Wetlands) requires any person who excavates, removes, fills, dredges or constructs any structures in or on any bank, flat, marsh, or swamp in and adjacent to any waters of the state to obtain a wetlands permit from DES [NH RSA 482-A:3 I (a)].

On June 12, 2015, the wetlands permit (2014-02100) was approved for work in jurisdictional wetlands.

C-40. On February 5, 2015, the Applicant submitted an application and supplemental information for Water Quality Certification to DES which included a completed DES Water Quality Certification Application Form and a draft application to the Federal Energy Regulatory Agency (FERC) for exemption from licensing for a small hydroelectric power project.

C-41. On May 21, 2015, the U.S. Fish and Wildlife Service (USFWS) issued terms and conditions to FERC to prevent loss of, or damage to, fish and wildlife resources, and to otherwise carry out the purposes of the Fish and Wildlife Coordination Act. Pursuant to 18 CFR 4.106(b) any case-specific exemption from licensing granted by FERC for a small hydroelectric power project requires inclusion in the exemption of these terms and conditions.

C-42. On August 14, 2015, the Federal Energy Regulatory Agency (FERC) issued an "Order Granting Exemption from Licensing" for the Activity (FERC Project No. 13806-004). The order includes the terms and conditions specified by the U.S. Fish and Wildlife Service (USFWS) in their letter of May 21, 2015 (see C-41).

C-43. DES issued a draft section 401 Water Quality Certification for public comment from October 16, 2015 to November 17, 2015. No comments were received.

D. FINDINGS

D-1. The Applicant proposes to refurbish the Brooklyn Dam (Dam) on the Upper Ammonoosuc River in Coos County and operate the Dam as a hydroelectric project (Activity) as described below.

The Activity will use the existing 120-foot long, 14-foot high timber crib Brooklyn dam (FERC No. 13806-004, NH Dam No. D182003). The drainage area upstream of the dam is approximately 240.7 square miles. The crest elevation of the dam is 878.73 National Geodetic Vertical Datum of 1929 (NGVD 1929). With 2.50-foot –high flashboards installed, the top of the spillway will be 881.23 NGVD 1929. With flashboards installed, the impoundment created by the dam extends approximately 0.8 miles upstream and has a surface area of approximately 26 acres. An existing flood gate structure with four 6.9- foot-wide, 10-foot -high floodgates is adjacent to the dam.

An existing 100-foot-long forebay, with three 15.2-foot-wide, 15.5 –foot-high trashracks leads to an existing concrete powerhouse. New trashracks will be installed that will meet US Fish and Wildlife Service (USFWS) specifications. The powerhouse will contain two new Kaplan turbine generating units each with an installed capacity of 300 kW (total capacity of 600 kW). Each turbine will be capable of operating at flows between 33 cubic feet per second (cfs) and 315 cfs; hence the total operating range of the Activity will be from 33 cfs to 630 cfs. Water from the turbines will be discharged to an existing 48-foot-long, 45-foot-wide tailrace. The power house and tailrace will be modified to accommodate the new turbine units which may require the temporary placement of cofferdams.

The Applicant proposes to operate the Activity in a run-of-river mode, whereby outflow from the project equals inflow at all times, and water levels in the impoundment will not be drawn down for electric generation. A new Programmable Logic Control (PLC) system will be installed to operate the project in run-of-river mode. When generating power within the operating range of the turbines, a 100-foot-long reach of the river will be bypassed from the dam to the downstream end of the tailrace.

When river inflow is within the operating range of the turbines (i.e., 33 to 630 cfs) the turbine/generator PLC will monitor the water level in the upstream impoundment and automatically adjust the wicket gates to maintain a steady pond water level at the top of the flashboards. When inflow is less than 33 cfs, all flow will pass over the spillway. When inflow exceeds 630 cfs the flood gates will be operated manually to control water level with water level not falling below the top of flashboards. When the flashboards are down, power can be generated but at a reduced output.

D-2. The Applicant is responsible for the Activity, including construction and operation.

D-3. The Brooklyn Dam is located between two other dams on the Upper Ammonoosuc River. The Red Dam is located approximately 0.8 miles upstream

and the Weston Dam is approximately 0.7 miles downstream of the Brooklyn Dam.

D-4. The U.S. Geological Survey (USGS) maintains a hydrologic gaging station (No. 01130000) on the Upper Ammonoosuc River approximately 3.8 miles upstream of the Activity. The drainage area at the gage is 232 square miles.

D-5. Surface waters are navigable waters for the purposes of certification under Section 401 of the Clean Water Act. Surface waters are jurisdictional wetlands for the purposes of wetlands permitting under RSA 482-A.

D-6. The named and unnamed fresh water rivers and streams, lakes and ponds, and wetlands in New Hampshire affected by the Activity, are surface waters under Env-Wq 1702.46. DES has assigned Assessment Unit (AU) identification numbers to many, but not all surface waters. Surface waters that do not have an AU number are still considered surface waters of the State in accordance with Env-Wq 1702.46 (see C-9). Surface waters that could be potentially affected by the Activity and their associated AU numbers (where available) include, but are not limited to the following:

Assessment Unit ID	Description
NHIMP801010707-02	Upper Ammonoosuc River Red Dam Impoundment
NHIMP801010707-03	Upper Ammonoosuc River Brooklyn Dam Impoundment
NHIMP801010707-04	Upper Ammonoosuc River Weston Dam Impoundment
NHRIV801010707-18	Upper Ammonoosuc River

D-7. The potentially affected surface waters are Class B waterbodies; therefore Class B New Hampshire surface water quality standards apply to the Activity. Class B waterways are considered suitable for aquatic life, primary and secondary contact recreation, fish consumption, wildlife, and, after adequate treatment, as a water supply (see C-12).

D-8. The Upper Ammonoosuc River is not a designated river under RSA 483 (see C-26).

D-9. The Upper Ammonoosuc River in the vicinity of the Activity is not an Outstanding Resource Water (see C-23).

D-10. Many of the potentially affected surface waters are considered cold water fisheries by the NH Fish and Game Department.

D-11. According to the 2014 list of impaired waters (see C-31), the following surface waters in the vicinity of the proposed Activity are listed as impaired. All impairments, with the exception of those highlighted in bold (which have approved TMDLs), are on the Section 303(d) List:

Assessment Unit (AU)	Waterbody Name	Cause of Impairment (Designated Use Impaired)

Assessment Unit (AU)	Waterbody Name	Cause of Impairment (Designated Use Impaired)
	All freshwaters in NH	**Mercury**(FC)

Notes: AL = Aquatic Life, PCR = Primary Recreation, SCR = Secondary Recreation, FC = Fish Consumption, SFC = Shellfish Consumption

Impairments highlighted in bold have approved TMDLs. All other impairments are on the Section 303(d) List. All fresh surface waters are impaired mercury due to elevated levels of mercury in fish tissue which has resulted in statewide fish consumption advisory.

As stated in C-33 of this Certification, when a surface water does not meet water quality standards (i.e., when it is impaired), the addition of pollutants causing or contributing to impairment is prohibited. As noted above, all fresh surface water in NH are impaired for mercury due to concentrations found in fish tissue which have resulted in a statewide fish consumption advisory. On December 20, 2007, EPA approved the Northeast Regional Mercury TMDL which addressed mercury impairments in all New Hampshire fresh surface waters (see C-32). The primary source of mercury is atmospheric deposition from in-state and out-of-state emissions. The proposed Activity is not expected to have a significant impact on mercury levels in fish tissue.

D-12. The Activity will include the release of water from the tailrace of the Brooklyn Dam, which is considered a discharge as applied under § 401 of the Clean Water Act (see C-16).

D-13. NH RSA 485-A:III applies to any activity that requires certification under § 401 of the Clean Water Act (see C-4). According to § 401 of the CWA , one of the "triggers" that determines if a § 401 certification is required, is the need for a federal license or permit (see C-1). Before the Activity in this Certification can be constructed and operated, FERC must issue a federal "Order Granting Exemption from Licensing" (i.e., Exemption Order). The Exemption Order serves as a federal permit to operate the Activity subject to the conditions in the Order (see C-38, C-41 and C-42), and, at the same time, it exempts the Applicant from the licensing provisions of Part I of the Federal Powers Act. As such, the Exemption Order meets the definition of a federal license or permit.

D-14. The Activity involves a discharge (see D-12) and requires a federal Order from FERC (see C-42) which meets the definition of a license or permit (see D-13). Therefore, a § 401 Water Quality Certification is required in accordance with RSA 485-A: 12, III. On May 14, 2015, DES notified FERC that DES would be issuing a § 401 Water Quality Certification for the Activity.

D-15. The Activity includes potential impacts to jurisdictional wetlands in New Hampshire and therefore requires a DES Wetlands Permit (or permits) in accordance with NH RSA 482-A. This 401 Certification decision relies, in part, on an approved permit (or permits) from the DES Wetlands Bureau for the potential impacts to jurisdictional wetlands. Through its processing and issuance, DES wetlands permits issued for the Activity will address any potential impacts to jurisdictional wetlands. On June 12, 2015, DES issued Wetlands Permit 2014-02100. The permit includes provisions to prevent surface water quality standard violations during construction.

D-16. During the summer of 2013 the Applicant performed a water quality monitoring study requested by DES. Water quality data for dissolved oxygen and water temperature were collected upstream and downstream of the Dam. Monitoring was conducted continuously for a 10 day period in August, 2013 using multi-parameter dataloggers when flows were relatively low (i.e., below three times the 7Q10 low flow[6]). Results were then submitted to DES for review. On October 25, 2013, DES sent a letter to the Applicant stating that based on current operation of the facility, current water quality standards, and the water quality data collected in 2013, the Upper Ammonoosuc River immediately upstream and downstream of the Brooklyn Dam appears to be attaining water quality standards for dissolved oxygen at this time. When the Activity is generating power with 2.50-foot-high flashboards in place, the impoundment volume and hydraulic residence time will be increased. Further, flow, which is currently passing over the spillway and receiving some reaeration, will be passed through the turbines which may be less aerated. Therefore, under future operating conditions, there is the potential for dissolved oxygen levels to be reduced. Once the Activity is operational, monitoring should be conducted to confirm that dissolved oxygen levels are still being met.

D-17. On May 21, 2015, the U.S. Fish and Wildlife Service (USFWS) issued a letter to FERC with terms and conditions to prevent loss of, or damage to, fish and wildlife resources, and to otherwise carry out the purposes of the Fish and Wildlife Coordination Act (referred to herein as the USFWS's terms and conditions letter). Pursuant to 18 CFR 4.106(b), FERC included the USFWS's terms and conditions in the Order Granting Exemption from Licensing issued on August 14, 2015. A copy of the USFWS's terms and conditions are provided below[7]. In general, DES concurs with these terms and conditions.

MODIFIED TERMS AND CONDITIONS

Pursuant to 18 CFR 4.106(b), any case-specific exemption from licensing granted for a small hydroelectric power project requires inclusion in the exemption of all terms and conditions that are prescribed by state and Federal fish and wildlife agencies to prevent loss of, or damage to, fish and wildlife resources, and to otherwise carry out the purposes of the Fish and Wildlife Coordination Act.

Consistent with this office's responsibilities, the Department has determined that the following terms and conditions, to be included in their entirety, shall apply to any exemption which the Federal Energy Regulatory Commission issues for the Brooklyn Dam Hydroelectric Project.

1. The Exemptee shall operate the Project in an instantaneous run-of-river mode, whereby inflow to the Project will equal outflow from the Project at all times and water levels above the Dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the Exemptee, or for short periods upon mutual agreement between the Exemptee, the U.S. Fish and Wildlife Service, and the New Hampshire Fish and Game Department.

[6] The 7Q10 low flow is the lowest average 7 day flow that will occur, on average, once every ten years.
[7] "Exemptee" in the USFWS terms and conditions letter is the same as "Applicant" in this Certification.

2. The Exemptee shall, within three (3) months of commencing generation, undertake a bypass reach assessment to determine the linear extent of habitat dewatered by the Project during periods of no spill. The assessment shall be developed in consultation with, and require approval by, the U.S. Fish and Wildlife Service. Based on results of the assessment, the U.S. Fish and Wildlife Service may determine that discharging flow over the Dam is warranted to protect instream habitat.

3. The Exemptee shall install trashracks that meet the following criteria: (1) have an approach velocity ≤ 2.0 fps (as measured 6 inches in front of the racks); (2) have clear spacing of 1 inch or less; and (3) extend full depth. The trashracks shall be installed and operational concurrent with Project start-up. The racks shall be required to be kept free of debris and maintained to design specifications.

4. The Exemptee shall conduct a post-operation water quality monitoring survey. The survey protocol shall be developed in consultation with, and require approval by, the U.S. Fish and Wildlife Service. Data shall be collected over a minimum of three (3) years, and shall be initiated the first low-flow season after Project start-up. If results indicate that the Project is not meeting water quality standards, mitigation measures may be required (e.g., releasing more flow over the Dam for reaeration).

5. The Exemptee shall, within six (6) months of the date of issuance of an exemption from licensing, prepare and file for approval by the U.S. Fish and Wildlife Service, a plan for maintaining and monitoring run-of-river operation at the Project. The plan shall include a description of the mechanisms and structures that will be used, the level of manual and automatic operation, the methods to be used for recording data on run-of-river operation, an implementation schedule, and a plan for maintaining the data for inspection by the U.S. Fish and Wildlife Service, the Federal Energy Regulatory Commission, and the New Hampshire Department of Environmental Services. The plan shall be developed in consultation with, and require approval by, the U.S. Fish and Wildlife Service.

6. The Exemptee shall be responsible for designing, constructing, operating, maintaining and evaluating upstream and downstream fish passage facilities at this Project when notified by the U.S. Fish and Wildlife Service and/or the New Hampshire Fish and Game Department that such fishways are needed. All plans and schedules associated with the design, construction, operation, maintenance and evaluation of any prescribed fishways shall be developed by the Exemptee in consultation with, and require approval by, the U.S. Fish and Wildlife Service. The fishways shall be operated and maintained in accordance with the schedule identified by the agencies.

7. During refilling of the Project reservoir after flashboard replacement, Dam maintenance or emergency drawdown, the Exemptee shall operate the Project such that 90 percent of inflow to the Project is released below the Project and the impoundment is refilled on the remaining 10 percent of inflow. This refill procedure may be modified on a case-by-case basis with the prior approval of both the U.S. Fish and Wildlife Service and the New Hampshire Fish and Game Department.

8. The Exemptee shall notify the U.S. Fish and Wildlife Service in writing when the Project commences operation. Such notice shall be sent within 30 days of start-up to: Supervisor, New England Field Office, 70 Commercial Street, Suite 300, Concord, New Hampshire 03301. The Exemptee shall furnish the Service with a set of as-built drawings concurrent with filing said plans with the Federal Energy Regulatory Commission.

9. The Exemptee shall allow the U.S. Fish and Wildlife Service to inspect the Project area at any time while the Project operates under an exemption from licensing to monitor compliance with their terms and conditions.

10. The U.S. Fish and Wildlife Service reserves the right to add to and alter terms and conditions for this exemption as appropriate to carry out its responsibilities with respect to fish and wildlife resources. The Exemptee shall, within thirty (30) days of receipt, file with the Federal Energy Regulatory Commission any additional terms and conditions imposed by the U.S. Fish and Wildlife Service.

11. The Exemptee shall incorporate the aforementioned terms and conditions in any conveyance—by lease, sale or otherwise—of its interests so as to legally assure compliance with said conditions for as long as the Project operates under an exemption from licensing.

D-18. DES concurs with operating the Activity in an instantaneous run-of-river and maintaining a steady pond when power is generated and flows are within the operating range of the turbines as such actions will help to support Biological and Aquatic Community Integrity (Env-Wq 1703.19 – see C-19).

D-19. With regards to whether or not there is a need to maintain a minimum flow in the 100-foot bypass channel, DES concurs with the USFWS's terms and condition letter (see D-17) that an assessment should be done after the Activity is operational to determine the linear extent of the dewatered habitat during periods of no spill. Results will determine if a discharge flow over the spillway is necessary to protect aquatic habitat and to support Biological and Aquatic Community Integrity (Env-Wq 1703.19 – see C-19).

D-20. With regards to minimizing impingement of fish on trashracks and entrainment of fish into the turbines, DES concurs with the USFWS's terms and condition letter (see D-17) to install new trashracks that meet USFWS specifications. Properly designed trashracks will help to support Biological and Aquatic Community Integrity (Env-Wq 1703.19 – see C-19).

D-21. To help ensure the Activity will not cause or contribute to surface water quality violations, DES concurs with the USFWS's terms and condition letter (see D-17) that requires the Applicant to develop a formal plan that details the equipment, systems, etc. that will monitor and record the information needed to verify compliance with the operational constraints specified for the Activity.

D-22. During authorized drawdowns, a refill procedure is required to ensure adequate flow is maintained downstream to protect aquatic habitat and to support Biological and Aquatic Community Integrity (Env-Wq 1703.19 – see C-19). DES concurs with the USFWS's terms and condition letter (see D-17), that during refilling of the impoundment after flashboard replacement, Dam maintenance or emergency drawdown, 90 percent of inflow to the Dam shall be released downstream with the remaining 10 percent of inflow used to refill the impoundment.

D-23. The NHFGD typically recommends a maximum drawdown rate of approximately six (6) inches per day to allow adequate time for aquatic organisms (including, but not limited to mussels), to move and stay sufficiently submerged as the water level gradually recedes.

D-24. With regards to Fish Passage, DES concurs with USFWS's terms and condition letter (see D-17) that requires the Applicant to design, construct, operate, maintain and evaluate fish passage facilities when notified by the USFWS or the New Hampshire Fish and Game Department, when such fishways are needed.

E. WATER QUALITY CERTIFICATION CONDITIONS

Unless otherwise authorized by DES, the following conditions shall apply:

E-1. **Compliance with Certification Conditions:** The Applicant shall operate and maintain the Activity to comply with the conditions of this Certification.

E-2. **Compliance with Water Quality Standards:** The Activity shall not cause or contribute to a violation of surface water quality standards.

E-3. **Modification of Certification:** The conditions of this Certification may be amended and additional terms and conditions added as necessary to ensure

compliance with New Hampshire surface water quality standards, when authorized by law, and after notice and opportunity for hearing.

E-4. **Proposed Modifications to the Activity:** The Applicant shall consult with and receive prior written approval from DES regarding any proposed modifications to the Activity that could have a significant or material effect on the conditions of this Certification including any changes to project operation or approved plans required by this Certification. If necessary, DES may modify the Certification in accordance with condition E-3 of this Certification.

E-5. **Reopening of FERC Order:** DES may, at any time, request that FERC reopen the Order of Exemption for the Activity to consider modifications to the Order if necessary to ensure compliance with the conditions of this Certification.

E-6. **Compliance Inspections:** In accordance with applicable laws, the Applicant shall allow DES to inspect the Activity and affected surface waters to monitor compliance with the conditions of this Certification.

E-7. **Posting of Certification and Operation and Compliance Monitoring Plan:** A copy of this Certification and the approved Operation and Compliance Monitoring Plan (OCMP – see E-16) shall be prominently posted within the powerhouse within seven days of receiving written approval of the OCMP from DES.

E-8. **Transfer of Certification:** Should this Certification be transferred to a new owner, contact information for the new owner (including name, address, phone number and email) shall be provided to DES within 30 days of the transfer.

E-9. **Run-of-River Flow[8]:** The Applicant shall operate the Activity in instantaneous run-of-river mode, whereby inflow to the Activity equals outflow from the Activity at all times and water levels upstream of the Dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the Applicant, or for short periods upon approval by DES, the USFWS and the NH Fish and Game Department (NHFGD).

E-10. **Bypass Reach Flow[8]:** The Applicant shall, within three (3) months of commencing generation, undertake a bypass reach assessment to determine the linear extent of habitat dewatered by the Activity during periods of no spill. The assessment shall be developed in consultation with and require approval by DES, NHFGD and USFWS. The Applicant shall then implement the approved plan and submit results to DES, NHFGD and USFWS. If DES determines that a minimum flow in the bypass reach is necessary, the minimum bypass reach flow requirements shall be included in the Operation and Compliance Monitoring Plan (see E-16) and shall become a condition of this 401 Certification. Exceptions to the above may be allowed if required by operating emergencies beyond the control of the Applicant, or for short periods upon approval by DES.

[8] This condition is based on one of the terms and conditions in USFWS's letter of May 21, 2015 (see D-17), with some modifications.

E-11. **Flow During Impoundment Refill:** The Applicant shall comply with term and condition #7 of the USFWS's terms and conditions letter of May 21, 2015 (see D-17). While the impoundment is being refilled, bypass flow requirements (see E-10) shall be met. Any proposed modifications to the refill procedures shall also require prior approval of DES.

E-12. **Impoundment Water Level:** Water levels shall be maintained at or above the top of flashboards when the flashboards are in place or at or above the top of the fixed dam crest when flashboards are not in place. If a minimum bypass reach flow is determined to be necessary (see E-10), the impoundment shall be maintained at or above the elevations that are determined necessary to pass the minimum bypass flow with or without flashboards in place. Fluctuations in impoundment water level due to operation of the Activity shall be minimized to the maximum extent practicable. During maintenance drawdowns, the impoundment shall not be drawn down more than twelve inches below the fixed dam crest. Exceptions to the above may be allowed if required by operating emergencies beyond the control of the Applicant or for short periods upon approval by DES.

E-13. **Trash Racks:** The Applicant shall comply with term and condition #3 of the USFWS's terms and conditions letter of May 21, 2015 (see D-17).

E-14. **Drawdown Rates:** When drawing the water level in the impoundment down for maintenance or an emergency drawdown, the Applicant shall strive to achieve, to the extent practicable, a gradual drawdown rate of six (6) inches per day or less. Exceptions to the above may be allowed if required by operating emergencies beyond the control of the Applicant or for short periods upon approval by DES.

E-15. **Post Operation Water Quality Monitoring Survey:** The Applicant shall conduct a post-operation water quality monitoring survey. The survey protocol shall be developed in consultation with, and require approval by, DES and shall be submitted within 6 months of the date of issuance of this Certification. As a minimum, parameters shall include dissolved oxygen (concentration and percent saturation), water temperature and pH. Multi-parameter dataloggers shall be used to collect data on a continuous basis (i.e., every 15 minutes) for at least ten consecutive days during periods of relatively low flow and high water temperature. The protocol shall also include quality assurance/quality control provisions. Sampling shall commence the first low flow / high temperature season after start-up. Results from the first year will be used to determine the need for sampling in subsequent years. If results indicate that the Activity is causing or contributing to violations of surface water quality standards, DES may require implementation of mitigation measures (e.g., releasing more flow over the Dam for reaeration) and additional monitoring to confirm that mitigation measures have resulted in attainment of surface water quality standards.

E-16. **Operation and Compliance Monitoring Plan (OCMP):**

a. Prior to operation of the Activity, the Applicant shall obtain DES approval of an Operation and Compliance Monitoring Plan (OCMP). The OCMP shall describe in detail how the Activity will be operated and monitored to comply with this Certification. The Applicant shall then implement the approved plan.

   The OCMP shall include the following:

   1) A description of how the Activity will be operated and maintained to comply with run-of-river and other requirements of this Certification[9];
   2) As-Built dimensions and elevations of all structures used to pass inflow from upstream to downstream of the dam including, but not limited to, the spillway (with and without flashboards), gates and notches.
   3) Procedures that will be implemented to comply with the conditions of this Certification as quickly as possible should it be found that the Activity is temporarily out of compliance, including notification of appropriate regulatory authorities;
   4) Methods for monitoring, recording and reporting impoundment water surface elevations, inflows, bypass flows, turbine flows and when power is generated, with monitoring and recording of data automated and collected continuously to the extent feasible;[10]
   5) A description of the mechanisms and structures that will be used, including equipment accuracy, frequency of measurement, the level of automation and any periodic maintenance and/or calibration necessary to ensure the devices work properly;
   6) How data will be recorded to verify proper operations and how these data will be maintained for inspection by DES and other resource agencies for the life of the Activity; and
   7) A schedule for when the plan will be implemented.

b. The Applicant shall consult with DES, and receive DES approval of any proposed modifications to the OCMP. Any DES approved modifications to the OCMP shall be considered a part of this Certification. Proposed modifications shall not be implemented until approved by DES. Exceptions to the approved OCMP may be granted by DES on a case-by-case basis.

c. The Applicant shall notify DES not more than 48 hours after any deviations from the OCMP. The notification shall include, to the extent known, an explanation as to why the deviations occurred, a description of corrective actions taken, and how long it will take until the operations will comply with the OCMP. The Applicant shall maintain a log of deviations and shall submit an annual summary of the deviations to DES for each calendar year by January 31 of the following year (i.e., the 2016 annual summary would be

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[9] DES may require calculations showing the estimated flow at various elevations for each structure used to pass inflow from upstream to downstream of the dam including, but not limited to, the spillway (with and without flashboards), gates and notches.

[10] The OCMP shall include a description of how inflow will be calculated to comply with condition E-11 when the impoundment is being refilled.

due by January 31, 2017). The annual summary shall also include a summary of the of maintenance and emergency drawdowns in each impoundment for the year including the dates, duration, depth, and reason for each drawdown.

E-17. **Fish Passage.** The Applicant shall comply with term and condition #6 of the USFWS's terms and conditions letter of May 21, 2015 to FERC (see D-17).

E-18. **Compliance with Wetland Permits:** The Applicant shall comply with conditions in all DES Wetlands permits issued for the Activity. The conditions of the wetlands permit(s) shall become conditions of this 401 Certification. Should any conditions conflict, the certification or permit with the more stringent condition shall apply.

E-19. **Water Conservation Plan:** Prior to construction of the Activity, the Applicant shall consult with the DES Water Conservation Program to determine if a water conservation plan and/or waiver is required for the Activity in accordance with Env-Wq 2101 (see C-29). If required, the Applicant shall submit a water conservation plan that meets the requirements of Env-Wq 2101 and receive DES approval of the plan by the time specified by the DES Water Conservation Program. The Applicant shall then implement the approved plan.

E-20. **DES Water Use Registration and Reporting:** The Applicant shall register, measure, and report all withdrawals and discharges with the DES Water Use Registration and Reporting program in accordance with RSA 488:3 and its supporting regulations, Env-Wq 2102. Prior to construction of the Activity, the Applicant shall consult with the DES Water Use Registration and Reporting program to determine specific monitoring requirements for the Activity. The Applicant shall then implement the DES approved measuring and reporting requirements.

F. APPEAL

Any person aggrieved by this decision may appeal to the N.H. Water Council ("Council") by filing an appeal that meets the requirements specified in RSA 21-O:14 and the rules adopted by the Council, Env-WC 100-200. The appeal must be filed directly with the Council within 30 days of the date of this decision and must set forth fully every ground upon which it is claimed that the decision complained of is unlawful or unreasonable. Only those grounds set forth in the notice of appeal can be considered by the Council.

Information about the Council, including a link to the Council's rules, is available at http://nhec.nh.gov/ (or more directly at http://nhec.nh.gov/water/index.htm). Copies of the rules also are available from the DES Public Information Center at (603) 271-2975.

If you have questions regarding this Certification, please contact Owen David at (603) 271-0699 or Owen.David@des.nh.gov

Eugene J. Forbes, P.E.
Director, DES Water Division

cc: Mellissa Grader, USFWS
Carol Henderson, NHFGD
Jeffrey Blecharczyk, North Country Inspector NHDES Wetlands Bureau
Charlie Ryan, Chair Ammonoosuc River Local Advisory Committee
Select board, Town of Northumberland, NH