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April 10, 2007

Ernest W. Hilton, Presiding Officer
c/o Terry Hanson
Board of Environmental Protection
17 State House Station
Augusta, ME 04333

RE: Petitions to Modify, Hydro-Kennebec Project, #L-11244-35-A-N

Dear Mr. Hilton:

I enclose the brief of Hydro Kennebec Limited Partnership in the above-captioned matter.

We are providing paper copies to each party on the service list. In addition, as agreed to at the second prehearing conference, we will email an electronic copy to the service list.

Please let me know if you have any questions.

Sincerely,

Sarah A. Verville

Sarah A. Verville

Enclosure
cc: 12-15-06 Service List

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE PETITIONS FOR REVOCATION, MODIFICATION, OR SUSPENSION OF PERMITS AND WATER QUALITY CERTIFICATIONS FOR THE LOCKWOOD, HYDRO-KENNEBEC, SHAWMUT, AND WESTON HYDRO PROJECTS

Merimil Limited Partnership Lockwood Hydro Project #L-20218-33-C-N	)	
Hydro Kennebec Limited Partnership Hydro-Kennebec Project #L-11244-35-A-N	)	BRIEF OF HYDRO KENNEBEC LIMITED PARTNERSHIP (HYDRO KENNEBEC PROJECT)
FPL Energy Maine Hydro, LLC Shawmut Hydro Project #L-19751-33-A-M	)	
FPL Energy Maine Hydro, LLC Weston Hydro Project #L-17472-33-C-M	)	

BRIEF OF HYDRO KENNEBEC LIMITED PARTNERSHIP

In the two years since it acquired its interest in and began operating the Hydro Kennebec Project, Brookfield Power has designed, secured necessary approvals, constructed, begun studying the effectiveness of, and committed to making any necessary refinements to an interim downstream fish passage facility designed to pass out-migrating anadromous and catadromous species. It has done this despite having a (mistaken) understanding when it purchased the project that an informal agreement had been reached with USFWS for interim downstream passage, and despite the lack of any evidence of significant mortality of either anadromous or catadromous species at the Project. The timeline associated with Brookfield's ownership of Hydro Kennebec and downstream fish passage installation is as follows:

- January 2005 - Brookfield purchases Hydro Kennebec.
- April-July 2005 - Brookfield consults with state and federal agencies concerning installation of downstream passage.
- August 2005 - Brookfield makes the decision to build downstream passage.
- October 2005 - Brookfield hires fish passage consultant, Lakeside Engineering, to work with agencies on design of downstream passage.
- February 2006 - Brookfield submits downstream passage conceptual plans to FERC for approval.
- March-April 2006 - Brookfield develops detailed plans and specifications for the downstream passage, in consultation with the agencies.
- April 2006 - FERC approves downstream passage conceptual plans.
- May 2006 - Brookfield submits detailed plans and specification for downstream passage to FERC. Brookfield begins consultation with the agencies on the downstream passage study plan.
- June 2006 - FERC authorizes construction. Brookfield begins construction on downstream passage. Brookfield submits design, operational, and 2006 study plans for downstream passage facility to DEP.
- July 2006 - Brookfield submits 2006 downstream passage study plan to FERC.
- August 3, 2006 - Brookfield completes construction. Downstream fish passage facility becomes operational.
- September-December 2006 - FERC approves 2006 downstream passage study plan. DEP approves Brookfield's design, operational, and 2006 study plans. Brookfield conducts 2006

downstream passage study plan evaluating technologies for the 2007 study, in consultation with the agencies.

- December 2006 - Downstream passage closed for the season.
- January 2007 - Brookfield submits downstream passage report and 2007 downstream passage effectiveness study plan to fisheries agencies, DEP, and FERC.
- March 2007 - Brookfield modifies downstream passage facility as requested by the agencies. To deepen plunge pool, Brookfield adds weir at the outlet. Equipment is ordered for 2007 study.
- April 2007 - Downstream passage is opened for the 2007 season.

Brookfield believes it has made significant efforts in a very short period of time to assess the need, design, and install the downstream passage at Hydro Kennebec, just 19 months after assuming ownership. Through these efforts, Brookfield has provided all reasonable protection for all species of fish, including eels, passing the project, and Brookfield asks the Board to recognize those efforts.

I. Background

In 1998, DEP modified the certification for the Hydro Kennebec Project to incorporate the provisions of the 1998 KHDG Agreement. Special Condition 4(B) of the 1998 certification for the Hydro Kennebec Project requires the following with respect to eel passage:

> (1) Study. The applicant shall, in consultation with [NMFS] and [USFWS], join other KHDG members and [DMR] in undertaking a three-year research project to determine (a) the appropriate placement of upstream fish passage for American eel at each of the seven KHDG-member owned dams, and (b) appropriate downstream measures for American eel at each KHDG member-owned project.
>
> (2) Consultation. Based on the results of the eel passage study and beginning no later than January 1, 2002 and ending no later than June 30, 2002, the applicant shall join other KHDG members in consulting with NMFS, USFWS, and DMR to attempt to reach agreement on the appropriate location of upstream eel passage at

each KHDG member-owned dam, and the appropriate downstream eel passage measures to apply to each KHDG-member owned project.

(3) Upstream Passage. [Omitted].

(4) Downstream Passage. If agreement is reached by all consulting parties on appropriate downstream eel passage measures, the applicant shall join the other parties in requesting that FERC approve the agreed-to-passage measures.

(5) Lack of Consensus. If no consensus is reached on eel passage issues by June 30, 2002, the applicant or any of the consulting parties shall be free to petition DEP or FERC to approve appropriate conditions relating to eel passage at the project.

(6) Funding. [Omitted].

The certification requires HKLP to join DMR in undertaking a three-year research project. Notably, it does not require HKLP, on its own, to conduct a three-year research project. As DMR Commissioner Lapointe testified at the hearing, and as evidenced by the fact that HKLP installed an upstream eel passage facility at the project in 2002, HKLP joined DMR in undertaking the required three-year research project. While there appears to be debate as to whether DMR completed the three-year research project with respect to downstream eel passage, failure to complete the study does not mean that it was not "undertaken," as required by the certification.

The certification also requires HKLP to join with other KHDG members in consulting with the agencies to attempt to reach agreement on upstream and downstream eel passage. Required consultation among HKLP, NMFS, USFWS, and DMR occurred in 2002 and an agreement was reached on upstream eel passage.

The certification states that if agreement is reached by all consulting parties, the applicant must join the other parties in requesting that FERC approve the measures. On the other hand, according to the certification, if consensus is not reached by June 30, 2002, DMR, NMFS, or

USFWS "shall be free to" petition DEP or FERC to approve appropriate conditions relating to eel passage at the project. The certification, however, does not require the implementation of downstream eel passage by June 30, 2002. Because the three-year research project did not yield sufficient information with respect to the Hydro Kennebec Project it was premature to reach consensus on appropriate downstream eel passage measures.

In September 2006, DEP issued a Condition Compliance Order addressing downstream fish passage at the project. DEP's order concluded that HKLP has complied with Special Condition 4(B) of the 1998 certification with respect to providing downstream passage for eels, subject to two conditions:

> (1) HKLP must develop an effectiveness study plan and conduct an effectiveness study in 2007. The study plan must include a schedule for filing a report of the effectiveness study. The report must contain proposals for changes in the design or operation of the facility, or additional studies, as appropriate.
>
> (2) Effective with the 2006 downstream eel migration season, in the event evidence reveals that certain interim downstream measures are needed to avoid significant downstream injury or mortality at the project, HKLP must consult with DMR, NMFS, and USFWS and must agree to undertake cost-effective measures designed to minimize mortality at the site.[1]

In sum, the certification does not require HKLP, on its own, to complete a three-year research project by June 30, 2002 with respect to upstream and downstream eel passage and does

[1] The Condition Compliance Order also found that HKLP has complied with Special Conditions 4(C) and 4(F) of the certification. Special Condition 4(C) relates to interim downstream fish passage for anadromous species, which is not before the Board in this proceeding. Special Condition 4(F) requires HKLP to file final design and operational plans for all interim and permanent upstream and downstream fish passage facilities and/or operational measures, after consultation with state and federal fisheries agencies, for DEP approval.

not require HKLP to install downstream eel passage by June 30, 2002. The Condition Compliance Order addresses the very same issues with respect to downstream eel passage that are being considered in this proceeding.

II. Summary of Argument

The Petitioners have requested that the Board modify the certification to require immediate, "safe," and "effective" upstream and downstream passage for all indigenous migratory species. The Petitioners have invoked four criteria from 38 M.R.S.A. § 341-D(3) in support of their petitions: (1) the certification does not include any standard or limitation legally required on the date it was issued,[2] (2) the licensee is in violation of Maine's water quality standards, (3) the project poses a threat to human health or the environment, and (4) circumstances have changed since the issuance of the certification.

The Board should dismiss the petitions because the petitioners presented no evidence to support their claims that the certification does not contain standards or limitations legally required on the date of its issuance, that Hydro Kennebec is in violation of Maine's water quality standards, that the project poses a threat to human health and the environment, or that there has been a change in circumstances that would require modification.

The evidence in the record proves the following key points:

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[2] Petitioner Watts also argues that the killing of American eels at dams is a Class E crime. He bases his argument on provisions in Title 12 that prohibit "angling" or "fishing" other than "by the use of the single baited hook and line, artificial flies, artificial lures and spinners." 12 M.R.S.A. § 12654(1). Mr. Watts points out that, in general, "to fish" is broadly defined to mean "to take, catch, kill, molest or destroy fish or to attempt to take, catch, kill, molest or destroy fish." 12 M.R.S.A.§ 10001(23). Thus, he argues, if even one fish dies at a dam, a crime has been committed. Mr. Watts, however, ignores the very important qualifier to the definition of "to fish": "unless the context otherwise indicates." 12 M.R.S.A.§ 10001, first paragraph. The context of Section 12654 clearly indicates otherwise, because it contemplates fishing with the goal of *possessing* the fish, not other actions that may result in fish mortality. *See* 12 M.R.S.A. §§ 12653 ("A person may not use dynamite or any other explosive, poisonous or stupefying substance at any time for the purpose of taking or destroying any kind of fish"; this section would not be necessary if Section 12654(1) prohibits all killing of fish in ways not listed), 12654(2) (penalty based on possessing fish), 12762 ("A person may not improperly operate a fishway required under this subchapter in a manner that results in a fish kill," and DIFW and DMR must make rules defining "fish kill"; this section would not be necessary if Section 12654(1) prohibits all killing of fish in ways not listed).

- Modification of the Hydro Kennebec Project's water quality certification to require immediate installation of permanent upstream passage will not achieve anadromous fishery restoration in the vicinity of the Hydro Kennebec Project any more successfully, or faster, than is being achieved under the current certification.
- The only way to achieve zero fish passage mortality or injury is through a "no hydropower" condition, which would violate Maine's water quality standards that include hydroelectric power generation as a designated use. Because the standard does not require zero mortality or injury, and because the evidence shows that numerous fish are present in the waters above and below the Hydro Kennebec Project, the level of mortality or injury is not a water quality issue, but a fisheries management issue that must be left to the appropriate fisheries management agencies.
- Studies conducted at the Hydro Kennebec Project from 2001 to 2003 showed no evidence of any anadromous or catadromous fish mortality. There is no site-specific evidence in the record that indicates that there has been significant fish mortality or injury at the Hydro Kennebec Project.
- Modification of the certification on the basis of an assumption of mortality would mean that all hydropower projects pose a threat to human health or the environment and would establish an artificially low threshold for modification of DEP licenses.
- USFWS has determined that the American eel is <u>not</u> an endangered or threatened species. Heightened awareness of an issue is not in and of itself a basis for modification of the certification.
- Modifying the certification would threaten viability of the 1998 KHDG Agreement, a landmark multiparty settlement agreement that is not yet even a decade old.

- The state agencies responsible for fisheries management on the Kennebec River do not support modifying the certifications. The following entities, in fact, have expressed strong opposition to modifying the certifications at issue: (1) the Maine Department of Marine Resources, (2) the Maine Department of Inland Fisheries and Wildlife, (3) the Maine Atlantic Salmon Commission ("MASC"), (4) the Maine State Planning Office, (5) American Rivers, (6) the Natural Resources Council of Maine ("NRCM"), (7) the Atlantic Salmon Federation, (8) Trout Unlimited, and (9) the Kennebec Valley Chapter of Trout Unlimited. Are they all wrong?

III. The certification includes all legally required standards on the date of its issuance and HKLP has not violated any law administered by the Department.

A. Maine's Water Quality Laws

Title 38 M.R.S.A. § 465 identifies four classes of waters – AA, A, B, and C – and for each class provides "a list of designated uses, a set of numerical criteria for water chemistry (dissolved oxygen and bacteria counts), and a set of narrative criteria on the permissible level of pollutant discharges." *Bangor Hydro-Electric Co. v. BEP*, 595 A.2d 438, 442 (Me. 1991).[3] The Kennebec River in the vicinity of the Hydro-Kennebec facility is classified as Class C. 38 M.R.S.A. §§ 467(4)(A)(10). Section 465 provides that Class C waters "shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as a habitat for fish and other aquatic life." 38 M.R.S.A. § 465(4)(A). Section 465 also provides that "discharges to Class C waters may cause some changes to aquatic life, except that the receiving

[3] Exhibit GLH-20.

waters must be of sufficient quality to support all species of fish indigenous to the receiving waters . . . ."

The most recent decision interpreting Maine's water quality standards with respect to issuing water quality certifications for hydropower projects is the Maine Supreme Judicial Court's (the "SJC's") decision in *S.D. Warren Co. v. Board of Environmental Protection*, 2005 ME 27 (February 15, 2005).[4] In *Warren* the SJC discussed the designated use prong of the standard for each class of waters and repeated its earlier statement, in its 1991 *Bangor Hydro* decision, that the "Legislature's purpose for the language 'suitable for the designated uses' was 'that the designated uses actually be present.'"[5] The SJC further repeated that "when those uses are not presently being achieved, the Legislature intended that the quality of the water be enhanced so that the uses are achieved."[6]

The SJC in *Warren* stated that "[w]hether compliance has been achieved and whether the conditions imposed are necessary to ensure future compliance are factual determinations to be made by the BEP." With respect to S.D. Warren's hydropower facilities on the Presumpscot River, the SJC then relied on the BEP's factual determination that compliance had not been achieved in that case and that the conditions imposed were necessary to ensure future compliance. The SJC found that S.D. Warren had not sufficiently challenged those factual determinations.[7]

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[4] Exhibit GLH-21.

[5] *Warren*, 2005 ME 27, ¶ 21. It is unlikely that the SJC meant that every designated use must always be present. Section 465(4)(A) identifies a host of designated uses for Class C waters, including uses for drinking water supply after treatment, fishing, recreation, industrial cooling water, and hydroelectric power generation. It is doubtful that the Legislature intended that each of those designated uses – such as industrial cooling water – must be present in order for the water to meet the applicable water quality standard. Thus, most likely the SJC meant that the DEP could require that the designated use must be present in order to provide the factual evidence needed to demonstrate that the water is of such quality that it is suitable for the designated use. *See Warren*, 2005 ME 27, ¶ 22.

[6] *Id.*

[7] The SJC in *Warren* confirmed that the BEP's findings must be based on substantial record evidence, and the Court will overturn them only if the appellant can show that they are clearly erroneous. *Warren*, 2005 ME 27, ¶ 22, n.10.

The *Warren* decision did not hold that immediate installation of fish passage facilities was required to achieve compliance with Maine's water quality standards.[8] The *Warren* decision also did not hold that fish passage at hydropower projects must result in zero fish mortality or injury in order for a hydropower project to be in compliance with water quality standards. Finally, by stating that whether compliance with water quality standards has been achieved is a factual determination to be made by the BEP, the *Warren* decision rejected the notion that what is required for fish passage at one hydropower project is required at all hydropower projects. Under *Warren*, if the facts show that a certain type of fish passage is needed to ensure that the designated use of fish habitat is present in the water, then the DEP may require that type of fish passage. On the other hand, if the facts show that the designated use of fish habitat is already present in the water, then fish passage is not needed to meet the water quality standard.

B. Maine's water quality standards do not require installation at the Hydro Kennebec Project of an upstream fish passage facility for anadromous fish species.

The project's certification requires that permanent upstream passage for anadromous species must be operational within two years following the earlier to occur of two biological triggers – 8,000 American shad in any single season captured at the interim fish lift at the downstream Lockwood project, or a biological assessment trigger initiated for Atlantic salmon, alewife, or blueback herring. Permanent upstream passage may not be required before 2010.

As set forth in the pre-filed rebuttal testimony of Lewis Flagg, the Acting Commissioner of DMR at the time the 1998 Agreement was signed, when DMR negotiated the 1998 KHDG Agreement, DMR agreed to phased construction of fish passage on the Kennebec River because

[8] The water quality certification for the S.D. Warren projects, which both this Board and the SJC upheld, does not require immediate installation of fish passage facilities for anadromous species at S.D. Warren's dams.

it recognized that it takes time for anadromous species to repopulate historic habitat.[9] The majority of alewives typically return from sea after four to five years, and American shad after five to six years, and these species could require two to three or more generations, depending on the size of the remnant stocks, to bring about significant returns to the area.

Mr. Flagg further testified that the removal of Edwards Dam opened up a very large amount of shad spawning/nursery habitat below Waterville-Winslow, which will take some years to fully utilize. Of the total shad habitat above Augusta, 24% occurs between Augusta and Waterville.[10] Phased construction of fishways allows for passage to be constructed when needed to accommodate expanding fish populations. As long as fish are collected and moved above the project, immediate installation of permanent upstream fishways is not needed or required for Atlantic salmon, alewife, blueback herring, or shad to reach their spawning habitat or for their successful restoration.[11] Patrick Keliher, MASC Executive Director, similarly testified that it is biologically appropriate to place adult salmon in habitat upstream of the projects to increase the likelihood of a successful restoration program. He stated that "the reason we are targeting the Sandy River [upstream of the Weston Project] is because of the high value habitat which gives us the most likelihood of a successful restoration project."[12]

Petitioner Watts has argued that immediate permanent upstream passage is required because the interim lift facility at Lockwood failed to capture any American shad below the dam, even though numerous American shad were present in the vicinity of the dam.[13] Mr. Watts,

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[9] *Pre-filed Rebuttal Testimony of Lewis Flagg*, GLH-17, at p. 4.
[10] *Id.*
[11] *Id.*
[12] *Transcript of Public Hearing on Kennebec River Hydropower Projects Lockwood, Hydro-Kennebec, Shawmut and Weston* (hereinafter "TR"), p. 65:22-25 (March 16, 2007). Mr. Keliher also stated that "[s]almon restoration is heavily dependent upon quality of habitat. The quality of habitat within the Sandy River is probably some of the very best for Atlantic salmon we have in the State of Maine for a number of factors that deal with the overall threats to the species." *Id.*, pp. 54:25-55:1-6
[13] *Pre-filed Rebuttal Testimony of Douglas H. Watts,* at p. 10.

however, fails to provide any support for the assertion that "numerous American shad were present in the vicinity of" Lockwood Dam. In fact, the evidence is that record high flows during the 2006 shad migration season may have curtailed shad use of the Lockwood lift facility, as was the case on other rivers throughout the region.[14] Further, American shad have successfully used fish lifts at many locations in the northeast, including the Cataract and Skelton projects on the Saco River.[15] Finally, the trap and truck program on the Kennebec, which has been underway since the 1987 KHDG Agreement, has been carried out with minimal mortalities to trucked fish.[16]

Both Petitioners also argue that trapping anadromous species at the Lockwood Dam and trucking them to above the Weston Dam violates water quality standards because it deprives the Kennebec River between Lockwood and Weston of upstream migrating anadromous fish populations.[17] But just as Maine's water quality standards do not require immediate installation of fish passage, they also do not require the immediate installation of permanent fish passage facilities that allow fish to pass freely over the dam. Immediate installation of permanent fish passage facilities that allow fish to pass freely over a dam may not automatically result in fish passing the dam and populating the next upstream reach if the spawning/nursery habitat below

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[14] *Pre-filed Rebuttal Testimony of Brandon Kulik,* at p. 2. Petitioner FOMB acknowledged that with regard to shad "[w]e did have an odd year last year with high flows." *Testimony of Edward Friedman,* TR, p. 123:23-24 (March 15, 2007).

[15] *Pre-filed Rebuttal Testimony of Brandon Kulik,* at p. 3.

[16] *Pre-filed Rebuttal Testimony of Lewis Flagg,* GLH-17, at p. 4; MASC states that each year it traps adult salmon at the Veazie Dam on the Penobscot River and transports up to 600 of the captured salmon. February 7, 2007 letter from DMR, MASC, and DIFW to the BEP. Dr. Gail Wippelhauser of DMR testified that "it looks like populations of American shad are increasing on the river." TR, p. 52:5-6 (March 16, 2007).

[17] *Pre-filed Rebuttal Testimony of Friends of Merrymeeting Bay,* at p. 3; *Pre-filed Rebuttal Testimony of Douglas H. Watts,* at pp. 9-10.

the dam has not been substantially utilized.[18] Further, as noted above, under *Warren*, if the facts show that the designated use of fish habitat is already present in the water, then fish passage is not needed to meet the water quality standard. The record shows that fish habitat is present.[19]

When the DEP issued the certification for the Hydro Kennebec Project in 1998, it found that compliance with water quality standards would be achieved through the imposition of the conditions contained in the KHDG Agreement, because they included reasonable timelines for the construction of fish passage facilities, based on reasonable fish management goals set by the fisheries management agencies. Thus, the certification contains conditions to ensure compliance, as permitted and contemplated by *Warren*. There is no evidence in the record that suggests that modification of the certification to require immediate installation of permanent upstream passage will achieve anadromous fishery restoration in the vicinity of the Hydro Kennebec project any more successfully or faster than is being achieved under the current certification. In fact, immediate installation of permanent upstream passage for anadromous species may slow down anadromous fishery restoration because trap and truck allows species to be moved directly into the higher quality spawning and nursery habitat above the Shawmut and Weston dams.[20]

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[18] *Pre-filed Rebuttal Testimony of Lewis Flagg*, GLH-17, at p. 4; *Pre-filed Rebuttal Testimony of Brandon Kulik,* at p. 3. With respect to utilization of habitat, Mr. Flagg testified that "[o]bviously there will be a certain component of the run that's going to stay below the dam because that's where they were produced and they just don't want to move up, but once the population reaches a certain level, there's going to be a natural expansion of those fish into the up river water." TR, p. 258:14-20 (March 15, 2007). As noted by a federal appellate court in *Bangor Hydro-Electric Co. v. FERC,* "[i]t will not do to present only a 'Field of Dreams' justification ('If you build it they will come')." 78 F.2d 659, 664 (D.C. Cir. 1996).

[19] Tens of thousands of adult shad, shad fry, and shad fingerlings and hundreds of thousands of alewives have been stocked in the waters of the Kennebec drainage above Augusta between 1987 and the present. *Pre-filed Rebuttal Testimony of Lewis Flagg*, GLH-17, at p. 3. Atlantic salmon, alewives, American shad stocked above the project must pass through these waters during their migration back to the sea to complete their life cycles. *Testimony of Lewis Flagg,* TR, p. 261:1-7 (March 16, 2007). The report of the 2001–2003 study states that Brookfield's predecessor saw "thousands, maybe millions of fish" at the project. *Testimony of Kevin Bernier,* TR, p. 332:18 (March 15, 2007).

[20] With respect to Atlantic salmon, Mr. Flagg testified that "[t]he mainstem river between Waterville and the Sandy River is not good – particularly good salmon habitat, and right now we're at the point where we have a very small resource coming back, and if I were still in fishery management, I would certainly be advocating that those fish be put in the area where we can maximize production of juveniles . . . ." TR, p. 310:1-25 (March 15, 2007).

C. Maine's water quality standards do not require that hydropower projects must pass all native migratory species with no mortality or injury.

1. *A "no mortality" standard is unachievable.*

Although there is no site-specific evidence that the turbines of the Hydro Kennebec Project result in significant eel (or any other fish) mortality or injury, even if there were such mortality or injury it would not mean that the Project causes the Kennebec River to fail to meet the Class C fish habitat standard.[21] If fish mortality or injury means that the waters are not suitable for fish habitat, and if by blocking fish from migrating upstream, dams cause a violation of water quality standards, then every hydroelectric facility in Maine, even those that have permanent upstream and downstream fish passage facilities fully approved by fishery agencies and DEP, would cause the water to fail to meet aquatic habitat standards. At the public hearing, Petitioner FOMB acknowledged that that "it is an unlikely standard to be able to meet."[22] Nonetheless, Petitioners argued that a zero mortality or 100 percent efficiency standard should be required as a condition in the certification because it is a "goal" to strive for.[23]

Maine's water quality laws for Class A, B, and C waters, however, provide that the waters must be suitable for the designated use of hydroelectric power generation.[24] In addition, the Legislature, when it enacted the Maine Waterway Development and Conservation Act to allow for the construction of new and modified hydropower projects, found that hydropower projects can augment downstream flow to improve fish and wildlife habitats, water quality, and

[21] Petitioner FOMB acknowledged that there is no specific evidence in the record of eel mortality at the project. TR, p.36:2-9 (March 15, 2007).
[22] TR, pp. 128:25 - 129:1-2 (March 15, 2007). DMR Commissioner George Lapointe agreed that "[t]he only way you can achieve a hundred percent efficiency is, from my understanding, not to have the facility there." TR, p. 108:5-8 (March 16, 2007).
[23] *Testimony of Edward Friedman*, TR, p. 42:2-13; 127:7-9 (March 15, 2007); *Testimony of Douglas H. Watts,* TR, p. 47:9-13 (March 15, 2007).
[24] 38 M.R.S.A. § 465(2)-(4).

recreational opportunities."[25] A zero mortality standard would make the designated use of hydroelectric power generation on Class A, B, and C waters impossible to achieve.[26]

2. *An assumption of cumulative mortality at hydroelectric projects does not constitute substantial evidence that a violation of Maine's water quality laws has occurred.*

The *Warren* decision did not address whether or at what point mortality or injury to fish at a hydroelectric project may be a violation of water quality standards.[27] DEP, however, has interpreted the aquatic habitat "suitability" standard to limit such mortality or injury to a reasonable amount, based on input from state and federal fisheries management agencies.[28]

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[25] 38 M.R.S.A. § 631(1)(B).

[26] On the other hand, the Legislature did not include hydroelectric generation as a designated use on Class AA waters and outstanding rivers and river segments as specified in 12 M.R.S.A. § 403.

[27] Because the evidence in this proceeding does not demonstrate that the Project has caused significant fish mortality or injury, and because the DEP reasonably relied on the fisheries management agencies to conclude to the contrary, the Board does not need to reach the issue of whether the water quality standard prohibits activities that result in significant fish mortality or injury. Brookfield preserves the argument, however, that the water quality standards do not contain such a prohibition.

[28] For instance, with respect to the American Tissue project on Cobboseecontee Stream, DEP stated its position that the dam owner "is in violation of 38 M.R.S.A. § 464 for rendering the receiving waters 'unsuitable as habitat for fish and other aquatic life.' *Our position is supported by the ongoing fish kill and evidence of other significant fish kills that occurred at the facility* over the past several years" (emphasis added). With respect to the Benton Falls project on the Sebasticook River, the DEP found that the dam owner had violated the MWDCA permit and water quality certification for the project because it had failed to adhere to the requirements of the DEP-approved downstream fish operating plan for the project. "As a result, *a significant number of juvenile alewives were killed or injured in attempting to migrate downstream*" (emphasis added). DEP's findings with respect to the fish kills at these projects are discussed in the *Pre-filed Rebuttal Testimony of Matthew D. Manahan,* GLH-19, at pp. 6-8. See GLH-22 for a copy of the DEP letters to the owner of the American Tissue project and FOMB-2 for the Administrative Consent Agreement and Enforcement Order for the Benton Falls Project.

Maine's antidegradation policy states that, with respect to existing uses of a water body such as aquatic life, "significant impact" means impairing the viability of the existing population, including significant impairment to growth and reproduction or an alteration of the habitat, which impairs the viability of the existing population. 38 M.R.S.A. § 464(4)(F)(1-A). Significant mortality does not mean, however, that there is impairment to the viability of the existing population or significant impairment to growth and reproduction or an alteration of the habitat, which impairs the viability of the population. In any event, there is no evidence in the record that the project has caused significant fish mortality or injury.

The antidegradation policy further states that DEP must determine what constitutes a population of a particular species based upon the degree of geographic and reproductive isolation from other individuals of the same species. *Id.* DOI found that the American eel population is not impaired. It determined that "American eels are one, well-mixed, single breeding population termed panmixia or panmictic . . . in contrast to many anadromous species . . . where mating is within separate populations that are geographically or temporally isolated." See DOI, *Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the American Eel as Threatened or Endangered,* 72 Fed. Reg. 4967, 4969, and 4997 (February 2, 2007) (Exhibit GLH-13).

Petitioner Watts contends that the Hydro Kennebec Project, in combination with the Lockwood, Shawmut, and Weston projects, results in significant mortality. In particular, there was discussion at the hearing regarding the statement in the DOI 12-Month Finding that "the cumulative impact of multiple hydroelectric projects within a watershed, as simulated by McCleave (2001b, p. 602), indicates substantial decrease in overall eel reproductive contribution from a watershed, even when survival rates of eel passage were high through each successive turbine or dam project."[29]

As noted by USFWS, however, the simulation by McCleave is a tool to compare results based on different inputs, and it is not a definitive statement about cumulative mortality in a watershed.[30] McCleave himself stated:

> "There is one key implication from the application of the model as a learning tool to the Kennebec River basin. Improved knowledge of the biology of the American eel (population density, sex ratio and female size by habitat) is probably more important than improved knowledge of turbine mortality for implementing management practices to increase the reproductive potential of eels within a drainage. The actual magnitudes of the impacts of hydroelectric dams and commercial weirs calculated by the model are secondary at this time. However, improved biological knowledge should lead to improved quantitative estimates of impacts."[31]

As noted above, Brookfield will be conducting effectiveness studies of its downstream passage facility in 2007 and has committed to making refinements to the facility for the downstream passage of American eels based on the results of the studies and the

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[29] DOI, *Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the American Eel as Threatened or Endangered,* 72 Fed. Reg. 4967, 4992 (February 2, 2007).

[30] *Id.*

[31] James D. McCleave, *Simulation of the Impact of Dams and Fishing Weirs on Reproductive Potential of Silver-Phase American Eels in the Kennebec River Basin,* pp. 602-603 (2001). McCleave also stated that "this is not to suggest that downstream passage is unimportant, but rather mitigation plans might better be developed on the basis of improved knowledge of production and size distribution of female American eels in a basin." *Id.*, at p. 603. The McCleave simulation is included as Exhibit 6 to the *Pre-filed Direct Testimony of Friends of Merrymeeting Bay.*

recommendations of USFWS and DMR.[32] Modification of the certification to require different or additional downstream passage for American eel will not eliminate the need for effectiveness studies, and there is nothing in the record to suggest that an alternative plan for downstream passage of American eel – short of removing the dam – will be significantly more effective than what is in place now.[33]

Finally, the claim that cumulative downstream eel passage mortality resulting from these hydropower projects may be significant misses the water quality point, which is the basis for any authority this Board may have. In accordance with the *Warren* decision, the focus is whether the designated uses are present in the waters above and below the dam. Not only does the record show the presence of fish habitat in the vicinity of the Hydro Kennebec Project, but it shows that eels, specifically, are present in the water. Upstream eel passage has been provided at the Project since 2002. In 2003, 2004, and 2005, 4,747, 7,286, and 2,979 eels, respectively, were passed through the Project's upstream eel passage, indicating that eels are present above and below the dam.[34]

3. *There is no site-specific evidence of significant eel mortality at the Hydro Kennebec Project.*

Studies conducted at the project from 2001 to 2003 showed no evidence of any eel mortality at the project.[35] While the purpose of the studies was to qualitatively evaluate

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[32] DMR's Dr. Wippelhauser testified that Brookfield's studies "are very well designed studies. They consulted with all the agencies. They've been very proactive in working with us and I think those will -- the studies that they are going to be doing this year will help us determine whether or not that passage facility is effective in passing eels and anadromous fishes." In addition, Dr. Wippelhauser acknowledged that she is confident that Brookfield will make whatever enhancements to the facility are necessary on an expeditious basis. TR, pp. 42:25 - 43:2-9 (March 16, 2007).

[33] In response to a question from BEP member Nancy Ziegler with respect to the effectiveness of the diversionary boom constructed by Brookfield and whether another measure in conjunction with a gate may be more effective, Dr. Wippelhauser replied that "It may be. It's something that -- it's been used as far as I know, in one other place specifically for downstream anadromous fish. We don't know if it will work with eels, and *we think it's worth studying"* (emphasis added). TR, p. 75:4-9 (March 16, 2007).

[34] *Pre-filed Rebuttal Testimony of Lewis Flagg*, GLH-17, at p. 6.

[35] *Pre-filed Rebuttal Testimony of Brian R. Stetson,* GLH-9, at p. 10.

downstream passage of clupeids (primarily juvenile shad and alewife), visual observations made two to three times per day, five days per week from June 15 to November 30 of areas above and below the project did not reveal evidence (dead fish, bird activity) of fish (anadromous or catadromous) mortality.

Petitioner Watts argues that the size and character of the Kennebec River and the siting of the Hydro-Kennebec project make it impossible to rely on observational methods to discover and document episodic fish kills.[36] In the absence of more concrete evidence, however, it is telling that, over a three-year period, with visual observations being made two to three times per day, five days per week for a five month period, there was no observation of fish (including eel) mortality or bird or other predator activity indicating fish mortality.[37] Dr. Wippelhauser, from DMR, confirmed that she has no data to indicate there is significant eel mortality at the project or that the viability of the eel population is being impaired.[38] Dr. Wippelhauser also testified that DMR has looked for eel mortality below the Hydro-Kennebec, Shawmut, and Lockwood projects by going into the tailrace areas on a number of occasions and using underwater cameras

[36] *Pre-filed Rebuttal Testimony of Douglas H. Watts,* at pp. 12-13. Petitioner Watts states that he "has been discovering, photographing, and documenting the killing of native, migratory fish in the turbines of various hydro-electric dams in the Kennebec River drainage since 1997. *Pre-filed Direct Testimony of Douglas H. Watts* at p. 35. Given this, if significant eel mortality was occurring on the Kennebec River, it seems likely that he would have observed it.

[37] Petitioner Watts points to a statement in an email dated December 20, 2006 by DMR biologist Nate Gray that "the big dams with deep tailraces could hide an army of dead and you'd never know" as evidence that there is significant eel mortality at the project. In the same email, however, Mr. Gray also states that, despite the difficulty of observing eels at the project, "*[f]rom the west plateau you are afforded an excellent view of the river downstream of the tailrace . . . . Binoculars should be used as well as the noon sun to have the best light. I've seen no eels there either*" (emphasis added). *Pre-filed Direct Testimony of Douglas H. Watts,* at p 23. On this point, Dr. Wippelhauser testified that "I don't know if there's an army of dead down there, but we haven't seen an army." TR, p. 85:14-15 (March 16, 2007).

[38] TR, p. 40:3-8 (March 16, 2007).

and running transects for eels. She stated that "[w]e've seen minimum mortality. I believe we've recorded something like 11 or 12 dead eels below the projects."[39]

Thus, if the Board were to modify the certification for the Hydro Kennebec Project, it would do so based on an *assumption* that the project results in significant eel mortality. A finding that the waters are not suitable for the designated use of fish habitat based on an assumption that the project results in an unknown amount of eel mortality or injury would call into question the compliance of every Maine hydropower project with Maine's water quality laws.

In sum, the record does not contain substantial evidence to support a finding that the certification for the Project does not contain standards or limitations legally required in 1998 or that HKLP has violated any law administered by the DEP.

IV. The operation of the Hydro Kennebec Project does not pose a threat to human health or the environment.

As discussed above, there is no site-specific evidence in the record that the Hydro Kennebec Project has resulted in significant fish mortality or injury at the project. Site-specific evidence (the 2001-2003 studies), in fact, shows that over a three-year period there was no observed fish mortality. Petitioners base their argument that the project poses a threat to human health or the environment on documentation of significant fish mortality at two projects on other rivers and on the assumption that all hydropower projects cause some fish mortality or injury.

To modify a license based on assumptions about fish mortality would undermine the finality of DEP licensing decisions. At a minimum, if the basis of a modification is that there is a "threat to fish," and thus a "threat to the environment," the threshold finding must be that the

[39] *Id.*, p. 61:10-18. Dr. Wippelhauser further stated that "DMR has not seen significant eel mortality on the Kennebec River." *Id.*, at p. 92:12-13. While Dr. Wippelhauser acknowledged that DMR has done limited studies, "the studies we have done have not demonstrated huge numbers of eels being killed." *Id.*, at p. 70:2-4.

fisheries management agencies with jurisdiction over the water body at issue concur that there is such a threat actually caused by the licensed activity.[40] In this case the fisheries management agencies strongly *disagree* with that proposition.

The Department's regulations provide no further guidance about the meaning of a "threat to the environment" in this context, and thus the standard is impermissibly vague. *Kosalka v. Town of Georgetown,* 2000 ME ¶ 11, 752 A. 2d 183. At the very least, modification of a certification on this basis must be based on substantial site-specific evidence in the record with respect to the licensed activity and not on an assumption, particularly one that is no more or less true today than when the permit was issued.

V. There has been no change in any condition or circumstance that requires modification of the certification.

Petitioner FOMB relies on USFWS's consideration of whether the American eel is an endangered or threatened species and "the greater awareness of the consequences of no safe passage" as justification that there has been a change in condition or circumstances that requires modification of the certification.[41] On February 2, 2007, however, USFWS issued its decision finding that the American eel is not an endangered or threatened species. As discussed at the public hearing, USFWS also found that "turbines are responsible for decreases in abundance on a

[40] In its Andro I decision the Board stated as follows: "Under 38 M.R.S.A. § 341-D(3)(C), the Petitioner must show that the projects, as certified, *pose a threat* to human health or the environment. The Board finds that this standard requires more than that certain fish exist in the watershed and there is a likelihood that some number of these fish are being killed. A 'threat to the environment' suggests that the evidence offered must, if proven, demonstrate that the activity is affecting or will affect the viability of fish populations or the overall integrity of the aquatic ecosystem." *Findings of Fact and Order Re: Petitions for Revocation, Modification, or Suspension Filed by Friends of Merrymeeting Bay and Douglas H. Watts,* Maine Board of Environmental Protection, February 2, 2006 ("Andro I Order"), at p. 25.

[41] *Pre-filed Direct Testimony of Friends of Merrymeeting Bay,* at pp. 2-3; *Pre-filed Rebuttal Testimony of Friends of Merrymeeting Bay*, at p. 9.

local or regional scale, but turbine mortality is not a significant threat to the American eel at a population level."[42]

While there may be a greater awareness of the potential impact of hydropower turbines on downstream migrating eels, greater awareness of an issue without substantial site-specific evidence of a significant adverse impact caused by the Hydro Kennebec project is not a basis upon which to modify the certification, because it is not a "condition" or "circumstance" at the licensed activity.

Similarly, the petition to list Atlantic salmon on the Kennebec River as an endangered species currently pending before NOAA Fisheries is not a changed circumstance or condition that requires modification of the certification. In fact, Mr. Keliher testified that a determination by NOAA Fisheries that the Atlantic salmon on the Kennebec River is a threatened or endangered species would not warrant modification of the certification to require immediate installation of permanent upstream passage.[43]

VI. The Legal Effect of Modification of a Water Quality Certification

While the BEP possesses the authority to modify a license (including a certification) if the statutorily established criteria are satisfied, such action has no effect with respect to a water quality certification that does not include a reopener, or one whose reopener condition has not been included in the federal license for which the certification was issued.[44] This is because the

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[42] DOI, *Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the American Eel as Threatened or Endangered,* 72 Fed. Reg. at p. 4992. USFWS found that turbine mortality was highly variable, depending on turbine design, size of eels, and operational conditions. According to USFWS, smaller turbines and turbines that rotate faster pose the greatest threats to eels. Petitioner Watts acknowledged that the turbines at the Hydro Kennebec Project are larger and rotate slowly, unlike the turbines at Benton Falls, which are smaller and rotate faster. TR, p. 140:9-20 (March 15, 2007).

[43] TR, p. 42:9-15 (March 16, 2007).

[44] BEP has acknowledged that, "in the absence of specific relevant reopeners in water quality certifications," the legal effect of a BEP attempt to modify a certification "is highly questionable." *Findings of Fact and Order Re: Petitions for Revocation, Modification, or Suspension Filed by Friends of Merrymeeting Bay and Douglas H. Watts,* Maine Board of Environmental Protection, February 2, 2006, at p. 24.

purpose of the certification is to allow the federal agency to issue a permit for an activity that may result in a discharge into navigable waters. *See* 33 U.S.C. § 1341(a). If the state issues the certification its conditions generally are incorporated into the conditions of the federal license. Once the federal agency issues its license the certification has no further effect independent of the federal license, and it is the federal licensing agency that has regulatory oversight over the conditions contained in its license, including the conditions incorporated from the certification, as provided by the terms of the federal license.[45]

In this case modification of the certification would have no effect on the FERC license because, even if the certification did contain a "reopener" clause with respect to eel passage, FERC did not incorporate any of the certification conditions into the 1998 FERC license amendment for the Hydro-Kennebec Project. Instead, FERC simply amended the project license "to include the fish passage requirements set forth in the 1998 KHDG Agreement."[46]

VII. Conclusion

The Board's license modification authority should be reserved for egregious violations of license conditions, fraudulent statements during the application process, a significant error of law in the license, an imminent, significant, and irrefutable threat to human health or the environment, and the like. Licensees must be able to rely on the finality of their licenses. In

[45] Section 401(a)(5) provides that the federal license (in this case, the FERC license) for which the certification was issued may be suspended or revoked by the federal agency – not the state – if a judgment is entered that the licensed activity violates specified provisions of the CWA. 33 U.S.C. § 1341(a)(5). Although CWA Section 401(d) allows states to include conditions to ensure that the federally-permitted activity will comply with state water quality standards, those conditions are enforceable by the federal agency, not by the state. *See* 33 U.S.C. § 1341(d), *Great Northern Paper, Inc.*, 77 F.E.R.C. ¶ 61,066 (1996) ("once a state has issued certification, the Clean Water Act contemplates no further role for the state in the process of issuing, and ensuring compliance with the terms of, a federal license, except in specified circumstances where a new certification is required"), *aff'd*, *Conservation Law Foundation v. FERC*, 216 F.3d 41 (D.C. Cir. 2000).

[46] See FERC's 1998 order at Exhibit GLH-23, ordering paragraph D (page 14).

dismissing the appeal of the Board's dismissal of Andro I, the Maine Superior Court stated that "[u]nder the Department's rules, the Board acts as a gatekeeper to ensure that thoroughly investigated licenses are only disturbed under certain circumstances." The Court further stated that "[b]ecause *any* person can petition the Board for a hearing, a hurdle was constructed to allow the Board to manage what could be numerous petitions for a public hearing. . . . . [W]hile the Board is charged with evaluating the merits of each petition, it will necessarily deny most petitions, reserving public hearings for only those select petitions which raise enough evidence as to call into question the reasoning for granting the license."[47]

The same logic applies here. Although the Board has held a public hearing, the evidence does not rise to the level needed to justify modification of the Hydro Kennebec certification to require fish passage provisions different from those contained in the 1998 KHDG Agreement. Specifically, petitioners presented no evidence to support their claims that the certification does not contain standards or limitations legally required on the date of its issuance, that Hydro Kennebec is in violation of Maine's water quality standards, that conditions have changed, or that the project poses a threat to human health or the environment.

The evidentiary standard for modification of a permit should be a high one – at a minimum there should be substantial site-specific record evidence before contemplating modification. This is even more the case when there is no guidance in DEP's regulations as to what a licensee must prove to defeat a petition to modify, and when the relevant fisheries management agencies unanimously oppose modification.

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[47] *Watts v. Maine Board of Environmental Protection*, Docket No. AP-06-19 (Me. Super. Ct., Ken. Cty., December 8, 2006) (Marden, J.), at pp. 3-4.

Finally, in determining whether to modify the certification, the BEP must consider the impact that such a decision may have on the 1998 KHDG Agreement.[48] As noted in the comments of Evan Richert, "[a]greements such as the one that opened the Kennebec rest on a foundation of trust that the terms settled upon will be honored in related regulatory processes."[49]

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[48] Nick Bennett of NRCM, who testified on behalf of the Kennebec Coalition, stated that "we believe that the Board should not reopen the 401 certificates for any these dams . . . . We do not want the KHDG Agreement to fall apart and we fear that this would be the result of the Board opening up the 401 certificates . . . ." TR, p. 364:3-8 (March 15, 2007).

[49] February 6, 2007 Comment Letter of Evan Richert to Matt Scott, Presiding Officer, at Exhibit 7.