



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

DEPARTMENT ORDER

IN THE MATTER OF

FPL ENERGY MAINE HYDRO LLC)	MAINE WATER QUALITY PROGRAM;
Richardsontown Twp., Townships C & D,)	FEDERAL CLEAN WATER ACT
Adamstown Twp., Magalloway & Rangeley)		
Plantations, and Town of Rangeley)		
Franklin and Oxford Counties)		
UPPER & MIDDLE DAMS STORAGE PROJECT)		
*#L-20204-32-B-N (Approval))		
*#L-20205-32-B-N (Approval))		WATER QUALITY CERTIFICATION
(*CORRECTED ORDER)		

Pursuant to the provisions of 38 MRSA 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 FPL ENERGY MAINE HYDRO LLC with its supportive data, agency comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

- a. Application. FPL Energy Maine Hydro LLC proposes the continued operation of the Upper and Middle Dams Storage Project, located on the Rapid River (headwaters of the Androscoggin River), in the unorganized territories of Richardsontown Township, Townships C and D, Adamstown Township, Magalloway and Rangeley Plantations, and in the Town of Rangeley, Franklin and Oxford Counties, Maine (see Exhibit 1).
- b. Existing Project Features. The project consists of two dams and their impoundments. The dams were originally built in the early 1850's and were reconstructed to their current height in the early 1880's.
 - i. Upper Dam. The Upper Dam consists of north and south earthen dikes separated by a concrete crib, steel and timber gatehouse section containing seventeen gates (see Exhibit 2). The dam measures a total of 1500 feet in length and has a maximum height of 25.6 feet.

The Upper Dam is located at the outlet of Mooselookmeguntic Lake. The dam has raised the natural low water level of the lake by about 12.5 feet to a full pond elevation of 1468 feet msl. At this elevation, the lake is about 15 miles long and a maximum of about 4 miles wide, with a surface area of 15,740 acres.

The Upper Dam discharges directly into Richardson Lake.

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- ii. Middle Dam. The Middle Dam consists of north and south earthen dikes separated by a concrete, steel and timber gatehouse section containing twenty gates (see Exhibit 3). A separate dike is located 2,000 feet to the south of the dam. The dam and dikes measure a total of 1,000 feet in length and have a maximum height of 25.7 feet.

The Middle Dam is located at the outlet of Richardson Lake. The dam has raised the natural low water level of the lake by about 17.5 feet to a full pond elevation of 1450 feet msl. At this elevation, the lake is about 16 miles long and a maximum of about 1.5 miles wide, with a surface area of 7,470 acres.

The Middle Dam discharges directly into the Rapid River, which flows for about 4.6 miles to its confluence with Umbagog Lake. The Androscoggin River begins at Errol Dam, located at the outlet of Umbagog Lake in Errol, New Hampshire.

- c. Existing Project Operation. The Upper and Middle Dams are operated in conjunction with the Aziscohos Lake Dam and Errol (Umbagog Lake) Dam to store and release water on an annual cycle to benefit downstream hydroelectric generation on the Androscoggin River (see Exhibit 4). Under the terms of a 1909 agreement between the Berlin Mills Company (now Pulp & Paper of America LLC), Rumford Falls Power Company (now a wholly-owned subsidiary of Mead Oxford Corporation), International Paper Company, and Union Water Power Company (whose hydro assets are now owned by FPL Energy Maine Hydro LLC), the four storage dams are operated to maintain a target flow of at least 1,550 cfs at Berlin, New Hampshire, whenever possible.

Typical operation of the Upper and Middle Dams involves drawing the level of the lakes down an average of four feet during the summer months, with larger drawdowns occurring based on water availability and downstream needs. In order to accommodate spring runoff, a winter drawdown of the lakes begins in early December, with historical drawdowns averaging about eleven feet. Maximum drawdowns are 12.2 feet below full pond for Mooselookmeguntic Lake and 17.5 feet for the Richardson Lakes. See Exhibits 5 and 6 for average water level (rule) curves for the lakes.

There is currently no legally required minimum flow below either Upper Dam or Middle Dam. The applicant has historically attempted to maintain a voluntary minimum flow release of 100 cfs from Upper Dam and 200 cfs from Middle Dam.

Currently, the applicant voluntarily provides eight days of high flow releases from Middle Dam on weekends in July and August for whitewater boating in the Rapid River.

- d. Proposed Operation/Protection, Mitigation and Enhancement Measures. The applicant has joined various stakeholders in signing the August 28, 1998 Upper Androscoggin River Storage Projects Settlement Agreement ("Settlement Agreement"). The parties to the Agreement include FPL Energy Maine Hydro LLC, Union Water Power Company, the Maine State Planning Office, Maine Department of Conservation, Maine Department

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of Inland Fisheries and Wildlife, New Hampshire Department of Environmental Services, U.S. Fish and Wildlife Service, National Park Service, the Appalachian Mountain Club, the Conservation Law Foundation, the Rangeley Lakes Heritage Trust, the Mooselookmeguntic Improvement Association, New England F.L.O.W., Saco Bound/Downeast Whitewater, American Whitewater Affiliation, Trout Unlimited and the Maine Council of Trout Unlimited, American Rivers, the City of Berlin, New Hampshire, the Town of Gorham, New Hampshire, and the Androscoggin Reservoir Company.

The Settlement Agreement strikes a carefully considered balance between maintaining the energy, flood protection, wastewater assimilative capacity, ecological, and recreational values of the Upper and Middle Dams Project and Aziscohos Project, while mitigating for the Projects' impacts on and enhancing the natural environment, and protecting other resources that are impacted by or directly related to the Projects. Among the principal provisions of the Settlement Agreement are: the continued operation of the Upper and Middle Dams Project as an annual water storage facility; the establishment of minimum flows from the Upper and Middle Dams Project and Aziscohos Project; the establishment of water level restrictions for the project lakes; the protection of significant parcels of land by conservation easements; and creation of a Protection, Mitigation and Enhancement Fund for additional land acquisition and resource management.

Under the terms of the Settlement Agreement, the applicant proposes the following project operational and non-operational measures for the protection, mitigation and enhancement of public resources:

- From Upper Dam, release a guaranteed minimum flow of 202 cfs from Labor Day through May 31, and a minimum flow of 202 cfs or inflow, whichever is less, from June 1 through Labor Day, except that, if the level of Richardson Lake falls to elevation 1444 feet msl during the June 1 through Labor Day period, the minimum flow may be reduced to a guaranteed flow of 100 cfs.
- From Middle Dam, release a guaranteed minimum flow of 382 cfs from the start of the spring refill of Richardson Lake through September 15, except that, if the level of Richardson Lake falls to elevation 1444 feet msl during the period from June 1 through Labor Day, the minimum flow will be reduced to a guaranteed flow of 310 cfs; a guaranteed minimum flow of 472 cfs from September 16 through the start of the spring refill of Richardson Lake; a flow no greater than 1,200 cfs from July 15 through Labor Day, except for agreed upon whitewater boating releases and high water emergencies; and specified whitewater boating releases during the 3rd and 4th weekends of July and the 1st and 2nd weekends of August.
- From Aziscohos Dam, release a guaranteed minimum flow of 130 cfs at the powerhouse from the start of spring refill of Aziscohos Lake through September 15; a guaranteed minimum flow of 214 cfs at the powerhouse from September 16 until the start of the spring refill; a guaranteed minimum flow of 50 cfs year-round in the bypass reach between the dam and the powerhouse; and specified whitewater flows

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during the 4th weekend of June, 1st and 2nd weekends of July, 3rd and 4th weekends of August, and 1st weekend of September.

- At Mooselookmeguntic Lake, attain a target lake level of 1467 feet msl (one foot below full pond) by June 1, if at all possible; from June 1 through July 15, maintain a maximum lake level of 0.5 feet above and a minimum lake level of 1.0 feet below the June 1 elevation achieved that year, except that, if the June 1 target level is not achieved, the lake may be allowed to fill up to elevation 1467 feet msl; from July 16 through Labor Day, maintain lake levels above elevation 1465 feet msl, except that, if the level of Richardson Lake falls to elevation 1444 feet msl, the level of Mooselookmeguntic Lake may drop to a minimum level of elevation 1464 feet msl, and in no event will the level of Mooselookmeguntic Lake go below elevation 1464 msl during this period except as needed to meet the required minimum flows from Upper Dam; and beginning the day after Labor Day, draw the lake level down gradually and in general conformity with historic operation of the lake, to a maximum drawdown of 12.2 feet to elevation 1455.8 feet msl prior to the start of the spring refill.
- At Richardson Lake, from July 16 through September 30, maintain lake levels above elevation 1444 feet msl (6 feet below full pond), except that, during the period from June 1 through Labor Day, the lake may be permitted to go below elevation 1444 feet msl as necessary to maintain a minimum flow release of 310 cfs from Middle Dam to the Rapid River; after September 30, draw the lake level down without restriction except that, after October 15 each year, drop the water level at least 5 feet below the October 1 level to preclude togue spawning, to a maximum drawdown of 10 feet to elevation 1440 feet msl under open water conditions; and under ice-in conditions, a drawdown in excess of 13 feet (below elevation 1437 feet msl) only when excessive snowpack requires additional drawdown to maintain the historic level of flood protection on the Androscoggin River below Errol Dam.
- Under emergency conditions beyond the applicant's control, including but not limited to anticipation of, or the occurrence of, extreme runoff events, equipment failure, flood storage requirements, or ice conditions, the agreed-to flow requirements and water level restrictions may be impossible to achieve or may be inconsistent with prudent and safe project operation.
- In consultation with interested parties, develop and review the effectiveness of loon management plan(s) for Mooselookmeguntic and Richardson Lakes.
- Conduct annual surveys and conduct maintenance activities as necessary to restore and maintain passage for fall spawning fish across the drawdown zones of Mooselookmeguntic and Richardson Lakes to specified tributary rivers and streams.
- Conduct a 3-year post-licensing study to determine the success of trout spawning in the Rapid River following implementation of the proposed minimum flow releases from Middle Dam.

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- Conduct triennial surveys of angler use and fishing success in the Rapid and Magalloway Rivers and Mooselookmeguntic and Richardson Lakes.
- Develop a Recreational Facilities and Management Plan that includes provisions for: maintaining existing public access to the project impoundments and the Rapid and Magalloway Rivers, to the extent controlled by the applicant; improving and maintaining canoe portage trails at the project dams; installing recreational signs at public access points, canoe portage trails, and key fishing access trails along the Rapid River; continuing to provide daily flow information by flow phone service and by posting of flows at the project dams; improving and maintaining a walkway or stairs and a foot path at the Magalloway River whitewater boating put-in site; improve designated boat access facilities at the project lakes as needed to meet ADA standards; install and maintain pit privies at the Upper Dam road gate, at Middle Dam, and at Lower Dam; install and maintain picnic tables near the Upper Dam; maintaining the Oxford County South Arm boat ramp on Richardson Lake; and improving, including periodic dredging as necessary, the Town of Rangeley's Haines Landing Boat Launch to provide for safe boat launching at a water level of 1464 feet msl.
- Develop and implement a Cultural Resources Management Plan that will protect or recover any significant archaeological site that will be adversely affected by the operation of the project dams.
- Union Water Power Company will donate permanent conservation easements on the following lands: two small islands in Mooselookmeguntic Lake above Upper Dam; a specified strip of shoreline east of the Upper Dam; a specified 250-foot-wide strip of shoreline along both sides of the Upper Dam tailrace (about 35 acres); and specified widths of shoreline along both sides of the Rapid River (about 283 acres).
- Impose specified restrictions on future development on lands currently owned by Union Water Power Company around the project dams.
- Contribute \$1.5 million to a Protection, Mitigation and Enhancement Fund that will be used for specified land stewardship activities, for acquisition of additional riparian lands or conservation easements with significant public value, and for protection and enhancement measures for water quality, fish and wildlife habitat, and wetlands.

On December 22, 1999, Androscoggin Reservoir Company, of which the applicant is a part owner, filed recommendations with the Federal Energy Regulatory Commission for permanent minimum flows and whitewater boating flows at the Aziscohos Project, FERC No. 4026, in accordance with the terms of the Settlement Agreement.

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2. JURISDICTION

The proposed continued operation of the Upper and Middle Dams Storage Project qualifies as an “activity...which may result in (a) discharge into the navigable water (of the United States)” pursuant to 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.

On August 1, 1994, the Federal Energy Regulatory Commission issued an order finding the unlicensed Upper Dam and Middle Dam storage projects to be jurisdictional projects under the Federal Power Act and directing the project owner to file application(s) to license the projects. On December 23, 1999, FPL Energy filed an Application for Initial License for the combined Upper and Middle Dams Storage Project. The project has been assigned FERC No. 11834. This application is currently pending before FERC.

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. While the Upper and Middle Dams Storage Project is located in unorganized territories subject to LURC regulatory jurisdiction, this licensing is not subject to LURC permitting or review under the Land Use Regulation Law or the Maine Waterway Development and Conservation Act. Therefore, the DEP is the certifying agency for the project.

3. APPLICABLE WATER QUALITY STANDARDS

a. Classification. The receiving waters that are or may be affected by the project are currently classified as follows:

- Mooselookmeguntic Lake and Richardson Lake—Class GPA. 38 MRSA § 465-A.
- Rapid River, from Middle Dam to a point located 1,000 feet downstream of Middle Dam—Class A. 38 MRSA § 467(1)(C).
- Rapid River, from a point located 1,000 feet downstream of Middle Dam to its confluence with Umbagog Lake—Class AA. 38 MRSA § 467(1)(C)(3).

b. Designated Uses. Class GPA, Class A, and Class AA waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection; recreation in and on the water; fishing; industrial process and cooling water supply; hydroelectric power generation; navigation; and as habitat for fish and other aquatic life. The habitat of Class GPA and Class A waters shall be characterized as natural. The habitat of Class AA waters shall be characterized as free flowing and natural. 38 MRSA § 465-A (1)(A), 38 MRSA § 465(2)(A), and 38 MRSA § 465(1)(A).

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- c. Numeric Standards. The numeric standards for the receiving waters are as follows.

Class GPA waters shall be described by their trophic state based on measures of the chlorophyll "a" content, Secchi disk transparency, total phosphorus content and other appropriate criteria. Class GPA waters shall have a stable or decreasing trophic state, subject only to natural fluctuations and shall be free of culturally induced algal blooms which impair their use and enjoyment. The number of Escherichia coli bacteria of human origin in these waters may not exceed a geometric mean of 29 per 100 milliliters or an instantaneous level of 194 per 100 milliliters. 38 MRSA § 465-A (1)(B).

The aquatic life, dissolved oxygen and bacteria content of Class AA waters shall be as naturally occurs. The dissolved oxygen content of Class A waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher, and the aquatic life and bacteria content of these waters shall be as naturally occurs. 38 MRSA § 465(1)(B) and 38 MRSA § 465(2)(B).

- d. Narrative Standards. The narrative standards for the receiving waters are as follows.

There may be no new direct discharge of pollutants into Class GPA waters. Discharges into these waters licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist. The habitat and aquatic life criteria of Class GPA are deemed to be met in an existing impoundment classified as GPA if the impounded waters, at a minimum, satisfy Class C aquatic life criteria (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), provided that, where the actual quality of the impounded waters attains any more stringent characteristic or criteria, that existing water quality must be maintained and protected. 38 MRSA § 465-A (1)(C) and 38 MRSA § 464(9).

New direct discharges to Class A waters are permitted only if, in addition to satisfying all other requirements, the effluent is equal to or better than the existing water quality of the receiving water. Discharges into these waters licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist. 38 MRSA § 465(2)(C).

There shall be no direct discharge of pollutants to Class AA waters. 38 MRSA § 465(1)(C).

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

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4. LAKE TROPHIC STATE

- a. Existing Conditions. Mooselookmeguntic and Richardson Lakes are natural lakes that have been increased in area, volume and depth by the construction of the Upper and Middle Dams. The area around the lakes is heavily forested, with limited shoreline development. The lakes currently receive no direct discharges of waste water. Together, the lakes drain an area of about 472 square miles.
- b. Water Quality Data. The applicant has conducted water quality sampling for the lakes in accordance with the DEP's Lake Trophic State Sampling Protocol. Bi-weekly sampling from May through September included dissolved oxygen and temperature profiles, Secchi disk transparency, and epilimnetic cores for total phosphorus, Chlorophyll *a*, color, pH, and total alkalinity. In addition, during late summer lake stratification, epilimnion and hypolimnion sampling was conducted for color, pH, total alkalinity, total phosphorus, total sulfate, total iron, total manganese, total calcium, total magnesium, and total dissolved silica. Finally, winter dissolved oxygen-temperature profile sampling was undertaken to check for oxygen depletion under ice cover.

Analysis of the data collected indicates that the water quality in both lakes is very good. Secchi disk and total phosphorus data puts the trophic state of the lakes at borderline oligotrophic/mesotrophic with some oxygen depletion occurring at depth in late summer. Some dissolved oxygen depletion was also indicated by the winter sampling.

- c. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above].
- d. Discussion. The trophic state of the lakes appears to be stable. The applicant's proposals are not expected to affect the water quality or trophic state of the lakes.

5. DISSOLVED OXYGEN

- a. Existing Conditions. The area immediately below the Upper Dam (known as the Upper Dam tailrace) is not typical riverine habitat, in that, when the level of Richardson Lake is high, the area is "flooded" and lake-like in character. However, as the level of Richardson Lake drops, a 2,000-foot-long stretch of water becomes increasingly riverine in character, as pool depths decrease and water velocities increase.

The Rapid River receives flow from Middle Dam and from a small drainage area along its almost 5-mile-long run between Middle Dam and Umbagog Lake. The area around the river is undeveloped and forested. The river receives no direct discharge of waste water.

- b. Water Quality Data. The applicant has conducted water quality sampling in the Rapid River and the Upper Dam tailrace in accordance with the DEP's River Sampling Protocol. Dissolved oxygen and temperature sampling was conducted above and below

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each dam on two successive days during high temperature and low flow conditions. Sampling was conducted during early morning and mid-afternoon periods to determine the maximum diurnal fluctuation in dissolved oxygen levels.

Analysis of the data collected indicates that dissolved oxygen levels under summer high temperature/low flow conditions are very good, with readings often near saturation levels below each dam. Diurnal sampling shows changes in dissolved oxygen levels of less than one part per million over the course of the day.

- c. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above].
- d. Discussion. The Rapid River and Upper Dam tailrace appear to meet current water quality classification standards for dissolved oxygen. The applicant's proposals are not expected to affect the water quality of these areas.

6. FISH RESOURCES

- a. Existing Conditions. Mooselookmeguntic Lake currently supports populations of landlocked salmon, brook trout, smelt, landlocked alewives, yellow perch and several additional forage species. The salmon and trout populations are entirely supported by natural reproduction.

Richardson Lake currently supports landlocked salmon, brook trout, lake trout (togue), a relic population of brown trout, smelt, and other forage species. As natural reproduction of salmon and trout is limited due to the small number and low habitat quality of tributaries, these species are sustained by dropdowns from Mooselookmeguntic Lake and by yearly stocking by the Department of Inland Fisheries and Wildlife. Management for togue is focused on producing small numbers of trophy-size fish while limiting natural reproduction, so as to minimize competition between togue, brook trout, and salmon.

The Rapid River supports landlocked salmon and brook trout, smelt, and other forage species. The salmon population is supported by both natural reproduction and stocking, while the trout are entirely supported by natural reproduction. The Rapid River is well known for the quality of its trout fishery.

There are currently no populations of anadromous, endangered or threatened fish species in the project waters. There are currently no fish passage facilities in place at either of the project dams.

- b. Fishery Studies. The applicant has conducted assessments of access and habitat conditions for spring spawning smelt and fall spawning brook trout and salmon in 27 selected tributaries to Mooselookmeguntic and Richardson Lakes. According to these assessments, all of the significant tributaries remained accessible during both spring and

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fall spawning periods. However, several of the smaller tributaries were found to have obstructions within the drawdown zone of the lakes that may limit fall spawning access.

- c. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above], in order to maintain existing fish populations, enhance littoral zone reproduction, and enhance spawning, juvenile and adult habitat for brook trout and salmon in the Rapid River below Middle Dam.

The applicant further proposes to draw the level of Richardson Lake down by an additional 5 feet below the October 1 level, in order to limit natural togue reproduction and thus minimize competition with brook trout and salmon.

The applicant further proposes to annually monitor and maintain access for fall spawning fish across the lake drawdown zones to the following tributaries:

- Tributaries to Mooselookmeguntic Lake—Kennebago River, Rangeley River, Cupsuptic River, Bemis Stream, Cold Brook, and Toothaker Brook No. 2.
- Tributaries to Richardson Lake—Mill Brook, Metallak Stream, Mosquito Brook, Fish Pond Brook, and Bailey Brook.

The applicant further proposes to conduct a 3-year post-licensing study to determine the success of trout spawning in the Rapid River following implementation of the proposed minimum flow releases from Middle Dam.

Finally, the applicant proposes to establish a Protection, Mitigation and Enhancement Fund, with \$150,000 from the fund to be used for various protection and enhancement measures, including measures to protect or enhance fisheries habitat.

- d. Discussion. The applicant's proposals appear to be adequate to maintain, protect and enhance the use of project waters as habitat for fish.

7. AQUATIC MACROINVERTEBRATES

- a. Existing Conditions. The levels of Mooselookmeguntic and Richardson Lakes and flows in the Rapid River are controlled by the project dams. Changes in lake levels and river flows may adversely affect aquatic organisms. The DEP uses the benthic macroinvertebrate community as an indicator of the general state of aquatic life for the purpose of attainment of classification standards.
- b. Macroinvertebrate Studies. The applicant has conducted a two-year assessment of the macroinvertebrate communities in the project waters. Samples were collected below each dam and in the littoral zone of each lake.

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Analysis of the data collected indicates that Middle Dam operates like a natural lake outlet and enriches the aquatic community in the downstream Rapid River, which is dominated by collector-filterer organisms.

Analysis of the data collected also indicates that the aquatic population in the Upper Dam tailrace is inhabited by generalist organisms that can live in a variety of conditions reflecting the changing conditions of the area, which is affected by flow releases from Upper Dam and by the annual drawdown of Richardson Lake.

Finally, analysis of the data collected indicates that the aquatic communities of the lakes, while generally low in density, are diverse and populated with stress sensitive organisms. These findings reflect the facts that the water quality is good and the lakes have low levels of primary productivity.

- c. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above].
- d. Discussion. There must be both sufficient quality and quantity of habitat for aquatic organisms to meet aquatic life standards. Subject to the provisions of this certification regarding mercury [see Section 8 below], the applicant's proposals appear to be sufficient to maintain, protect and enhance the use of project waters as habitat for aquatic life.

8. MERCURY

- a. Existing Conditions. A fish consumption advisory has been issued for all freshwaters in Maine due to the presence of elevated levels of mercury in fish tissue. As a result, all Maine lakes are classified as not supporting fish consumption. In addition, high mercury levels have been shown to affect reproduction of loons.

The largest source of mercury appears to be atmospheric deposition from out-of-state sources. However, some studies have suggested that there may be a correlation between lake drawdowns and the bioavailability of mercury [in the form of methylmercury].

- b. Studies. The applicant has participated in a study to assess the bioavailability of mercury in a number of Maine lakes. The study measured mercury levels in bottom sediments, loons and their prey, and gamefish in a number of artificial impoundments and natural lakes, including Mooselookmeguntic and Richardson Lakes. Among other things, the study concluded that:
 - No single factor primarily accounts for methylmercury exposure in water bodies;
 - Water level fluctuations could be affecting mercury availability on both natural lakes and reservoirs, however, other factors such as watershed inputs, wetland inputs, tributaries, soils and precipitation runoff could all be equally or more important;

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- Both natural and regulated water level fluctuations are at least partially related to methylmercury enhancement; and
- Reservoirs with river valley origins are more likely to have higher mercury concentrations in their biota than reservoirs that originated from raising the water levels of existing lakes.

The study also compared 12 mean mercury level parameters for samples taken from all the lakes to established benchmarks. Mooselookmeguntic Lake samples exceeded the benchmark mercury thresholds for three parameters (bottom sediments, game fish, and loon eggs), while Richardson Lake samples exceeded the benchmark mercury thresholds for two parameters (bottom sediments and game fish). Both Mooselookmeguntic and Richardson Lakes are reservoirs that originated from raising the water levels of existing lakes.

- Applicant's Proposals. The applicant states that, if mercury methylation is ever found to be significantly impacted by water level drawdown, then the proposed drawdown restrictions should have a positive impact on limiting the biological availability of mercury. The applicant does propose that, if a definitive link between the operation of the dams and the bioavailability of mercury is established, then the applicant will develop and implement a plan to address localized and cumulative impacts.
- Discussion. The evidence indicates that there are elevated levels of mercury in game fish and loons in the project lakes. However, there is insufficient evidence to determine whether these levels are statistically higher than levels on natural lakes and, if so, whether these levels are higher due to the drawdowns of the lakes. And even as restricted by the terms of the Settlement Agreement, the drawdowns of Mooselookmeguntic and Richardson Lakes, at 12.2 feet and 13 feet respectively, still greatly exceed the water level fluctuations of most natural lakes. Therefore, additional analysis of mercury levels in fish and loons in Mooselookmeguntic and Richardson Lakes and in suitable reference lakes is needed.

9. FISHING

- Existing Conditions. Beginning around 1880, sport fishing and a local sporting industry developed in the Rangeley Lakes region, and Mooselookmeguntic and Richardson Lakes developed a national reputation for catching large trout and salmon. Records show that, from 1880 through 1910, several brook trout weighing 8-10 pounds were caught each year. Since that time, changing dam operations, the introduction of competing "exotic" species, and overfishing have all reduced the size of the annual fish harvest and the size of individual fish.

Since 1950, the Department of Inland Fisheries and Wildlife has managed angling pressure on the fishery by restricting gear and harvests, outlawing live bait, decreasing daily bag limits, increasing minimum size restrictions, and instituting a catch and release

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program for the Rapid River trout fishery. The lakes have been closed to winter fishing for more than 100 years.

Today, the open water fishing pressure on the Rangeley Lakes (including Mooselookmeguntic, Richardson, Rangeley, Aziscohos, and Kennebago) exceeds the state average for open water and ice fishing combined.

- b. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above], in order to maintain and enhance fish populations and angling opportunity.

The applicant also proposes to conduct triennial surveys of angler use and fishing success in the Rapid River and Mooselookmeguntic and Richardson Lakes.

- c. Discussion. The applicant's proposals appear to be adequate to maintain, protect and enhance the use of project waters for fishing.

10. RECREATION IN AND ON THE WATER

- a. Existing Resources. The project area is a major recreational area and receives significant use for fishing, flatwater and whitewater boating, swimming, camping, hunting, skiing, snowmobiling and sight seeing.

Public recreational facilities in the project area include several boat launches, canoe portage trails, docks and picnic areas and numerous fishing access trails. There are also numerous commercial fishing/hunting camps, remote campsites and campground campsites.

The Rapid River offers private and commercial kayaking and whitewater rafting opportunities on Class II-IV rapids when sufficient flows are released from Middle Dam.

- b. Studies. The applicant has conducted a recreation resources and use study. The results of the study indicate that: the lakes offer similar types and numbers of recreational facilities; campowners/property owners are the primary recreation users; the spring/summer season is the highest recreation use period; the majority of recreation visitors stayed overnight in a campground or remote campsite and traveled an average of 200 miles from their home; the undeveloped "natural" character of the area is what attracts visitors; Richardson Lake is the most popular recreation destination in the project area, with the most frequent activities being enjoying scenery, observing/photographing wildlife/nature, camping, swimming, and walking/hiking; recreation use has increased over the past 10 ten years and is expected to increase over the next 10 years; and recreation facilities are currently not being used to their capacity.

The applicant has also conducted a study of the effects of flows on recreation in the Upper Dam tailrace. The results of the study indicate that the optimal range of flows for

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angling is between 500 and 700 cfs, and that the fishability of the tailrace is significantly affected by the level of Richardson Lake.

Finally, the applicant has conducted a study on the effects of flows on recreation in the Rapid River. The results of the study indicate that:

- Anglers prefer lower flows (in the 600-1200 cfs range), with 800 cfs being the optimum angling flow;
 - As flows increase, fewer areas are available which can be safely fished due to increases in water velocities and depth; and
 - Whitewater boaters prefer higher flows (in the 1300 to 1800 plus cfs range), with 1300 cfs being the optimum beginner and intermediate level open and closed boating flow and 1800 being the optimum advanced level closed boating and whitewater rafting flow.
- c. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above], in order to maintain and enhance angling opportunity.

The applicant also proposes a flow release from Middle Dam of no greater than 1200 cfs from July 15 through Labor Day, except for specified whitewater boating flow releases and high water emergencies, in order to enhance angling opportunity in the Rapid River.

The applicant also proposes specified high flow releases from Middle Dam, in order to maintain and enhance whitewater boating on the Rapid River. These releases, which are scheduled for times when water temperatures are relatively high and angling activity is reduced, include:

- During the 3rd weekend in July, a 1300 cfs release on Friday and Saturday and a 1800 cfs release on Sunday;
- During the 4th weekend of July, a 1300 cfs release on Saturday and a 1800 cfs release on Sunday;
- During the 1st weekend in August, a 1300 cfs release on Saturday and Sunday;
- During the 2nd weekend in August, a 1300 cfs release on Friday and Saturday, and a 1800 cfs release on Sunday;
- In those years when the level of Richardson Lake falls to elevation 1444 feet msl during the period from June 1 through Labor Day, whitewater releases shall be reduced to a maximum of 1300 cfs for a total of eight days during the 3rd and 4th weekends in July and the 1st and 2nd weekends in August; and

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- All whitewater flow releases to the Rapid River will start at 6 pm the day before the scheduled release and end at 12 noon on the last day of the scheduled release.

The applicant also proposes to develop a Recreational Facilities and Management Plan to include specified provisions for maintaining and enhancing existing recreational use and character [see Section 1(d) above].

The applicant further proposes to establish a Protection, Mitigation and Enhancement Fund, with \$600,000 from the fund to be used for specified stewardship activities on lands under conservation easements, and \$750,000 from the fund to be used for the acquisition of additional riparian lands or conservations easements with significant public value, in order to protect, maintain and enhance the recreational use and character of the project area.

Finally, under the terms of the Settlement Agreement, Union Water Power Company will donate permanent conservation easements on specified company-owned lands and will impose restrictions on future development on company-owned lands.

- d. Discussion. The applicant's proposals appear to be adequate to maintain, protect and enhance the use of project waters for recreation in and on the water.

11. WETLANDS AND WILDLIFE RESOURCES

- a. Existing Resources. Wetlands in the project area are limited as a result of the mountainous character of the region, the seasonal drawdowns of the lakes, the relative lack of sufficient nutrients in the lakes (oligotrophic lakes are, by definition, nutrient-poor), and the large, deep, and steep-sided character of the lakes. In general, lake drawdowns have the effect of restricting submerged aquatic vegetation, limiting shallow water plants, and diminishing the potential wetland areage.

A diversity of wildlife species utilize the terrestrial and wetland habitats in the project area, which is predominately undeveloped and forested. Common species include deer, moose, black bear, coyote, fox, racoon, squirrel, and numerous other mammals, waterfowl, and repiles. Among the mammals observed foraging in the open water of the lakes are otter, mink and muskrat.

The following threatened or endangered wildlife species have been observed in the project area: bald eagle (state and federal threatened lists), peregrine falcon (state endangered list), harlequin duck (state threatened list), and golden eagle (state endangered list).

- b. Studies. The applicant has inventoried the wetlands within 500 feet of the high water line of Mooselookmeguntic and Richardson Lakes and Pond-in-the-River (the first segment of the Rapid River below Middle Dam). According to this inventory, there are more than

150 individual wetlands totaling 565 acres within the defined area. Three individual wetland complexes on each lake together comprise more than 50% of all wetland acreage on the lakes. The primary wetland types found were forested, emergent and scrub-shrub.

- c. Applicant's Proposals. The applicant proposes various minimum flow releases and drawdown restrictions for the future operation of the project [see Section 1(d) above], in order to maintain and enhance existing wetlands and wildlife habitat.

The applicant also proposes to implement a management plan for common loon nesting on the lakes, to mitigate for the affects of lake level fluctuations on loon productivity.

Finally, the applicant proposes to establish a Protection, Mitigation and Enhancement Fund, with \$150,000 from the fund to be used for various protection and enhancement measures, including measures to protect or enhance wildlife habitat and wetlands.

- d. Discussion. Subject to the provisions of this certification regarding mercury [see Section 8 above], the applicant's proposals appear to be adequate to maintain, protect and enhance wetlands associated with Mooselookmeguntic and Richardson Lakes and the Rapid River and to maintain, protect and enhance the use of project waters as habitat for wildlife.

12. HYDROELECTRIC POWER GENERATION

- a. Existing Generation. Eighteen hydroelectric generating projects with a combined capacity of about 250 MW are located downstream of the Upper and Middle Dams Storage Project on the Androscoggin River in New Hampshire and Maine. These projects generate an average of about 900,000,000 kilowatt-hours of electricity annually. This is equivalent to the energy that would be produced by burning about 1,500,000 barrels of oil or about 417,000 tons of coal each year.

The operation of the project dams, in conjunction with the other headwater dams (Aziscohos and Errol), provides a reliable, year-round supply of water for generation at downstream hydro projects. Without the seasonal storage of water during the spring and fall months and the seasonal release of water during the summer and winter months, there would be significantly less generation at downstream projects. Together, Mooselookmeguntic and Richardson Lakes provide half of the total water storage capacity of the headwater storage system.

- 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 assuring that energy production and use are consistent with a healthy environment and vibrant economy. Specifically, the Plan establishes the following targets for Maine's energy future:

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- Reduce the State's level of dependence on oil from 50% to at least 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 special emphasis on enhancing Maine's competitive position relative to New England and the United States.

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.

- c. Applicant's Proposals. The proposed operational measures will maintain existing downstream generation during dry streamflow years and increase downstream generation less than 1% during median streamflow years.
- d. Discussion. The applicant's proposals appear to be adequate to maintain, protect and enhance the use of the project waters for downstream hydroelectric generation.

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 Upper and Middle Dams Storage 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. Minimum flows are provided from Upper Dam to Richardson Lake as proposed;
2. Except for whitewater boating releases, minimum and maximum flows are provided from Middle Dam to the Rapid River as proposed;
3. Whitewater boating flows are provided from Middle Dam to the Rapid River as proposed;
4. Water levels at Mooselookmeguntic Lake and Richardson Lake are managed as proposed;
5. The applicant annually monitors and maintains access for fall spawning fish across the drawdown zones of Mooselookmeguntic Lake and Richardson Lake to specified tributaries as proposed;

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6. The applicant conducts a post-licensing study of trout spawning in the Rapid River as proposed;
7. The applicant conducts additional analysis of mercury levels in fish and loons in Mooselookmeguntic and Richardson Lakes and suitable reference lakes.
8. The applicant conducts triennial surveys of angler use and fishing success in the Rapid River and Mooselookmeguntic and Richardson Lakes as proposed;
9. The applicant develops and implements a Recreational Facilities and Management Plan as proposed;
10. The applicant implements a management plan for common loon nesting as proposed; and
11. The applicant establishes a Protection, Mitigation and Enhancement Fund as proposed.

THEREFORE, The Department APPROVES the application of FPL ENERGY MAINE HYDRO LLC and GRANTS CERTIFICATION that there is a reasonable assurance that the continued operation of the UPPER AND MIDDLE DAMS STORAGE PROJECT, as described above, will not violate applicable water quality standards, SUBJECT TO THE FOLLOWING CONDITIONS:

1. MINIMUM FLOWS—UPPER DAM

- A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, minimum flows shall be released from the Upper Dam to Richardson Lake in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Specifically, the following minimum flows shall be released:
 - From Labor Day through May 31 annually, a guaranteed minimum flow of 202 cfs; and
 - From June 1 through Labor Day annually, a minimum flow of 202 cfs or inflow, whichever is less, except that, during those years when the level of Richardson Lake falls to elevation 1444 feet msl during this period, the minimum flow may be reduced to a guaranteed flow of 100 cfs.
- B. Operating emergencies beyond the applicant's control include, but may not be limited to: equipment failure or other temporary abnormal operating condition; project operation in anticipation of, or in response to, extreme runoff events, flood storage requirements, or ice conditions; project operation in response to power supply emergencies; orders from

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local, state or federal law enforcement or public safety authorities; and other conditions inconsistent with prudent and safe project operation.

- C. The applicant shall, within 6 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, 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 the approval of the DEP Bureau of Land and Water Quality.

2. MINIMUM/MAXIMUM FLOWS—MIDDLE DAM

- A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, minimum and maximum flows shall be released from the Middle Dam to the Rapid River in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Specifically, the following minimum and maximum flows shall be released:

- From the start of the spring refill of Richardson Lake through September 15 annually, a guaranteed minimum flow of 382 cfs, except that, during those years when the level of Richardson Lake falls to elevation 1444 feet msl during the period from June 1 through Labor Day, the minimum flow will be reduced to a guaranteed flow of 310 cfs;
- From September 16 through the start of the spring refill of Richardson Lake annually, a guaranteed minimum flow of 472 cfs; and
- From July 15 through Labor Day annually, a flow no greater than 1200 cfs, except for whitewater releases as set forth in Condition 3 of this order.

- B. Operating emergencies beyond the applicant's control include, but may not be limited to: equipment failure or other temporary abnormal operating condition; project operation in anticipation of, or in response to, extreme runoff events, flood storage requirements, or ice conditions; project operation in response to power supply emergencies; orders from local, state or federal law enforcement or public safety authorities; and other conditions inconsistent with prudent and safe project operation.

- C. The applicant shall, within 6 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit plans for providing and monitoring the minimum and maximum flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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3. WHITEWATER FLOWS—MIDDLE DAM

A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, whitewater flows shall be released from the Middle Dam to the Rapid River in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Specifically, the following whitewater flows shall be released:

- During the 3rd weekend in July annually, a 1300 cfs release on Friday and Saturday and a 1800 cfs release on Sunday;
- During the 4th weekend of July annually, a 1300 cfs release on Saturday and a 1800 cfs release on Sunday;
- During the 1st weekend in August annually, a 1300 cfs release on Saturday and Sunday;
- During the 2nd weekend in August annually, a 1300 cfs release on Friday and Saturday, and a 1800 cfs release on Sunday; and
- During those years when the level of Richardson Lake falls to elevation 1444 feet msl during the period from June 1 through Labor Day, whitewater releases shall be reduced to a maximum of 1300 cfs for a total of eight days during the 3rd and 4th weekends in July and the 1st and 2nd weekends in August.

All whitewater flow releases to the Rapid River will start at 6 pm the day before the scheduled release and end at 12 noon on the last day of the scheduled release.

- B. Operating emergencies beyond the applicant's control include, but may not be limited to: equipment failure or other temporary abnormal operating condition; project operation in anticipation of, or in response to, extreme runoff events, flood storage requirements, or ice conditions; project operation in response to power supply emergencies; orders from local, state or federal law enforcement or public safety authorities; and other conditions inconsistent with prudent and safe project operation.
- C. The applicant shall, within 6 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit plans for providing and monitoring the whitewater flows required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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4. WATER LEVELS

- A. Except as temporarily modified by (1) approved maintenance activities, (2) inflows to the project area, (3) operating emergencies beyond the applicant's control, as defined below, or (4) agreement between the applicant and appropriate state and/or federal agencies, water levels in Mooselookmeguntic Lake and Richardson Lake shall be managed in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Specifically, water levels shall be managed as follows:

Mooselookmeguntic Lake

- From the start of the spring refill through June 1 annually, refill the lake in general conformity with historic operation of the lake, as defined by the Mooselookmeguntic Lake-Upper Dam Average Rule Curve, attached hereto as Exhibit 5, to attain a target lake level of elevation 1467 feet msl (one foot below full pond) by June 1, if at all possible;
- From June 1 through July 15 annually, if the lake achieves a level of elevation 1467 feet or higher by June 1, maintain the lake level within a range from a maximum of 0.5 feet above to a minimum of 1.0 feet below the elevation achieved on June 1 of that year, except that, during those years when the target level of elevation 1467 feet msl is not achieved by June 1, the lake may be allowed to fill up to elevation 1467 feet msl during this period;
- From July 16 through Labor Day annually, maintain lake levels above elevation 1465 feet msl (3 feet below full pond), except that, during those years when the level of Richardson Lake falls to elevation 1444 feet msl during this period, the level of Mooselookmeguntic Lake may drop to a minimum level of elevation 1464 feet msl (4 feet below full pond) during this period. In no event shall the level of Mooselookmeguntic Lake go below elevation 1464 feet msl during this period except as needed to meet the minimum flow requirements specified in Condition 1 above; and
- Beginning the day after Labor Day and continuing through the following May 31 annually, there are no specific lake level restrictions. However, the lake level will be drawn down gradually and in general conformity with historic operation of the lake, as defined by the Mooselookmeguntic Lake-Upper Dam Average Rule Curve, attached hereto as Exhibit 5, to a minimum level of elevation 1455.8 feet msl (12.2 feet below full pond) prior to the start of the spring refill.

Richardson Lake

- From July 16 through September 30 annually, maintain lake levels above elevation 1444 feet msl (6 feet below full pond), except that, during the period from June 1 through Labor Day, the lake may be permitted to go below elevation 1444 feet msl as

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necessary to maintain a minimum flow release of 310 cfs from Middle Dam to the Rapid River;

- Beginning October 1 and continuing through the following May 31 annually, and except as limited by the stipulations below, there are no specific lake level restrictions. However, the lake level will be drawn down gradually and in general conformity with historic operation of the lake, as defined by the Richardson Lakes-Middle Dam Average Rule Curve, attached hereto as Exhibit 6, to a minimum level of 1440 feet msl (10 feet below full pond) under open water conditions, and to a minimum level of elevation 1437 feet msl (13 feet below full pond) under ice-in conditions;
 - Notwithstanding the restrictions above, after October 15 annually, the level of Richardson Lake shall be dropped at least 5 feet below the level achieved on October 1 of that year, in order to preclude togue spawning. This restriction shall remain in effect until such time as the Department of Inland Fisheries and Wildlife determines that the restriction is no longer needed to control togue populations;
 - Notwithstanding the restrictions above, the drawdown of Richardson Lake under ice-in conditions may exceed 13 feet when excessive snowpack (defined as an average water equivalent greater than 8.5 inches as measured at the applicant's principal snow measuring stations during the March 1-15 period) requires an additional drawdown in order to maintain the historic level of flood protection on the Androscoggin River below Errol Dam; and
 - From the start of the spring refill through July 15 annually, refill and manage lake levels in general conformity with historic operation of the lake, as defined by the Richardson Lakes-Middle Dam Average Rule Curve, attached hereto as Exhibit 6.
- B. Operating emergencies beyond the applicant's control include, but may not be limited to: equipment failure or other temporary abnormal operating condition; project operation in anticipation of, or in response to, extreme runoff events, flood storage requirements, or ice conditions; project operation in response to power supply emergencies; orders from local, state or federal law enforcement or public safety authorities; and other conditions inconsistent with prudent and safe project operation.
- C. The applicant shall, within 6 months of the issuance of a FERC license for the project or upon such other schedule as established by FERC, submit plans for providing and monitoring the water levels required by Part A of this condition. These plans shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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5. TRIBUTARY ACCESS MAINTENANCE

A. The applicant shall monitor and maintain access for fall spawning fish across the drawdown zones of Mooselookmeguntic Lake and Richardson Lake to identified tributary rivers and streams, in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Specifically, the applicant shall, on an annual basis, monitor access conditions and perform any remedial activities necessary to ensure access for adult brook trout and salmon across the lake drawdown zones (defined as the area in Mooselookmeguntic Lake and Richardson Lake from the lowest water level attainable to the high water mark) throughout the fall spawning period to the following tributaries:

- Tributaries to Mooselookmeguntic Lake—Kennebago River, Rangeley River, Cupsuptic River, Bemis Stream, Cold Brook, and Toothaker Brook No. 2.
- Tributaries to Richardson Lake—Mill Brook, Metallak Stream, Mosquito Brook, Fish Pond Brook, and Bailey Brook.

Remedial activities shall consist of the removal of debris and unconsolidated sand, gravel and boulders as needed to restore fish access across the lake drawdown zones to baseline conditions, as specified in the Agreement.

B. The applicant shall prepare and submit to DEP, the Department of Inland Fisheries and Wildlife, Trout Unlimited, and the Rangeley Lakes Heritage Trust an annual report detailing the results of the annual monitoring of access conditions and any remedial actions taken to maintain access conditions.

6. RAPID RIVER TROUT SPAWNING STUDY

A. The applicant shall, in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement," and in consultation with the Department of Inland Fisheries and Wildlife (DIFW), conduct a 3-year post-licensing study to determine the success of trout spawning in the Rapid River following implementation of the minimum/maximum flows and whitewater flows from the Middle Dam that are required under the terms of the Agreement.

B. The applicant shall, within 12 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit plans for conducting a trout spawning study as required by Part A of this condition. These plans shall be prepared in consultation with DIFW and shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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7. MERCURY ANALYSIS

- A. The applicant shall, in consultation with the DEP, collect and analyze total mercury levels in biological samples from fish and loons in Mooselookmeguntic and Richardson Lakes and in suitable reference lakes. *The purpose of this analysis is to determine whether mercury levels in fish and loons in the project lakes are statistically higher than levels in the reference lakes.
- B. The applicant shall, within 12 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit a plan and schedule for collecting and analyzing biological samples from fish and loons as required by Part A of this condition. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

8. ANGLER USE/FISHING SUCCESS SURVEYS

- A. The applicant shall, in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement," and in consultation with the Department of Inland Fisheries and Wildlife (DIFW), conduct triennial surveys of angler use and fishing success in the Rapid River and Mooselookmeguntic and Richardson Lakes following implementation of the flow and water level regimes that are required under the terms of the Agreement.
- B. The applicant shall, within 12 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit plans for conducting angler surveys as required by Part A of this condition. These plans shall be prepared in consultation with DIFW and shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

9. RECREATIONAL FACILITIES AND MANAGEMENT PLAN

- A. The applicant shall develop and implement a Recreational Facilities and Management Plan ("Recreation Plan"), in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Specifically, the Recreation Plan shall include provisions for the applicant to undertake the following measures to maintain and enhance recreational access and use:
 - Maintain existing public access to Mooselookmeguntic and Richardson Lakes and the Rapid River, to the extent that such access is controlled by the applicant;
 - Improve and maintain canoe portage trails at both Upper and Middle Dams;

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- Install and maintain all FERC required recreation signs at public access points, and install and maintain appropriate signs at canoe portage trails and key fishing access points along the Rapid River;
 - Continue to provide daily flow information through a toll free flow phone service and by posting the flows at Upper and Middle Dams;
 - Improve the existing Oxford County boat launch facility on the South Arm of Richardson Lake and the existing State-owned boat launch facility on Mooselookmeguntic Lake if needed to meet Americans with Disabilities Act (ADA) requirements for access;
 - Install and maintain pit privies at the Upper Dam road gate, at Middle Dam, and at the Lower Dam site (Pond-in-the-River);
 - Install and maintain two picnic tables on applicant-owned land near Upper Dam;
 - Assume responsibility for maintaining the Oxford County boat launch facility on the South Arm of Richardson Lake in a good and serviceable condition; and
 - Improve the Town of Rangeley's Haines Landing boat launch facility to provide for safe boat launching. Such improvements may include periodic dredging, as necessary, to provide for boat launching at a water level of elevation 1464 feet msl.
- B. The applicant shall, within 12 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit a Recreation Plan as required by Part A of this condition. This plan shall be prepared in consultation with the Department of Conservation, the Department of Inland Fisheries and Wildlife, and other parties as provided in the Settlement Agreement, and shall include a schedule for implementation. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

10. LOON MANAGEMENT PLAN

- A. The applicant shall develop, implement, and evaluate the effectiveness of loon management plan(s) for Mooselookmeguntic and Richardson Lakes. This plan may include, but is not limited to, the placement of loon nesting platforms.
- B. The applicant shall, within 12 months of issuance of a FERC license for the project or upon such other schedule as established by FERC, submit loon management plan(s) as required by Part A of this condition. This plan shall be prepared in consultation with the Department of Inland Fisheries and Wildlife, and other interested parties, and shall include a schedule for implementation. This plan shall be reviewed by and must receive the approval of the DEP Bureau of Land and Water Quality.

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- C. The effectiveness of the loon management plan(s) approved under Part B of this condition shall be reviewed every five years by the applicant, in consultation with the Department of Inland Fisheries and Wildlife, and other interested parties, and the plan(s) will be modified, if necessary, to improve the effectiveness. However, any modifications to improve the effectiveness of the loon management plan(s) will not include changing the flow and water level requirements contained in Conditions 1 through 4 of this approval.

11. PROTECTION, MITIGATION AND ENHANCEMENT FUND

- A. The applicant shall establish a \$1.5 million Protection, Mitigation and Enhancement Fund ("Fund"), in accordance with the provisions of the 1998 "Upper Androscoggin River Storage Projects Settlement Agreement." Under the terms of the Settlement Agreement and this certification, the Fund will be used for the following purposes and activities:
- \$600,000 for stewardship activities undertaken by the Rangeley Lakes Heritage Trust ("RLHT") or its successor for lands conserved in the Rangeley Lakes area;
 - \$750,000 for the acquisition of additional riparian lands or conservation easements with significant public value from willing sellers; and
 - \$150,000 for protection and enhancement measures for water quality, fish and wildlife habitat, and wetlands.

The Fund shall be administered by RLHT and a Fund Administration Committee in accordance with the provisions of the Settlement Agreement.

12. 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 proposals contained in said documents are subject to review and approval of the DEP prior to implementation.

13. 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 in accordance with the terms of this certification.

14. EFFECTIVE DATE

This water quality certification shall be effective concurrent with the effective date of the license issued for the project by the Federal Energy Regulatory Commission.

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DONE AND DATED AT AUGUSTA, MAINE, THIS 24 DAY OF July, 2001.
CORRECTING THE ORDER DATED JULY 11, 2001. The effective date and expiration date of the certification remain the same as in the original order.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: 
Martha Kirkpatrick, Commissioner

*PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES.

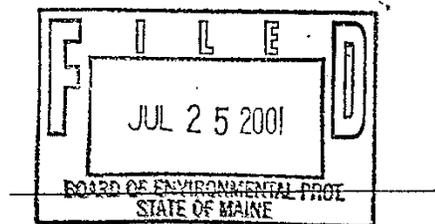
*Date of receipt of application: 12/18/2000

*Date application accepted for processing: 01/07/2001

*(Initial application received 12/22/1999 and subsequently withdrawn and refiled 12/18/2000)

Date application approved: 07/11/2001

Date filed with Board of Environmental Protection



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

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Figure A-1
Upper and Middle Dams Storage
Project Location

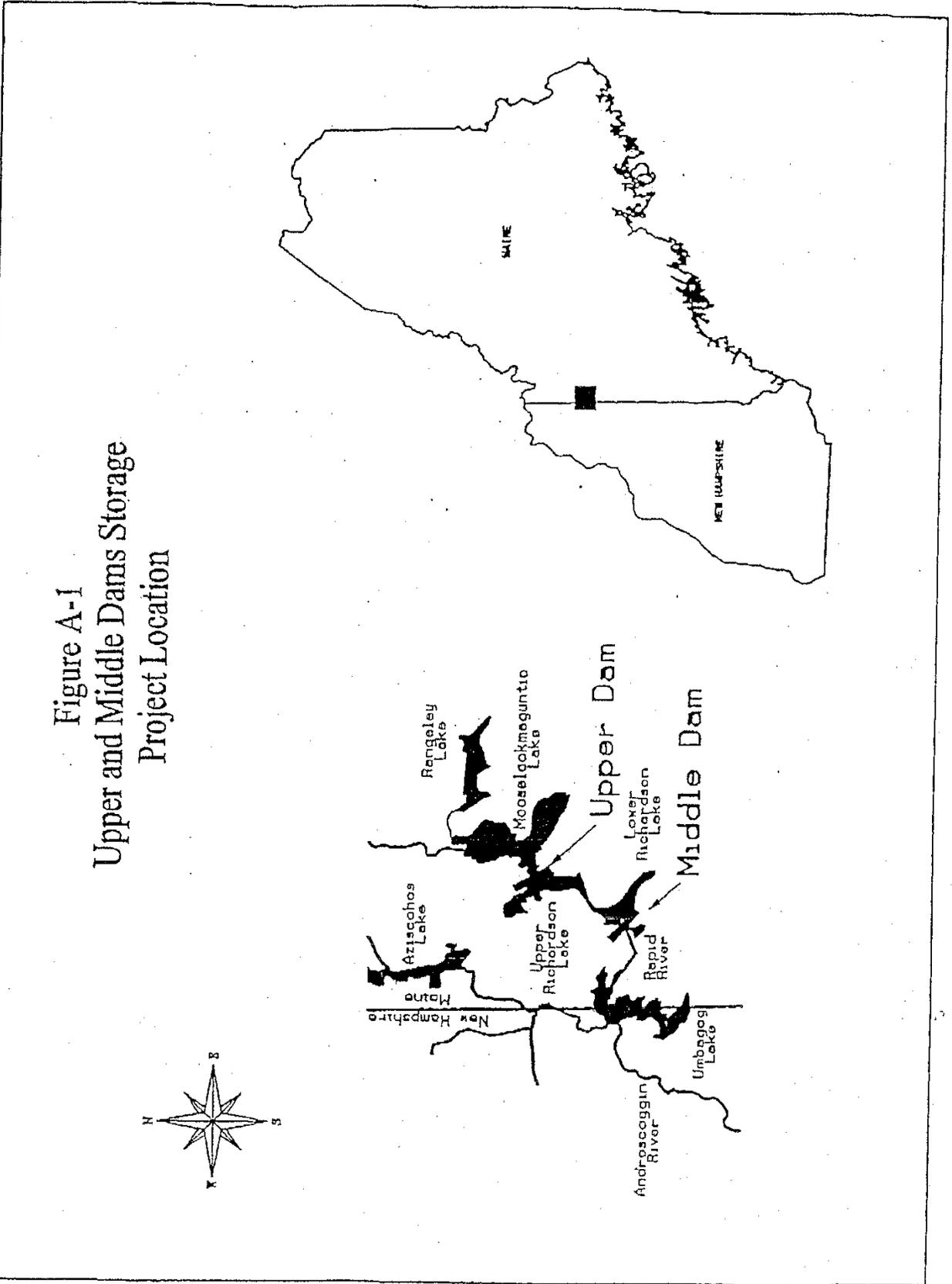


Exhibit 1

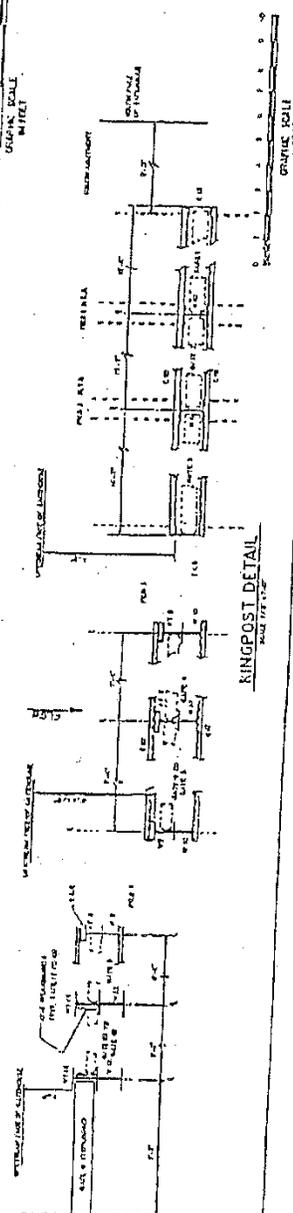
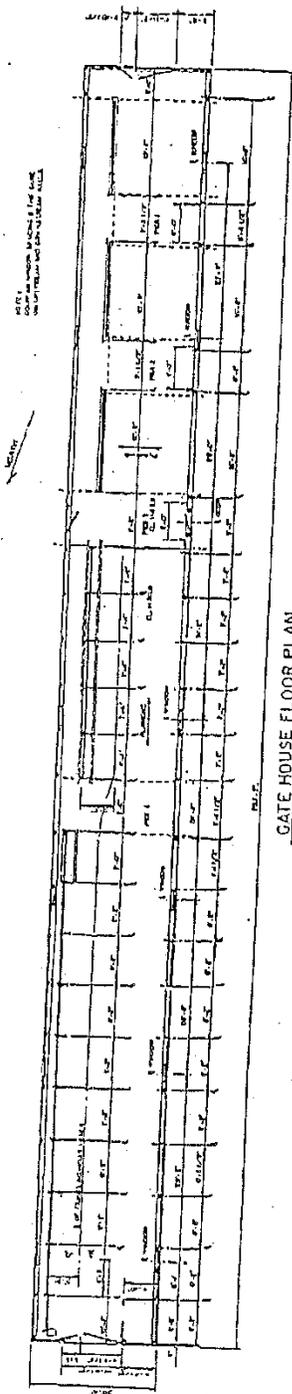
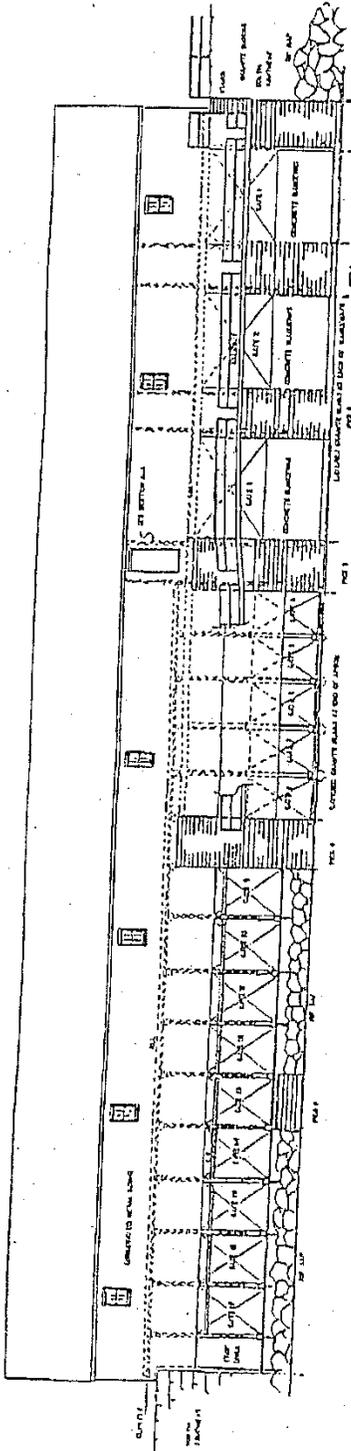


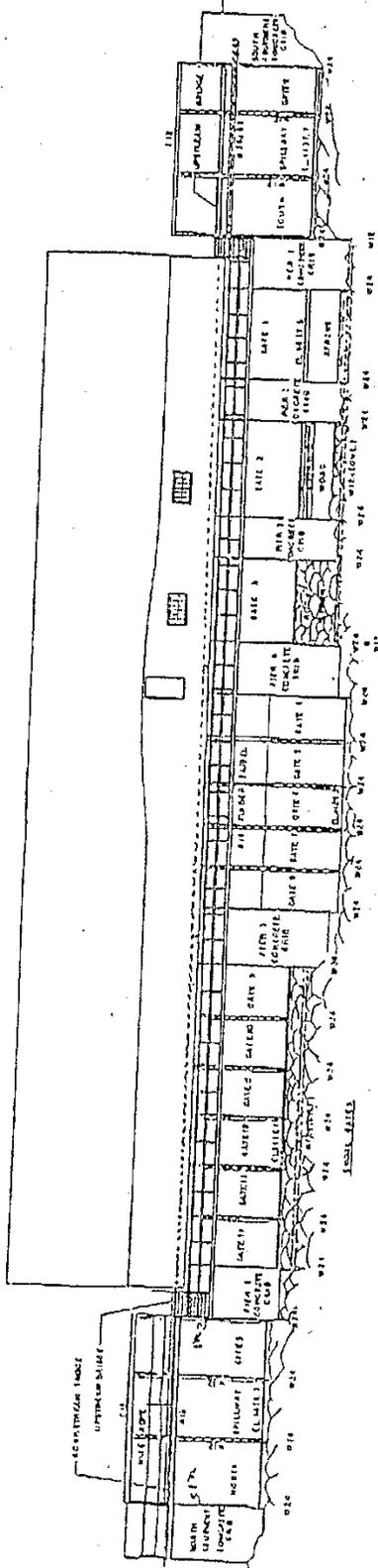
EXHIBIT F SHEET

ELEVATION, PLAN, AND DETAILS
UPPER DAM GATE HOUSE

UPPER DAM GATE HOUSE PROJECT
100% DESIGN

DATE: 06/15/01

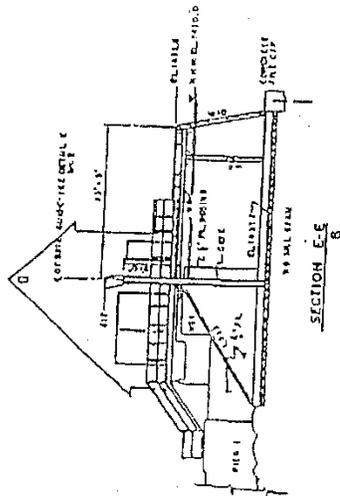
Exhibit 2



DOWNSTREAM ELEVATION

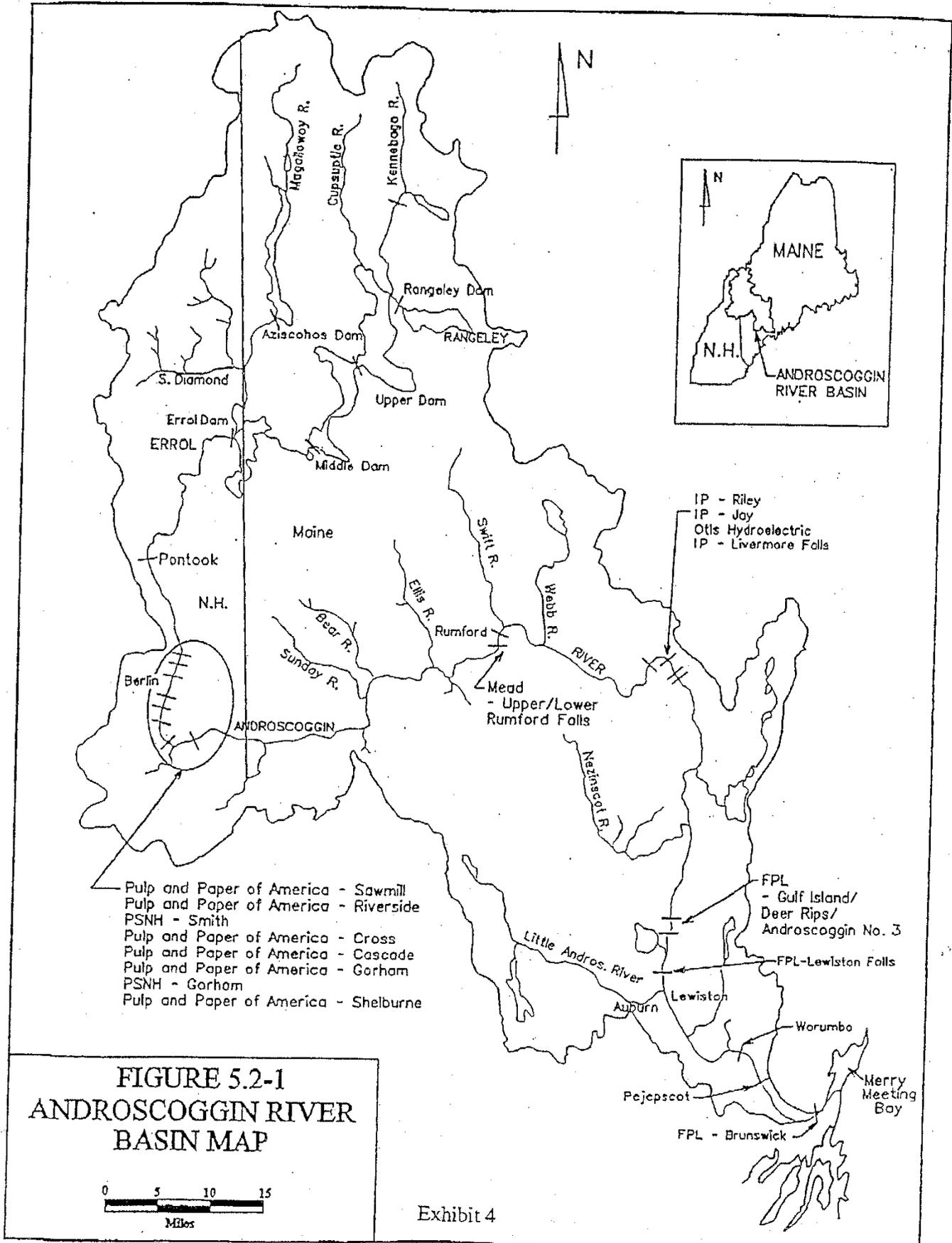


NOTE: DIMENSIONS ARE ON NATURAL GEOMETRIC VERTICAL (DOWNSTREAM)



SECTION E-E

EXHIBIT F	SHEET 9
DOWNSTREAM ELEVATION	
MIDDLE DAM	
UPPER DAM AND MIDDLE DAM STORAGE PROJECT FOR LINCOLN COUNTY, VERMONT	
DATE: 02-18-1993	SCALE: 1"=10'-0"



- Pulp and Paper of America - Sawmill
- Pulp and Paper of America - Riverside
- PSNH - Smith
- Pulp and Paper of America - Cross
- Pulp and Paper of America - Cascade
- Pulp and Paper of America - Gorham
- PSNH - Gorham
- Pulp and Paper of America - Shelburne

- IP - Riley
- IP - Jay
- Otis Hydroelectric
- IP - Livermore Falls

- FPL - Gulf Island/ Deer Rips/ Androscoggin No. 3
- FPL-Lewiston Falls

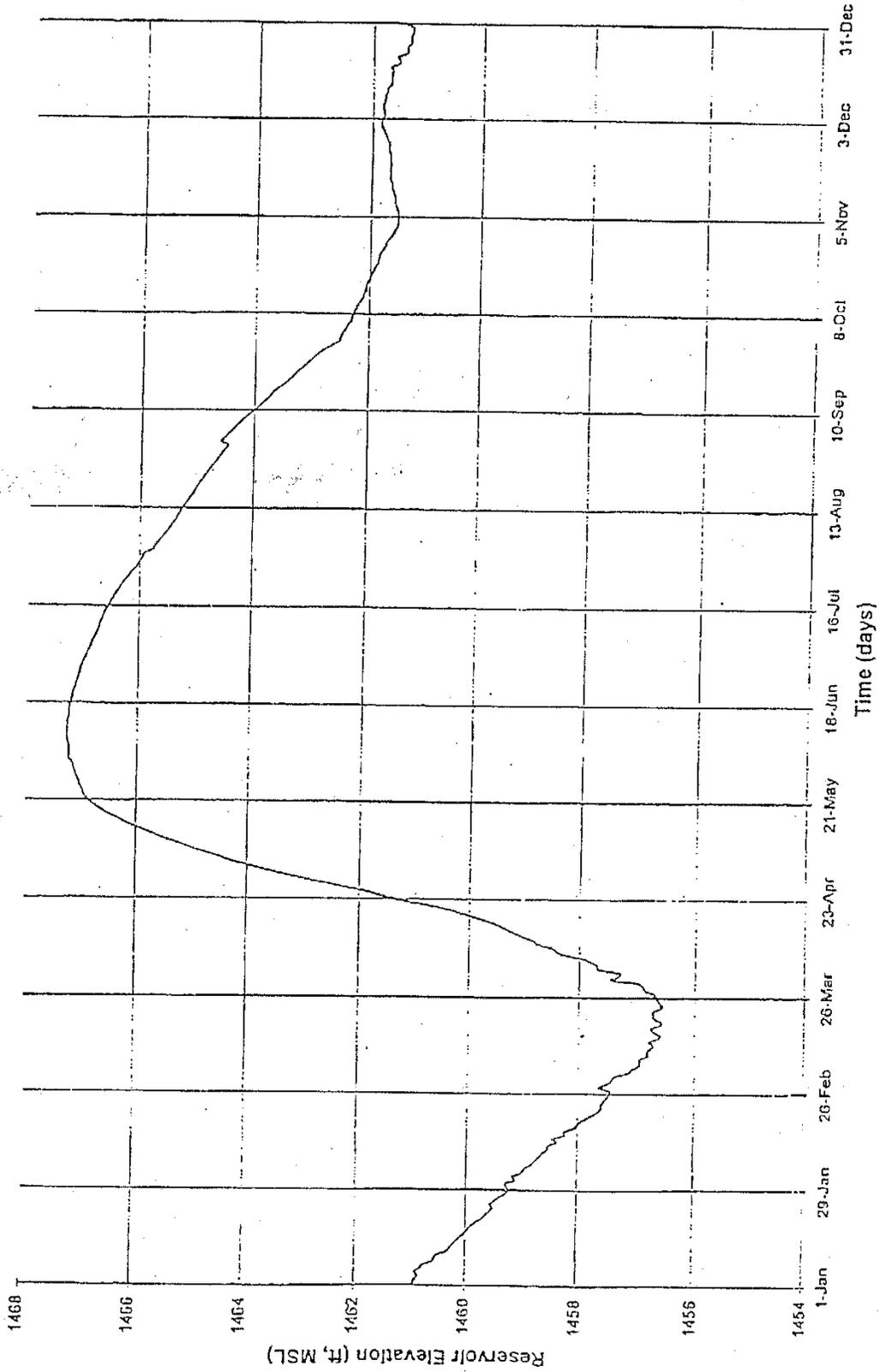
FPL - Brunswick

**FIGURE 5.2-1
ANDROSCOGGIN RIVER
BASIN MAP**



Exhibit 4

Average Daily Lake Level Curve for Mooselookmeguntic Lake
Period of Record: 1950-94



Average Daily Lake Level Curve for Richardson Lake
Period of Record: 1950-94

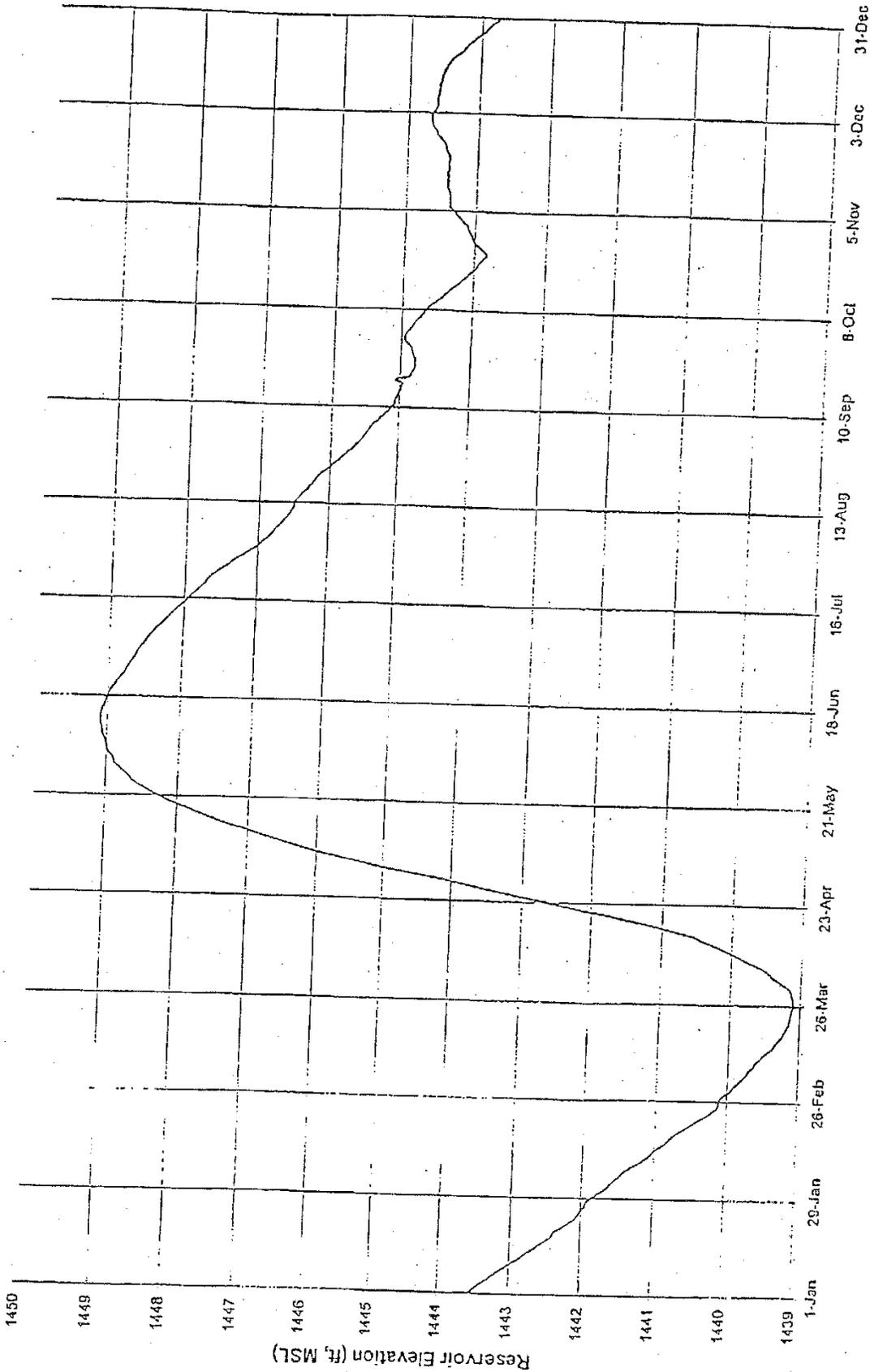


Exhibit 6