



State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

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APR 23 2001

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 FEDERAL ENERGY
 REGULATORY COMMISSION

April 16, 2001

Mr. Cleve Kapala
 USGen New England, Inc.
 46 Centerra Parkway, Suite 100
 Lebanon, New Hampshire 03766

P-2077

RE: Section 401 Water Quality Certification Fifteen Mile Falls Project, New Hampshire
 FERC No. 2077

A. INTRODUCTION

The Fifteen Mile Falls Hydroelectric Project (the Project) consists of the Moore, Comerford and McIndoes developments, which are located on the Connecticut River in Grafton and Coos Counties in New Hampshire and Caledonia and Essex Counties in Vermont. For the purposes of this document, the Project consists of the three developments, including all upland portions within the Project boundary.

USGen New England, Inc. (the Applicant) has applied for a federal license (the License) under the Federal Power Act (16 U.S.C. §791a – 828c) and has submitted an application to the New Hampshire Department of Environmental Services (NHDES) for a Water Quality Certification under Section 401 of the Clean Water Act, (33 U.S.C. §1341).

B. STATEMENT OF FACTS AND LAW

- 1) Before the federal license may be issued for the Project under the Federal Power Act, the Clean Water Act requires the Applicant to obtain from the state where a discharge to navigable waters originates, a certification that the operation of the Project will meet state water quality standards. To implement this provision of the Act, NHDES has adopted Section 401 Water Quality Certification regulations, at Env-Ws 451-455 under the authority of RSA 485-A:6, VII.
- 2) The boundary between New Hampshire and Vermont is the low water mark of the Connecticut River on the western (Vermont) side, as it existed before the creation of the reservoirs. Project facilities and reservoirs are located in both states, and the discharge affects the quality of the waters of both states. Consequently, under the provisions of Section 401 of the Clean Water Act, the Project is subject to the water quality standards of New Hampshire and Vermont.
- 3) In New Hampshire, RSA 485-A:8 & 9 and Env-Ws 1700, Surface Water Quality Regulations, effective December 10, 1999, fulfill the requirements of Sections 303 of the Clean Water Act that New Hampshire adopt water quality standards consistent with the provisions of the Clean Water Act.
- 4) In Vermont, 10 VSA Chapters 41 (Regulation of Stream Flow) and 47 (Water Pollution Control) and the Vermont Water Quality Standards adopted on April 2, 1997, fulfill the requirements of Section 303 of the Act that Vermont adopt water quality standards consistent with the provisions of the Clean Water Act.
- 5) The reaches of the Connecticut River affected by the Project have been designated by the New Hampshire legislature as Class B waters. Class B waters shall be high quality waters with no objectionable physical characteristics, are acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies.

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APR 23 2001

USGen New England, Inc.

April 16, 2001

Page 2 of 11

- 6) The reaches of the Connecticut River affected by the Project have been designated by the Vermont Water Resources Board as Class B waters. Class B waters are managed to achieve and maintain a high level of quality compatible with certain beneficial values and uses. Values are high quality habitat for aquatic biota, fish and wildlife and a water quality that consistently exhibits good aesthetic value; uses are public water supply with filtration and disinfection, irrigation and other agricultural uses, swimming, and recreation, including fishing.
- 7) RSA 484 and 10 VSA §1331-1342 established the New England Interstate Water Pollution Control Compact (the Compact). Article V of the compact provides "...technical experts employed by state departments of health and state water pollution control agencies are authorized to confer on questions relating to classification of interstate waters affecting 2 or more states." Article VI provides "Each of the signatory states pledges to ... maintain the waters thereof in a satisfactory condition consistent with the highest classified use of each body of water."
- 8) In August 1997, a settlement agreement (the Settlement) was signed by the Applicant, the States of New Hampshire and Vermont, and other parties concerning the operation of the Project, environmental mitigation and land conservation. In addition to other provisions, the Settlement provides that the two states will work collaboratively on a single Water Quality Certification to be issued for the Project by the State of New Hampshire, with the purpose of the collaboration being to ensure that the Project complies with both New Hampshire and Vermont water quality standards.
- 9) Under Env-Ws 1702.46 "Surface waters" means "surface waters of the state" as defined in RSA 485-A:2, XIV and waters of the United States as defined in 40 CFR 122.2.
- 10) Env-Ws 452.02 defines a discharge as "any addition of pollutants to the surface waters of the state, or release of water, which alters the physical, chemical or biological condition of surface waters of the state."
- 11) Env-Ws 1701.02 provides that the water quality standards "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."
- 12) Env-Ws 1703.19, Biological and Aquatic Community Integrity, provides 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.
(b) Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function."
- 13) Env-Ws 1703.21(a)(2) provides that unless naturally occurring, all surface waters shall be free from toxic substances or chemical constituents in concentrations that "persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife which might consume aquatic life."
- 14) Env-Ws 1703.07(d) provides that "unless naturally occurring ... surface waters within the top 25 percent of depth of thermally unstratified lakes, ponds, impoundments and reservoirs or within the epilimnion shall contain a dissolved oxygen content of at least 75 percent saturation, based on a daily average and an instantaneous minimum dissolved oxygen content of at least 5 mg/l. Unless naturally occurring, the dissolved oxygen content below those depths shall be consistent with that necessary to maintain and protect existing and designated uses."
- 15) For waters designated cold water fish habitat, the Vermont water quality standards provide for a dissolved oxygen concentration of "(n)ot less than 7 mg/l or 75 percent saturation at all times, nor less than 95 percent saturation during late egg maturation and larval development of salmonids in areas that the Secretary determines are salmonid spawning or nursery areas important to the establishment or maintenance of the fishery resource. Not less than 6 mg/l or 70 percent saturation at all times in all other waters designated as a cold water fish habitat."

USGen New England, Inc.

April 16, 2001

Page 3 of 11

- 16) Env-Ws 1703.01(d) provides that "unless the flows are caused by naturally occurring conditions, surface water quantity shall be maintained at levels adequate to protect existing and designated uses."
- 17) Env-Ws 1703.03(c)(1) provides that all surface waters shall be free from substances in kind or quantity which "float as foam, debris, scum, or other visible substances;" and "interfere with recreational activities."
- 18) Env-Ws 455.02(c) provides that a Water Quality Certification may only be issued if construction or operation of the Project will not violate surface water quality standards.
- 19) The ecosystem of the Project, including both the aquatic ecosystem and the water-dependent ecosystem on Project lands contains threatened and endangered species, including: sticky false-asphodel (*Tofieldia glutinosa*), grass-of-parnassus (*Parnassia glauca*), bog wintergreen (*Pyrola asarifolia*), chestnut sedge (*Carex castanea*), golden-fruited sedge (*Carex aurea*), Garber's sedge (*Carex garberi* var. *bifaria*), Muehlenberg's sedge (*Carex muehlenbergii*), gregarious black snakeroot (*Sanicula gregaria*), long-fruited snakeroot (*Sanicula trifoliata*), dwarf ragwort (*Senecia pauperculus*), small dropseed (*Sporobolus neglectus*), spurred gentian (*Halenia deflexa*), Kalm's lobelia (*Lobelia kalmii*), Loesel's twayblade (*Liparis loeselii*), showy lady's-slipper (*Cypripedium reginae*), shining ladies'-tresses (*Spiranthes lucida*), meadow horsetail (*Equisetum pratense*), marsh horsetail (*Equisetum palustre*), satiny willow (*Salix pellita*), leafy pondweed (*Potamogeton foliosus*), dwarf wedgemussel (*Alasmidonta heterodon*), common loon (*Gavia immer*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), and osprey (*Pandion haliaetus*).

C. FINDINGS

- 1) The Project will cause a discharge, as defined in Env-Ws 452.02, to the Connecticut River, in that water from the tailrace of turbines installed at the Project discharges to the downstream river reach.
- 2) The Connecticut River is a surface water as described under Env-Ws 1702.46.
- 3) Water quality standards apply to the Project under Env-Ws 1701.02.
- 4) Under Env-Ws 453.01(a) and Section 401 of the Clean Water Act, the Project requires a Section 401 Water Quality Certification from New Hampshire in order to receive a License from the Federal Energy Regulatory Commission under the Federal Power Act.
- 5) The administration of the certification will require periodic review of compliance data, review and approval of management plans and other studies, and other consultation with the Applicant and other parties. Given the interstate nature of the waters affected by the Project, these actions will be undertaken jointly by the states of New Hampshire and Vermont.
- 6) Vermont's responsibilities in post-certification reviews, approvals and compliance monitoring are specified in the certification conditions. Reviews by the Vermont Department of Environmental Conservation (VTDEC) will address compliance with Vermont water quality standards only. New Hampshire's determination of compliance will include an incorporation of a review by the State of Vermont.
- 7) In accordance with the provisions of the Compact, the elements of water quality requirements from both New Hampshire and Vermont are incorporated into this certification.
- 8) The Applicant has issued a report documenting Dissolved Oxygen (D.O.) concentrations in the impoundments and the tailraces of the Moore and Comerford developments during periods of reservoir stratification [1999 Program Addressing Dissolved Oxygen Issues at the Fifteen Mile Falls Hydropower Project FERC Project No. P-2077, Louis Berger Group, December 1999]. The study concludes that the D.O. standard in the Moore and Comerford Reservoirs and in the tailrace discharge immediately downstream is not always obtained under existing operating conditions and predicts that the D.O. standard could be met if the Project were operated in accordance with the minimum flow and reservoir level management schedules in Attachment 1 and turbine venting is instituted as proposed by the Applicant.

USGen New England, Inc.

April 16, 2001

Page 4 of 11

- 9) Consideration of fish passage in accordance with the *Strategic Plan for the Restoration of Atlantic Salmon to the Connecticut River* (Connecticut River Atlantic Salmon Commission, revised July 1, 1998) and mitigating fish mortality from turbines is required for compliance with Env-Ws 1703.19, Biological and Aquatic Community Integrity.
- 10) The Applicant has submitted a Fisheries Mitigation Plan dated September 2000 as part of the license application. The plan details a process for identifying and implementing specific projects to enhance structural habitat in the Moore and Comerford tailraces and enhancing tributary access by reservoir and impoundment fish. This certification is being conditioned to require review and approval (by NHDES and VTDEC) of specific projects to ensure that the fisheries mitigation measures will be effective and conform to water quality standards.
- 11) Operation of the Project in accordance with the minimum flow and reservoir level management schedules in Attachment 1, which are the schedules in the Settlement, will satisfy the requirements of Env-Ws 1703.01 and Env-Ws 1703.19 relative to minimum flow requirements for designated uses, including aquatic life and recreation.
- 12) The Project causes hydrologic modifications, including changes in flow regime and inundation of lands.
- 13) The requirements of Env-Ws 1703.19 for Biological and Aquatic Community Integrity include the water-dependent ecosystem in Project lands subject to inundation and riparian zones.
- 14) Because of hydrologic modifications due to the Project including changes in flow regime and in lands subject to inundation, active management of wildlife and forestry in riparian zones, including consideration of threatened and endangered species, is needed to evaluate and ensure compliance with Env-Ws 1703.19, Biological and Aquatic Community Integrity.
- 15) Because of hydrologic modifications due to the Project including changes in flow regime and in lands subject to inundation, active management of the waters affected by the Project, and riparian zones within the Project boundary is needed to evaluate and ensure compliance with the provisions of RSA 485-A:8, II that class B waters shall be acceptable for fishing, swimming and other recreational purposes.
- 16) Operation of the Project and use of lands within the Project boundary may generate or cause introduction of Project related debris that does not meet the requirements of Env-Ws 1703.03(c)(1).
- 17) Waters throughout both states are impaired under the water quality standards due to mercury levels in fish tissue. Statewide fish consumption advisories for mercury are in effect in both states. Studies conducted by the Applicant show that mercury levels in fish in Moore and Comerford reservoirs are higher than the average statewide levels. The states of New Hampshire and Vermont have issued more restrictive fish consumption advisories for these reservoirs.
- 18) Published studies have established a possible link between elevated mercury levels in fish tissue and seasonal fluctuation of reservoir levels, such as occur now and will continue to occur when the Project is operated in accordance with the Settlement. The contribution of Project operations, if any, to the elevated levels of mercury in fish tissue from Moore and Comerford reservoirs has not been determined. There is a need for further study to understand the relationship before considering mitigative actions. NHDES and VTDEC have agreed to undertake a regional study of mercury to determine the relationship between reservoir water level fluctuations and elevated levels of mercury in fish and wildlife. The Fifteen Mile Falls reservoirs will be included in the scope of the study.

USGen New England, Inc.
April 16, 2001
Page 5 of 11

D. WATER QUALITY CERTIFICATION APPROVAL

Based on the findings, NHDES hereby issues the Water Quality Certification under Section 401 of the Act for the Project subject to the conditions in Section E.

E. WATER QUALITY CERTIFICATION CONDITIONS

- 1) **Compliance with Conditions.** The Applicant shall operate and maintain the Project consistent with the conditions of this certification. At no time shall the Project cause the water quality standards of either state to be violated. If it is determined that water quality standards are being violated, additional conditions may be imposed or conditions amended by NHDES in accordance with Env-Ws 455.
- 2) **Reservoir and Flow Management.** The Project shall be operated in accordance with the conservation flow and reservoir level management schedules in Attachment 1.
- 3) **Operating Plan.** The Applicant shall prepare a plan that addresses how reservoir storage will be utilized to provide guaranteed flows while minimizing impacts on the environment and public use. A draft of the plan shall be developed in consultation with NHDES, U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department and the VTDEC, and a draft will be submitted to NHDES and VTDEC for review within 90 days of the issuance of a federal license. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 4) **Deviations from Prescribed Operating Conditions.** The Applicant shall notify NHDES and VTDEC within 24 hours of any deviation from the provisions of Condition 2 and within 10 days submit a written report describing the event (including the extent of the deviation), explaining the reasons, identifying ways to avoid future occurrences, and proposing mitigative measures. An extension of the 10-day filing deadline may be granted in writing by NHDES for good cause. The Applicant shall file a report of all deviations from the provisions of Condition 2 annually with NHDES and VTDEC as part of the annual filing provided for in Condition 5.
- 5) **Monitoring Plan for Reservoir and Flow Management.** Within 90 days of the issuance of a federal license the Applicant shall file a plan with NHDES and VTDEC for monitoring instantaneous reservoir levels, inflow, and outflow at all three Project facilities. The plan shall include provisions for this flow data to be available on a near real-time basis. The Applicant shall include in the monitoring plan copies of the turbine rating curves, accurately depicting the flow/production relationship. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following approval of the monitoring plan, the Applicant shall measure flows and reservoir levels and file the records annually with NHDES and VTDEC by March 31 of the following year. The annual filing shall specifically address compliance with the maximum flow restrictions at McIndoes, as described in Attachment 1.
- 6) **Dissolved Oxygen in the Tailraces of the Moore and Comerford Developments.** Within 180 days of the issuance of the federal license the Applicant shall file a plan with NHDES and VTDEC, for measures necessary to meet dissolved oxygen standards in the river reaches below the Moore and Comerford developments, and a schedule for implementation. The plan and schedule shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. If violations of dissolved oxygen standards persist, the Applicant shall revise the plan to include additional measures to meet dissolved oxygen standards. Any revised plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.

USGen New England, Inc.

April 16, 2001

Page 6 of 11

- 7) **Monitoring of Tailrace Dissolved Oxygen and Temperature.** Within 180 days of the issuance of the federal license the Applicant shall file with NHDES and VTDEC a plan for monitoring 1) dissolved oxygen and temperature in the tailraces of the Moore and Comerford developments during periods of reservoir stratification, and 2) temperature in the Moore and Comerford penstocks. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following approval of the monitoring plan, the Applicant shall measure dissolved oxygen and temperature and file records of these results annually with NHDES and VTDEC by March 31 of the following year. Following the initial five year monitoring period, NHDES will review the data in consultation with VTDEC and may suspend this requirement, all or in part.
- 8) **Reservoir Dissolved Oxygen.** Within 180 days of the issuance of a federal license the Applicant shall file a plan with NHDES and VTDEC for monitoring water temperature and dissolved oxygen in the Moore and Comerford reservoirs during periods of reservoir stratification. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following approval of the monitoring plan, the Applicant shall then measure dissolved oxygen and temperature and file records of these results annually with NHDES and VTDEC by March 31 of the following year. Following the initial five year monitoring period, NHDES will review the data in consultation with VTDEC and may suspend this monitoring requirement, all or in part.
- 9) **Monitoring Plan for Mercury in Fish Tissue.** Within 180 days of the issuance of a federal license, the Applicant shall file with NHDES and VTDEC a long-term plan for monitoring mercury in fish tissue at Moore and Comerford reservoirs. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Monitoring results shall be reported to NHDES and VTDEC by December 31 of the sample year.
- 10) **Posting of Fish Consumption Advisories at Access Points.** The Applicant shall post and maintain fish consumption advisories at public access points within the Project boundary. It shall be the responsibility of the Applicant to post signs with the most updated fish consumption advisory information provided by each state.
- 11) **Prevention of Fish Entrainment and Impingement at Intakes.** Prior to the next replacement of intake trashracks at any Project facility, the Applicant shall determine the appropriate bar clear spacing, rack location, and other design elements. The design shall be developed in consultation with the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department and the Vermont Department of Fish and Wildlife, and a draft shall be submitted to NHDES and VTDEC for review. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 12) **Fisheries Mitigation Measures.** The Applicant shall implement plans to enhance structural habitat in the Moore and Comerford tailraces and improve tributary access to fish as described in Appendix B and Appendix C, respectively, of the *Fisheries Mitigation Plan* (September 2000) submitted as part of the license application. Within two years of receiving a federal license for the project, the Applicant shall file site-specific project plans with NHDES and VTDEC for review. The final plans shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 13) **Downstream Fish Passage – McIndoes Development.** The Applicant shall provide downstream fish passage at the McIndoes Development within two years of receiving a federal license for the project. Plans for the fish passage facilities shall be developed in consultation with the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Connecticut River Atlantic Salmon Commission. Prior to construction, the design shall be filed with NHDES and VTDEC. The design shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Once new passage facilities are completed, the Applicant shall monitor their effectiveness in accordance with a plan developed in consultation with the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Connecticut River Atlantic Salmon Commission. A draft monitoring plan shall be filed with NHDES and VTDEC. The plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation. Following review of the final monitoring results by the state and federal fishery agencies and VTDEC, NHDES may require additional measures to provide downstream fish passage.

USGen New England, Inc.

April 16, 2001

Page 7 of 11

- 14) **Downstream Fish Passage – Moore and Comerford Developments.** The Applicant shall provide downstream fish passage at the Moore and Comerford Developments within two years of being notified by the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, and U.S. Fish and Wildlife Service that an Atlantic salmon stocking program has been initiated upstream from Moore Reservoir and that such passage is needed. Upon a request from the Connecticut River Atlantic Salmon Commission to extend the implementation schedule, the schedule may be extended by NHDES, in consultation with VTDEC. The design and operating plan for fish passage facilities shall be developed in consultation with these agencies and the Connecticut River Atlantic Salmon Commission, and shall be filed with NHDES and VTDEC. The design and operating plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 15) **Atlantic Salmon Upstream Passage.** The Applicant shall provide upstream fish passage past McIndoes Dam after 20 Atlantic salmon migrating upstream reach the East Ryegate Dam for two consecutive years and the New Hampshire Fish and Game Department, Vermont Department of Fish and Wildlife, U.S. Fish and Wildlife Service and Connecticut River Atlantic Salmon Commission determine that upstream fish passage is justified. At the discretion of the above-named agencies, the passage may consist of facilities located at McIndoes Dam or participation in trap-and-truck facility construction and operation at East Ryegate Dam. If the above-named agencies determine it is justifiable, at the same time or subsequently, a fish trap shall be constructed at Comerford Dam, and a trap-and-truck operation instituted. Passage measures shall be developed by the Applicant, in consultation with and following a schedule and plan acceptable to the above-named agencies. This requirement may be modified by the above-named agencies subject to approval by NHDES, in consultation with VTDEC. The upstream fish passage plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 16) **American Eel Passage.** The Applicant shall develop a plan to study eel passage or provide upstream and downstream eel passage within one year of being notified by the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department, and Vermont Department of Fish and Wildlife that eel passage is necessary. The plan will include an implementation schedule agreed to with the fishery agencies, and will be developed in consultation with the above-named agencies. The eel passage plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 17) **Threatened and Endangered Species.** The Applicant shall prepare a management plan for threatened and endangered species located on Project lands or affected by the Project. The plan will be developed in consultation with the U.S. Fish and Wildlife Service and the natural heritage programs of New Hampshire and Vermont. A draft will be submitted to NHDES and VTDEC for review within one year of the issuance of a federal license. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 18) **Wildlife and Forestry Management Plan.** The Applicant shall prepare a management plan for the protection, enhancement, and management of wildlife resources, and management of timber resources; on Project lands. The plan shall include provisions for the protection of riparian areas, wetlands, and water quality. The plan will be developed in consultation with the U.S. Fish and Wildlife Service, New Hampshire Fish and Game Department and the Vermont Agency of Natural Resources. A draft will be submitted to NHDES and VTDEC for review within one year of the issuance of a federal license. The final plan shall be subject to approval by NHDES, in consultation with VTDEC, prior to implementation.
- 19) **Public Access.** The Applicant shall allow public access to the Project area for utilization of public resources, subject to reasonable safety and liability limitations. Such access should be prominently and permanently posted so that its availability is made known to the public. Any proposed limitations of access to Vermont waters to be imposed by the Applicant shall first be subject to written approval by the VTDEC. In cases where an immediate threat to public safety exists, access may be restricted without prior approval; the Applicant shall so notify the VTDEC and shall file a request for approval, if the restriction is to be permanent or long term, within 14 days of the restriction of access.

USGen New England, Inc.

April 16, 2001

Page 8 of 11

- 20) **Recreation Plan.** Recreational facilities shall be constructed and maintained consistent with a recreation plan filed with NHDES and VTDEC within one year of the issuance of the FERC license. The plan shall include an implementation schedule. The Applicant shall consult with the appropriate state agency (NHDES or VTDEC) during the development of site-specific project plans if any clearing of vegetation or earthwork would be involved. Where appropriate, the project plans shall include details on erosion control. Changes to the recreation plan shall also be subject to approval by the appropriate state agency over the term of the license.
- 21) **Erosion Control.** Upon a written request by NHDES or VTDEC, the Applicant shall design and implement erosion control measures as necessary to address erosion resulting from use of the Project lands for recreation that is causing turbidity or is otherwise compromising water quality. Any work that exceeds minor maintenance shall be subject to prior approval by NHDES or VTDEC, depending on the state where the erosion control measures will take place.
- 22) **Debris Disposal Plan.** The Applicant shall develop a plan for proper disposal of debris associated with Project operation, including trashrack debris, litter, and trash. The plan shall be submitted to NHDES and VTDEC for review within one year of the issuance of a federal license. The final plan shall be approved by NHDES, in consultation with VTDEC, prior to implementation. The approved plan shall be filed with FERC. The purpose of the plan is to protect downstream navigation and aesthetic quality. Proper disposal is defined as disposal in accordance with the New Hampshire and Vermont Solid Waste Rules in the affected state. The plan shall include information on the design and materials (including flashboard composition, failure characteristics, and attachment method) used for flashboard construction at McIndoes Dam and the potential for the discharge of flashboards downstream. Upon approval of the plan by NHDES and FERC the Applicant shall implement the approved plan. NHDES reserves the right of review and approval of any material changes made to the plan at any time, in consultation with VTDEC.
- 23) **Maintenance and Repair.** At least 90 days prior to implementing any alteration of normal reservoir pool levels or stream flow, or maintenance or repair that requires earth-disturbing activities, including but not limited to dredging or desilting operations, the Applicant shall consult with NHDES and VTDEC. Except under emergency conditions, the Applicant shall obtain approval from NHDES, in consultation with VTDEC, prior to initiating these types of maintenance activities.
- 24) **Compliance Inspection by Departments.** The Applicant shall allow NHDES and VTDEC to inspect the Project at any time to monitor compliance with certification conditions.
- 25) **Posting of Certification.** A copy of this certification shall be prominently posted within the Project powerhouses.
- 26) **Approval of Project Changes.** The Project shall be constructed and operated as described in this Water Quality Certification. Should the FERC license require modifications or the licensee request to make modifications, the licensee shall first consult with NHDES for a determination of whether the certification may need to be amended or a new certification issued. NHDES will consult with VTDEC prior to making a final determination. Any amendment of certification or new certification, determined appropriate by NHDES, must be issued prior to implementing any changes.
- 27) **Reopening of License.** NHDES or VTDEC may request, at any time, that FERC reopen the license to consider modifications to the license as necessary to ensure compliance with New Hampshire and Vermont water quality standards.
- 28) **Reservation of Authority.** The terms and conditions of this Water Quality Certification may be amended and additional terms and conditions added as necessary to ensure compliance with New Hampshire and Vermont water quality standards, when authorized by law, and after notice and opportunity for hearing.

USGen New England, Inc.
April 16, 2001
Page 9 of 11

F. APPEAL

If you are aggrieved by this decision, you may appeal the decision to the Water Council. Any appeal must be filed within 30 days of the date of this decision, and must conform to the requirements of Env-Wc 200. Inquires regarding appeal procedures should be directed to Jim Ballentine, DES Council Appeals Clerk, 6 Hazen Drive, PO Box 95, Concord, New Hampshire 03302-0095; telephone (603) 271-6072.



Harry T. Stewart, P.E.
Director, Water Division



Robert W. Varney
Commissioner

cc: FERC ✓
Brian Fitzgerald, VTDEC
Ralph Abele, USEPA
Michael Walls, NHDOJ
Bill Ingham, NH Fish & Game
John Warner, US Fish & Wildlife

USGen New England, Inc.
 April 16, 2001
 Page 10 of 11

Attachment 1

Reservoir and Flow Management. The Project shall be operated in accordance with the conservation flow and reservoir level management schedules tabulated below. Conservation flows shall be released on a continuous basis and not interrupted.

Table A. Moore Development and Reservoir Operation

Period	Minimum Flow Release (cfs)
January 1 - December 31	320
The minimum flow release is the value listed above or instantaneous inflow, if less.	
Maximum operating elevation	809.0 feet msl
Maximum annual drawdown elevation	769.0 feet msl
Spring spawning: Achieve a minimum elevation of 802.0 feet msl, with a target elevation of 804.0 feet msl, by May 21.	
Impoundment fluctuation: From May 21 through June 30, the reservoir shall not be drawn more than 2.0 feet below the maximum elevation previously attained during that period.	

Table B. Comerford Development and Reservoir Operation

Period	Minimum Flow Release (cfs)
1 June 1 - September 30	818
2 October 1 - March 31	1145
3 April 1 - May 31	1635 ¹
The minimum flow release is the value listed above, guaranteed from storage.	
Maximum operating elevation	650.0 feet msl
Maximum annual drawdown elevation	624.0 feet msl
Spring spawning: Achieve a minimum elevation of 645.0 feet msl, with a target elevation of 647.0 feet msl, by May 21.	
Impoundment fluctuation: From May 21 through June 30, the reservoir shall not be drawn more than 2.0 feet below the maximum elevation previously attained during that period.	

USGen New England, Inc.
 April 16, 2001
 Page 11 of 11

Table C. McIndoes Development and Reservoir Operation

Period		Minimum Flow Release (cfs)
1	June 1 - September 30	1105
2	October 1 - March 31	2210
3	April 1 - May 31	4420 ²
<p>The minimum flow releases are the values listed above or instantaneous inflow, if less.³</p> <p>Maximum operating elevation⁴ 451.0 feet msl</p> <p>Maximum drawdown elevation 447.5 feet msl</p> <p>Maximum flows: From June 1 through February 28, the maximum discharge from the McIndoes Development shall not exceed 5800 cfs for more than 7 percent of the hours during the period. This restriction shall not apply to periods when the Moore and Comerford Reservoirs are at their maximum operating elevations, or when the sum of the flow at the Dalton gage and prorated Passumpsic gage (Note 3) exceeds 8000 cfs.</p>		

- Notes:
1. During period 3, minimum flows below the Comerford Development may be reduced to 50 percent of the flow at the Dalton gage if the Moore and Comerford reservoirs are unlikely to refill to the target elevations by May 21. Flows shall only be reduced to the extent necessary to achieve the target elevations. Prior to reducing the flows, the Applicant shall consult with NHDES and VTDEC and shall provide an analysis substantiating the necessity of reduced flows.
 2. If flows in excess of 50,000 cfs are anticipated at the Bellows Falls Project, or 10,000 cfs are anticipated at the Wilder Project, the minimum flow at the McIndoes Development may be reduced to 2210 cfs. The Applicant shall notify NHDES and VTDEC when such action is taken.
 3. Inflow to the McIndoes impoundment is defined as the sum of the corresponding Comerford Development minimum flow (subject to the provisions of Note 1, above) and the prorated Passumpsic gage flow (1.3 times the reported flow at the USGS Passumpsic River Gage No. 01135500), which represents the drainage areas of the Passumpsic and Stevens Rivers.
 4. If inflow exceeds the McIndoes Dam discharge capacity (approximately 30,600 cfs at elevation 451 feet msl), the impoundment may rise above this elevation.

Document Content(s)

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