



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

COMMENTS

August 22, 1997

Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

RE: Application for New License
Bonny Eagle Hydro Project
FERC No. 2529 — 005

97 AUG 28 PM 3:11
FEDERAL ENERGY REGULATORY COMMISSION
SECRETARY

Water Quality Certification

Dear Secretary Cashell:

This is in response to Central Maine Power's Application for New License for the existing Bonny Eagle Hydro Project, FERC No. 2529, located on the Saco River in the Towns of Hollis, Limington and Standish, Cumberland and York Counties, Maine.

The Maine Department of Environmental Protection has now issued Water Quality Certification for the proposed relicensing of the Bonny Eagle Project. A copy of the Department Order granting certification (DEP #L-17650-33-F-N dated August 21, 1997) is attached.

In summary, the continued operation of the Bonny Eagle project has been certified as meeting applicable water quality standards subject to the following special conditions:

1. Except as temporarily modified by maintenance activities, inflows, flashboard failure, or emergencies beyond the applicant's control, water levels in the project impoundment shall be maintained in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, water levels shall be maintained as follows

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FERC DOCKETED

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AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
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- From April 1 through June 30, within one foot of full pond when flashboards are in place, and within one foot of "New Channel Dam" spillway crest when flashboards are not in place; and
 - From July 1 through March 31, within 4.5 feet of full pond when flashboards are in place, and within one foot of "New Channel Dam" spillway crest when flashboards are not in place.
2. Except as temporarily modified by maintenance activities, inflows, flashboard failure, or emergencies beyond the applicant's control, minimum flows shall be released from the project in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, minimum flows shall be released as follows (except where noted, minimum flows are the sum of all flows from the project):
- From April 1 through June 30, outflow approximately equal to inflow (run-of-river operation) while allowing for up to a one foot drawdown of the impoundment;
 - From July 1 through September 30, an instantaneous minimum flow of 400 cfs or inflow, whichever is less;
 - From October 1 through November 15, or for an agreed-to alternate six week period, an instantaneous minimum flow of 600 cfs or inflow, whichever is less;
 - From November 16 through March 31, an instantaneous minimum flow of 250 cfs or inflow, whichever is less; and
 - An instantaneous minimum flow of 25 cfs from the diversion dam into the "New River Channel."
3. Fish passage shall be provided in accordance with the "Saco River Fish Passage Agreement." Specifically:
- Interim downstream fish passage shall be provided when anadromous fish have been stocked or trucked above the project;
 - Permanent downstream fish passage shall be constructed within two years following issuance of a new project license;

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- Interim and/or permanent upstream fish passage facilities shall be constructed in accordance with the schedule and conditions contained in the "Saco River Fish Passage Agreement;" and
 - The applicant shall conduct appropriate studies to determine the effectiveness of all required fish passage facilities. The Department reserves the right to require such reasonable changes in fish passage design and/or operation as are warranted by the results of the studies.
4. The applicant shall conduct a study to confirm that the macroinvertebrate community in the 1,000 foot-long river reach immediately below the West Buxton Dam is meeting applicable water quality standards as a results of the new minimum flow requirements for the project. The Department reserves the right to require such modification of minimum flow requirements as are warranted by the results of the study.
 5. The applicant shall maintain existing recreational facilities and shall evaluate the need for, and where appropriate modify existing facilities and/or develop additional facilities, as proposed.

We recommend that the foregoing conditions be included in the Articles of any new license issued for the Bonny Eagle Project, in compliance with the provisions of Sections 401 (a) and (d) of the Clean Water Act.

By Executive Order of the Governor of the State of Maine, the terms and conditions contained in the attached water quality certification represent the State's official recommendations regarding the subject Application for New License, superceding all preliminary recommendations by individual State agencies.

We note that the 1994 "Saco River Fish Passage Agreement" has been filed with the Commission as an Offer of Settlement to resolve fish passage issues at the several dams throughout the Saco River in Maine. The agreement includes a long-range plan to determine the need for, design of, and schedule for implementing fish passage measures at the Bonny Eagle Project. The applicable provisions of the agreement has already been incorporated by the Commission into the licenses for the downstream Cataract Project (FERC No. 2528), Bar Mills Project (FERC No. 2194) and West Buxton Project (FERC No. 2531) and the upstream Hiram Project (FERC No. 2530). Implementation of the fish passage agreement at the Bonny Eagle, Skelton, and Swans Falls Projects, each of which is pending at the Commission for a new license or exemption, is essential to achieve the State's goal of restoring anadromous Atlantic salmon, American shad and river herring to the

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Saco River and to meet State water quality standards for aquatic habitat and fishing. We urge the Commission to approve the fish passage agreement and incorporate the provisions of the agreement in the new license for the Bonny Eagle Project.

We also note that the 1997 "Instream Flow Agreement for Hydroelectric Projects on the Saco River" has been filed with the Commission as an Offer of Settlement to resolve minimum flow and pond level issues at the several dams throughout the Saco River in Maine. The agreement includes seasonally-varied minimum flow and water level requirements for the Bonny Eagle Project. The applicable provisions of the agreement are already effectively incorporated in the current licenses for the downstream Cataract Project (FERC No. 2528), Bar Mills Project (FERC No. 2194), and West Buxton Project (FERC No. 2531). Implementation of the instream flow agreement at the Bonny Eagle, Skelton and Swans Falls Projects, each of which is pending at the Commission for a new license or exemption, and at the licensed Hiram Project, is essential to achieve the State's fisheries management and reclamation goals for the Saco River and to maintain the generation of cost-effective electricity from indigenous hydropower sources. We urge the Commission to approve the instream flow agreement and incorporate the provisions of the agreement in the new license for the Bonny Eagle Project.

We further note that, in the Final Environmental Impact Statement for Saco River Projects (August 1996), the FERC staff recommended that CMP monitor fish populations and the adequacy of instream flow releases to maintain fish populations in the New River Channel. This recommendation was based on providing sufficient flows in the channel to establish a seasonal salmonid fishery (see FEIS, page 5-22). In the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," state and federal fisheries agencies have foregone the goal of managing the New River Channel to provide a seasonal salmonid fishery in order to meet higher priority management objectives elsewhere on the river. As a result, we see no need for any fish monitoring in the New River Channel, and we recommend that this requirement not be included in the new license for the Bonny Eagle Project.

Finally, we note that, in the FEIS referenced above, the FERC staff recommended that CMP conduct two years of sampling to evaluate the response of benthic macroinvertebrates below the West Buxton Dam to the new minimum flow releases from the Bonny Eagle Project (see FEIS, page 5-22). In the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," CMP agreed to conduct a follow-up study of the aquatic community below the West Buxton Dam as required by DEP in its water quality certification for the Bonny Eagle Project.

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In accordance with the attached certification, the required macroinvertebrate sampling must be done in accordance with a study plan approved by DEP. We see no need for separate macroinvertebrate studies in order to comply with DEP and FERC requirements, and we recommend that the new license for the Bonny Eagle Project simply require macroinvertebrate sampling in accordance with the study plan approved by DEP.

Please direct any questions regarding these comments to Dana Murch of the Department's staff at 207-287-3901.

Sincerely,



Martha Kirkpatrick, Director
Bureau of Land & Water Quality

Attachment

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cc: Frank Dunlap, CMP
Director, OHL-DL&C, FERC
Rich McGuire, OHL-DL&C, FERC
Quentin Lawson, OGC, FERC
Gordon Russell, USF&WS
Ralph Abele, US EPA
Ed Laing, SRSC
FERC Review Coordinating Committee



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

CENTRAL MAINE POWER COMPANY)	MAINE WATER QUALITY PROGRAM;
HOLLIS, LIMINGTON AND STANDISH)	FEDERAL CLEAN WATER ACT
CUMBERLAND AND YORK COUNTIES, MAINE)	
BONNY EAGLE HYDRO PROJECT)	
#L-17650-33-F-N (APPROVAL))	WATER QUALITY CERTIFICATION

Pursuant to the provisions of 38 M.R.S.A. Section 464 et seq., and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act), the Department of Environmental Protection has considered the application of CENTRAL MAINE POWER COMPANY with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

- a. Application: The applicant proposes the continued operation of the existing Bonny Eagle Hydroelectric Project, located at River Mile 26 on the Saco River in the Towns of Hollis, Limington, and Standish, Cumberland and York Counties, Maine (See Exhibit 1).
- b. Existing Project Features: The existing project was constructed in 1911-12 and consists of two dams and an associated impoundment, an intake structure, penstocks, a powerhouse and tailrace, and appurtenant structures (See Exhibits 2 and 3).
 - i. The dam in the main river channel is a 784-foot-long non-overflow concrete gravity and earth structure consisting of an intake and sluice section flanked by earth embankments.
 - ii. The intake section is a concrete structure about 67 feet in height and 164 feet in length. The intake supplies water to eight steel penstocks, six of which are 13 feet in diameter, and two of which are 4 1/2 feet in diameter.
 - iii. The penstocks supply water to six turbine-generator units and two exciter turbines located in a concrete, brick and steel powerhouse that spans the main river channel about 35 feet downstream from the intake. The project has a nameplate generator capacity of 7.2 MW at a head of 37 feet. Total hydraulic capacity of the turbines is 4,932 cfs.
 - iv. The diversion dam on the "New River Channel" has a concrete spillway section that is 339 feet long and a wooden stoplog section that is 8 feet long. The permanent dam is approximately 9 feet in height; under normal operating conditions, the spillway is topped by 4.3-foot-high wooden flashboards. The "New River Channel" is a natural overflow channel that is about 3,500 feet long and that has been re-engineered to handle all river flows in excess of the project's turbine capacity.

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- v. Together, the two project dams form an impoundment that has a surface area of 347 acres at a normal full pond elevation of 216.3 feet (local datum). The impoundment extends upstream of the dam approximately 6.6 miles. The applicant estimates the usable storage within a 4.3 foot operating range from full pond to be approximately 1,150 acre-feet.
- vi. The tailrace extends down the natural river channel, which is a narrow gorge, and is joined by the "New River Channel" about 2,000 feet below the powerhouse. The tailrace is partially backwatered by the downstream West Buxton Project.
- c. Existing Project Operation: There are a total of seven hydroelectric projects located on the main stem Saco River. Six of these projects are owned by CMP. From upstream to downstream those projects are: Hiram (FERC 2530), Bonny Eagle (FERC 2529), West Buxton (FERC 2531), Bar Mills (FERC 2194), Skelton (FERC 2527), and Cataract (FERC 2528). The seventh project, located above Hiram, is the Swans Falls Project (FERC 11365), which is owned by others.

The Bonny Eagle Project is an intermittent peaking facility which regulates flows to the lower river by storing and releasing inflow to the project on a daily basis. During normal peaking operations, the project releases flows depending on electrical demand, available storage, and river flow. The impoundment is drawn down during the day and refilled overnight. When the impoundment is refilling, only leakage flows (about 50 cfs) are passed. Peaking operations can result in the impoundment being drawn down by up to four and a half feet depending on inflow and ability to refill the impoundment overnight. Outflow is approximately equal to inflow on a 24-hour basis.

During high flow periods, all six generator units may be run 24 hours a day, with flows in excess of 4,500 cfs being passed as spillage over the New River Channel dam. When inflow to the project is less than 4,500 cfs and the flashboards are up on the diversion dam, only leakage flows (about 5 cfs) are passed through the New River Channel.

The operation of the Bonny Eagle Project directly affects the flows available in the 1,000-foot-long free-flowing river reach immediately below the downstream West Buxton Project.

- d. Summary of Proposal: The applicant does not propose any changes in the generating or hydraulic capacities of the existing project. However, the applicant does propose to modify project facilities and operation in accordance with several measures designed for the protection or enhancement of, or mitigation of impacts on, public resources. These measures include:
- Providing fish passage at the project in accordance with the provisions of the "Saco River Fish Passage Agreement," dated May 24, 1994;

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- Providing flow releases and maintaining impoundment levels at the project in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," dated April 30, 1997; and
 - Providing or maintaining various recreational and public access facilities.
- e. Fish Passage Agreement: In 1993, the applicant completed construction and began operation of permanent upstream and downstream fish passage facilities at the East and West Channel Dams of the Cataract Hydro Project, located at head-of-tide on the Saco River. These facilities include a state-of-the-art fish lift and trapping and sorting facility at the East Channel Dam.

On June 28, 1994, the applicant entered into an agreement with state and federal fisheries agencies and other parties interested in restoring viable, self-sustaining runs of anadromous fish populations (Atlantic salmon, American shad and river herring) to the Saco River. The long term goal of the "Saco River Fish Passage Agreement" is to provide passage for salmon above the Swans Falls Project. For shad and river herring, the goal of the Agreement is to provide passage on the main stem only to above Bonny Eagle, and to tributaries below the Hiram Project.

The Agreement calls for construction of a lock system to provide fish passage at the Springs and Bradbury Dams (which are part of the Cataract Project), and construction of a new fish lift to replace the existing pool and weir fishway at the Skelton Dam. The applicant constructed the Springs and Bradbury Dams lock system in 1996. In addition, the Agreement includes a long-range plan to determine the need for, design of, and schedule for implementing fish passage measures at the Bar Mills, West Buxton, Bonny Eagle, Hiram, and Swans Falls Projects. Such determinations will result from periodic assessments as outlined in the Agreement.

- f. Instream Flow Agreement: On June 20, 1997, the applicant entered into an agreement with DEP, state and federal fisheries agencies, and other interested parties governing flow and water level management at all dams on the main stem Saco River in Maine. The "Instream Flow Agreement for Hydroelectric Projects on the Saco River" achieves and balances the following objectives and considerations:

- To improve the habitat for Atlantic salmon, American shad and river herring sufficiently to allow self-sustaining populations, and to improve habitat for resident fish and aquatic communities, focusing on the Hiram to Bonny Eagle reach which provides the most valuable spawning and rearing habitat for Atlantic salmon in the Saco River downstream of Swans Falls;
- To provide for and improve a zone of passage for anadromous fish and spawning habitat below the Skelton Dam;
- To provide for spawning and rearing of clupeids (American shad and river herring) below the Skelton Dam;

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- To contribute to restoration of the natural hydrology and riverine ecosystems by reducing the difference between the minimum and maximum flows;
- To maintain and improve the habitat for resident aquatic life in the West Buxton to Bar Mills reach;
- To meet the State of Maine's minimum water quality standards below the Bonny Eagle and Skelton Projects; and
- To ensure continued hydro power generation in the Saco River basin in a cost-effective manner for the project owners, and in a manner which provides for flexibility in hydro power operations to meet changing peak and off-peak demands.

Under the terms of the flow agreement, the applicant will modify the existing operation of the Hiram, Bonny Eagle, and Skelton Projects. With respect to the Bonny Eagle Project, the applicant agrees to provide run-of-river flows from April 1 through June 30 and seasonally-varied minimum flow releases, ranging from 250 cfs to 600 cfs or inflow, if less, throughout the remainder of the year. The applicant also agrees to provide a year-round minimum flow of 25 cfs to the "New River Channel," as part of the total agreed-to minimum flow releases from the project.

2. JURISDICTION

The proposed continued operation of the project qualifies as an "activity...which may result in (a) discharge into the navigable water (of the United States)" under the Clean Water Act (CWA), 33 USC 1251 et seq. Section 401 of the CWA requires that any applicant for a federal license or permit to conduct such an activity obtain a certification that the activity will comply with applicable State water quality standards.

The licensee has filed an Application for New License for Major Project Greater than 5 MW to continue to operate the Bonny Eagle Project, FERC No. 2529. This application is currently pending before the Federal Energy Regulatory Commission.

The Department of Environmental Protection has been designated by the Governor of the State as the certifying agency for issuance of Section 401 Water Quality Certification for all activities in the state not subject to Land Use Regulation Commission permitting and review. The Bonny Eagle Project is located in the organized municipalities of Hollis, Limington and Standish, which are not subject to LURC's regulatory jurisdiction.

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3. APPLICABLE WATER QUALITY STANDARDS

- a. Classification: The receiving waters of the Saco River that are or may be affected by the Bonny Eagle Project are currently classified as follows:

From its confluence with the Little Ossipee River to the West Buxton Dam, including all impoundments - Class A. 38 M.R.S.A §467(12)(A)(6-A).

From the West Buxton Dam to its confluence with the impoundment formed by the Bar Mills Dam - Class A. 38 M.R.S.A. §467(12)(A)(6-B).

- b. Designated Uses: Class A waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as naturally occurs. 38 M.R.S.A. §465(2)(A).
- c. Numeric Standards: The dissolved oxygen content of Class A waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher. 38 M.R.S.A. §465(2)(B).
- d. Narrative Standards: Discharges to Class A waters shall be permitted only if the discharged effluent will be equal to or better than the existing water quality of the receiving waters. 38 M.R.S.A. §465(2)(C).

The habitat characteristics and aquatic life criteria of Class A are deemed to be met in an existing impoundment classified A if the impounded waters achieve the aquatic life criteria of Class C, provided that any reasonable changes are implemented that do not significantly affect existing energy generation capability and would result in improvement in the habitat and aquatic life of the impounded waters, and further provided that, where the actual quality of the impounded waters attains any more stringent habitat characteristics or aquatic life criteria than required under the assigned classification, the existing water quality must be maintained and protected. 38 M.R.S.A. §464(10).

The habitat characteristics and aquatic life criteria of Class A are deemed to be met in the waters immediately downstream of and measurably affected by the West Buxton Project, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community. 38 M.R.S.A. §464(11).

- e. Antidegradation: The Department may only approve water quality certification if the standards of classification of the waterbody and the requirements of the State's Antidegradation policy will be met. The Department may approve water quality certification for a project affecting a waterbody in which the standards of classification are

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not met if the project does not cause or contribute to the failure of the waterbody to meet the standards of classification. 38 M.R.S.A. §464(4)(F).

4. DISSOLVED OXYGEN

- a. Existing Conditions: The water quality of the Saco River can be characterized as good. Approximately 20 miles downstream of the project, water is drawn from the Saco River by the Saco-Biddeford Water District and the Kennebunk/Kennebunkport/Wells Water District for residential and industrial uses.

During the period 1975-1978, the Department of Environmental Protection conducted water quality monitoring in the Saco and Biddeford area. During that period, dissolved oxygen concentrations and saturation levels remained high, with only two instances of non-attainment of Class A dissolved oxygen standards.

In 1987 and 1991 the applicant conducted water quality studies in the project waters. Data were collected in accordance with the Department's "River Sampling Protocol" in both the impoundment and the tailrace of the project. Dissolved oxygen levels ranged from a low of 7.0 ppm at 88% saturation to a high of 10.9 ppm at 102.4 % saturation.

Under existing project operations, there is no guaranteed minimum flow release to the "New River Channel." As a result, dissolved oxygen standards are not met here during periods of low flow and high water temperature.

- b. Applicant's Proposals: To meet and/or maintain dissolved oxygen standards in the areas of the Saco River affected by the project, the applicant proposes to provide instream flow releases and maintain impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," dated April 30, 1997. Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; seasonally varied minimum flows ranging from 250 cfs to 600 cfs or inflow, whichever is less, from July 1 through March 31, with impoundment drawdowns limited to 4.5 feet or less during normal peaking operations; and a minimum flow of 25 cfs year-round in the "New River Channel," as part of the total minimum flow releases from the project.
- c. Discussion: The applicant's proposals appear to be adequate to meet dissolved oxygen standards in all waters affected by the project.

5. FISH RESOURCES

- a. Existing Resources: The Saco River supports a variety of resident warmwater and coldwater fish species including brook trout, brown trout and smallmouth bass. The anadromous Atlantic salmon may also have been present in project waters before the construction of dams at the head-of-tide. The project currently has no upstream or downstream fish passage facilities.

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In response to requests made by state and federal fisheries resource agencies, the applicant conducted several studies aimed at assessing project impacts on fish and fish habitat in the Bonny Eagle impoundment and the stretch of river below the Bonny Eagle dam.

In 1989 the applicant conducted an Instream Flow Incremental Methodology (IFIM) Study in the 3,000 foot-long free-flowing stretch of river below the Bonny Eagle Dam. Under most flow conditions, the backwater influence of the West Buxton impoundment extends up to the Bonny Eagle powerhouse. Even with large changes in flow discharges, the tailrace elevation only increased by about 0.5 feet. The only substantive change in the tailrace was increased velocity. The study team agreed to look at flow impacts on Weighted Useable Habitat (WUA) for: adult brook trout; adult brown trout; adult rainbow trout; American shad immigration, outmigration, spawning, and larval and juvenile life stages; alewife outmigration; and Atlantic salmon immigration. Habitat values were simulated at flows from 100 cfs to the maximum capacity of the powerhouse (4,932 cfs). The study revealed that habitat for brook trout, brown trout, and rainbow trout is maximized at flows of 100-400 cfs, 700 cfs, and 1000-1500 cfs, respectively, and that American shad and alewife habitat increased up through 2000 cfs.

In 1990, a follow-up IFIM study was conducted in the 1,000-foot-long reach of the Saco River immediately below the West Buxton Project. Habitat values were examined under a range of flow conditions from 370 cfs to 4,960 cfs. The members of the study team agreed to combine the results of each IFIM into a single set of flow vs. WUA calculations for the life stages of fish identified. The combined results indicate that for almost all species, WUA is optimized at flows in excess of 1500 cfs.

SPECIE	FLOW (CFS)
Adult Brook Trout	600
Adult Rainbow Trout	1500
Adult Brown Trout	1750
American Shad	5000
Alewife (Outmigrating)	5000
Atlantic salmon (Immigrating)	4000

Because of the complex nature of the fractures in the bedrock substrate in the "New River Channel," it was decided that an IFIM here would produce confusing results. Therefore, the channel was qualitatively evaluated for habitat and angling quality at four flows: leakage (5 cfs), 50, 100, and 150 cfs. Overall, quality improved with increasing flows, but angling quality improved only marginally at flows above 50 cfs.

The applicant conducted a "zone of passage" study below Bonny Eagle, West Buxton and Bar Mills. The applicant contends that the Bonny Eagle Project cannot sustain the flows necessary to optimize overall WUA and that the results of the IFIM studies conducted to date provided conflicting results for different species. For these reasons, the applicant focused on the ability of the several projects to provide a "zone of passage" for anadromous fish.

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- b. Existing Management Plans: In 1987, the Maine Department of Inland Fisheries and Wildlife (DIF&W), the Maine Department of Marine Resources (DMR), the Maine Atlantic Sea Run Salmon Commission (ASRSC), and the United States Fish and Wildlife Service (USF&WS) released the document Saco River Strategic Plan for Fisheries Management. This document outlines the management objectives for resident, catadromous, and anadromous species.
- c. Applicant's Proposals: To protect and enhance fishery resources, the applicant proposes the following measures:
- i. Providing fish passage at the Bonny Eagle Project in accordance with the provisions of the "Saco River Fish Passage Agreement." Specifically, the applicant proposes to provide interim and/or permanent upstream fish passage facilities at the project based on periodic assessments of the need for fish passage for anadromous fish at all dams above Skelton, subject to the restriction that no upstream passage facility at these dams will be required to be operational before May 1, 2005. The applicant also proposes to construct permanent downstream fish passage facilities at the project within two years of receipt of a new FERC license for the project.
 - ii. Providing instream flow releases and maintaining impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; seasonally varied minimum flows ranging from 250 cfs to 600 cfs or inflow, whichever is less, from July 1 through March 31, with impoundment drawdowns limited to 4.5 feet or less during normal peaking operations; and a minimum flow of 25 cfs year-round in the "New River Channel," as part of the total minimum flow releases from the project.
- d. Discussion: Given the significant overall benefits of the fish passage and instream flow agreements to fish habitat and fish restoration throughout the Saco River system, the applicant's proposals appear to be adequate to achieve and maintain the suitability of all waters affected by the project as habitat for fish.

6. OTHER AQUATIC LIFE RESOURCES

- a. Existing Resources: In the summer of 1991 the applicant conducted an aquatic life assessment of the macroinvertebrate community in the free-flowing river reach below the West Buxton Dam to determine compliance with applicable aquatic life standards. The study plan utilized the Department's standard protocol for assessing macroinvertebrate communities. The results of the 1991 study indicated that the Saco River below the West Buxton Dam was not maintaining the structure and function of the resident biological community and was therefore not in attainment of applicable aquatic life standards.

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A follow-up study was conducted in 1992 using a modification of EPA's Rapid Bioassessment Protocol I. Results of the 1992 study confirmed that the macroinvertebrate community was not meeting applicable standards for aquatic life. The study concluded that the aquatic community below West Buxton was not meeting standards due to the impact of leakage flows during periods of non-generation at the Bonny Eagle Project. Because there is essentially no flow during these periods of non-generation, the affected river reach provides a stillwater habitat which is atypical of a flowing riverine system.

In addition, the quantity of habitat available for aquatic life below the West Buxton Dam is directly affected by flow releases from the Bonny Eagle Project.

- b. Applicant's Proposals: To meet and/or maintain aquatic life standards in the areas of the Saco River affected by the project, the applicant proposes to provide instream flow releases and maintain impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," dated April 30, 1997. Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; seasonally varied minimum flows ranging from 250 cfs to 600 cfs or inflow, whichever is less, from July 1 through March 31, with impoundment drawdowns limited to 4.5 feet or less during normal peaking operations; and a minimum flow of 25 cfs year-round in the "New River Channel," as part of the total minimum flow releases from the project.
- c. Discussion: Given the significant overall benefits of the instream flow agreement to aquatic habitat throughout the Saco River system, the applicant's proposals appear to be adequate to achieve and maintain the suitability of all waters affected by the project as habitat for aquatic life other than fish. A follow-up study should be conducted, however, to document attainment of aquatic life standards, in accordance with established biological assessment criteria.

7. FISHING AND RECREATION IN AND ON THE WATER

- a. Existing Facilities and Use: Existing recreational use in the project area consists of canoeing, picnicking, swimming, bank and boat fishing, hiking, camping, and hunting. Current recreational facilities at the Bonny Eagle Project are shown on Exhibit 4. These facilities include: a canoe portage trail and unimproved picnic area near the powerhouse; the Limington Rips Recreational Area, which includes water access, picnic tables with grills, a foot bridge and walking trails; several primitive campsites; a privately-owned campground with boat launch facilities; an informal day use park; and an informal boat launch.

During the IFIM study that was conducted to assess available fish habitat, the applicant also examined the effects of various flows on fishing access. The report concluded that fishing by wading is rarely available and that fishing from boats is generally best at a flow of approximately 1000 cfs.

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During 1990, the applicant examined the potential for whitewater boating in the "New River Channel." The applicant concluded that, during the spring, suitable conditions exist for intermediate and advanced paddlers. These conditions occur naturally for about one month in the spring when high flows overtop the flashboards.

b. Applicant's Proposals: In 1989, the applicant developed a Comprehensive Recreational Facilities Plan which was designed to meet current and anticipated public recreational needs at CMP-owned hydro projects. Based on this Plan, and after consultation with resource agencies and the affected municipalities, the applicant proposes the following measures to protect or enhance recreational access and use in the project area:

- Maintaining and investigating the need to modify the existing canoe portage trail;
- Maintaining the existing informal picnic area and parking area near the powerhouse;
- Maintaining the existing campsite at the southern end of Bonny Eagle Island;
- Maintaining the walk-in day-use area at the north end of Bonny Eagle Island;
- Maintaining the three existing informal carry-in boat access sites on the west shore of the impoundment;
- Maintaining the existing informal parking area and associated whitewater boating access to the New River Channel;
- Installing interpretive signs at the project powerhouse;
- Evaluating the need to install two new picnic tables near the powerhouse;
- Continuing to honor the existing agreement with the Maine Department of Transportation governing the Limington Rips recreational area (currently maintained by MDOT);
- Evaluating the need for a new boat launch/parking facility on the west side of the impoundment; and
- Evaluating the need for boat/vehicle access primitive campsites (either on the shores of the impoundment or on islands) for lease as a commercial operation.

c. Discussion: In commenting on recreational access, the Maine Department of Conservation (DOC) requests that the applicant monitor future use of the Limington Rips recreational area and, if use increases, to develop additional overflow parking. DOC also requests that the applicant monitor boating use and continue to evaluate the potential for providing a new boat launch/parking facility on the west shore of the impoundment. DOC also recommends that the canoe

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portage trail be moved to a location where access on the put-in side is not so steep. Finally, DOC requests that access to the "New River Channel" remain available for solo whitewater boating.

With respect to the canoe portage trail, it is noted that the modification of the existing trail may be adequate to address existing portage difficulties.

The applicant's proposals to protect and enhance recreational use and access appear to be adequate to achieve and maintain the suitability of the waters in the protect area for fishing and recreation in and on the water.

8. WETLANDS AND WILDLIFE RESOURCES

- a. Existing Resources: The Bonny Eagle impoundment supports a variety of wildlife species typical of a rural south-central Maine habitat area, including muskrat, deer, raccoon, great blue heron, ducks, turtles and birds. There are no known threatened or endangered species present in the project area, except for an occasional migrant bald eagle.

During 1991, the applicant conducted a survey on the Bonny Eagle impoundment to determine use by loons. No loons were observed during the survey. The applicant concluded that the riverine nature of the impoundment and the lack of bays and coves accounted for the absence of loons.

In response to a FERC request for additional information, the applicant conducted a study to assess the quantity, quality and functions of the existing wetlands and to estimate the change in wetlands that would develop under stable pond conditions. 348 acres of high-quality wetlands were identified in the Bonny Eagle impoundment area. These wetlands have developed as a result of construction of the dam and the daily 2-4 foot fluctuation in water levels.

Operating the project run-of-river while maintaining the impoundment at full pond would result in the estimated loss of 15% of the existing wetlands. This loss would occur because the current aquatic bed wetlands that receive light during drawdown periods would die off because of less light penetration under full pond conditions. Based on the results of the wetlands study, the applicant takes the position that no additional wetland enhancement measures should be required. Enhancement opportunities are limited to restoration of riparian habitat at three locations that have been damaged as the result of non-project related farming and forestry activities.

- b. Applicant's Proposals: To protect existing wetlands and wildlife resources, the applicant proposes to provide instream flow releases and maintain impoundment levels in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," dated April 30, 1997. Specifically, the applicant proposes: run-of-river operation from April 1 through June 30, with impoundment drawdowns limited to one foot or less; seasonally varied minimum

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flows ranging from 250 cfs to 600 cfs or inflow, whichever is less, from July 1 through March 31, with impoundment drawdowns limited to 4.5 feet or less during normal peaking operations; and a minimum flow of 25 cfs year-round in the "New River Channel," as part of the total minimum flow releases from the project.

- c. Discussion: The MDIF&W has reviewed the application and the applicant's proposals to continue to operate the project in a peaking mode and has commented that the fluctuations will not result in any significant adverse impacts on wetlands or wildlife resources.

The applicant's proposals appears to be adequate to protect and maintain wetlands and wildlife resources in the project area.

9. HYDROELECTRIC POWER GENERATION

- a. Existing Energy Generation: The Bonny Eagle Project generates an average of 46,881,330 kilowatt-hours (KWH) of electricity annually. This is the equivalent to the energy that would be produced by burning 78,136 barrels of oil or 19,407 tons of coal each year. Power from the Bonny Eagle Project is fed to the applicant's transmission and distribution system for use by its residential, commercial and industrial customers.
- b. Existing Energy Policies/Plans: The State of Maine has developed a comprehensive energy plan (Final Report of the Commission on Comprehensive Energy Planning, May 1992) with the goal of meeting the State's energy needs with reliable energy supplies at the lowest possible cost, while ensuring that energy production and use are consistent with a healthy environment and a vibrant economy. Specifically, the Plan establishes the following targets for Maine's energy future:
- Reduce the State's level of dependence on oil from 50% to at least match the national average of 43% by the year 2000, with further reductions to at least the 30% level by 2010;
 - Increase the percentage of renewable energy resources in the State's primary energy mix from 30% to 40% by the year 2000, and to at least 50% by 2010;
 - Increase statewide energy efficiency relative to 1990 levels by 25% by the year 2000 and by at least 50% by 2010; and
 - Work to stabilize long-term energy prices, in balance with Maine's other energy-related goals, with a specific emphasis on enhancing Maine's competitive position relative to New England and the U.S.

With respect to renewable energy, the Plan recommends that Maine actively encourage the development of wind and solar energy resources and support the continued utilization and further development, where appropriate, of the State's renewable, indigenous hydro and biomass energy resources.

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- c. Applicant's Proposals: The applicant's proposals to change operations at and increase minimum flow releases from the Bonny Eagle Project, in conjunction with changes in operation at the upstream Hiram Project pursuant to the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," will not result in a significant change in average annual generation at the Bonny Eagle Project.
- d. Discussion: As proposed, the Bonny Eagle Project will continue to provide cost-effective indigenous and renewable electricity.

BASED on the above Findings of Fact, and the evidence contained in the application and supporting documents, and subject to the Conditions listed below, the Department CONCLUDES that the continued operation of the Bonny Eagle Hydro Project will result in all waters affected by the project being suitable for all designated uses and meeting all other applicable water quality standards, provided that:

1. Water levels are maintained in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River;"
2. Minimum flows are provided in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River;"
3. Upstream and downstream fish passage is provided in accordance with the provisions of the "Saco River Fish Passage Agreement;"
4. A follow-up study is conducted to assure that the macroinvertebrate community immediately below the West Buxton Dam is in compliance with applicable water quality standards; and
5. Public recreational access and use facilities are maintained and developed as proposed.

THEREFORE, the Department GRANTS certification that there is a reasonable assurance that the continued operation of the BONNEY EAGLE HYDRO PROJECT, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. WATER LEVELS

- A. The applicant shall maintain water levels at the Bonny Eagle Project in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) flashboard release or maintenance, (4) operating emergencies beyond the applicant's control, as defined below, or (5) agreement between the applicant and appropriate state and/or federal agencies, water levels in the project impoundment shall be maintained as follows:

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- From April 1 through June 30 annually, no more than one foot below normal full pond elevation (flashboard crest) when the flashboards are in place, and no more than one foot below the "New Channel Dam" spillway crest elevation when the flashboards are not in place; and
 - From July 1 through March 31 annually, no more than 4.5 feet below normal full pond elevation (flashboard crest) when the flashboards are in place, and no more than one foot below the "New Channel Dam" spillway crest elevation when the flashboards are not in place.
- B. Operating emergencies beyond the applicant's control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and orders from local, state, or federal law enforcement or public safety authorities.
- C. The applicant shall, in accordance with the schedule established in a new FERC license for the project, submit plans for providing and monitoring the water levels in the impoundment as required by Part A of this condition. These plans shall be reviewed by and must receive approval of the DEP Bureau of Land and Water Quality.

2. MINIMUM FLOWS

- A. The applicant will provide flow releases from the Bonny Eagle Project in accordance with the provisions of the "Instream Flow Agreement for Hydroelectric Projects on the Saco River." Specifically, except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) flashboard release or maintenance, (4) operating emergencies beyond the applicant's control, as defined below, or (5) agreement between the applicant and appropriate state and/or federal agencies, the following minimum flows shall be released from the project:
- From April 1 through June 30 annually, run-of-river operation, with outflow approximately equal to inflow, while allowing for up to a one foot drawdown of the impoundment;
 - From July 1 through September 30 annually, an instantaneous minimum flow of 400 cfs or inflow, whichever is less;
 - From October 1 through November 15 annually, or for such alternate six week period as may be mutually agreed to by the applicant and state and federal fisheries agencies, as described below, an instantaneous minimum flow of 600 cfs or inflow, whichever is less;
 - From November 16 through March 31 annually, an instantaneous minimum flow of 250 cfs or inflow, whichever is less; and
 - An instantaneous year-round minimum flow of 25 cfs from the diversion dam into the "New River Channel."

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All required flows, except for the minimum flow required in the "New River Channel," shall be the sum of flows from the powerhouse and the "New River Channel."

- B. Operating emergencies beyond the applicant's control include, but may not be limited to, equipment failure or other temporary abnormal operating condition, generating unit operation or interruption under power supply emergencies, and orders from local, state, or federal law enforcement or public safety authorities.
- C. As provided in the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," the start of the fall flow period may be changed during any year by mutual agreement among the applicant, U.S. Fish and Wildlife Service, Department of Inland Fisheries and Wildlife, the Department of Marine Resources, and the Atlantic Salmon Authority based on the following considerations: (1) expected flow and weather conditions; (2) biological factors such as fish migration or spawning periods; and/or (3) anticipated electrical need for or value of CMP's generation.

The fall flow period shall be no less and no more than six weeks, except upon mutual agreement among the parties listed above, and shall start no sooner than September 1 and no later than October 1. Any changes in the timing of the fall flow period will change the ending date of the summer flow period and the beginning date of the winter flow period accordingly for that year.

- D. The applicant shall, in accordance with the schedule established in a new FERC license for the project, submit plans for providing and monitoring the minimum flows required by Part A of this condition. These plans shall be reviewed by and must receive approval of the DEP Bureau of Land and Water Quality.

3. FISH PASSAGE

The applicant shall provide fish passage at the Bonny Eagle Project in accordance with the provisions of the "Saco River Fish Passage Agreement." Specifically:

A. Interim Downstream Fish Passage

The applicant shall provide interim downstream passage (e.g. controlled spills during downstream migration periods, installation of temporary downstream fish passage facilities or other feasible measures) necessary to allow downstream fish passage at the Bonny Eagle Project when anadromous fish have been stocked or trucked above the project dam. The applicant shall continue such measures until permanent downstream fish passage facilities are installed and operational in accordance with Part B of this condition.

B. Permanent Downstream Fish Passage

The applicant shall construct permanent downstream passage at the Bonny Eagle Project within 2 years of receipt of a new FERC license for the project.

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C. Downstream Fish Passage Design Plans

The applicant shall, at least 60 days prior to the construction of downstream fish passage facilities required in Parts A and B of this condition, submit final design and operational plans for these facilities, prepared in consultation with state and federal agencies. These plans shall be reviewed by and must receive approval of the fisheries agencies, the Department and FERC prior to construction of the facilities.

D. Upstream Fish Passage Facilities

The applicant shall construct interim, permanent or, under appropriate circumstances, both interim and permanent upstream passage facilities at the Bonny Eagle Project in accordance with the schedule and conditions contained in Paragraphs 7 and 14 of the "Saco River Fish Passage Agreement".

E. Upstream Fish Passage Design Plans

The applicant shall, at least 60 days prior to the construction of the permanent upstream fish passage facilities required in Part D of this condition, submit final design and operational plans for these facilities, prepared in consultation with state and federal fisheries agencies. These plans shall be reviewed by and must receive approval of the fisheries agencies, the Department, and FERC prior to construction of the facilities.

F. Fish Passage Study

The applicant shall, in consultation with state and federal fisheries agencies, conduct a fish passage study or studies to determine the effectiveness of the upstream and downstream fish passage facilities required pursuant to Parts B & D of this condition.

G. Fish Passage Study Plan

The applicant shall, at least 60 days prior to the commencement of operation of the upstream and downstream fish passage facilities required by Parts B & D of this condition, submit a fish passage study plan or plans, prepared in consultation with state and federal fisheries agencies. These plans shall be reviewed by and must receive approval of the fisheries agencies, the Department, and FERC prior to its implementation.

H. Fish Passage Study Results

The applicant shall submit the results of any fish passage studies and any recommendations for changes in the design and/or operation of fish passage facilities to the consulting agencies and the Department within 6 months following completion of the study. The Department reserves the right, after notice and opportunity for hearing, to require reasonable changes in the design and/or operation of the fish passage facilities as may be deemed necessary

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to adequately pass anadromous fish (specifically, Atlantic salmon, American shad and river herring) through the project site. Any such changes must be approved by the Department and FERC prior to their implementation.

I. Salmon Restoration Efforts

In accordance with Paragraph 8 of the "Saco River Fish Passage Agreement," all parties to the Agreement will use their best efforts to expedite such agreements as are necessary for restoring Atlantic salmon to the New Hampshire portion of the Saco River basin.

4. MACROINVERTEBRATE STUDY

- A. The applicant shall, in accordance with the "Instream Flow Agreement for Hydroelectric Projects on the Saco River," and in consultation with the DEP, conduct a study to determine whether the macroinvertebrate community in the 1,000 foot-long reach of the Saco River immediately below the West Buxton Project is meeting applicable water quality standards following the implementation of the minimum flow requirements of this certification. The applicant shall submit the details of a study plan within one year of the issuance of a new FERC license for the Bonny Eagle Project. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.
- B. The results of the macroinvertebrate study shall be submitted to the Department in accordance with the schedule established in the study plan. After reviewing the study results and comments from the applicant, and after notice and opportunity for hearing, the Department may order such modification of the minimum flows established in this certification as may be deemed necessary to meet applicable aquatic life standards in the 1,000 foot-long reach of the Saco River immediately below the West Buxton Project, in accordance with established biological assessment criteria.

5. RECREATION

- A. The applicant shall maintain existing public recreational access and use facilities which are currently within its ownership and shall evaluate the need for and, where deemed necessary, modify existing recreational facilities and/or develop and maintain additional recreational facilities as described in Section 7 of this Order.
- B. The applicant shall, in accordance with the schedule established in a new FERC license for the project, submit a schedule for implementing Part A of this condition. This schedule shall be reviewed by the Maine Department of Conservation and the DEP Bureau of Land and Water Quality and must be approved by the Bureau of Land and Water Quality.

6. LIMITS OF APPROVAL

This approval is limited to and includes the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. All variances from the plans and

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proposals contained in said documents are subject to the review and approval of the Board or Department prior to implementation.

7. COMPLIANCE WITH ALL APPLICABLE LAWS

The applicant shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations, conditions, agreements and orders required for the operation of the project.

8. EFFECTIVE DATE

This water quality certification shall be effective on the date of issuance of a new hydropower project license by the Federal Energy Regulatory Commission.

DONE AND DATED AT AUGUSTA, MAINE, THIS 22nd DAY OF August, 1997.

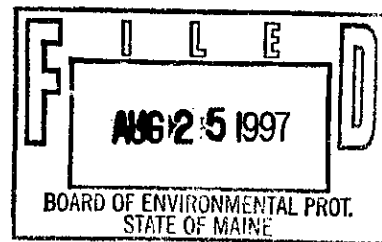
DEPARTMENT OF ENVIRONMENTAL PROTECTION

By: *Edward O. Sullivan*
Edward O. Sullivan, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of receipt of application: 11/12/96.
Date application accepted for processing: 11/12/96.

(Initial application received 12/16/91 and subsequently withdrawn and refiled 12/8/92, 12/8/93, 12/2/94, 11/30/95, and 11/12/96.)

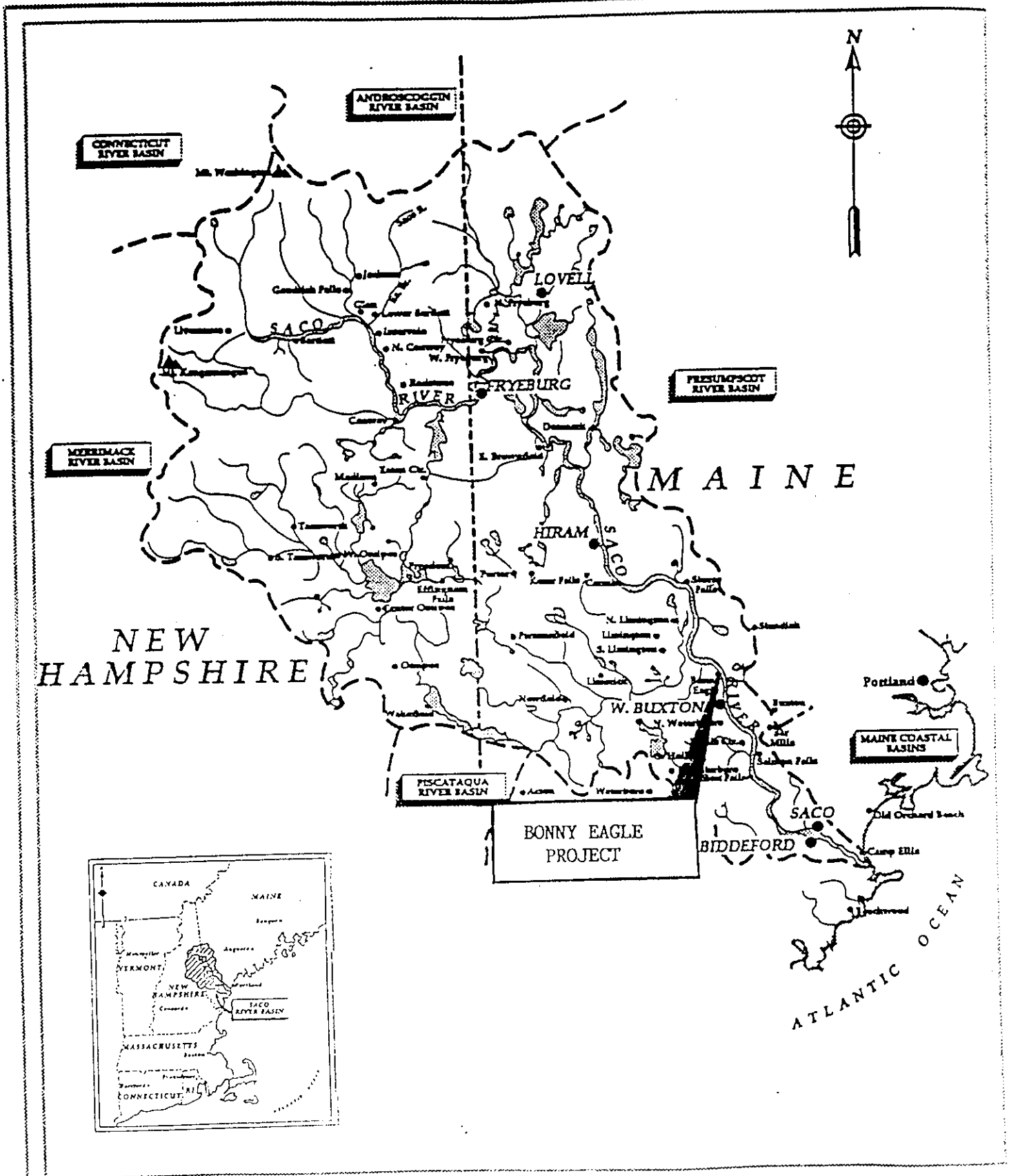


Date filed with the Board of Environmental Protection: _____

This Order prepared by Dana Murch, Bureau of Land and Water Quality

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Location of the Bonny Eagle Project



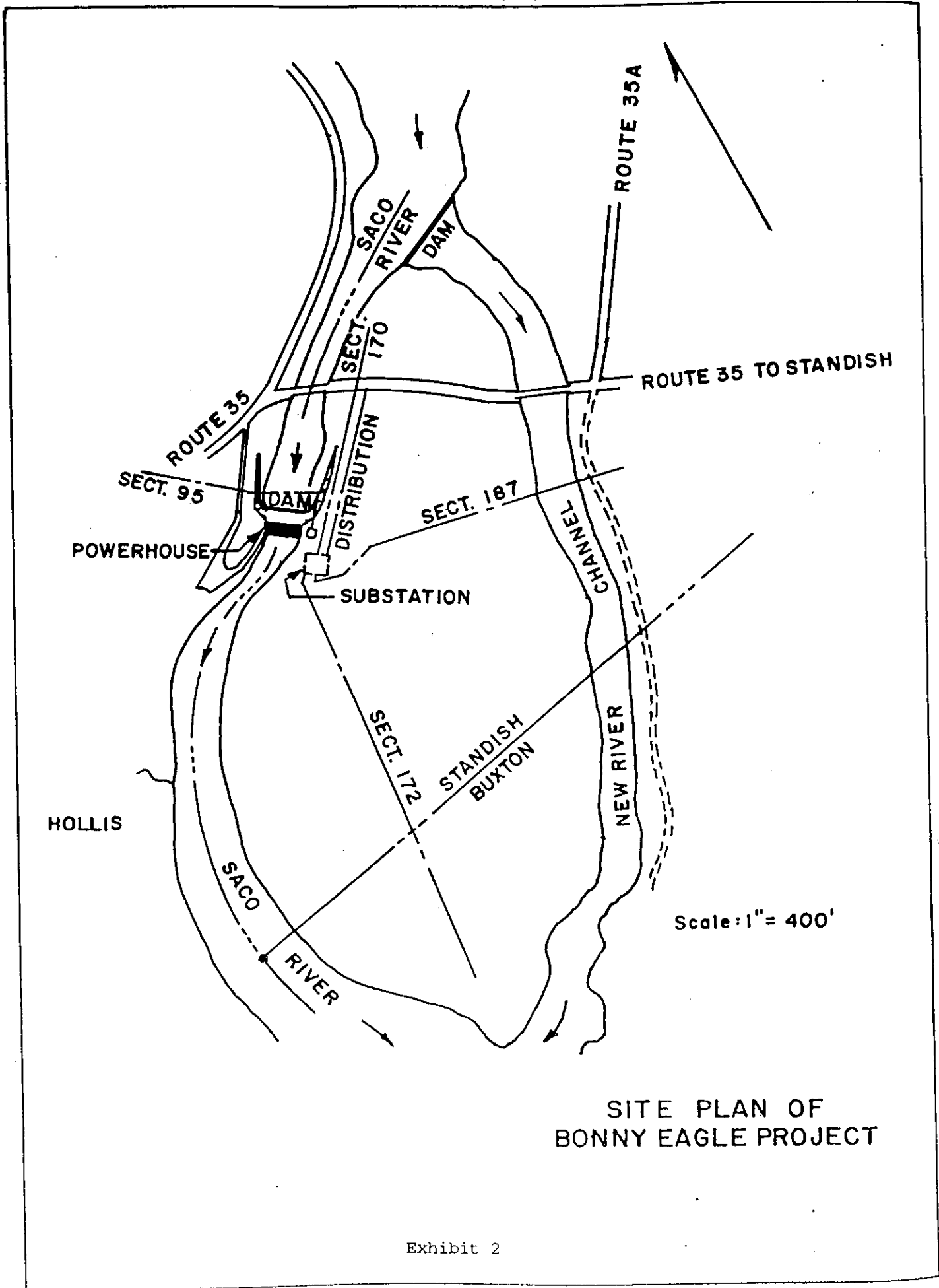
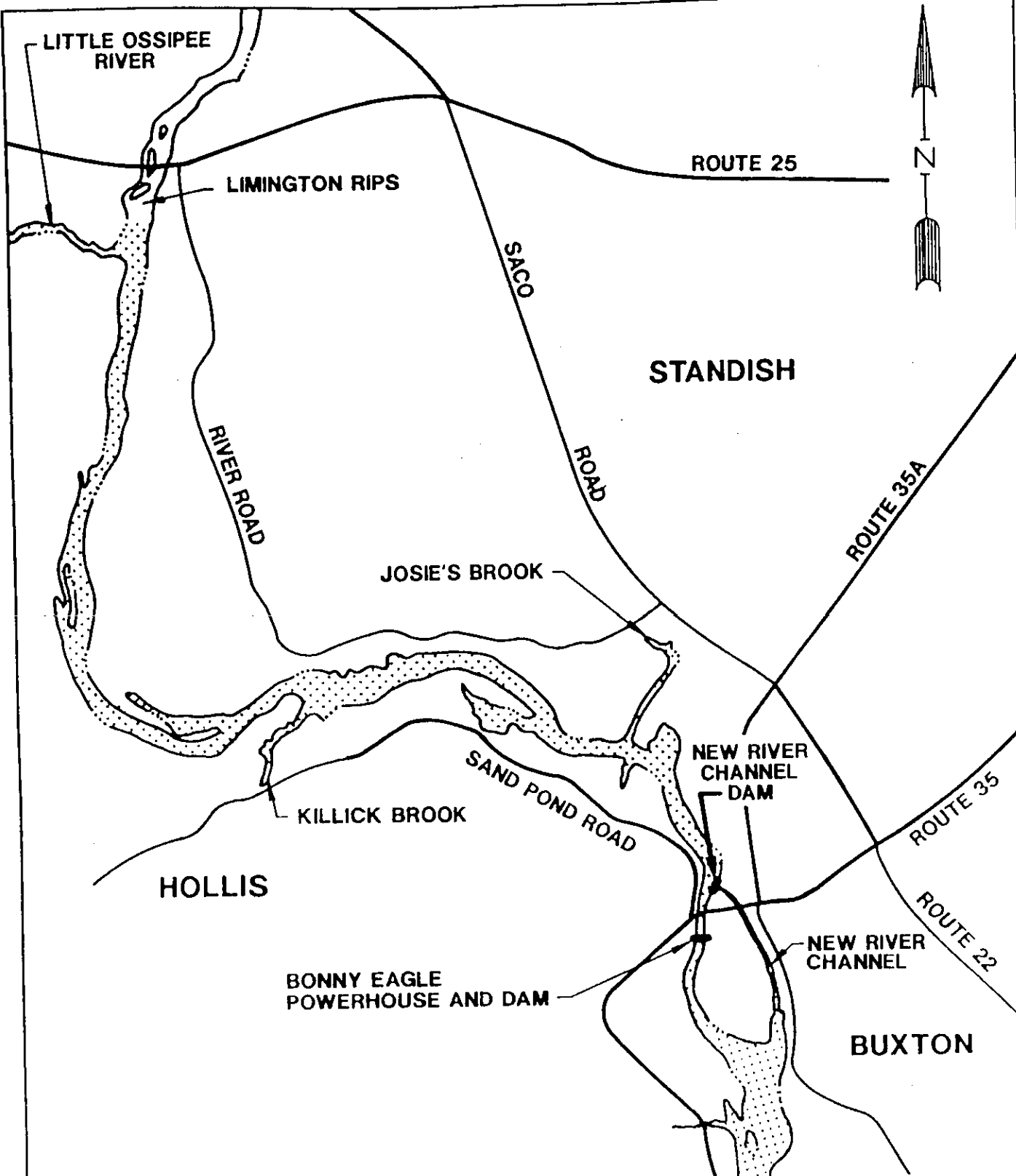


Exhibit 2

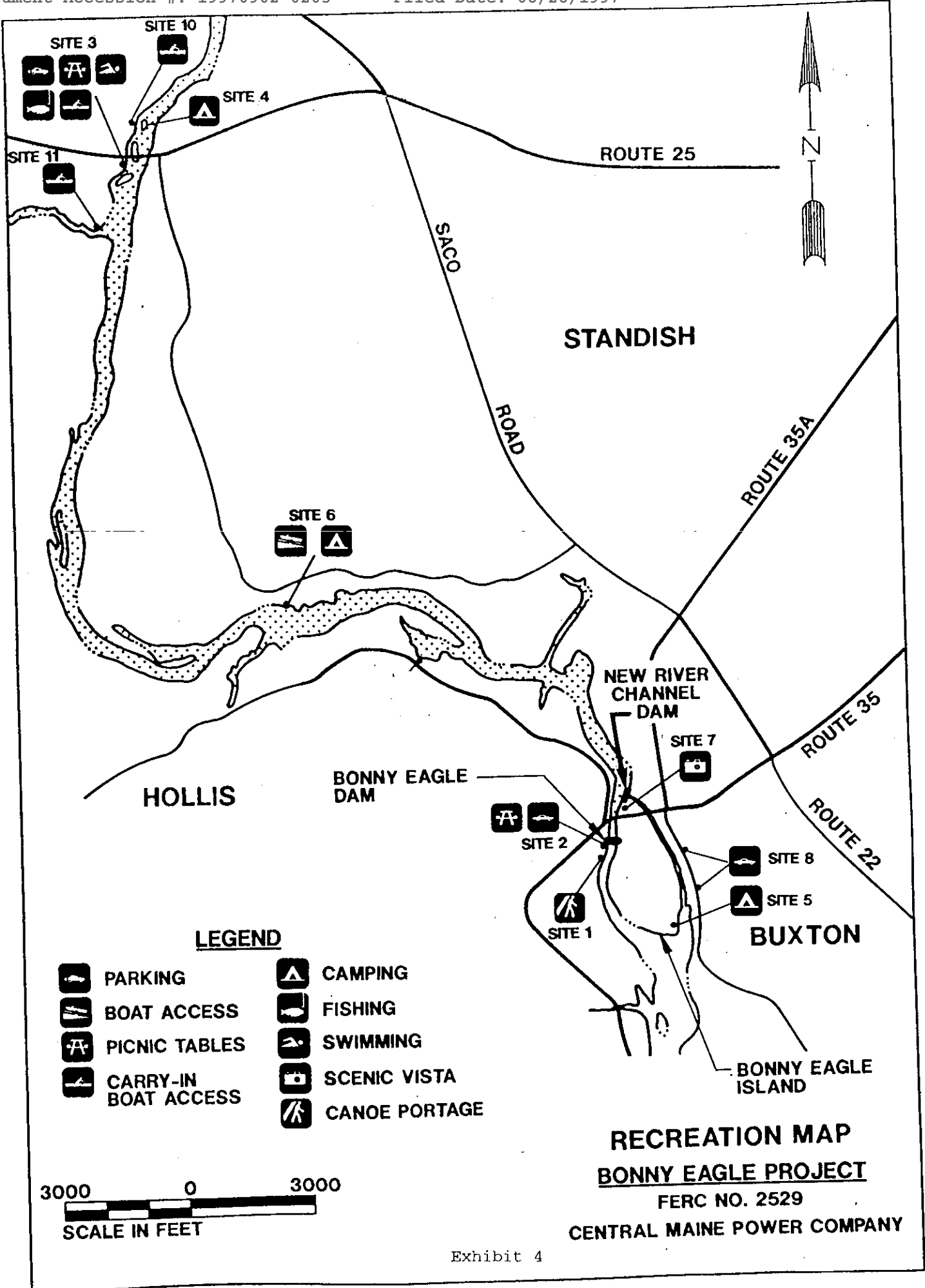


**IMPOUNDMENT
LOCATION MAP**

BONNY EAGLE PROJECT

FERC NO. 2529

CENTRAL MAINE POWER COMPANY



LEGEND

- | | | | |
|--|----------------------|--|---------------|
| | PARKING | | CAMPING |
| | BOAT ACCESS | | FISHING |
| | PICNIC TABLES | | SWIMMING |
| | CARRY-IN BOAT ACCESS | | SCENIC VISTA |
| | | | CANOE PORTAGE |



**RECREATION MAP
BONNY EAGLE PROJECT**

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CENTRAL MAINE POWER COMPANY

Document Content(s)

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