APPLICATION REVIEW FOR
LOW IMPACT HYDROPOWER INSTITUTE CERTIFICATION
of the
RED BRIDGE PROJECT NO. 10676

July 26, 2012

Application Reviewer: Patricia McIlvaine

WRIGHT-PIERCE
Engineering a Better Environment

APPLICATION REVIEW FOR LOW IMPACT HYDROPOWER INSTITUTE CERTIFICATION

ESSENTIAL POWER LLC.

RED BRIDGE PROJECT - FERC PROJECT NO. 10676

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NORTH AMERICAN ENERGY ALLIANCE, LLC RED BRIDGE PROJECT (FERC NO. 10676)

1.0 INTRODUCTION AND OVERVIEW

This report reviews the original application submitted by North American Energy Alliance, LLC (NAEA or Applicant) in June 2011 to the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification for the Red Bridge Hydroelectric Project (Red Bridge or Project). In response to the Intake Review completed in August 2011, the applicant chose to submit a revised application package on March 27, 2012, rather then provide the missing information. The Applicant is now operating under the name of Essential Power, LLC (Essential Power). The Red Bridge Project, located on river mile 15.2 of the Chicopee River, Massachusetts, was granted an Exemption from Licensing by the Federal Energy Regulatory Commission (FERC) on September 11, 1992 as Project Number 10676.

The Red Bridge project is located in the Towns of Wilbraham, Ludlow, Palmer and Belchertown in Hampden and Hampshire Counties. It is situated upstream of five other hydroelectric facilities

located on the Chicopee River[1] and downstream of other dams on the Ware, Swift and Quaboag Rivers, tributaries to the Chicopee as illustrated on the next page. The Dwight Station Project (P-10675), Indian Orchard Project (P-10678) and Putts Bridge Project (P-10677) are also owned by Essential Power. The remaining downstream, and all upstream projects, are owned by others.

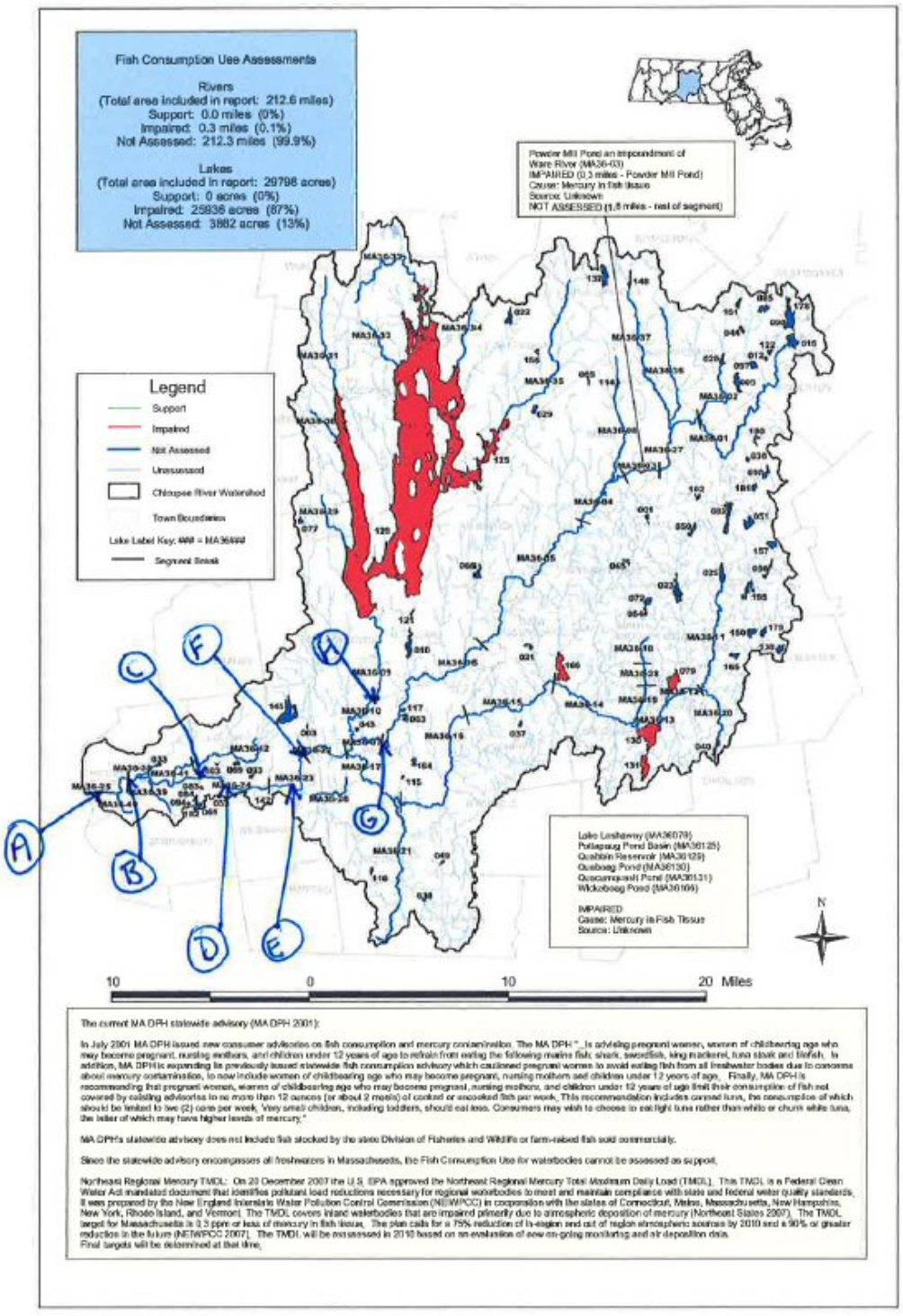
The Project, constructed in 1901 by the Ludlow Manufacturing Company, was purchased in 1957 by the Western Massachusetts Electric Company ("WMECO"), sold to Consolidated Edison Energy Inc. (CEEI) in 1999 and to NAEA, now called Essential Power, in 2008.

1.1 Project and Site Characteristics

The dam, built ca. 1901, crosses the Chicopee River in a roughly north to south direction, and is composed of three sections: the northern section, which is 165-foot-long, and the southern 362-foot-long section, are earthen embankment with a concrete core. The middle section of the dam is a rubble stone with cut-granite facing 300-foot-long overflow spillway. The maximum height of the dam is approximately 51 ft.

Red Bridge Dam and Minimum Flow Gate

[1] The order of the hydroelectric dams, starting with the lowest dam, on the Chicopee River is Dwight Station Project (P-10675), Chicopee Falls Project (P-6522), Indian Orchard Project (P-10678), Putts Bridge Project (P-10677), Collins Hydro Project (P-6544) and Red Bridge Project (P-10676).



A - DWIGHT

B - CHICOPEE

C - INDIAN ORCHARD

D - PUTTS BRIDGE

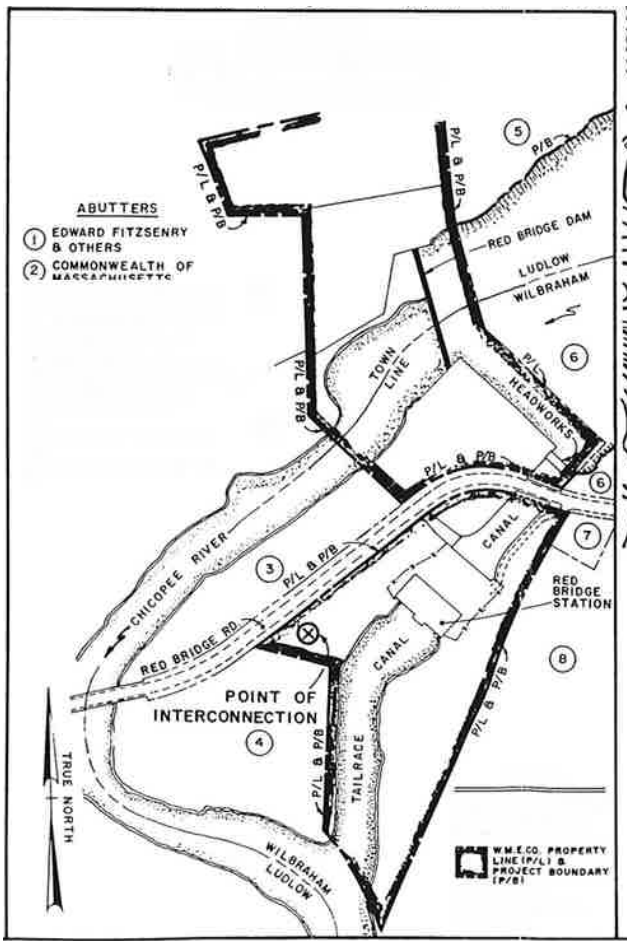
E - COLLINS

F - RED BRIDGE

G - THORN DIKE

H - BONDSVILLE

At normal pond elevation, the Red Bridge Project impoundment extends approximately 1.8 miles upstream of the dam, having a maximum surface area of approximately 185 acres. There is limited permitted storage (530 acre-feet) with a permitted daily drawdown of two feet. However, operation is voluntarily limited to a one-foot drawdown. Minimum flows are discharged to an approximate 1,600 foot-long bypass channel. The canal headgate house controls the flow from the impoundment to a 340-foot-long power canal which extends to the penstock intake structure. Adjacent to the trashracks on the upstream face of the intake is a cut-stone ice sluice that crosses beneath the Red Bridge Road and discharges back into the Chicopee River. There are four units, each fed by four penstocks, two which are operating and two abandoned in 1938. The flows from the two operating units discharge through two tailrace bays into the 735 foot long tailrace canal which discharges to the Chicopee River. The combined installed capacity at the Project is 4,500KW.



Red Bridge Powerhouse

Red Bridge Power Canal

The station operates in a limited storage and release, semi-automatically by a PLC control system. The operating mode of the Red Bridge project does not change during dry, mean or high

water years. As flows vary at the Project, the number of turbines operating and the duration of operation changes, increasing and decreasing the amount of generation realized.

1.2 Regulatory History

In 1988, the Federal Energy Regulatory Commission determined that the Chicopee River was a navigable waterway under its jurisdiction and ordered WMECO, the owner at that time, to prepare an application for Exemption from Licensing. The License Exemption was issued to WMECO on September 11, 1992.

WMECO proposed to add capacity to the Project by the addition of a minimum flow turbine, a plan which was later modified by CEEI to instead increase the output of the two units to a combined 4,630 KW through transformer upgrades. In response to comments from the US Fish and Wildlife Service (UWFSW), this Order also required the installation of a slide gate to better guarantee minimum flow releases. This was approved by FERC on December 29, 1999. Letters from the USFWS and MDFW commenting on the appropriateness of the license exemption modification, and specifically supporting the minimum flow requirements and impoundment fluctuations are contained in Appendix B. This Order also required consultation with the State Historic Preservation Officer to ensure the gate installation does not negatively affect the historic nature of the Project. The slide gate was installed following FERC approval and SHPO review. The nameplate capacity was further revised (following testing) to 4,500 KW via a FERC Order dated November 8, 2001. No other changes were included in this amending Order.

A review of the FERC database for January 2008 (when Essential Power took ownership) through April 2012 found no reported compliance issues. However, as discussed under Section 2.1, apparently the Flow Monitoring Plan, which was a condition of the License Exemption, had never been finalized or approved, but is currently in that process now. Other than this issue, Essential Power appears to have demonstrated conscientious attention to the environmentally-related issues associated with the Red Bridge Project's current FERC License Exemption.

1.3 Public Comment

The public comment period for the initial application closed without submission of any comments. The new comment period closed on May 27, 2012. Two comment letters were received within this period, from MDEQ and MDFW. In addition, a memo was received from Collins Hydroelectric LLC, operated by Swift River Company, dated June 15, 2012, which was accepted despite its late submission due to allegations that the Red Bridge Project was cycling up to eight times daily, with flows ranging between about 200 cfs to 1,000 cfs., causing operational problems at this downstream dam. Data using flows measured at the Indian Orchard gage for June 12, 2012 was provided as evidence for this reported operating mode at Red Bridge. The letter commented that the Red Bridge Project should not receive low impact certification unless it was operated as run-of-river. The Indian Orchard gage is located immediately downstream of Essential Power's Indian Orchard Project. As such flow variations and frequencies were not understood to be typical of Red Bridge, we elected to accept this late letter and provide Essential Power an opportunity to respond to these allegations. The three comment letters received, as well as Essential Powers response letters, are contained in Appendix A. A discussion of these flow issues is included under Certification Recommendation and under 2.1 Criteria A - River Flows.

1.4 Certification Recommendation

Based on my review of information submitted by the applicant, and in response to document requests and questions raised by me, my consultations with various resource agencies and other entities, review of FERC's eLibrary, and public comments received, I conclude that the Red Bridge is in compliance with LIHI's criteria, as discussed in Section 2.0 of this report and discussed below.

The letter issued by MDFW, (C. Slater) does not support certification of the Red Bridge project due to the fact that the project is not operated as run-of-river and that the minimum flow established for the project of 237 cfs (or inflow if less) is representative of summer flows, and therefore does not represent a natural flow regime for the river. The MDEQ letter (R. Kubit)

supports the opinion of MDFW on such issues and therefore also challenges the certification of the project as "low impact". The MDEP letter also states its goal of having all hydropower projects operated as run-of-river and sees LIHI certification as an opportunity for operators to voluntarily modify their operations to "more environmentally sensitive manner". It should also be noted that the river system is already a "modified system" due in large part to the existence of the Quabbin Reservoir which discharges to the Ware River before the Ware and Chicopee Rivers merge, as noted in the Applicant's May 30, 2012 response letter. Depending on reservoir levels, up to 300 cfs of flow is diverted to the reservoir until reservoir levels meet the supply needs.

Based on Essential Power's response letter dated July 23, 2012, it appears that in fact the Red Bridge Project did cycle nearly eight times on June 12, 2012. A PLC software configuration designed and tested three years ago to operate the units using a two-inch drawdown, rather than a typical 9-inch drawdown, to evaluate the effect of a "run-of-river" operational mode, was accidentally activated from June 8 through June 15, 2012. Thus, on June 12, Red Bridge was operating essentially as a as "run-of-river" facility. Data was also provided by Essential Power documenting compliance with their minimum flow requirement during this subject period. Essential Power's letter also provides evidence that use of Indian Orchard gage data is only useful to illustrate flows discharged from the immediately upstream Indian Orchard Project, and not Red Bridge. Therefore, although not intention, the Red Bridge Project was in fact operating as Swift River Company suggested it should, yet the Collins Project was experiencing operational difficulties. Thus, I do not believe that these Collins Project operational issues are a concern regarding my recommendations for certification of the Red Bridge Project.

While both run-of-river operation and a summer minimum flow may indeed be more environmentally "sensitive", I believe that the Project does satisfy LIHI's current flow criteria. It is also important to note that the minimum flow was established by the USFWS as being suitable to support water quality and fisheries habitat needs. Appendix B contains letters dated January 27, 2000 from the USFWS and February 20, 2000 from the MDFW (signed by C. Slater) which address license exemption modifications adopted almost eight years after the exemption was first issued. Both agencies continued to support the minimum flow and non-run-of river operating modes at this time. . It would appear that concerns for issues could have been raised at that time,

but were not. The License exemption also includes a condition that allows the USFWS to add and/or alter these terms and conditions as appropriate in order to carry out its responsibilities with respect to fish and wildlife resources. Thus, the Project appears to be subject to modifications of these requirements through licensing modification, although this option has not been pursued to date. Both 2000 letters address the need for a monitoring plan which appears to never have been finalized until this LIHI review process identified this deficiency. The recommended conditions address this still "open" issue.

Therefore, despite the opinions offered by the MDEP and MDFW, I recommend that the Red Bridge Project be certified to be in compliance with LIHI's criteria with a certification term of five years as it does meet current LIHI criteria. However, I believe this certification should include the following conditions for the reasons stated:

1. As the final confirmation that the recently submitted Flow Monitoring Plan sufficiently addresses compliance with the various flow requirements is contingent upon review and approval of six months of flow data by the USFWS, Essential Power shall provide LIHI a letter documenting that such records have been provided at the conclusion of the six months.
2. Essential Power shall certify to LIHI that the 24 hour period of empirical data to compare with the calculated flows for USFWS's evaluation of the Flow Monitoring Plan has been provided. Essential Power shall also provide LIHI, documentation of the USFWS review/approval or concerns found with this data comparison.
3. Should this review process find that modifications are needed to the Flow Monitoring Plan, Essential Power shall forward a copy of the modifications, along with resource agency approval of these modifications, within one month of the Plan submission to FERC. Essential Power shall also provide LIHI a copy of FERC's final Plan approval within one month of receipt of this approval.

LIHI reserves the right to terminate this certification should it conclude, based on findings of the resource agency review and noted documents, that the Project cannot sufficiently demonstrate compliance with its flow requirements. Certification could potentially be reinstated should

needed modifications be implemented either in the monitoring approach or operational activities such that the mandated flows are being appropriately released.

2.0 CRITERIA ASSESSMENT

The Low Impact Hydropower Institute certifies those hydropower facilities that meet its eight criteria:

2.1 Criteria A - River Flows

***Goal**: The facility (dam and powerhouse) should provide river flows that are healthy for fish, wildlife, and water quality, including seasonal flow fluctuations where appropriate.*

***Standard**: For instream flows, a certified facility must comply with resource agency recommendations issued after December 31, 1986, for flows. If there were no qualifying resource agency recommendations, the applicant can meet one of two alternative standards: (1) meet the flow levels required using the Aquatic Base Flow methodology or the "good" habitat flow level under the Montana-Tennant methodology; or (2) present a letter from a resource agency prepared for the application confirming the flows at the facility are adequately protective of fish, wildlife, and water quality.*

The Red Bridge project is operated in a limited pond-and-release mode, utilizing the storage capacity (185 acre-feet) afforded by a maximum 1.0 foot drawdown. The station is operated semi-automatically by a PLC and does not change during dry, mean or high water years. As flows vary at the Project, the number of turbines operating and the duration of operation changes, increasing and decreasing the amount of generation realized.

The Project's License Exemption requires:

- a continuous minimum flow release of 237 cfs, or inflow, at the base of the spillway;
- pond drawdowns to one foot below the crest from April to June and two feet for the remainder of the year (The Project is currently operated with only one foot drawdown.);
- within six months from the date of Exemption, the Owner would submit issuance to the US Fish and Wildlife Service (USFWS) for approval, a plan for monitoring project impoundment level and instantaneous bypass releases. Following approval of the plan,

the Owner would measure and record impoundment level and flows according to the plan and provides records of these data to the USFWS within 30 days from a request for the records; and

- The USFWS also reserved the right to add and/or alter these terms and conditions as appropriate in order to carry out its responsibilities with respect to fish and wildlife resources. The Exemptee agreed, within 30 days of receipt, to file with the Commission any additional or modified mandatory terms and conditions.

During a June 22, 1999 meeting, the resource agencies indicated the drawdowns would not likely have an adverse impact on fish habitat, but could adversely impact the existing boat launch. At this same time, USFWS indicated the present flow release mechanism proposed during this timeframe was inadequate for a permanent measure due to large fluctuations in actual release amounts. In response, an automated slide gate at the spillway, meeting USFWS and the Massachusetts Division of Fish and Wildlife (MDFW) approval, was installed. The new slide gate is capable of releasing the required minimum flow from a single point on the spillway during full and low pond conditions. Letters from the USFWS, MDEP and MDFW documenting these issues are contained in Appendix B. To date, with the exception of the recently received comment letters issued by the MDFW and MDEP in response to this LIHI review, no notifications have been issued by the USFWS or MDFW of the need to modify the Project's minimum flow or operating mode. As noted in their May 1, 2012 letter, MDFW challenges the appropriateness of the minimum flow of 237 cfs as not being representative of natural conditions as it represents summer flows. Dr. Slator also states that he does not believe that the Project is "low impact" because it operates with a one-foot headpond fluctuation, and is not a true run-of-river operation. Historical communications (contained in Appendix B) show acceptance of both conditions by MDFW in the past. The License exemption also includes a condition that allows the USFWS to add and/or alter these terms and conditions as appropriate in order to carry out its responsibilities with respect to fish and wildlife resources. Thus, the Project appears to be subject to modifications of these requirements through licensing modification, although none have been requested through this formal process, but only through the LIHI certification process.

It appears that the lack of an approved Flow Monitoring Plan was overlooked at this Project until identified as part of this LIHI review. The site has been operating under a draft plan dated October 2011. In response to this discovery in mid-2011, Essential Power developed a revised Flow Monitoring Plan, incorporating consultation comments from the USFWS, MDFW and Massachusetts Department of Environmental Protection (MDEP), and issued the Plan to FERC on February 20, 2012. An agreement was also established under which Essential Power would provide flow release data, and a 24 hour period of empirical data for comparison, to the USFWS starting in March 2012 through August 2012 for their review to confirm adequacy of this Plan. Based on discussions with MDFW and MDEP, they have agreed to rely on this USWFS review, as noted in Section 3.0 of this Report. The monitoring data is being provided monthly to the USFWS starting for March 2012. The need for the empirical data is documented in the emails contained in Appendix A.

As discussed under section 1.4 Certification Recommendation, while Swift River Company did raise concerns regarding reported operational flows from the Red Bridge Project, I do not believe the concerns raised affect my assessment that the Red Bridge Project is in compliance with their regulatory requirements and LIHI's flow criteria.

A. Flows – The Facility is tentatively in Compliance with Resource Agency Recommendations issued after December 31, 1986, as specified in FERC License Exemption, regarding flow conditions for fish and wildlife protection, mitigation and enhancement for downstream river reaches. FACILITY CONDITIONALLY PASSES.

2.2 Criteria B - Water Quality

Goal: *Water quality in the river is protected.*

Standard*: The water quality criterion has two parts. First, a facility must demonstrate that it is in compliance with state water quality standards, either through producing a recent (after 1986) Clean Water Act Section 401 certification, or demonstrating compliance with state water quality standards (typically by presenting a letter prepared for the application from the state confirming the facility is meeting water quality standards). Second, a facility must demonstrate that it has*

not contributed to a state finding that the river has impaired water quality under Clean Water Act Section 303(d) (relating to water quality limited streams).

A Section 401 Water Quality Certification (WQC) was not issued for the Red Bridge Project. However, in a letter dated October 19, 2011 (see Appendix A), in response to an inquiry from Essential Power, Mr. Robert Kubit of the MDEP commented that the Red Bridge Project is not expected to cause or contribute to violation of the state water quality standards given the impoundment retention time of only one day, and based on data provided an assessed in the 1989 Environmental Assessment and Water Quality Report.

The second part of this Criterion requires that the Project demonstrate that it has not contributed to a state finding that the river has impaired water quality under Clean Water Act Section 303(d). In the Massachusetts Year 2010 Integrated List of Waters, the Chicopee River has been identified as "impaired waters" under Section 303(d) requiring a TMDL for escherchia coli, and fecal coliform in waters above and below the Project, respectively. In the above noted letter, Mr. Kubit commented that combined sewer overflows are the likely cause of these concerns, and the Project does not contribute to these escherchia or fecal coliform levels.

B. Water Quality – The Facility is in Compliance with state water quality standards, based on consultation with the MDEP, in the Facility area and in the downstream reach. The reach of the river upstream, at and downstream of the facility is identified by the state as not meeting water quality standards pursuant to the Clean Water Act for escherichia coli and fecal coliform, but the Projects is not expected to be contributing to these levels per MDEP comment. - FACILITY PASSES

2.3 Criteria C - Fish Passage and Protection

Goal: *The facility provides effective fish passage for riverine, anadromous and catadromous fish, and also protects fish from entrainment.*

Standard: *For riverine, anadromous, and catadromous fish, a facility must be in compliance with recent (after 1986) mandatory prescriptions regarding fish passage (such as a Fish and Wildlife Service prescription for a fish ladder) as well as any recent resource agency recommendations regarding fish protection (e.g., a tailrace barrier). If anadromous or*

catadromous fish historically passed through the facility area but are no longer present, the applicant must show that the fish are not extirpated or extinct in the area because of the facility and that the facility has made a legally binding commitment to provide any future fish passage recommended by a resource agency.

When no recent fish passage prescription exists for anadromous or catadromous fish, and the fish are still present in the area, the facility must demonstrate either that there was a recent decision that fish passage is not necessary for a valid environmental reason, that existing fish passage survival rates at the facility are greater than 95% over 80% of the run, or provide a letter prepared for the application from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service confirming the existing passage is appropriately protective.

The 1992 License Exemption, Article 2, contains a requirement that the Exemptee would construct, operate, maintain and monitor upstream and downstream fish passage facilities when prescribed by the USF&S or MADFW. These requirements are noted as mandatory terms and conditions under Section 30(c) of the Federal Power Act and Section 408 of the Energy Security Act, and are detailed in a letter dated 07/31/92 from the USFWS (contained in Appendix B). As written, these requirements clearly apply to both anadromous and riverine fish, but remain "silent" with regard to catadromous species. Currently there are no active migratory fish management efforts within the Chicopee River watershed. As noted by Ms. Melissa Grader of the USFWS in an email dated 10/13/11, "while it is likely that lower dams will need fish passage facilities in the near future, it will likely be a number of years before passage will be required at Red Bridge." In an April 2011 telephone conversation, Dr. Caleb Slater of MADFW stated that that "fish passage for neither anadromous nor catadromous species are required at this point of time at the Red Bridge Project." His email dated 09/27/11 acknowledges the presence of American eel in the River "upstream Dwight Dam", but his comments or concerns with regard to LIHI certification do not identify the need for fish passage. These emails are contained in A.

C. Fish Passage and Protection –Mandatory Fish Passage Prescriptions for upstream and downstream passage of fish have been issued by Resource Agencies after December 31, 1986, which are contained in the FERC License Exemption. Currently, none of these features have been required to be installed.
FACILITY PASSES.

2.4 Criteria D - Watershed Protection

***Goal**: Sufficient action has been taken to protect, mitigate and enhance environmental conditions in the watershed.*

***Standard**: A certified facility must be in compliance with resource agency recommendations and FERC license terms regarding watershed protection, mitigation or enhancement. These may cover issues such as shoreline buffer zones, wildlife habitat protection, wetlands protection, erosion control, etc. The Watershed Protection Criterion was substantially revised in 2004. The revised criterion is designed to reward projects with an extra three years of certification that have a buffer zone extending 200 feet from the high water mark; or, an approved watershed enhancement fund that could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1. and has the agreement of appropriate stakeholders and state and federal resource agencies. A Facility can pass this criterion, but not receive extra years of certification, if it is in compliance with both state and federal resource agencies' recommendations in a license-approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.*

No conservation buffer zone, watershed enhancement fund nor a shoreland management plan were required by the FERC License Exemption for the Red Bridge Project. However an Erosion Control Plan is required under Article 14 whenever land-disturbing, land-clearing or spoil producing activity adjacent to the impoundment is undertaken. A copy of the Soil Erosion and Sediment Control Plan developed for 2002 construction of the automated slide gate was submitted for resource agency review and approved by FERC in their letter dated May 25, 2001.

D. Watershed Protection – No conservation buffer zone, watershed enhancement fund nor a shoreland management plan were required by the FERC License Exemption. - FACILITY PASSES.

2.5 Criteria E - Threatened and Endangered Species Protection

***Goal**: The facility does not negatively impact state or federal threatened or endangered species.*

***Standard:** For threatened and endangered species present in the facility area, the facility owner/operator must either demonstrate that the facility does not negatively affect the species, or demonstrate compliance with the species recovery plan and any requirements for authority to "take" (damage) the species under federal or state laws.*

Ms. Melissa Grader of the USFWS in an email dated 10/13/11, reported that no federally endangered or threatened species known to exist in the Project area. A review of the Massachusetts Natural Heritage and Endangered Species Program likewise found there are no state endangered or threatened species, as noted in a letter dated 10/26/11. This review did report that two species of special concern, wood turtle and Stygian Shadowdragon, may be located in the area

E. Threatened and Endangered Species Protection – There are no federally or state designated endangered or threatened species found in the project area. FACILITY PASSES

2.6 Criteria F - Cultural Resource Protection

Goal: *The facility does not inappropriately impact cultural resources.*

Standard: *Cultural resources must be protected either through compliance with FERC license provisions, or, if the project is not FERC regulated, through development of a plan approved by the relevant state, federal, or tribal agency.*

The Red Bridge Project was included in the National Register of Historic Places as part of the Ludlow Village Historic District in 1993. Article 12 of the License Exemption requires consultation with and approval by the State Historic Preservation Officer (SHPO) prior to modification of the existing historic features of the Project. Article 13 requires similar consultation with the SHPO prior to land-disturbing or land clearing activities with the Project boundaries, and should any new historical features or artifacts be found, that a Cultural Resource Management Plan be prepared for SHPO approval and implementation. SHPO approval was required for the installation of the slide gate in 2002. The gate installation was determined by the SHPO to constitute an "adverse effect", although FERC requested that, as the SHPO accepted the mitigation provided by CEEMI, that this finding be changed to "no adverse effect". Despite this opinion difference, the requirements of the SHPO were satisfied based on record review. A letter dated 09/27/11 from Edward Bell of the Massachusetts Historic Commission confirmed no current concerns, but reminded the Applicant of the need for project review by the Commission if future modifications were to occur at the site. (See Appendix A)

F. Cultural Resources – The Facility is in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC License Exemption - FACILITY PASSES.

2.7 Criteria G - Recreation

Goal: *The facility provides free access to the water and accommodates recreational activities on the public's river.*

Standard: *A certified facility must be in compliance with terms of its FERC license or exemption related to recreational access, accommodation and facilities. If not FERC-regulated, a facility must be in compliance with similar requirements as recommended by resource agencies. A certified facility must also provide the public access to water without fee or charge.*

Various recreational facilities were developed by WMECO in the 1970's including a small boat access area at the impoundment near the gatehouse, picnic facilities, a hiking trail along an abandoned railroad tight-of-way paralleling the impoundment north shore and a small boat/canoe put-in below the powerhouse tailrace. A 2010 FERC Inspection Report reported that several of the features were not being properly maintained, and raised questions about responsibility for these facilities. The insufficient maintenance issue was later confirmed to be an error in the report by FERC. Documentation has confirmed that the facilities were deeded over to the Commonwealth in 1973 to be used as a park to serve the residents. These facilities are maintained by the Commonwealth (Massachusetts Department of Conservation and Recreation and Massachusetts Department of Fish and Game) as confirmed by Mr. Richard Brazo, Assistant Regional Engineer for the Massachusetts Department of Conservation and Recreation on November 18, 2011. As noted in a FERC letter dated October 12, 2011, Essential Power is nonetheless ultimately responsible for these resources, as a condition of the License Exemption, even though regular maintenance of the features has been assumed by the Commonwealth.

Essential Power provides use of the impoundment and downstream waters for recreational activities free of charge.

G. Recreation – The Facility is in Compliance with all requirements regarding Recreation protection, mitigation or enhancement and allows access to the reservoir and downstream reaches without fees or charges - FACILITY PASSES

2.8 Criteria H - Facilities Recommended for Removal:

***Goal**: To avoid encouraging the retention of facilities which have been considered for removal due to their environmental impacts.*

***Standard:** If a resource agency has recommended removal of a dam associated with the facility, certification is not allowed.*
No resource agency has recommended removal of the Red Bridge Dam.

H. Facilities Recommended for Removal – There are no Resource Agency recommendations for removal of the Red Bridge Dam - FACILITY PASSES.

3.0 RECORD OF COMMUNICATIONS

This section documents the contacts made with resource agencies, other interested parties during the review of this application. Communications were by telephone, email and letters. Appendix A contains comment letters received by LIHI and recent agency letters and emails addressing compliance questions raised during this LIHI review process. Appendix B contains key historical agency letters addressing flow and operation mode issues.

Date of Communication	11/18/11
Person Contacted	Richard Brazo Massachusetts Department of Conservation and Recreation
Telephone and email address	(413) 545-5432
Mr. Brazo confirmed that the MDCR does the "regular maintenance" of the recreational facilities at the Red Bridge site under a past agreement with the Project. He also reported that the MA Division of Fish and Wildlife is responsible for capital improvement projects that may be needed to the boat launch,	

Date of Communication	04/05/12
Persons Contacted	Ms. Melissa Grader US Fish and Wildlife Service
Telephone and/or email address	(413) 548-9138 Melissa_Grader@fws.gov
Ms. Grader confirmed the plan for her review of six months of flow data for the periods of March 1, 2012 through August 31, 2012. This review would allow assessment of the appropriateness of the recently submitted Flow Monitoring Plan for Red Bridge. She stated that if this data does not validate the monitoring measures included in the current plan, than USFWS would recommend to FERC that modifications are needed to the Plan to ensure that it meets the agencies requirements, as well as those incorporated into the FERC license exemption. Ms. Grader also confirmed that American eel are not a species of concern at the Red Bridge Project but they are a concern at the downstream Dwight Station also owned by Essential Power. The issues associated with the need of empirical data for comparison between calculated and actual flows are presented in emails contained in Appendix A.	

Date of Communication	04/05/12
Persons Contacted	Dr. Caleb Slater Massachusetts Division of Fisheries and Wildlife
Telephone and/or email address	(508) 389-6331 caleb.slater@state.ma.us
Dr. Slater confirmed that fish passage for neither anadromous nor catadromous species are required at this point of time at the Red Bridge Project. He also confirmed that he was not part of the review process of the six-months of flow data being reviewed by the USFWS to confirm appropriateness of the Flow Monitoring Plan. He stated that while he will depend on the USFWS review, that he reserves his right to comment on the Plan if in fact this data suggests that plan modifications are needed. Dr. Slater's formal comment letter dated May 1, 2012, in which he raises issues regarding the minimum flow and non-run-of-river operations, is contained in Appendix A.	

APPENDIX A

COMMENT LETTERS AND RECENT LETTERS/EMAILS RECEIVED FROM RESOURCES AGENCIES

ESSENTIAL POWER, LLC™
c/o William P. Short III
44 West 62nd Street
P.O. Box 237173
New York, New York 10023-7173
(917) 206-0001; (201) 970-3707
w.shortiii@verizon.net

July 23, 2012

Via E-Mail Only

Low Impact Hydropower Institute
c/o Mr. Fred Ayer
Executive Director
34 Providence Street
Portland, Maine 04103

Re: Application of Red Bridge Project (the "Project" or the "Facility") for Certification by the Low Impact Hydropower Institute

Dear Mr. Ayer:

On June 15, 2015, Essential Power, LLC received a comment letter from Collins Hydroelectric LLC ("Collins") on its LIHI application for Red Bridge Project, requesting that the application for LIHI certification for Red Bridge be approved only upon the condition that the Red Bridge Project convert to a run-of-river mode of operations. This request was premised upon the belief that that Red Bridge is cycling numerous times a day as evidence by the changes in the flows at Indian Orchard gage. From these observations, Collins believes that Red Bridge is adversely affecting the electric production at Collins.

After a careful review of the Collins letter and the operations of Red Bridge and Indian Orchard Projects, Essential Power, LLC™ ("Essential Power") believes that Collins' conclusions are incorrect. Given that Collins' conclusions are premised on its analysis of the flow at Indian Orchard gage being the flows of Red Bridge Project, those statements as the cause for its operational problems at Collins are not accurate. Furthermore, its request for a conditional approval of Red Bridge Project for LIHI certification only upon a conversion to run-of-river mode is not justified. A review of the LIHI criteria shows that run-of-river mode of operation is neither a criterion of LIHI nor its absence a reason for a denial of LIHI certification. Accordingly, Essential Power reiterates that its request that LIHI certification of Red Bridge Project be approved.

On the issue of the flows of Indian Orchard gage being representative of the discharges of Red Bridge Project, they simply are not. The instantaneous flows at Indian Orchard gage are

only representative of the flows of Indian Orchard Project, which is located immediately upstream stream of Indian Orchard gage. There is a direct correlation between the operation of units at the Indian Orchard Project and indicated river flow at Indian Orchard gage. For example, on the date sampled by Collins (June 12, 2012), the only unit online at Indian Orchard Project was Unit 3, which has a 625 cfs hydraulic capacity (at full load, best gate it is about 600 cfs). That unit cycled 3 times during the day, generating from 5:43 to 6:55, 11:40 to 13:00 and 17:40 to 19:25. The indicated river flow showed a 600 cfs increase at 6:00, 12:00 and 18:00.

On the day in question, June 12, the average flow at the Indian Orchard gage was 616 cfs or 590 cfs at Red Bridge Project.[1] Under normal operating parameters of a nine-inch drawdown, it would have taken about 384 minutes to draw down the impoundment and another 285 minutes to fill the impoundment back up. In total, the cycle time at Red Bridge would have been a bit more than 11 hours. Thus, Collins would have experienced slightly more than two full cycles on June 12. On June 12, the software configuration for the Red Bridge PLC was incorrect.[2] This resulted in a drawdown of two inches, reflecting a run-of-river mode of operations.[3] Thus, it would have taken about 85 minutes to draw down the impoundment and another 63 minutes to fill the impoundment back up. In total, the cycle time at Red Bridge would have been a bit less than two and one-half hours. Thus, Collins would have experienced more than 9 full cycles on June 12. A review of the operating data of June 12 indicates that Red Bridge Project cycled nearly eight times that day with an average drawdown of slightly more than 2 inches and a cycle time slightly exceeding three hours.

In the Collins letter, it is mentioned that Collins was designed to operate based upon a daily peaking operation of Red Bridge Project beginning at 17:00 and continuing 22:00. While that mode of operations may have been true in the mid-1980s, it has not been true since 1992[4] when the site was issued its FERC Exemption from License.

Whether the Red Bridge Project cycles once a day, every day (for example, during the mid-1980s) or several times a day (June 12), Collins' control system should be designed to react to changes in river flows within a very short time period. The letter from Collins clearly states that its units are operating as designed. Its control system detects the change in river flow and operates the units (they load up, unload, come on and off-line). As taken directly from the Collins Letter, "What I have to stress is that Collins PLC cannot keep up with this erratic flow behavior." The various resource agencies, which have jurisdiction over this project, have never found the Project's flows to be erratic or detrimental.

Regarding the Collins request that LIHI certification not be awarded until and unless run-of-river operation is commenced by Red Bridge Project, there is no such requirement in the LIHI

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[1] The drainage area at the Indian Orchard gage is 689 square miles while the drainage area at the Red Bridge Project is 660 square miles; thus, 95.79% of the flow at Indian Orchard gage was used as the flow at Red Bridge Project.

[2] Approximately three years ago, an algorithm had been programmed for a two-inch drawdown in the PLC in an attempt to judge the effects of operating the Project in a run-of-river mode of operations. That algorithm was accidentally activated on June 8th, operating the Project in a run-of-river mode until June 15th

[3] The MDEP has orally confirmed that operating the Project at a two-three inch drawdown would be operating in a run-of-river mode given the operating limitations of the Red Bridge turbines.

[4] Prior to 1992, besides a higher drawdown, Red Bridge Project operated with a "voluntary" minimum flow, ranging between 70 and 130 cfs.

criterion. Instead, the relevant criterion, the Flows Criterion, is met when the facility demonstrates that it complies with recent resource agency recommendations for flows. Red Bridge Project fully satisfies this requirement by possessing approvals of its flows by both the Massachusetts Division of Fisheries & Wildlife[5] and the United States Fish & Wildlife Service.[6] Furthermore, each of these agencies' approvals contains concise language that permits either of them, at their sole option, to request reopening of Red Bridge Project's Exemption from License. To date, neither agency has made such a request.

A review was also made of the FERC e-Library for criticism of the operations of Red Bridge Project from inception to the present. Not one similar compliant letter to Collins, let alone a compliant letter, has ever been received. During the process of the vetting the LIHI application for Red Bridge Project, numerous state and federal agencies[7] as well as local and national NGOs[8] were informed of the LIHI application for Red Bridge Project. No similar comments were received by the LIHI In-Take Reviewer or Essential Power. To the contrary, the Massachusetts Department of Environmental Protection wrote, "The Department acknowledges the applicant's statement that the Red Bridge Project has been in continuous compliance with the requirements of its exception since 1992 and we have no records to indicate otherwise."

In summary, the flows at Indian Orchard gage are not indicative of the permitted flows from Red Bridge Project but only the permitted flows of Indian Orchard Project. All of the relevant resource agencies found that Red Bridge Project fully satisfied the LIHI criterion. Accordingly, Essential Power reiterates that its request that LIHI certification of Red Bridge Project be approved.

Sincerely yours,

William P. Short III

enclosures

John J. Bahrs (via e-mail only)
David Schmidt (via e-mail only)
Kim Marsili (via e-mail only)
Nicholas Hollister (via e-mail only)
Patricia B. McIlvaine (via e-mail only)

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[5] Copies of these letters are attached.
[6] Copies of these letters are attached.
[7] Among the state and federal agencies contacted were Army Corps of Engineers, Environmental Protection Agency, Federal Energy Regulatory Commission, Federal Energy Regulatory Commission – New York Regional Office, Fish and Wildlife Service, National Marine Fisheries Service, National Park Service, Rivers and Special Studies Branch, Natural Resources Conservation Service, Massachusetts Department of Conservation and Recreation, Massachusetts Department of Fish and Game, Massachusetts Department of Environmental Protection, Massachusetts Division of Ecological Restoration, Massachusetts Division of Fisheries and Wildlife and Massachusetts Historical Commission (SHPO).
[8] Among the local and national NGOs contacted were American Rivers, American Whitewater, Appalachian Mountain Club, Conservation Law Foundation, Connecticut River Watershed Council and Pioneer Valley Trout Unlimited and Trout Unlimited.

Collins Hydroelectric LLC

Memo

To: Fred Ayer

From: Peter B. Clark, President (SRC)

CC: Martha Brennan, Bill Short

Date: 6/15/2012

Re: Cycling of the Chicopee River Flows

Background

During our call this morning about the status of the Collins Hydroelectric LP (Collins) LIHI application, we discussed the problems that Collins has had with cycling flows that come to it from Red Bridge operations upstream of our site. As Collins LIHI application describes, Collins knew when it designed its full Kaplan project that Western Mass Electric's Red Bridge plan was operated so that it could generate at full capacity from roughly 17:00 to 22:00 each day of the week to generated evening peak power for its customers. Collins is designed to adjust rapidly to the incoming flow so that the impoundment does not rise, and water is not spilled over the dam and the impoundment is not drawn down below the crest of the flashboards. Collins is a run of river operating system that follows the flow changes in the river adjusting wicket gates and changing output to accommodate normal flow changes.

Recently, we have noticed much more frequent flow adjustments. Because Collins headpond does not rise or lower, the only indication of the flow changes are shown in the output records of the Collins plant. Since Collins passes flow downstream exactly as it is received from upstream, we look to the nearest USGS stream gauge to measure flow changes in the Chicopee River. I am including a set of daily flow graphs taken from the USGS gauge at Indian Orchard. It is located below Collins, Putts Bridge and Indian Orchard power stations. The only evidence that we have that the cycles of river flows are coming from Red Bridge is the fact that Collins output goes up and down without spilling water. This behavior is observed about six hours later at the Indian Orchard gauge. What is troubling to Collins is the peak power production is no longer taking place during evening hours; it now happens many times each day.

Current flow pattern in the Chicopee River

During the month of June this year, most of the time Indian Orchard flow readings have been jumping from 500 cfs to 1,100 cfs (see Exhibit A). To better understand this timing of these flow changes, please look at the June 12thgraph (also in Exhibit A), where flows dropped from over 1,000 cfs to 500 cfs in the first 30 minutes of the day and remained at 500 cfs until about 5:45 AM, then river flows shot up to 1,000 to 1,200 cfs with a storm duration of about a week where flows rose above 1,800 cfs but with dips several times each day down to 1,200 cfs and occasionally all the way down to 500 cfs. We want to focus attention on the recent period from June 9 to today, June 14th. We would like to focus attention on a single day, so we chose June 12, 2012. The day started with flow above 1,000 cfs for about an hour, only to drop again to 500 cfs between 7:30 AM to 11:30 AM. Then again flow rose from 505 cfs to 1,070 cfs for about an hour, only to drop again to 505 cfs within two hours and remained at 505 cfs for the next 4 to 5 hours. At 17:45 roughly flow rose again to just about 1,100 cfs where it remained at that flow rate for 1.5 hours, but then over the next half hour dropped back to 505 cfs for the rest of the evening. I printed out the flow gauge readings, which contain readings taken at 15 minute intervals that verify this strange behavior.

The Indian Orchard flow gauge was cycled from over 1000 cfs to 500 cfs four times during the 24 hour period, only remaining at peak flows for between 1 ½ hours to 1 ¾ hours at a time, four times in the day. If one were trying to maximize output, it would seem that the duration of full capacity turbine flows should be sustained for a majority of the hours of the day. But, the higher flow rates were less than six hours of that 24 hour period and during the other 18 hours of the day, flows were at Red Bridge's min flow discharge rate (237 cfs) plus the additional flow coming from tributaries entering the Chicopee River between Red Bridge and the Indian Orchard USGS stream gauge. On the evening of June 11th, when the water was passing the Collins project, flows varied so much that Collins auto control program took the plant off line for an hour and a half while the control program waited for flow to increase enough (i.e. head pond rise enough) for the PLC program to restart the first generator just before midnight. That flow variation would have reached Indian Orchard six or seven hours later.

Impact of erratic flows on Collins output

Collins output on the 12th of June was very unstable, cycling between slightly above 100 kW and then up to 850 to 900 kW eight times during that 24 hour period. A graph of Collins output is shown in Exhibit B. There was another generator stop between 2:45 and 3:00 AM and thereafter, every three to four hours for the rest of the day output had to be cut back to 100 kW max output from normal output of between 750 and 800 kW. This cycling from that output level down to 100 kW and back up again was repeated every 3 to 4 hour for a total of eight times in the 24 hour period.

Our conclusion is that the river flows were varying so much and never stabilized in the way that river flow do with sloping increases from rain events followed by long attenuated flow reductions as the river flow subsides over a week or ten days. These almost instantaneous changes of 600 cfs up and down over short periods of a half hour caused Collins' control system not to come back to a stable long-term generation level. Collins output was cycling more rapidly than the river flows because of the unstable discharge pattern upstream that we think must have come from Red Bridge. It looks to us as though the hydro plant immediately upstream of Collins was putting its units on line for short durations of a hour plus or minus and then taking them off line until the headpond returned to full pond elevation which took from three to five hours. Then the units would once again come on for an hour or two until another recharge cycle re-commenced. We cannot look at stream gauge data to see what the average daily flows were in the river, but I average the quarter hourly flow readings at Indian Orchard and found the daily average flow measured at that gauge was 616 cfs.

What I have to stress is that Collins PLC cannot keep up with this erratic flow behavior. It seems to overshoot the amount of change because I think it uses a PID loop which looks at the rate of change and makes its adjustment accordingly. Because of the on and off changes between min flow discharge and then full rated flow for the turbines during a very short period of between 1 – 1.5 hours, followed by shutting the river off again back to the min flow discharge rate, Collins' program never gets back to a steady state where flows are constant. Instead, I think that the program computes these radical up ticks and down ticks in the flows coming into its impoundment. Accordingly, Collins program over corrects frequently. I think that this causes Collins equipment to cycle from stop to full two turbine gate opening back to about 100 kW, and then sometimes up over 1,000 kW, and often to 1,500 kW for a very short time, only to find the river level dropping again. So, on June 12th, while the gauge shows only four complete cycles, Collins went through eight production cycles triggered by the abruptness of the on and off cycling upstream at Red Bridge Station.

Incentives

Collins was designed to follow the daily evening peak hour discharge from Red Bridge Station. Its PLC is programmed to operate on the min flow discharge and to follow the normal turbine generating discharge rates ramp up for peak hour full capacity turbine flow discharge. Red Bridge was operated with units spinning no load which was the likely minimum flow Collins would encounter on the Chicopee River. If flows are lower than that, the program will take the base load Collins unit off line. We believe that the rest of the hydro units on the Chicopee River are set up with the same operating systems due to the former peaking operations of the other four plants. That was for a single cycle per day to meet

evening peak demand. At that time, Red Bridge could draw its impoundment down by three feet in one cycle. Today, there is no longer a benefit for the owners of these plants to operate them at full capacity periodically during the day, whenever the impoundment is filled. The *modus operandi* seems to be to operate at "best gate capacity" or full capacity whenever head can be maximized, i.e. the impoundment is full, regardless of the time of day. But, by dispatching water downstream at full gate bursts every few hours, and then turning off the river to recharge the Red Bridge impoundment, all the other five hydro plants downstream are forced to follow this regime with none of them set up to generate at their best gate operating rates of flow.

Collins recommends that LIHI offer an incentive for Red Bridge to operate as a run of river hydro station. By approving Red Bridge as a low impact hydro project conditional upon its operation as a full run of river hydro plant, the rest of the river would return to normal flow passage (meteorologically determined) rises and falls from precipitation in a river basin. The Ware River is subjected to flow diversion into the Quabbin Reservoir, but without major impacts on the environmental condition of the river system. But, the right of Red Bridge to cycle the river once a day for peaking purposes is not what has been happening for many years. Collins is a run of river hydro plant, and as such it does not contribute to the problem that is evident in the stream flow data recorded at the Indian Orchard gauge. Give a MA RPS REC incentive to Red Bridge to stop cycling the Chicopee River.

Exhibit A: Flow graphs from Indian Orchard Gauge

a. Month of June 2012

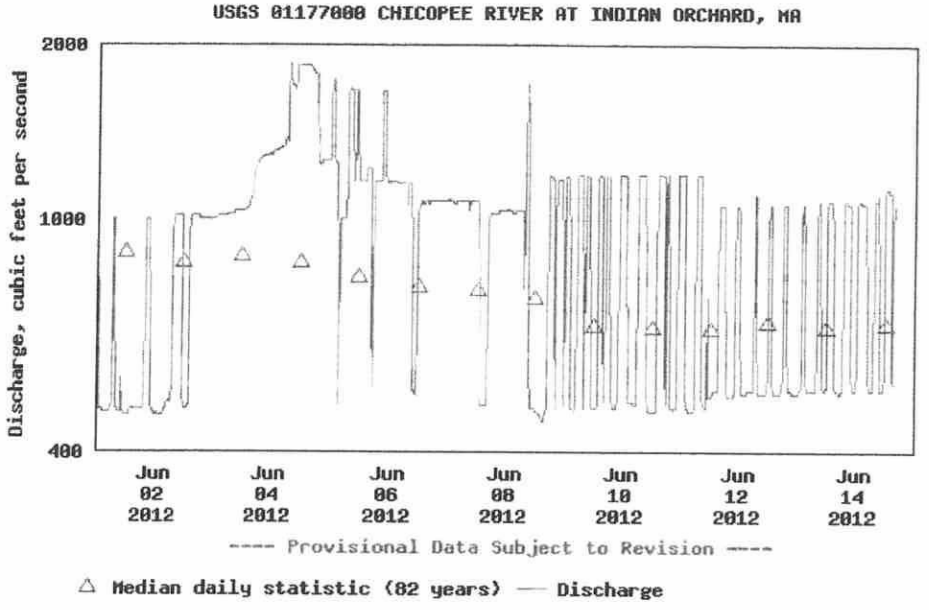
b. June 12, 2012

c. Tabulated data June 12, 2012

Instantaneous-data availability statement

Discharge, cubic feet per second

Most recent instantaneous value: 1,060 06-14-2012 15:30 EDT



Create presentation-quality / stand-alone graph. Subscribe to WaterAlert

Daily discharge statistics, in cfs, for Jun 14 based on 82 years of record more

Min (1964)	25th percen-tile	Median	Mean	Most Recent Instantaneous Value Jun 14	75th percen-tile	Max (1948)
178	431	662	878	1060	1200	3750

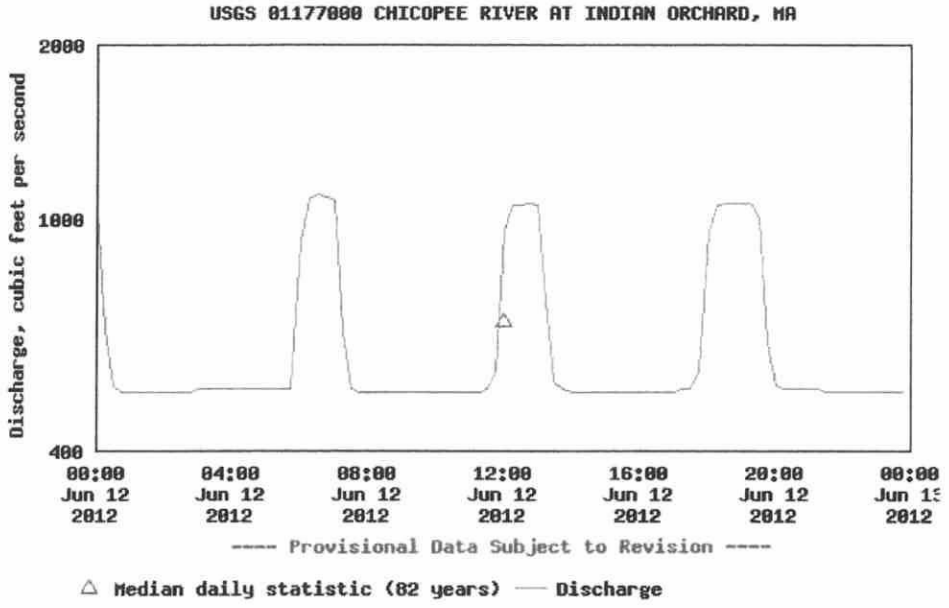
Gage height, feet

Most recent instantaneous value: 5.40 06-14-2012 15:30 EDT

Instantaneous-data availability statement

Discharge, cubic feet per second

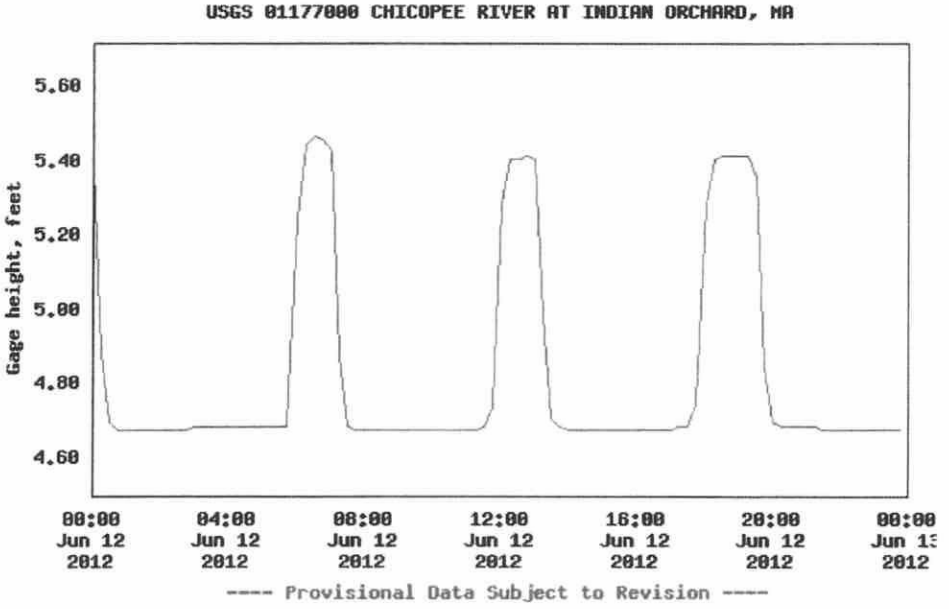
Most recent instantaneous value: 530 06-14-2012 09:30 EDT



Create presentation-quality graph. Subscribe to WaterAlert

Gage height, feet

Most recent instantaneous value: 4.71 06-14-2012 09:30 EDT



Create presentation-quality graph. Subscribe to WaterAlert

Questions about sites/data? Data Tips
Feedback on this web site Explanation of terms

Chicopee River Flow Data for Indian Orchard Gauge on June 12, 2012

Source	Gauge No.	Date	Time	cfs	Height (ft)
USGS	1177000	6/12/2012	0:00 EDT	1040	5.38
USGS	1177000	6/12/2012	0:15 EDT	647	4.88
USGS	1177000	6/12/2012	0:30 EDT	518	4.69
USGS	1177000	6/12/2012	0:45 EDT	505	4.67
USGS	1177000	6/12/2012	1:00 EDT	505	4.67
USGS	1177000	6/12/2012	1:15 EDT	505	4.67
USGS	1177000	6/12/2012	1:30 EDT	505	4.67
USGS	1177000	6/12/2012	1:45 EDT	505	4.67
USGS	1177000	6/12/2012	2:00 EDT	505	4.67
USGS	1177000	6/12/2012	2:15 EDT	505	4.67
USGS	1177000	6/12/2012	2:30 EDT	505	4.67
USGS	1177000	6/12/2012	2:45 EDT	505	4.67
USGS	1177000	6/12/2012	3:00 EDT	511	4.68
USGS	1177000	6/12/2012	3:15 EDT	511	4.68
USGS	1177000	6/12/2012	3:30 EDT	511	4.68
USGS	1177000	6/12/2012	3:45 EDT	511	4.68
USGS	1177000	6/12/2012	4:00 EDT	511	4.68
USGS	1177000	6/12/2012	4:15 EDT	511	4.68
USGS	1177000	6/12/2012	4:30 EDT	511	4.68
USGS	1177000	6/12/2012	4:45 EDT	511	4.68
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USGS	1177000	6/12/2012	5:15 EDT	511	4.68
USGS	1177000	6/12/2012	5:30 EDT	511	4.68
USGS	1177000	6/12/2012	5:45 EDT	511	4.68
USGS	1177000	6/12/2012	6:00 EDT	922	5.24
USGS	1177000	6/12/2012	6:15 EDT	1090	5.44
USGS	1177000	6/12/2012	6:30 EDT	1110	5.46
USGS	1177000	6/12/2012	6:45 EDT	1100	5.45
USGS	1177000	6/12/2012	7:00 EDT	1080	5.42
USGS	1177000	6/12/2012	7:15 EDT	640	4.87
USGS	1177000	6/12/2012	7:30 EDT	511	4.68
USGS	1177000	6/12/2012	7:45 EDT	505	4.67
USGS	1177000	6/12/2012	8:00 EDT	505	4.67
USGS	1177000	6/12/2012	8:15 EDT	505	4.67
USGS	1177000	6/12/2012	8:30 EDT	505	4.67
USGS	1177000	6/12/2012	8:45 EDT	505	4.67
USGS	1177000	6/12/2012	9:00 EDT	505	4.67
USGS	1177000	6/12/2012	9:15 EDT	505	4.67
USGS	1177000	6/12/2012	9:30 EDT	505	4.67
USGS	1177000	6/12/2012	9:45 EDT	505	4.67
USGS	1177000	6/12/2012	10:00 EDT	505	4.67
USGS	1177000	6/12/2012	10:15 EDT	505	4.67
USGS	1177000	6/12/2012	10:30 EDT	505	4.67
USGS	1177000	6/12/2012	10:45 EDT	505	4.67
USGS	1177000	6/12/2012	11:00 EDT	505	4.67
USGS	1177000	6/12/2012	11:15 EDT	505	4.67
USGS	1177000	6/12/2012	11:30 EDT	511	4.68
USGS	1177000	6/12/2012	11:45 EDT	543	4.73
USGS	1177000	6/12/2012	12:00 EDT	955	5.28
USGS	1177000	6/12/2012	12:15 EDT	1060	5.4

Chicopee River Flow Data for Indian Orchard Gauge on June 12, 2012

USGS	1177000	6/12/2012	12:30 EDT	1060	5.4
USGS	1177000	6/12/2012	12:45 EDT	1070	5.41
USGS	1177000	6/12/2012	13:00 EDT	1060	5.4
USGS	1177000	6/12/2012	13:15 EDT	724	4.98
USGS	1177000	6/12/2012	13:30 EDT	524	4.7
USGS	1177000	6/12/2012	13:45 EDT	511	4.68
USGS	1177000	6/12/2012	14:00 EDT	505	4.67
USGS	1177000	6/12/2012	14:15 EDT	505	4.67
USGS	1177000	6/12/2012	14:30 EDT	505	4.67
USGS	1177000	6/12/2012	14:45 EDT	505	4.67
USGS	1177000	6/12/2012	15:00 EDT	505	4.67
USGS	1177000	6/12/2012	15:15 EDT	505	4.67
USGS	1177000	6/12/2012	15:30 EDT	505	4.67
USGS	1177000	6/12/2012	15:45 EDT	505	4.67
USGS	1177000	6/12/2012	16:00 EDT	505	4.67
USGS	1177000	6/12/2012	16:15 EDT	505	4.67
USGS	1177000	6/12/2012	16:30 EDT	505	4.67
USGS	1177000	6/12/2012	16:45 EDT	505	4.67
USGS	1177000	6/12/2012	17:00 EDT	505	4.67
USGS	1177000	6/12/2012	17:15 EDT	511	4.68
USGS	1177000	6/12/2012	17:30 EDT	511	4.68
USGS	1177000	6/12/2012	17:45 EDT	550	4.74
USGS	1177000	6/12/2012	18:00 EDT	955	5.28
USGS	1177000	6/12/2012	18:15 EDT	1060	5.4
USGS	1177000	6/12/2012	18:30 EDT	1070	5.41
USGS	1177000	6/12/2012	18:45 EDT	1070	5.41
USGS	1177000	6/12/2012	19:00 EDT	1070	5.41
USGS	1177000	6/12/2012	19:15 EDT	1070	5.41
USGS	1177000	6/12/2012	19:30 EDT	1010	5.35
USGS	1177000	6/12/2012	19:45 EDT	618	4.84
USGS	1177000	6/12/2012	20:00 EDT	518	4.69
USGS	1177000	6/12/2012	20:15 EDT	511	4.68
USGS	1177000	6/12/2012	20:30 EDT	511	4.68
USGS	1177000	6/12/2012	20:45 EDT	511	4.68
USGS	1177000	6/12/2012	21:00 EDT	511	4.68
USGS	1177000	6/12/2012	21:15 EDT	511	4.68
USGS	1177000	6/12/2012	21:30 EDT	505	4.67
USGS	1177000	6/12/2012	21:45 EDT	505	4.67
USGS	1177000	6/12/2012	22:00 EDT	505	4.67
USGS	1177000	6/12/2012	22:15 EDT	505	4.67
USGS	1177000	6/12/2012	22:30 EDT	505	4.67
USGS	1177000	6/12/2012	22:45 EDT	505	4.67
USGS	1177000	6/12/2012	23:00 EDT	505	4.67
USGS	1177000	6/12/2012	23:15 EDT	505	4.67
USGS	1177000	6/12/2012	23:30 EDT	505	4.67
USGS	1177000	6/12/2012	23:45 EDT	505	4.67
				======	
			Average:	616	cfs

Exhibit B: Collins production graphs

a. Weekly Output for first and second weeks of June 2012

b. Daily output for June 12, 2012

nationalgrid

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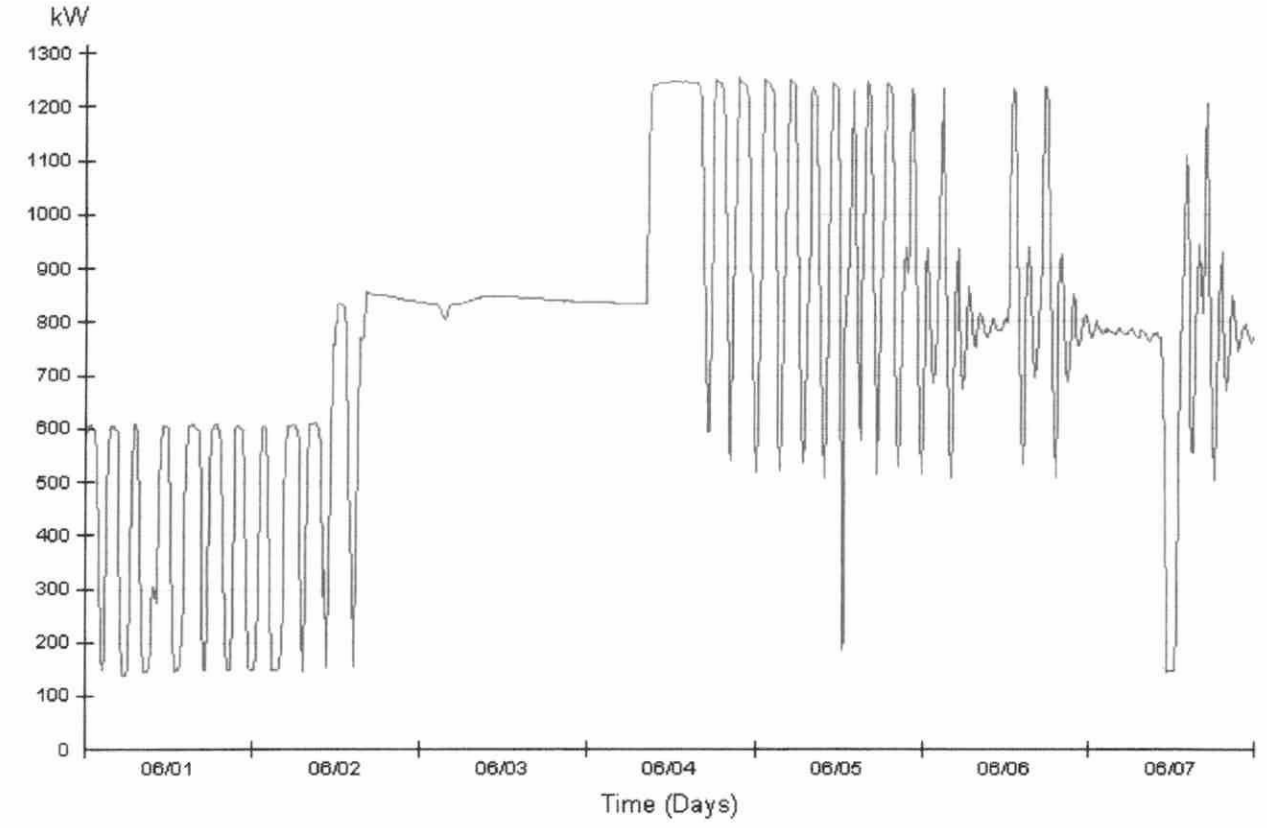
Profile for Selected Accounts From 06/01/2012 Through 06/07/2012



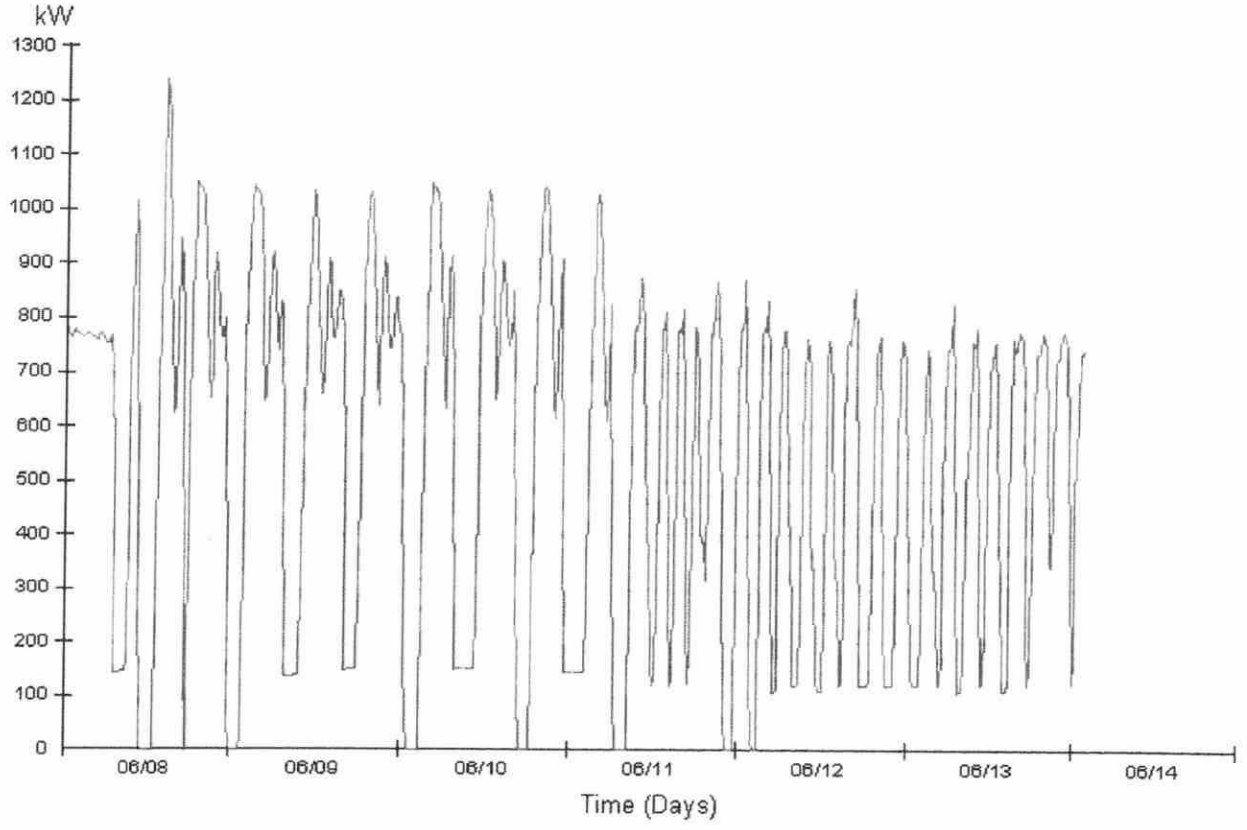
4120779002 SWIFT RVR-COLLINSDAM (kW)

Selected Date Range Friday, June 01, 2012 Through Thursday, June 14, 2012

nationalgrid

Load Profiles

Profile for Selected Accounts From 06/08/2012 Through 06/14/2012



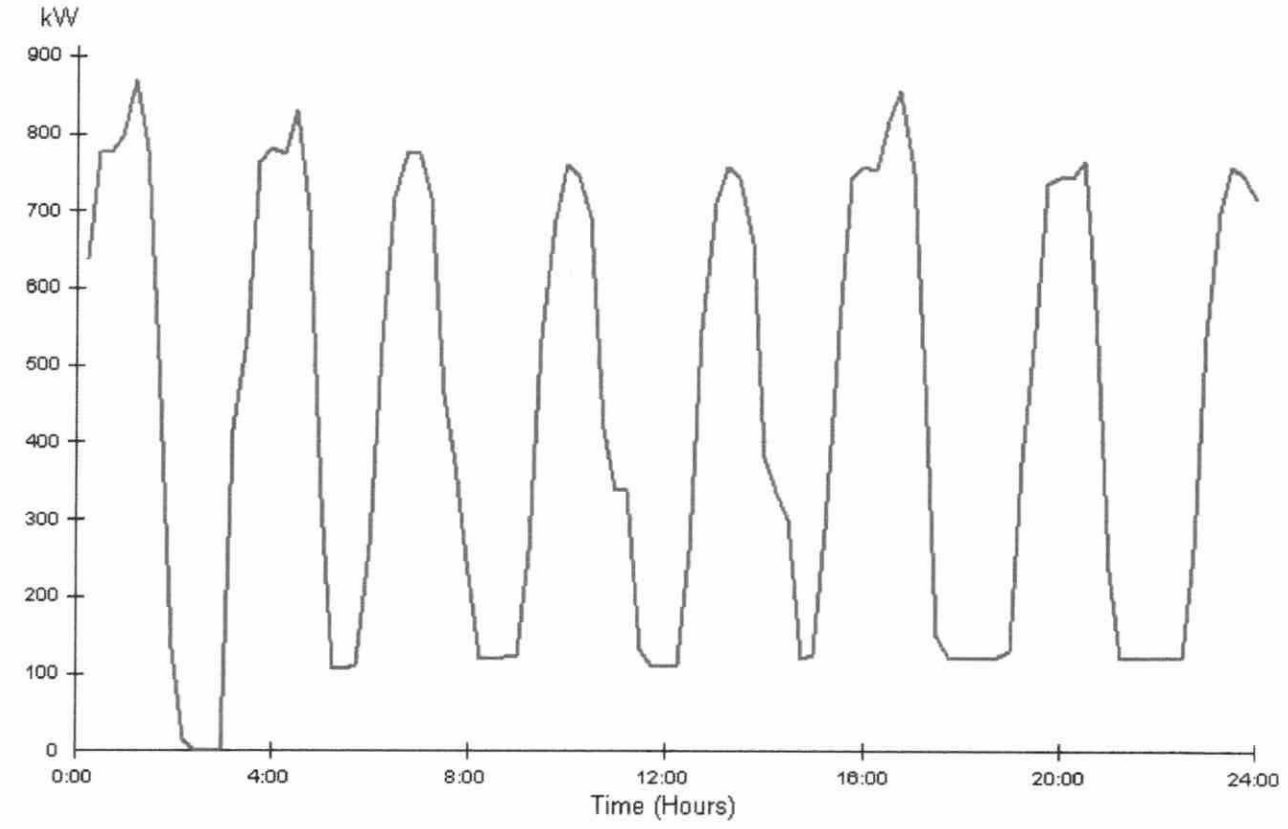
4120779002 SWIFT RVR-COLLINSDAM (kW)

Selected Date Range Friday, June 01, 2012 Through Thursday, June 14, 2012

nationalgrid

Load Profiles

Profile for Selected Accounts on Tuesday, 06/12/2012



4120779002 SWIFT RVR-COLLINSDAM (kW)

Selected Date Range Friday, June 01, 2012 Through Wednesday, June 13, 2012

The following has been obtained from the LIHI website.

(May 1, 2012) LIHI received a comment letter from Caleb Slater Mass DFW Anadromous Fish Project Leader :

Mr. Fred Ayer, Executive Director

Low Impact Hydropower Institute

34 Providence Street

Portland, ME 04103

RE: Red Bridge Project (FERC No. P-10676)

Dear Mr. Ayer:

The Department of Fish and Game ("DFG") hereby submits the following comments on the Low Impact Hydropower Institute's ("LIHI") Pending Application **for** the proposed LIHI certification of North American Energy Alliance, LLC's ("NAEA") Red Bridge Project. The project is located on the Chicopee River in the Towns of Wilbraham, Ludlow, Palmer and Belchertown in Hampden and Hampshire Counties, Massachusetts.

DFG is submitting these comments to LIHI in order to fulfill the requirements of the Massachusetts Department of Energy Resources ("DOER") Renewable Energy Portfolio Standard Regulations (225 CMR 14.00; "RPS I" and 225 CMR 15.00; "RPS II"). The RPS I and RPS II regulations were promulgated by DOER on January 1, 2009 and require that any hydroelectric project wishing to qualify as either a RPS I or RPS II generator first obtain LIHI certification. These regulations also require all relevant regulatory agencies to comment on the pending LIHI application.

The Department does not support NAEA's application for LIHI Certification of the Red Bridge Hydroelectric Project for the reasons outlined below.

PROJECT

The project includes a dam with a crest elevation of 272.3' (NGVD), a canal headgate house, a power canal, two operating penstocks, a powerhouse with two generating units, a tailrace channel (normal tailrace elevations 222.7') and appurtenant facilities. The project creates a bypass reach approximately 1,600 feet long.

At normal pond elevation, the Red Bridge Project impoundment extends approximately 1.8 miles upstream of the dam with a maximum surface area is approximately 185 acres at El. 272.3'. Although the permitted storage is approximately 530 acre-feet and the permitted daily drawdown is two feet except during annual energy audits and system emergencies when a drawdown of as much as three feet may be used, the Project uses only one foot of its drawdown and 185 acre-feet of its storage.

The Red Bridge project is situated upstream of five other hydroelectric facilities located on the Chicopee River and downstream of other dams on the Ware, Swift and Quaboag Rivers.

FISH AND WILDLIFE RESOURCES

The Chicopee River is the largest drainage basin in Massachusetts (721 square miles). The River is formed where its three tributaries, the Swift, the Ware, and the Quaboag, meet in Palmer. The Swift River's three branches were impounded in 1938 to form the Quabbin Reservoir. The upper section of the Ware River is also seasonally diverted into the Quabbin Reservoir. Operation of the Quabbin Reservoir has lead to significant flow alteration in the Chicopee River.

The fish of the Chicopee River include microhabitat generalists species such as chain pickerel, bluegill, golden shiner, largemouth bass and smallmouth bass; fluvial species such as white sucker, common shiner; and tessellated darter. The only migratory fish found upstream of the first dam on the system (Dwight dam) is the American eel. Anadromous fish such as American shad, Blueback herring and sea lamprey are present downstream of the Dwight dam. The 2009 publication "Development of Target Fish Community models for Massachusetts Mainstem Rivers" determined that fish species expected to be abundant in the Chicopee river (fallfish, common shiner, blacknose dace, white sucker, and longnose dace) are at low abundance or absent from existing fish survey data.

IMPACTS AND MITIGATION

FLOWS

Run-of-river Operation

The project does not operate as a run-of-river project. The project operated in a "limited pond and release mode" which raises and lowers the impoundment by one foot on a daily basis. This mode of operation also results in unnatural flow variations in the Chicopee River downstream of the project.

Bypass reach

The project's FERC license guarantees that a minimum flow of 237cfs or inflow is released into the project's 1,600 foot long bypass reach. This flow was recommended in 1989 by the USFWS. The flow is either the estimated median August flow and represents 0.36 cfsm (cfs per square mile of drainage area). This flow is not representative of a natural flow regime and is not appropriate as a year round flow requirement.

FISH PASSAGE

The project has no fish passage requirements.

COMMENTS

The Department does not support NAEA's application for LIHI Certification of the Red Bridge Project.

This project, with its daily peaking operations and impoundment, contributes to changes to the nature of the Chicopee River and cannot be described as "Low Impact".

Likewise a minimum flow of 237cfs in a 1,600 foot long section of the Chicopee River cannot be described as "Low Impact". Using summer flows for a year round prescription subjects fish and

wildlife resources to year round low flow conditions and does not reflect the current state of knowledge for instream flow requirements.

The Department opposes LIHI certification of this project until such time as this project is operated in a significantly more environmentally sensitive manner.

Thank you for this opportunity to comment.

Sincerely,

Caleb Slater, Ph.D.

Anadromous Fish Project Leader

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 627 Main Street, Worcester MA 01608 • 508-792-7650

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

William P. Short III
on behalf of North American Energy Alliance, LLC
P.O. Box 237173
New York, NY 10023-7008

October 19 , 2011

Re: Request For Conditional Approval
Red Bridge Hydro, FERC #10676

Dear Mr. Short,

In pursuit of certification from the Low Impact Hydropower Institute, North American Energy Alliance, LLC has requested the MA Department of Environmental Protection (the Department) to confirm (1) the Red Bridge Hydro facility (Project) is not expected to cause or contribute to violations of state water quality standards; (2) the automated slide gate that releases minimum flows was installed and is operating properly; and (3) that the Department approves of the monitoring approach being used to verify minimum flow.

(1) The Department does not possess water quality data collected at the Red Bridge Hydro facility beyond that submitted with this request. However, the Department does have data collected in the vicinity and believes the presence of wet weather combined sewer overflows upstream of the Project is likely the cause of upstream waters requiring a TMDL for pathogens. The Department believes the Project does not cause nor contribute to the presence of pathogens, escherchia coli and fecal coliform both immediately upstream and downstream of or in the Project area.

Based on the upstream impoundment estimated retention time of approximately one day and information from the 1989 Environmental Report and Water Quality Report prepared for the FERC exemption application, the Department does not expect the Project to cause or contribute to violations of state water quality standards due to water chemistry, either downstream or in the impoundment.

(2) The Department did not issue a water quality certificate for the Red Bridge Hydro exemption in 1992 and was not a participant in the exemption amendment of 1999 (the Supreme Court decision incorporating water quality certificates into FERC licenses was issued in 1994). We are not now requiring any information from the owner and cannot judge whether the slide gate is operating properly. We note however, via email from Melissa Grader to you October 13, 2011

that the U.S. Fish & Wildlife Service states the slide gate was installed in 2002 but they are unable to determine whether the Project is in compliance with its minimum flow requirement.

(3) For reasons described in (2) above the Department cannot approve of the monitoring approach being used to verify minimum flow.

The Department can respond to approval requests (2) and (3) above when we receive the information identified as missing in the U.S. Fish & Wildlife Service email dated October 13, 2011, specifically:

1. A revised final Minimum Flow and Impoundment Fluctuation Monitoring Plan that addresses the comments contained in the U.S. Fish & Wildlife Service letter to Kleinschmidt Associates dated November 6, 2001;
2. Provide a method to allow visual verification of gate discharge.

In view of your Low Impact Hydropower Institute certification application, the Department notes this facility uses a peaking mode of operation. The Department intends to require all Projects to be operated at all times in a run-of-river mode with inflows equal to outflows and a stable pond level within a narrow band. While this Project may be in compliance with FERC exemption flow requirements, the Department has concerns that a peaking facility would be considered a low impact hydropower facility.

If you have any questions, please contact me at 508-767-2854.

Sincerely,

Robert Kubit, P.E.

Cc: Caleb Slater/MADFW
Melissa Grader/USFWS

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

September 27, 2011

William P. Short III
North American Energy Alliance, LLC
PO Box 2371773
New York, NY 10023-7173

RE: Red Bridge Hydroelectric Project, Wilbraham, MA.
MHC#RC.4544. FERC Project No. 10676-001.

Dear Mr. Short:

Staff at the Massachusetts Historical Commission have reviewed information that you submitted concerning the proposed project referensced above, and the MHC's files.

The Red Bridge Generating Station (WIL.108) is listed in the National Register of Historic Places.

To ascertain the project's compliance with the Federal Energy Regulatory Commission's conditions, the MHC suggests that you contact FERC. The MHC has no further information than the MHC's previous comments noted in your letter.

If any project is proposed at the property the involves new construction, demolition, or modification, then a completed Project Notification Form (available at the MHC website), USGS locus map, and scaled plans showing existing and proposed conditions should be submitted to the MHC.

Sincerely,

Edward Bell
Technical Services Division
Massachusetts Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Bill Short

From: Melissa_Grader@fws.gov
Sent: Thursday, October 13, 2011 11:26 AM
To: w.shortiii@verizon.net
Cc: Robert.Kubit@state.ma.us; caleb.slater@state.ma.us; John_Warner@fws.gov
Subject: Fw: LIHI certification for the Red Bridge Project; FERC No. 10676

Dear Mr. Short,

This responds to your various requests for information necessary for NAEA to complete its application for Low Impact Hydropower Institute (LIHI) Certification. We have reviewed the project file and filings contained on the FERC Online database, and offer the following:

1. Threatened and Endangered Species
According to the FWS/New England Field Office's online database (http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm), there are no federally listed T&E species known to occur in the project area.

2. Minimum Flow
The Red Bridge Project is required to release a continuous flow of 237 cfs (or inflow, if less) to the 1,600 foot-long bypass reach. Originally this flow was passed via uniform spill at the dam, but in 2002 the previous owners (Consolidated Edison Energy Massachusetts, Inc.; or CEEMI) installed a slide gate to pass the bypass flow. In a letter to CEEMI's consultant (Kleinschmidt Associates) dated March 13, 2001, the FWS requested that once the slide gate was installed and operational, CEEMI should provide data for the first six months to verify that the project was complying with its bypass flow requirement. The FWS also requested that CEEMI provide a method to allow visual verification of gate discharge. By letter dated March 19, 2001, Kleinschmidt agreed to these requests. To date, it appears that neither of these requests have been fulfilled; therefore, we are unable to determine whether the project is in compliance with its minimum flow requirement.

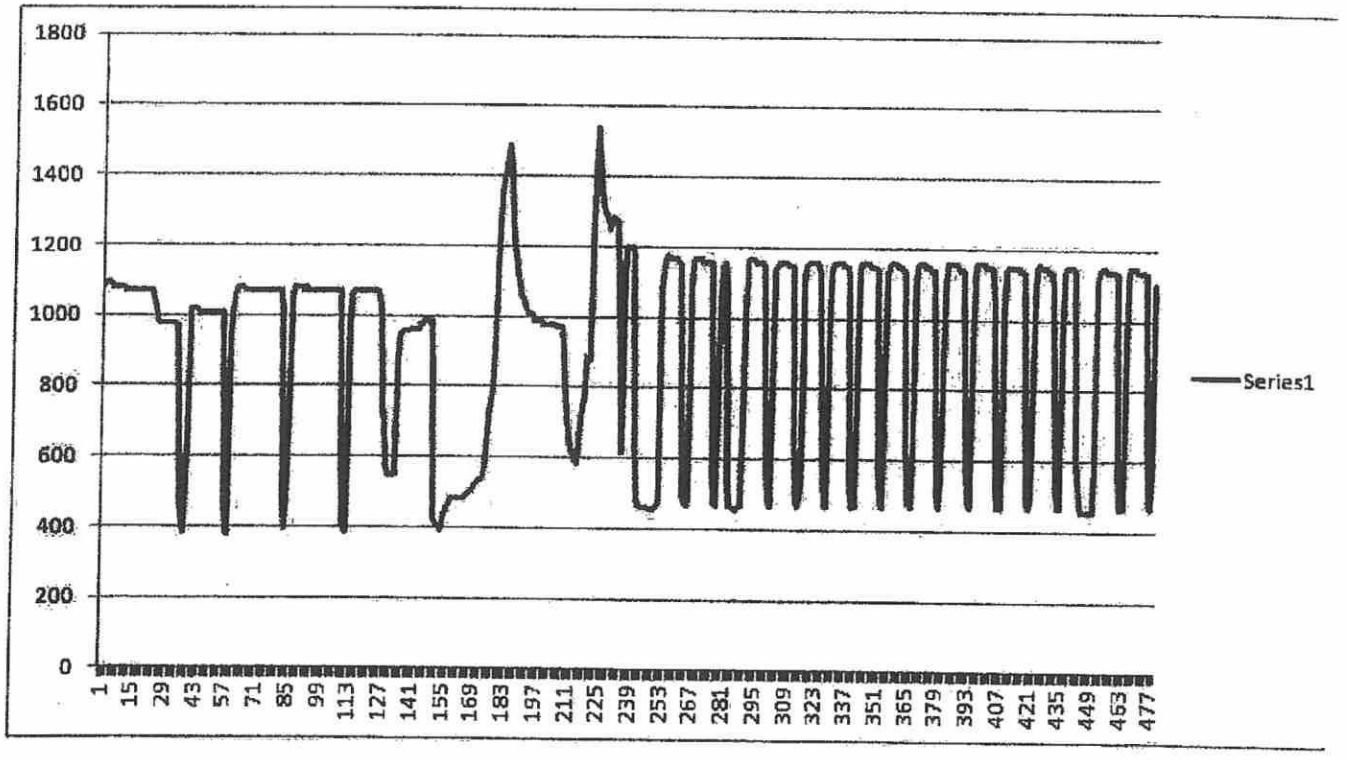
In January of 2000, the FWS submitted modified terms and conditions (T&Cs) for the Red Bridge Project. One of those T&Cs was a requirement to submit a plan to monitor impoundment level and bypass flow releases at the project. Kleinschmidt Associates prepared a draft Minimum Flow and Impoundment Fluctuation Monitoring Plan for all four of CEEMI's Chicopee River projects (including Red Bridge) in October of 2001. The FWS provided comments on that plan by letter dated November 6, 2001. That letter contained a number of issues/concerns that the Service recommended be addressed in the final plan. There is no indication in our files that a revised plan addressing the comments received by the Service was ever submitted for our approval; therefore it appears that the project is not in compliance with Condition #5 of the exemption.

3. Fish Passage
The original terms and conditions set for this project by the Service on July 31, 1992 contained a requirement that the Exemptee construct, operate, maintain and monitor upstream and downstream fish passage facilities when prescribed by the Service and/or the Massachusetts Division of Fisheries and Wildlife. Currently there are no active migratory fish management efforts within the Chicopee River watershed. The Red Bridge Project is the most upstream of NAEA's Chicopee projects. While it is likely that the lower dams will need fish passage facilities in the near future, it likely will be a number of years before passage will be required at Red Bridge. Therefore, the project appears to be in compliance with respect to fish passage.

4. Watershed Protection
The Service did not set any mandatory terms and conditions relative to watershed protection. The Commonwealth of Massachusetts is the appropriate agency to respond to this particular information request.

5. Below-project Flows

The Red Bridge Project is allowed to fluctuate the headpond up to one foot from April 1 through June 30, and up to 2 feet from July 1 through March 30. According to documents in our project file, in the early post-licensing days it appears that the project did not do drawdowns (although allowed to) because the impoundment level needed to be kept higher than the dam crest in order to provide the required bypass flow. However, the agencies were concerned that the uniform dam spill method of providing the bypass flow was not satisfactory, because the project still operated with an approximate three-inch fluctuation, which resulted in times when less than 237 cfs was being provided to the bypass reach. Therefore, a new method of providing the bypass flow (via a deep slide gate) was agreed to. Since it was installed, this new bypass flow mechanism has provided the project with the ability to utilize the allowable drawdown limits. While the Service does not know exactly how Red Bridge operates, viewing the downstream Indian Orchard USGS streamflow gauge indicates that at least some projects on the river are operating in a cycling mode: the units turn off and on several times a day, leaving only the minimum flow in the river. Below is a hydrograph for the period June 15 through June 19, 2011 (provisional data). It appears that the agencies may have inadvertently facilitated the conversion of Red Bridge operations from one of more or less run-of-river under uniform spill, back to a store and release mode of operation under the slide gate method. We raise this issue because, although the project may be operating in compliance with the terms and conditions of its exemption, and therefore may meet requirements of LIHI certification under the existing criteria, this may not be the case under future revisions to LIHI criteria.

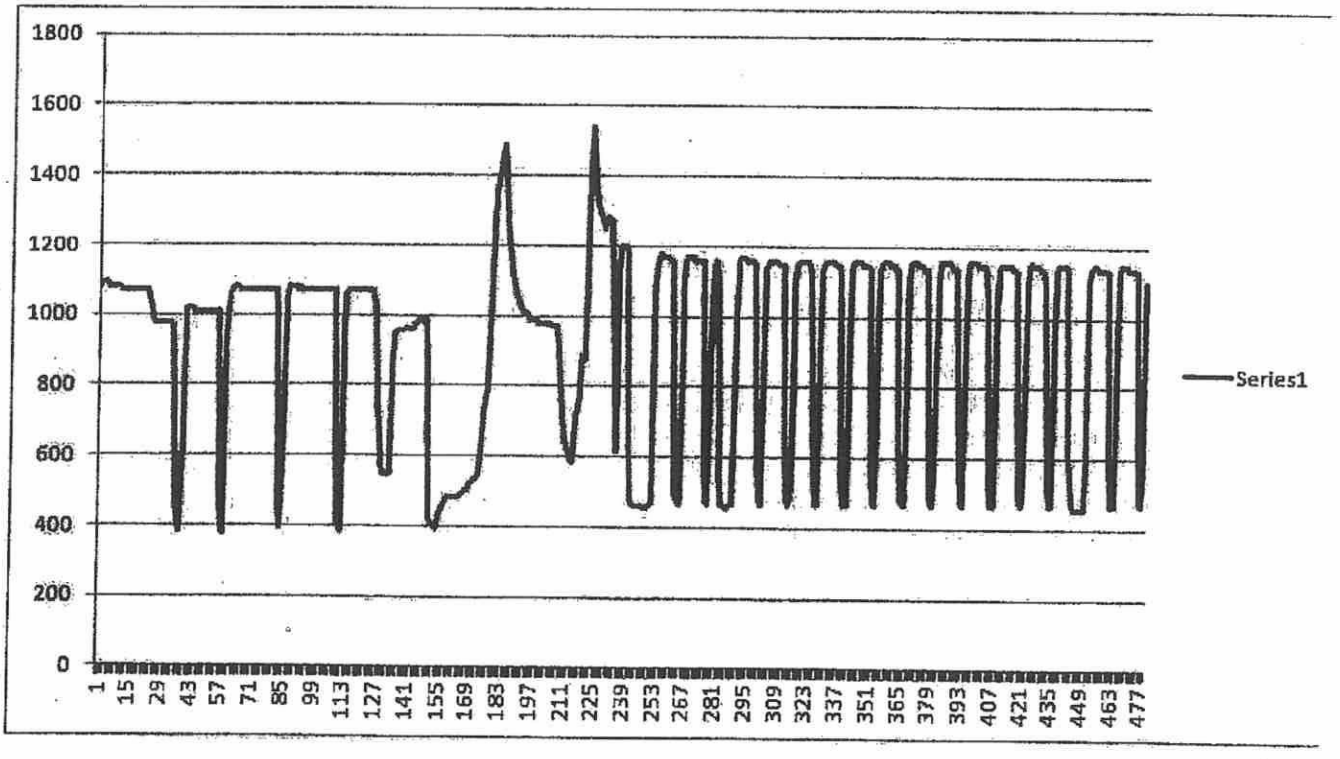


In developing this response to your request, we identified several information gaps relative to the project facilities. We would appreciate it if NAEA could provide us with the following:

- the type of units at the project, and their minimum and maximum hydraulic capacities;
- trashrack specifications (wetted area and clear spacing);
- as-built plans of the slide gate.

5. Below-project Flows

The Red Bridge Project is allowed to fluctuate the headpond up to one foot from April 1 through June 30, and up to 2 feet from July 1 through March 30. According to documents in our project file, in the early post-licensing days it appears that the project did not do drawdowns (although allowed to) because the impoundment level needed to be kept higher than the dam crest in order to provide the required bypass flow. However, the agencies were concerned that the uniform dam spill method of providing the bypass flow was not satisfactory, because the project still operated with an approximate three-inch fluctuation, which resulted in times when less than 237 cfs was being provided to the bypass reach. Therefore, a new method of providing the bypass flow (via a deep slide gate) was agreed to. Since it was installed, this new bypass flow mechanism has provided the project with the ability to utilize the allowable drawdown limits. While the Service does not know exactly how Red Bridge operates, viewing the downstream Indian Orchard USGS streamflow gauge indicates that at least some projects on the river are operating in a cycling mode: the units turn off and on several times a day, leaving only the minimum flow in the river. Below is a hydrograph for the period June 15 through June 19, 2011 (provisional data). It appears that the agencies may have inadvertently facilitated the conversion of Red Bridge operations from one of more or less run-of-river under uniform spill, back to a store and release mode of operation under the slide gate method. We raise this issue because, although the project may be operating in compliance with the terms and conditions of its exemption, and therefore may meet requirements of LIHI certification under the existing criteria, this may not be the case under future revisions to LIHI criteria.



In developing this response to your request, we identified several information gaps relative to the project facilities. We would appreciate it if NAEA could provide us with the following:

- the type of units at the project, and their minimum and maximum hydraulic capacities;
- trashrack specifications (wetted area and clear spacing);
- as-built plans of the slide gate.

We hope this has been responsive to your requests. If you have any questions or require further information please feel free to contact me.

Sincerely,
Melissa Grader

Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
103 East Plumtree Road
Sunderland, MA 01375
413-548-8002, x124
413-548-9622 (FAX)
melissa_grader@fws.gov
www.fws.gov/newengland

Patricia B. McIlvaine

From: Bill Short [w.shortiii@verizon.net]
Sent: Sunday, October 23, 2011 11:48 PM
To: Patricia B. McIlvaine
Cc: John J. Bahrs; John J. Bahrs
Subject: FW: RE: Red Bridge Project LIHI Application -- Water Quality
Attachments: image004.jpg; image001.jpg

Pat,

Here is Caleb Slater's e-mail reply to **Fish Passage Requirements.** He confirms that Red Bridge is complying with its fish passage requirements.

Bill Short

From: w.shortiii@verizon.net [mailto:w.shortiii@verizon.net]
Sent: Tuesday, September 27, 2011 11:19 PM
To: w.shortiii@verizon.net
Subject: Fwd: RE: Red Bridge Project LIHI Application -- Water Quality

From: "Slater, Caleb (MISC)"

Date: Sep 27, 2011 9:21:19 AM

Subject: RE: Red Bridge Project LIHI Application -- Water Quality

To: Bill Short <w.shortiii@verizon.net>

Bill,

This email is to confirm for the LIHI reviewer that "the current upstream and/or downstream passage prescriptions are still valid and that no fish passage facilities, such as entrainment barriers, have been requested at the Red Bridge Project to date".
MADFW agrees that the Terms and Conditions for fish passage set in the 1992 exemption and 1999 amendment to the exemption for the Red Bridge Project are still accurate and that MADFW has not asked the project owner to install and fish passage protection since. MADFW of course reserves its right to revisit fish passage protection needs at this project at some future time.

Caleb

Caleb Slater, PhD
Anadromous Fish Project Leader

Patricia B. McIlvaine

From: Melissa_Grader@fws.gov
Sent: Thursday, November 10, 2011 3:21 PM
To: w.shortiii@verizon.net
Cc: caleb.slater@state.ma.us; Robert.Kubit@state.ma.us
Subject: Red Bridge LIHI certification

Hi Bill,

Regarding our phone conversation earlier today, I'm providing this follow-up response for your consideration:

In my October 13, 2011 email to you, I outlined several issues in my review of the Red Bridge Project file relative to NAEA's application for LIHI certification: (1) the lack of empirical data verifying that the slide gate is providing the required flows to the bypass reach; (2) the lack of a visual mechanism allowing verification of gate discharge; (3) and the lack of a submittal of a revised Minimum Flow and Impoundment Fluctuation MonitoringPlan.

This message is to clarify that the Service's position is that these outstanding issues do not necessarily preclude NAEA from applying for LIHI certification; however, the Service would recommend that LIHI condition the certification to require NAEA to address these outstanding issues within a specified timeframe. Below are our suggested LIHI conditions:

1. Within 12 months of receiving LIHI certification NAEA should use standard stream-gauging techniques to quantify the bypass discharge when the slide gate is set to release 237 cfs. Once verified, NAEA shall place a visual marker in an easily observable location (e.g., a staff gage or paint mark on a rock, etc.) that identifies the water level equating to 237 cfs.
2. NAEA should provide the FWS with operational data for the period June 1 through November 30, 2012 that verifies the project is meeting its bypass flow requirement.
3. Within 6 months of receiving LIHI certification NAEA should submit a revised Minimum Flow and Impoundment Fluctuation Monitoring Plan for FWS review and approval. This plan should address the issues/concerns that the Service identified in its letter of November 6, 2001.

I hope these comments are of assistance to you in completing your LIHI application.

Regards,
Melissa

~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
103 East Plumtree Road
Sunderland, MA 01375
413-548-8002, x124
413-548-9622 (FAX)
melissa_grader@fws.gov
www.fws.gov/newengland

~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Patricia B. McIlvaine

From: Bill Short [w.shortiii@verizon.net]
Sent: Friday, November 11, 2011 4:34 PM
To: 'Patricia B. McIlvaine'
Cc: John J. Bahrs; John J. Bahrs; Kim Marsili; David Schmidt; Nicholas Hollister
Subject: RE: Will await emails
Attachments: Red Bridge LIHI certification; William P Short III.vcf

Patricia,

Attached is an e-mail from Melissa Grader of the USFWS regarding USFWS's requirements for signing off on the LIHI application for Red Bridge Project. Her three points are as follows:

- If NAEA cannot find the 2001(?) Minimum Flow and Impoundment Fluctuation Monitoring Plan, it must prepare such a plan. This must be completed and approved by June 1, 2012;

- If NAEA cannot find the empirical data from 2003 verifying that the slide gate is providing the required flows to the bypass reach, six months of data must be provided which confirms a minimum flow of 237 cfs. This must completed by December 1, 2012;

- NAEA must either place a pole or paint a rock in the spillway area from which one can tell if the flow is 237 cfs.

I have let NAEA know of the USFWS requirements and we will be talking about these requirements in the very near future. In the meantime, NAEA has been searching its files and has reached out to Kleinschmidt but so far without any luck.

I did speak with Bob Kubit about Melissa's e-mail. Bob agreed with the first two points but was not as enthusiastic about the requirement for the pole or painted rock since the spillway area is not very accessible and the lack of a "convenient" rock to paint a red stripe. Bob came to this conclusion once he had viewed the pictures that I sent him on the CD. Melissa has not completed viewing the CD, especially the photographs. Next week, I'll speak with Melissa about her latter request to see if it is that germane if the first two items are accomplished.

On NAEA's minimum flow letters, I did speak with NAEA personnel and they have calculations and records that indicate that the 237 cfs minimum flows is being achieved. My reply question is that, "Do you need both the USFWS requests answered as well as the NAEA documentation of minimum flow?"

Changing subjects, I'll contact the Massachusetts State Park people next week and find out if they will provide me with a letter or e-mail on the maintenance of the upstream boat ramp and downstream car-top boat launch.

Bill Short

William P. Short III

(917) 206-0001 Work
(201) 970-3707 Mobile
w.shortiii@verizon.net

P.O. Box 237173 (Mailing Address)
New York, New York 10023-7173
44 West 62nd Street (Street Address)
New York, New York 10023-7008

From: Patricia B. McIlvaine [mailto:pbm@wright-pierce.com]
Sent: Friday, November 11, 2011 9:17 AM
To: 'Bill Short'
Subject: Will await emails

Bill

I will need to wait until I receive all of the emails you mentioned before I can do a complete review of the water quality issue. Also, please be sure that the data requested in my intake review and our various discussions is provided. I still believe that you may need to contact KA. If they are issuing formal statements to FERC that the facility is in compliance with the license flow requirements, they must have some formal basis on which to sign off of this, including an agency approved method of measuring the flow.

Also, have you received any written confirmation that the recreational facilities are in fact being maintained by the state?

Pat

Pat McIlvaine | Project Manager

Wright-Pierce | Water, Wastewater & Infrastructure Engineers
www.wright-pierce.com

Offices throughout New England
Tel 888.621.8156 | Fax 207.729.8414

Serving New England for Over 60 Years

Patricia B. McIlvaine

From: Bill Short [w.shortiii@verizon.net]
Sent: Saturday, April 14, 2012 11:06 PM
To: Patricia B. McIlvaine
Subject: FW: Red Bridge LIHI certification
Attachments: pic29170.gif; red bridge aerial pix.docx; William P Short III.vcf

Pat,

Per your e-mail of 4/12/2012, below is the e-mail from Melissa Grader where she agrees to drop the requirement for the rock with a red stripe. If you accept this e-mail, the e-mail that you are looking for from Melissa Grader should only cover one issue – whether NAEA needs to perform an empirical study or will the six months of data suffice.

Bill Short

William P. Short III

(917) 206-0001 Work
(201) 970-3707 Mobile
w.shortiii@verizon.net

P.O. Box 237173 (Mailing Address)
New York, New York 10023-7173
44 West 62nd Street (Street Address)
New York, New York 10023-7008

From: Melissa_Grader@fws.gov [mailto:Melissa_Grader@fws.gov]
Sent: Wednesday, November 16, 2011 3:44 PM
To: w.shortiii@verizon.net
Cc: caleb.slater@state.ma.us; Robert.Kubit@state.ma.us
Subject: Re: Red Bridge LIHI certification

Dear Bill,

This is to follow up on our phone conversation earlier today. On that call, you questioned the feasibility of installing a visual marker within the bypass reach to identify the water surface elevation equating to 237 cfs due to the remoteness and lack of easy access to the site.

I have reviewed the photos you sent on CD and have looked at aerial views from different vantage points online (e.g., Bing, Google Earth, etc.; see attached file). While I do think it might be possible to find a location where a staff gage could be installed (e.g., where the transmission line crosses the river), **we have reconsidered and find that it is not necessary to provide a visual mechanism**. Because NAEA maintains monitoring records of gate discharge, if there is any question of compliance with the bypass flow requirement, the Service can request those records from NAEA (directly, or indirectly through FERC).

Therefore, we have modified our first suggested condition as follows:
1. Within 12 months of receiving LIHI certification NAEA should use standard stream-gauging techniques to quantify the bypass discharge when the slide gate is set to release 237 cfs. The

measurements and calculations should be provided to the Service within 3 months of data collection.

Regards,
Melissa
(See attached file: red bridge aerial pix.docx)

Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
103 East Plumtree Road
Sunderland, MA 01375
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www.fws.gov/newengland

Melissa Grader/R5/FWS/DOI

Melissa Grader/R5/FWS/DOI

ToBill Short
ccCaleb.slater@state.ma.us, Robert.Kubit@state.ma.us
SubjectRed Bridge LIHI certification

11/10/2011 03:20 PM

Hi Bill,

Regarding our phone conversation earlier today, I'm providing this follow-up response for your consideration:

In my October 13, 2011 email to you, I outlined several issues in my review of the Red Bridge Project file relative to NAEA's application for LIHI certification: (1) the lack of empirical data verifying that the slide gate is providing the required flows to the bypass reach; (2) the lack of a visual mechanism allowing verification of gate discharge; (3) and the lack of a submittal of a revised Minimum Flow and Impoundment Fluctuation MonitoringPlan.

This message is to clarify that the Service's position is that these outstanding issues do not necessarily preclude NAEA from applying for LIHI certification; however, the Service would recommend that LIHI condition the certification to require NAEA to address these outstanding issues within a specified timeframe. Below are our suggested LIHI conditions:

1. Within 12 months of receiving LIHI certification NAEA should use standard stream-gauging techniques to quantify the bypass discharge when the slide gate is set to release 237 cfs. Once verified, NAEA shall place a visual marker in an easily observable location (e.g., a staff gage or paint mark on a rock, etc.) that identifies the water level equating to 237 cfs.
2. NAEA should provide the FWS with operational data for the period June 1 through November 30, 2012 that verifies the project is meeting its bypass flow requirement.
3. Within 6 months of receiving LIHI certification NAEA should submit a revised Minimum Flow and Impoundment Fluctuation Monitoring Plan for FWS review and approval. This plan should address the issues/concerns that the Service identified in its letter of November 6, 2001.

I hope these comments are of assistance to you in completing your LIHI application.

Regards,
Melissa

~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
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Sunderland, MA 01375
413-548-8002, x124
413-548-9622 (FAX)
melissa_grader@fws.gov
www.fws.gov/newengland

~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Patricia B. McIlvaine

From: Melissa_Grader@fws.gov
Sent: Thursday, April 26, 2012 11:30 AM
To: Patricia B. McIlvaine
Subject: Re: FW: USFWS comments on empirical data

Hello Pat,

Yes, Kim's email accurately portrays our discussion and agreement regarding the empirical data needs for the Red Bridge Project.

Regards,
Melissa

~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
103 East Plumtree Road
Sunderland, MA 01375
413-548-8002, x124
413-548-9622 (FAX)
melissa_grader@fws.gov
www.fws.gov/newengland

~~~~~~~~~~~~~~~~~~~~~~~~~~~~

"Patricia B. McIlvaine" <Pat.McIlvaine@wright-pierce.com>

"Patricia B. McIlvaine" <Pat.McIlvaine@wright-pierce.com>	To"'Melissa_Grader@fws.gov'" <Melissa_Grader@fws.gov>
	cc
04/26/2012 11:24 AM	SubjectFW: USFWS comments on empirical data

Melissa

Could you please confirm for me that this email accurately portrays your agreement regarding the empirical data needs for the Red Bridge Project?

A quick email response would work great.

Thanks

Pat

From: Kim Marsili [mailto:Kim.Marsili@essentialpowerllc.com]
Sent: Monday, April 23, 2012 9:28 AM
To: Bill Short
Cc: John Bahrs

Subject: RE: USFWS comments on empirical data

Bill, I spoke with Melissa. Long story short I promised her a one day flow study to verify that a given pond elevation and a given gate position equates to the min flow that we calculated. She realizes that we may have to wait until the river flows will allow the test, but I assured her that we are committed to do it as soon as possible. With this information she seemed satisfied that we could move ahead with the certification process.

APPENDIX B

COPIES OF HISTORICAL COMMUNICATIONS

357-89

RECEIVED
OCT 2 5 1989
R.A.R.

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

October 20, 1989

Mr. R. A. Reckert
Vice President
Northeast Utilities Services Company
P.O. Box 270
Hartford, CT 06141-0270

RE: FERC No. 10676, Red Bridge Hydro Project, Chicopee River, Draft Application for Exemption from Licensing

Dear Mr. Reckert:

The Massachusetts Division of Fisheries and Wildlife (MDFW) has completed its review of the Second Stage Consultation Draft Application for Exemption from Licensing for the Red Bridge Hydro Project as requested. Stage One consultation resulted in recommendations by this agency and the U.S. Fish and Wildlife Service (USFWS) for studies to determine the continuing impact of project operation on fish and wildlife resources. These studies addressed four specific areas of concern; instream flows, reservoir fluctuations, water quality, and recreational access.

Instream Flow

You are proposing the release of an instantaneous minimum flow of 237 cfs or inflow to the project (if less) at the Red Bridge Dam. The 237 cfs flow figure was derived from a hydrological analysis of gage data from within the Chicopee River basin in accordance with guidelines of the USFWS's Aquatic Base Flow policy and approximates the unregulated August median flow. We believe this flow will be adequate to protect fisheries resources in the bypass and below the project. A method for monitoring the instantaneous flow should also be developed.

Reservoir Fluctuations

These studies and consultation with the USFWS concluded that the area of available fish spawning habitat is significantly impacted by a reservoir fluctuation greater than one foot. You are proposing to limit the maximum water level fluctuation to one foot or less during the period of April 1 to June 30, the period we and the USFWS have agreed is the period of maximum fish spawning activity. Also, we concur with the conclusion of the

Field Headquarters
Westborough, Massachusetts 01581 (508) 366-4470
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement

studies that continued operation of the project will not significantly affect either wildlife or wetlands resources.

Water Quality

Review of data from 1980 and 1985 coupled with additional sampling within the Red Bridge impoundment indicated that dissolved oxygen levels are above the Class B standards. Therefore we see no adverse impacts to water quality from continued operation of the project.

Recreational Access

During Stage One consultation you were advised to describe the recreational use of the project area and to develop alternatives to accommodate increased recreational demand. We understand you will be increasing vehicle parking adjacent to the area used for launching car-top boats.

Other Issues

The subject of anadromous fish passage was discussed during the Stage One consultation. At that time, both we and the USFWS informed you that the Chicopee River is not currently considered for anadromous fish restoration. This may change in the future after restoration efforts on other higher priority waters is achieved. Accordingly, we and the USFWS will prescribe a condition in your exemption requiring the construction, operation, and monitoring of fish passage facilities when prescribed by one or both of these agencies.

Terms and Conditions

Section 30(c) of the Federal Power Act and Section 408 of the Energy Security Act require the inclusion in the exemption of all terms and conditions that are prescribed by State and Federal fish and wildlife agencies to prevent loss of, or damage to, fish and wildlife resources and to otherwise carry out the purposes of the Fish and Wildlife Coordination Act. Consistent with our responsibilities, the following terms and conditions are provided:

1. The Exemptee shall construct, operate, and monitor fish passage facilities at this project when prescribed by the MDFW and/or the USFWS.

2. The Exemptee shall provide a minimum instantaneous flow release at the Red Bridge Dam of lessor of 237 cfs or inflow to the project, to conserve, protect, and enhance aquatic habitat.

3. The Exemptee shall limit drawdown of the project impoundment to no more that one (1) foot daily below the crest of the Red Bridge Dam (272.3' NGVD) during the period April 1 through

June 30 of any year. During the period July 1 through March 30 of any year the impoundment shall not be drawn down more than two (2) feet daily below the crest of the dam, except for system emergencies or annual energy audits.

4. The exemptee shall notify the MDFW in writing when the minimum flow turbine commences operation. Such notice shall be sent within 30 days of start-up to Assistant Director Fisheries, Field Headquarters, Route 135, Westborough, MA 01581.

5. The Exemptee shall construct and operate a public parking facility as described in the draft application for exemption, and allow for public access to the project area for utilization of fish and wildlife resources, subject to reasonable safety and liability limitations. Such access should be prominently and permanently posted so that its availability is made known to the public.

6. The Exemptee shall within six months of issuance of an exemption for this project, present to the MDFW for approval a plan for monitoring the instantaneous minimum flow releases at this project. Following approval of the monitoring plan, the Exemptee shall then measure instantaneous flows and provide records of discharges at the project on a regular basis as per specifications of the MDFW.

7. The Exemptee shall allow the MDFW to inspect the project area at any time while the project operates under an exemption from licensing to monitor compliance with their terms and conditions.

8. The MDFW is reserved the right to add and alter terms and conditions as appropriate to carry out its responsibilities during the life of the project with respect to fish and wildlife resources. The Exemptee shall, within thirty (30) days of receipt, file with the Federal Energy Regulatory Commission (FERC) any additional terms and conditions imposed by the above agency.

9. The Exemptee shall incorporate the aforementioned fish and wildlife conditions in any conveyance - by lease, sale or otherwise - of his interests so as to legally assure compliance with said conditions for as long as the project operates under an exemption from licensing.

With regard to FERC Order #487 requiring reimbursement to fish and wildlife agencies for costs incurred in the setting of terms and conditions for hydroelectric projects, such reimbursement to the MDFW is waived. This agency's costs have been covered under its F-W-9-T Technical Assistance Project.

Please contact Mr. Bob Madore of this office at (508) 366-4470 regarding any questions you might have.

Sincerely,

Peter H. Oatis (RPM)

Peter H. Oatis
Assistant Director, Fisheries

346-89

United States Department of the Interior

FISH AND WILDLIFE SERVICE
400 RALPH PILL MARKETPLACE
22 BRIDGE STREET
CONCORD, NEW HAMPSHIRE 03301-4901

REF: FERC No. 10676

October 20, 1989

Mr. Richard A. Reckert, Vice President
Northeast Utilities Service Company
P.O. Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Reckert:

We have reviewed the Second Stage Consultation Draft Application for Exemption from Licensing for the Red Bridge Project (Docket UL88-33-000), located on the Chicopee River in Hampden and Hampshire Counties, Massachusetts. These comments are submitted in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (48 stat. as amended; 16 U.S.C. 661 et seq.).

The Red Bridge Project operates on a daily store and release basis, utilizing up to two feet of storage. Generation flows are released through a tailrace into the Chicopee River about 1600 feet downstream of the Red Bridge Dam. The project area supports a variety of warmwater game and pan fish. During Stage One consultation we recommended a number of studies be performed to determine the continuing impact of project operation on fish and wildlife resources. The draft application for exemption contains the results of these studies. Studies were conducted in four major areas, viz., instream flows, reservoir fluctuations, water quality, and recreational access.

Instream Flows

Based on a hydrological analysis utilizing gage data from within the Chicopee River basin, and following Fish and Wildlife Service (Service) Aquatic Base Flow criteria, you have proposed to release an instantaneous minimum flow at the Red Bridge Dam of the lessor of 237 cfs or inflow to the project. This flow is equal to the calculated unregulated August median flow, and should conserve, protect, and enhance fishery resources in the bypassed reach and below the project. This flow will be released through a minimum flow turbine located at the base of the dam. You should also make provision for monitoring flow releases from the project.

Reservoir Fluctuations

Reconnaissance and mapping studies were performed in the Red Bridge impoundment to determine the extent of wetlands and fish spawning habitats that would be affected by water level fluctuation. Based on these studies and consultation with the Service and the Massachusetts Division of Fisheries and Wildlife (MADFW), it was determined that fish spawning would be significantly

affected by fluctuations greater than one foot during the spawning season. Thus you have proposed to limit pond fluctuation to one foot or less during the period April 1 through June 30. Pond fluctuation the remainder of the year should be limited to two feet, exclusive of system emergencies or energy audits. This should conserve, protect, and enhance fishery resources in the project impoundment. Studies indicated that wetlands and wildlife habitats should not be significantly affected by continued project operation.

Water Quality

To determine whether project operation was affecting water quality, water quality sampling data collected by the state in 1980 and 1885 were examined. In addition, the Service recommended that dissolved oxygen and temperature data be collected from within the project area during Stage Two consultation. Examination of this data showed that dissolved oxygen levels above and below the project are above Class B standards. Thus, continued project operation should not have an adverse affect on water quality.

Recreational Access

We recommended during Stage One consultation that existing recreational access be described, and additional measures proposed that would accommodate increased demand. A boat ramp and parking area currently provide access to the impoundment. You have proposed to construct an additional parking lot near the powerhouse to accommodate car-top boats. Signs will also be placed to indicate available facilities and their location. You should also cooperate with state and local groups to provide trails where needed.

Other Issues

As we indicated during Stage One consultation, the Chicopee River is not currently being considered for anadromous fish restoration. However, as restoration proceeds and habitat is fully utilized in other higher priority Massachusetts rivers, attention may focus on the Chicopee. Thus we will prescribe a condition in your exemption requiring construction, operation, and monitoring of fish passage facilities when prescribed by the Service and/or the MADFW.

Terms and Conditions

Section 30(c) of the Federal Power Act and Section 408 of the Energy Security Act require inclusion in the exemption of all terms and conditions that are prescribed by State and Federal fish and wildlife agencies to prevent loss of, or damage to, fish and wildlife resources, and to otherwise carry out the purposes of the Fish and Wildlife Coordination Act. Consistent with our responsibilities, the following terms and conditions are provided:

1. The Exemptee shall construct, operate, and monitor fish passage facilities at this project when prescribed by the U.S. Fish and Wildlife Service and/or the Massachusetts Division of Fisheries and Wildlife. Operational flows shall also be provided by the Exemptee, as prescribed by the Service.

2. The Exemptee shall provide a minimum instantaneous flow release at the Red Bridge Dam of the lessor of 237 cfs or inflow to the project, to conserve, protect, and enhance aquatic habitat.

3. The Exemptee shall limit drawdown of the project impoundment to no more than one (1) foot daily below the crest of the Red Bridge Dam (272.3' NGVD) during the period April 1 through June 30 of any year. During the period July 1 through March 30 of any year the impoundment shall not be drawn down more than two (2) feet daily below the crest of the dam, except for system emergencies or annual energy audits.

4. The Exemptee shall notify the Fish and Wildlife Service in writing when the minimum flow turbine commences operation. Such notice shall be sent within 30 days of start-up to Supervisor, Ecological Services, U.S. Fish and Wildlife Service, 400 Ralph Pill Marketplace, 22 Bridge Street, Concord, NH 03301.

5. The Exemptee shall construct and operate a public parking facility as described in the draft application for exemption, and allow public access to the project area for utilization of fish and wildlife resources, subject to reasonable safety and liability limitations. Such access should be prominently and permanently posted so that its availability is made known to the public.

6. The Exemptee shall, within six months of issuance of an exemption for this project, present to the Fish and Wildlife Service for approval a plan for monitoring instantaneous flow releases at this project. Following approval of the monitoring plan, the Exemptee shall then measure instantaneous flows and provide records of discharges at the project on a regular basis as per specifications of the Fish and Wildlife Service.

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

8. The Fish and Wildlife Service is reserved the right to add and alter terms and conditions as appropriate to carry out its responsibilities during the life of the project with respect to fish and wildlife resources. The Exemptee shall, within thirty (30) days of receipt, file with the Federal Energy Regulatory Commission (Commission) any additional terms and conditions imposed by the above agency.

9. The Exemptee shall incorporate the aforementioned fish and wildlife conditions in any conveyance - by lease, sale or otherwise - of his interests so as to legally assure compliance with said conditions for as long as the project operates under an exemption from licensing.

FERC Order #487 states that hydroelectric exemption applicants for projects required to meet the terms and conditions of fish and wildlife agencies under Section 30(c) of the Federal Power Act must reimburse those agencies for reasonable costs incurred in setting terms and conditions to protect fish and wildlife resources. Agency estimates of fees are to be provided to the applicant at the end of Second Stage Consultation. Our estimate of the costs incurred in setting these terms and conditions for this project is $1750.00. The sum is based on the following calculation (see also Attachment A):

Staff Day(s)	x	Cost per Staff Day	=	Estimated Cost
Five (5)		$350.00		$1750.00

Please contact Mr. Robert Scheirer of this office at (603) 225-1411 if you have any questions about this letter.

In order to acknowledge receipt of this letter, please sign the enclosed copy and return as soon as possible.

Sincerely yours,

Gordon E. Beckett

Gordon E. Beckett
Supervisor
New England Area

I have received and understand the terms and conditions identified in this letter.

_____ _____

(signed) (date)

attachment A

March 23,, 1989

Mr. Fred E. Springer, Director
Office of Hydropower Licensing
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

Dear Mr. Springer:

The Federal Energy Regulatory Commission's Order No. 487 establishes procedures for reimbursing fish and wildlife agencies for costs associated with setting terms and conditions to protect fish and wildlife resources at certain hydroelectric projects. The order, in part, requires fish and wildlife agencies to provide applicants during the second stage of consultation with an estimate of what it will eventually cost to establish necessary terms and conditions. A second filing, including a statement of actual total cost, would be made with the Commission after the final application and public notice are reviewed.

In order to develop consistent cost estimates at hydroelectric projects in New England that are subject to Order 487, we intend to notify applicants that it will cost $350.00 per staff day X estimated days to cover Fish and Wildlife Service expenses. We use this value in our transfer funding arrangements with the Corps of Engineers and Environmental Protection Agency. It is intended to help us and applicants meet our joint responsibilities during pre-filing consultation, and would be subject to adjustment when we submit our final cost statement.

We hope this will help all parties follow the new transfer funding regulations. If you have any questions, or wish to discuss this further, please contact Joe McKeon at FTS 834-4411.

Sincerely yours,

Gordon E. Beckett

Gordon E. Beckett
Supervisor
New England Area

ORIGINAL

United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL AFFAIRS
O'NEILL FEDERAL OFFICE BUILDING - ROOM 1022
10 CAUSEWAY STREET
BOSTON, MASSACHUSETTS 02222-1035

ER 92/596

REF: FERC No. 10676
Western Massachusetts Electric Company
COMMENTS, RECOMMENDATIONS AND TERMS AND CONDITIONS

July 31, 1992

Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, DC 20426

Dear Ms. Cashell:

This is in response to the Notice of Application Filed with the Commission for the Red Bridge Project located on the Chicopee River in Hampden County, Massachusetts.

The following comments, recommendations and terms and conditions reflect the best information available to us. We reserve the right to supplement our terms and conditions as needed following review of any additional information or modifications to the proposed project submitted by the applicant.

FISH AND WILDLIFE RESOURCES

The Chicopee River is a tributary to the Connecticut River Basin. Resident fish species currently inhabit the river in the project area. In addition, anadromous fish currently have access to the lower Chicopee River to the base of the Dwight Project Dam (FERC No. 10675). Restoration of American shad, river herring and Atlantic salmon are ongoing in the Connecticut basin. No management activities are currently focussed on the Chicopee River, however, the Chicopee offers habitat for anadromous species. Future expansion of the restoration program to the Chicopee is likely.

IMPACTS AND MITIGATION

Fish Passage

Anadromous fish restoration activities in the Chicopee River would necessitate the installation of upstream and/or downstream fish passage facilities in the future. These facilities should be constructed in the future upon the request of the Fish and Wildlife Service, Massachusetts Division of Fisheries and Wildlife, and Connecticut River Atlantic Salmon Commission (CRASC).

Design of these facilities should be coordinated with these agencies and the final plans for the facilities approved by them. Plans and schedules for the construction, operation and monitoring of passage facilities will be needed and must also be developed in consultation with the agencies.

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Minimum Bypass Flows

The project tailrace discharges 1,600 feet downstream from the dam, thereby reducing flows to this reach of the Chicopee River. To determine appropriate minimum flow release needed to protect fish and other aquatic resources in the bypass reach, the applicant conducted a hydrological analysis of the river. From this analysis, the median August flow of 237 cfs was calculated. This flow is the flow we consider to be the flow necessary to conserve and protect fish and other aquatic resources in the bypass reach. This flow should be released at the project dam, and can be provided through spill over the dam, through gates, or through minimum flow turbine as proposed in the application for exemption.

A plan to monitor minimum flow releases is needed to allow verification of compliance with the reservoir fluctuation limitations and the required minimum flow release.

Reservoir Fluctuations

Mapping and reconnaissance studies determined that wetlands and fish habitat would be adversely affected by dramatic reservoir fluctuations. To minimize this impact, the applicant has proposed limiting pond fluctuations to 1 foot or less from April 1 through June 30. Pond fluctuations should be limited to 2 feet the remainder of the year to protect and enhance fish and wildlife resources.

Recreational Access

The applicant proposes to construct a parking area and car-top boat access area to provide angler access to the area near the powerhouse. Signage will also be provided. The applicant should cooperate with state and local groups to provide trials where needed.

MANDATORY TERMS AND CONDITIONS

Section 30(c) of the Federal Power Act and Section 408 of the Energy Security Act require the inclusion in the exemption from licensing, all terms and conditions that are prescribed by the state and Federal fish and Wildlife agencies to prevent loss of, or damage to fish and wildlife resources. The following conditions of the Fish and Wildlife Service are provided in accordance with these provisions.

1. The Exemptee shall construct, operate, maintain and monitor upstream and downstream fish passage facilities when prescribed by the Fish and Wildlife Service (FWS) and/or the Massachusetts Division of Fisheries and Wildlife (MDFW).

   The Exemptee shall be responsible for the designs of the fish passage facilities which shall be developed in consultation with, and be approved by, the FWS, MDFW and Connecticut River Atlantic Salmon Commission (CRASC).

   Upstream and/or downstream passage facilities shall be constructed and operational within 2 years after being notified of their need by the FWS and/or MDFW.

2. The Exemptee shall develop plans for monitoring, maintaining and operating the upstream and downstream fish passage facilities in consultation with the FWS, MDFW, and CRASC. These plans shall be finalized and approved within two years after being notified of the need for passage facilities.

3. A minimum flow of 237 cubic feet per second, or inflow to the project, whichever is less, shall be continuously released at the project dam to the bypassed reach.

4. The exemptee shall operate the project to limit drawdown of the project impoundment to no more than one foot below the crest of the dam from April 1 through June 30. From July 1 through March 30, the Exemptee shall limit drawdown to no more than 2 feet below the crest of the dam, except for system emergencies or energy audits.

5. The licensee shall, within six months from the date of issuance of the exemption from licensing for this project, present to the Fish and Wildlife Service for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Fish and Wildlife Service within 30 days from a request for the records.

6. The Exemptee shall construct and operate a public parking facility as described in the draft application, and allow public access to the project area for utilization of fish and wildlife resources, subject to reasonable safety and liability limitations. Such access should be prominently posted so that its availability is made known to the public.

7. The Exemptee shall allow the Fish and Wildlife Service to inspect the project area at any time while the project operates under an exemption from licensing, in order to monitor compliance with the terms and conditions.

8. The Fish and Wildlife Service reserves the right to add and/or alter these terms and conditions as appropriate to carry out its responsibilities with respect to fish and wildlife resources. The Exemptee shall, within 30 days of receipt, file with the Federal Energy regulatory Commission any additional or modified mandatory terms and conditions.

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

We appreciate this opportunity to comment on this application.

Sincerely yours,

William Patterson

William Patterson
Regional Environmental Officer

ConEdison Energy
Massachusetts

ORIGINAL

ORIGINAL

OFFICE OF THE SECRETARY
99 DEC -8 PM 3:41
FEDERAL ENERGY REGULATORY COMMISSION

December 06, 1999

Attn: OHL, HL-11.1
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Chicopee River Projects -010 -011 -011 -014
FERC No. 10675, 10676, 10677 and 10678
Response to Additional Information Request of October 27, 1999

Dear Secretary:

By letter dated October 27, 1999, FERC requested Consolidated Edison Energy Massachusetts, Inc. (CEEMI) to provide additional information regarding the Development Plan (Plan) submitted on July 30, 1999. This letter is to provide you with the requested information.

Consolidated Edison Energy Massachusetts, Inc. respectively requests an expedited review of this clarifying letter to expedite the issuance of an order approving the Development Plan by December 31, 1999. CEEMI is committed to completing the work involved in bringing all the projects into compliance with the FERC exemption orders and we are anxious to expedite the schedule. CEEMI is willing to have a meeting in Washington, if need be, prior to December 31, 1999 to resolve or clarify any outstanding issues or concerns. We will make available all personnel and/or consultants required for the meeting. We are looking forward to working with FERC and wish to commence construction as soon as possible in order to avoid any delays in the overall schedule. If you have any questions or if there is any we can do help FERC expedite these orders, please call John Labiak at (212) 267-5280.

Specifically, the October letter requested clarification of the seven items listed below:

1. **The exemptions for the four Chicopee River Projects currently authorize an increase in the total installed capacity of 14.28 percent (1,705 kW) with minimum flow units added at each project. In our review of the Plan, we found the proposed capacity increase for the four projects is 3.67 percent (438.4 kW) without the addition of minimum flow units, as described in the table below:**

000112 -0142 -3

FERC DOCKETING
DEC 8 1999

West Springfield Generating Station • 15 Agawam Avenue • West Springfield, MA 01089
Phone: (914) 286-7026 • Fax: (212) 385-8693 • www.conedenergy.com

FERC PROJECT No.	EXISTING CAPACITY (KW)	PROPOSED PERCENT INCREASE	ESTIMATED CAPACITY INCREASE (KW)
10675	1,440	6	86.4
10676	3,600	3	108.0
10677	3,200	3	96.0
10678	3,700	4	148.0
TOTAL	11,940	3.67%	438.4

The proposed percent increases for each project are based on estimated values. Therefore, we are unable to determine the actual installed capacity from the information provided in the Plan. So that we can verify the actual installed capacity for each of the four projects, please provide generator nameplate capacities, or KVA (after rewinding process), turbines' horsepower ratings, and power factor for each unit.

The following table provides the requested information regarding the ***existing*** units for each project.

FERC PROJECT No.	UNIT No.	GENERATOR KW (each)	GENERATOR KVA (each)	POWER FACTOR	TURBINE RATING (HP)
10675	2, 3 & 4	480	600	0.8	650
10676	3 & 4	1800	2250	0.8	3000
10677	2 & 3	1600	2000	0.8	2600
10678	3	1500	1875	0.8	2000
10678	4	2200	2750	0.8	3000

It should be clarified that the proposed capacity increase percentage presented in the Plan are based on adjusted nameplate ratings using a power factor of 1.0.

The following table provides the requested information regarding the ***upgraded*** units for each project.

FERC PROJECT No.	UNIT No.	GENERATOR KW (each)	GENERATOR KVA (each)	POWER FACTOR	TURBINE RATING (HP)
10675	2, 3 & 4	633	633	1.0	650
10676	3 & 4	2315	2315	1.0	3000
10677	2 & 3	2050	2050	1.0	2600
10678	3	1500	1875	0.8	2080
10678	4	2200	2750	0.8	3000

Correction: The submitted Plan for P-10678 (Indian Orchard Project) indicated an anticipated 1500 KVA rating. The actual anticipated rating is 1550 KVA (2080 horsepower)

with a power factor of 1.0. It should also be noted that the turbine rating for Unit #3 will be increased with no changes proposed to the generator nameplate.

2. **The exemption for P-10675 (Dwight Project) requires a continuous minimum flow of 258 cubic feet per second (cfs), or inflow, into the bypass reach. The exemption also limits pond drawdown to one foot below the crest. You plan to install automated headgates at the canal gatehouse to better regulate pond levels and to restore the hydraulic capacity of the project. You plan no changes to the existing release flow mechanism and no additional devices. Please explain the method you intend to use to release the required minimum flow.**

By agreement with the resource agencies, an interim method to release the minimum flow was established though notches in the dam flashboard system and maintenance of the pond level above the dam crest. The existing release mechanism consists of a series of notches in the existing dam flashboards that discharge directly into the bypass reach. CEEMI is proposing to maintain this system while the boards are installed and limit pond drawdown to three inches below the top of the boards.

During periods in which the flashboards system is damaged or lost, CEEMI will maintain the pond level a minimum 5-inches above the crest to maintain the minimum flow release during generation. Lower pond levels may be experienced during low inflow periods in which generation would not be possible. CEEMI would not resume generation until the pond level has reached the required levels for the 258 cfs release amount. As indicated in the Plan, short interruptions to the minimum flow release would occur during flashboard maintenance. In discussions with the resource agencies, this short duration (one to two day events) was acceptable.

CEEMI does not intend to implement the permitted pond drawdowns at this time. CEEMI does request that this permitted fluctuation be maintained in the event that future economics warrant the change in operation. CEEMI acknowledges that should the pond drawdowns be implemented, the existing minimum flow release measures would be inadequate. Therefore, CEEMI will agree not to implement the permitted pond fluctuations without modifications to the minimum flow release mechanism for the lower pond (below crest) conditions. Any modifications and operational changes would be not be implemented without appropriate agency approvals.

3. **The exemption for P-10676 (Red Bridge Project) requires a continuous minimum flow of 237 cfs, or inflow at the base of the spillway, into the bypass reach. In the Plan, Appendix B (Meeting Summary), Consolidated Edison Energy, Inc (CEEI) proposes alternative minimum flow release points, such as releasing 50% of the minimum flow at the dam and the remaining flow though the canal drain gate. You indicated that both CEEI and the U.S. Fish and Wildlife Service (USFWS) are still considering alternatives, and have yet to agree on an acceptable method. Please provide us with the method of release that CEEI and the USFWS have finally agreed on.**

As indicated in Section 4 of the Plan, CEEMI proposes to release all minimum flows through a single gate at the dam. The alternative to split the flow was abandoned after a review by CEEMI determined that the cost savings from this alternative was not substantial and in

deference to the USFWS' concerns. The use of a single minimum flow gate at the dam is acceptable to both the USFWS and the Massachusetts Division of Fish and Wildlife (MADFW).

4. **In Section 4 (Compliance Requirements) of the Plan, you state that CEEI proposes to install an automated slide gate at the Red Bridge Dam masonry spillway to discharge the required minimum flow in the bypass reach. Please provide in detail a description of the automated slide gate and how it will function.**

The proposed slide gate will be located on the South side of the masonry overflow spillway directly adjacent to the abutment. An approximately 10 ft. wide by 9.5ft deep notch will be removed from the dam crest and capped with concrete. Concrete piers (approximately 1.5 ft wide) will be cast in place to provide a clear opening of 7.0 ft wide by 7.5 ft deep (below crest) and extend approximately 2 ft above the crest to protect the new gate equipment during high flow events. A 7.0ft wide by 8.5ft high painted steel slide gate will be installed and operated by an electric screw stem operator system with manual override capability. A Programmable Logic Controller (PLC), to adjust the gate level during pond fluctuations, will control the gate operator. Gate level adjustments will occur for every four inches of pond fluctuation. The gate will open vertically upwards with discharge occurring under the gate. A maintenance walkway will be installed integral with the gate guides and be located above the high water level.

5. **The exemption for P-10677 (Putts Bridge Project) requires a minimum flow release of 25 cfs into the bypass reach. You state that CEEI does not plan to modify the present system and amount of minimum flow release, nor does it intend to modify project operation. In Appendix B of the Plan, the USFWS requested evidence that operation of the Putts Bridge Project does not impact the minimum flow release at Indian Orchard. CEEI should review the effects of the flow releases at the project due to additional capacity and provide us with comments on its findings.**

Appendix A of this filing contains the review results on the effect of operation at the Putts Bridge Project (P-10677) on the ability of the Indian Orchard Project (P-10678) to maintain the minimum flow release at the project.

Based on the information in Appendix A attached, CEEMI plans to operate the upgraded units (turbine discharge and cycling on/off) within the headpond restrictions such that the total outflow from Putts Bridge (turbine discharge plus the 25 cfs. bypass flow) is adequate to maintain the 247 cfs minimum flow requirement at Indian Orchard. As indicated in Appendix A, this results in a reduced pond level fluctuation at the Indian Orchard Project between 4/1 and 6/30. CEEMI will follow up with USFWS and MADFW.

6. **The exemption for P-10678 (Indian Orchard Project) requires a continuous minimum flow release of 247 cfs, or inflow, at the base of the dam. The minimum flow is released from canal drain gates at the base of the dam. In Appendix B of the Plan, the USFWS requested that CEEI consider installing some kind of bar rack or similar device to avoid large debris plugging the minimum flow drain gates. CEEI should review alternatives to protect the inlet gate and provide us with the alternative decided upon.**

CEEMI has contacted the USFWS (John Warner on 11/12/99) to determine the actual need for any modifications of the present system. Historically the reduction of flow through the gate area has only been reduced (not stopped) on few occasions due to debris. However, to remove the debris the former project owners drained the canal causing interruptions to the minimum flow release. After discussion it was agreed that a protection device is not required at this time. Instead, CEEMI will modify its operational procedures to increase observations for debris buildup in the area and study the debris patterns over the next two years to confirm that modifications are not required. CEEMI will maintain the same level of reporting as has been historically supplied. In addition, CEEMI will review, with the USFWS, methods to remove any debris build without canal draining or interruptions to the minimum flow. If modifications are determined to be required before the end of the two year review period, CEEMI will consult with the USFWS and other resource agencies on the most appropriate method to correct the situation.

7. **Included in Appendix B of the Plan is a letter dated June 24, 1999, from the Commonwealth of Massachusetts, Executive Office of Environmental Affairs in which they state their concerns with fish passage facilities and land protection issues. The Commonwealth of Massachusetts requested that you provide specific options to protect the lands and other environmental issues mentioned in the Plan. Please provide us with your comments in response to the Commonwealth of Massachusetts.**

The referenced letter discusses five main topics regarding the Chicopee River Projects. Each of the main topics is briefly discussed below:

A) Fish Passage: As indicated in the meeting minutes with the USFWS and MADFW (Appendix B of the Plan), there is no restoration plan requiring fish passage started for the Chicopee River. CEEMI acknowledges that future restoration efforts may require fish passage at some of the sites. However, as discussed during the June 22nd meetings, fish passage at any of the sites is not being proposed and is not required. CEEMI has agreed to discuss appropriate measures for fish passage at the projects after a restoration plan has been implemented.

B) Open Space Protection: During the June 22nd meeting the request to protect shore land properties from development was discussed. The meeting concluded that additional information (property lines and limits) would be needed before formal arrangements could be finalized. CEEMI intends to continue discussions with the Commonwealth of Massachusetts after Plan approval.

C) Dwight Nature Trail: The nature trail near the Dwight station is being considered by the local community and beyond CEEMI's ability to expedite. CEEMI has agreed to resume discussions regarding the nature trail once the local community and other organizations have developed a plan for the trail. During the June 22nd meeting the organizations involved with the project indicated that they are still determining the trail details.

D) Access to Middle Bypass Reach: As indicated in Section 4 of the Plan access to the middle bypass section below the Dwight dam will not be pursued. Local community leaders oppose access to this area and the MADFW, the originator of

the issue, has indicated a deference to the local community. As also indicated in the Plan, there are several safety issues associated with access to this area.

E) Water Quality Study: CEEMI has begun preparation of a water quality study plan that will be submitted for agency review within two months after Plan approval.

We trust this information is complete and adequate for your use.

If you require additional information please do not hesitate to contact me at 212- 267-5281 (email: noyesm@conedenergy,com) or John Labiak of CEEMI at 212-267-5280 (email: labiakj@conedenergy.com).

Sincerely,

Consolidated Edison Energy Massachusetts, Inc

Mark Noyes
Vice President

AJN

cc: John Labiak (CEEMI)
Alfred Nash (KA)
Fred Szufnarowski (KA)

\\EAGLE\JOBS\803-001\documents\015-803-AIR response.doc

Appendix A

MEMORANDUM

TO: John Labiak, Kim Marsili

FROM: Alfred Nash

CC: Fred Szufnarowski (KA), John Warner (USFWS), Caleb Slater (MADFW)

DATE: November 23, 1999

RE: Putts Bridge Operations effect at Indian Orchard

The US Fish and Wildlife Service (USFWS) has requested information regarding the effect of operations at Putts Bridge on the minimum flow release at Indian Orchard. This request was made several years ago when the minimum flow discharge at Putts Bridge was reduced to 25 cfs. The USFWS' concern is based on the store and release operation at Putts Bridge. Since the outflow at Putts Bridge during motoring is less than the required minimum flow release at Indian Orchard, there is a concern that the ability of the Indian Orchard Project to release its minimum flow is be adversely effected by the Putts Bridge operation. The attached calculation tables were developed on the assumption that the current practice of motoring is maintained.

METHODOLOGY

The following table indicates the pond level fluctuations permitted by the exemption orders.

EXEMPTION ORDER POND FLUCTUATIONS

Project	4/1 to 6/30 (ft.)	7/1 to 3/31 (ft.)
Red Bridge	1	2
Putts Bridge	1	2
Indian Orchard	1	1

To determine the effects of the Putts Bridge operation of the Indian Orchard minimum flow release, three wicket gate settings were considered (60%, 80% and 100%). To identify the worse case conditions, the inflow to the Putts Bridge Project was limited to the minimum flow and motoring flow release at the Red Bridge Project. This limitation of inflow was used to reflect the current minimum flow conditions at Red Bridge in which the pond fluctuation is limited to 3 inches.

The Red Bridge, Putts Bridge and Indian Orchard Projects are each controlled by float switches that cause the units to "motor" when the minimum pond level is achieved. The units at each project are not taken off motoring until normal pond level conditions are restored. The 1989 turbine inspection at each of the projects indicated that the gate setting during motoring was approximately 20% gate. During periods of low flow, a single unit at the Putts Bridge Project is operated between the 60% and 80% gate opening. KA understands that the 60% gate opening may be more commonly used to reduce motor time of the unit. KA also reviewed the condition of using 100% gate opening.

To achieve the capacity increase required by the exemption order, CEEMI is proposing a new runner assembly at the Indian Orchard Project. Although the details of the new assembly will not be known for many months, KA assumed that a 10% increase in hydraulic capacity over the existing unit (#3) would be realized. Therefore the analysis assumed this increased discharge from the project.

To determine the gross generation for each gate opening, the 1999 index test results conducted by Voith was used. Unit flows were based on nameplate ratings and a straight ratio of percent gate to rated flow was used to determine flows at the various gate openings. Information regarding the storage area was obtained from the exemption order or the exemption application.

RESULTS

The following table summarizes the results shown on the attached calculation tables. The table below is based on a 12-inch pond fluctuation at Putts Bridge. The analysis indicates that the pond level fluctuation at Indian Orchard must be reduced during the summer low flow periods to provide adequate storage to maintain the minimum release at the dam. For time periods when the pond fluctuation at Putts Bridge is greater than 12 inches (*i.e,* July through March), the full 12-inch pond fluctuation at Indian Orchard can be implemented.

Gate Opening	Indian Orchard Pond Fluctuation (inches)	Putts Bridge Motoring Time (hrs / day)	Indian Orchard Motoring Time (hrs / day)	Gross Generation (MWH)
60%	8	8.5	21	23.6
80%	9.5	12.5	20	22.8
100%	10	16.5	19.8	23.2

CONCLUSION

Based on the results of our review, it appears that the pond level control at the Indian Orchard Project should be set at 6 inches during the spring (4/1 to 6/30) period. This will provide sufficient storage to permit the continuous discharge of the minimum flow at the Indian Orchard Project.

J:\803-001\documents\017-803 PB Operation MEMO.doc

CONSOLIDATED EDISON ENERGY MASSACHUSETTS, INC

OPERATIONAL EFFECTS OF PUTTS BRIDGE
ON MINIMUM FLOW RELEASE AT INDIAN ORCHARD

	RED BRIDGE	PUTTS BRIDGE	INDIAN ORCHARD
MINIMUM FLOW (CFS)	238	25	247
UNIT FLOW (CFS) **	615	725	690
PERCENT GATE AT MOTORING *	20%	20%	20%
PERCENT GATE DURING GENERATION	80%	80%	80%
STORAGE (ACRE)	185	65.4	74
DRAWDOWN (FEET) - SUMMER	1	1	1
STORAGE VOLUME (CF)	8058677.5	2848922.1	3223551
CONVERSION FOR STORAGE	43561.5 SF/ACRE		

* FROM 1989 INSPECTION REPORT OR ASSUMED
** ASSUMES A 10% INCREASE IN CAPACITY AT INDIAN ORCHARD OVER THE EXISTING 625 CAP

Let Red Bridge operate in its current mode without the proposed minimum flow gate
However, assume an average of the required minimum flow is released from the site
and that, for the worse case, a unit is motoring.

Discharge from Red Bridge = minimum flow + motoring of unit.

Discharge $_{RB}$ = 361 cfs Note: exceeded 85% of time annually

PUTTS BRIDGE PROJECT FLOWS

Hours that Putts Bridge can Generate with Storage and Inflow from Red Bridge

Time $_{PB}$ = storage / (min flow + Gen flow - Discharge $_{RB}$)

Generation Time $_{PB}$ = 3.24 hours

Generation Discharge $_{PB}$ = 605 cfs

Hours Requried to Recharge Putts B Pond

Project Discharge During Motoring (unit and min flow) 170 cfs

Time $_{recharge}$ = storage / (Discharge $_{RB}$ - Discharge during motoring)

Time $_{recharge}$ = 4.14 hours Note: generation at Red Bridge decreases time

INDIAN ORCHARD PROJECT FLOWS

Since flows entering IO during PB motoring are less than the discharge at IO, the IO project
storage must be used to supplement flows until Putts Bridge resumes generation.
Thus determine the number of hours that storage can release min flow with projects motoring

Storage discharge time = storage / (min flow + motoring flow -inflow (from PB))

Time Storage Discharge 4.16 hours

By comparison with the time required to recharge the PB storage, the pond at IO must
be full when Putts Bridge begins motoring in order to allow sufficient time before.
Putts Bridge resumes generation discharges.

Time to Recharge IO with IO unit motoring and PB generating
time = storage / (PB discharge - IO motoring and min Flow)

4.07 hours

Since recharge time is longer than generation time at Putts Bridge - determine available drawdown limit:

limit = (PB discharge - IO motoring - min flow (IO))*hours gen / surface storage

9.56 inches

Con Edison Development

ORIGINAL

March 21, 2000

Mr. David Boergers, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Chicopee River Projects, FERC Nos. 10675, 10676, 10677, 10678
Modified Terms and Conditions from Department of Interior-Fish and Wildlife Service

Dear Secretary:

Consolidated Edison Energy Massachusetts, Inc. (CEEMI) owns and operates the Red Bridge Project (FERC No. 10676), the Putts Bridge Project (FERC No. 10677), the Indian Orchard Project (FERC No. 10678) and the Dwight Project (FERC No. 10675), known collectively as the "Chicopee River Projects", which are located on the Chicopee River in western Massachusetts. We are writing to apprise you that we have received modified terms and conditions from the U.S. Department of Interior-Fish and Wildlife Service (FWS) and the Commonwealth of Massachusetts, Division of Fisheries and Wildlife (MADFW) for the Chicopee River Projects (see Attachment A). Their letters were in response to a December 29, 1999 order amending exemptions issued by the Federal Energy Regulatory Commission (FERC).

We are aware that in order to modify terms and conditions, the FWS and MADFW must have included specific language to address future modifications in their original terms and conditions letter, dated July 31, 1992. We have reviewed the July 31, 1992 letter and it does contain language that allows FWS to modify the original terms and conditions.

We intend to contact FWS and the MADFW to discuss the new terms and conditions. We will keep you apprised of the status of our discussions and any changes that occur to the terms and conditions.

If you require additional information please do not hesitate to contact me at (212) 267-5280 (email: labiakj@conedenergy.com).

Sincerely,

(KA)

John Labiak
Project Manager
Con Edison Development Inc.

Encl. – Attachment A
cc: Al Nash (KA), Fred Szufnarowski (KA), NYRO, Michael Bartlett – FWS
Pete McGovern – FERC, Mark Robinson – FERC

J:\803-001\documents\027-803 FERC on usfw letter.doc

111 Broadway, 16th Floor, New York, New York 10006
Tel: (212) 393-9242 Fax: (212) 393-9282

000331-0280-3

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

REF: FERC Nos. 11675 - Dwight
11676 - Red Bridge
11677 - Putts Bridge
11678 - Indian Orchard
Consolidated Edison Energy Massachusetts, Inc.

January 27, 2000

Mark Noyes
CEEMI
111 Broadway, 16th Floor
New York, NY 10006

Dear Mr. Noyes:

This is in response to the Federal Energy Regulatory Commission's December 29, 1999 Order Amending Exemptions for the Red Bridge, Putts Bridge, Indian Orchard and Dwight Projects, located on the Chicopee River in Massachusetts. We originally were going to respond to the November 23, 1999 memorandum prepared by Kleinschmidt Associates which provides the results of an assessment of the effect operations at Putts Bridge has on the ability of Indian Orchard to meet its minimum flow requirement. As the FERC order addresses and accepts the findings of the assessment, we instead will comment on modifications to the original terms and conditions we prescribed for the exemptions that we believe are necessary, given that minimum flows and headpond fluctuations have changed at some sites.

As originally exempted, each project had specific minimum flows and allowable impoundment drawdowns.

Originally Exempted

- Red Bridge
  237 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1 - June 30 and 2-ft. from July 1 - March 30
- Putts Bridge
  247 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1 - June 30 and 2-ft. from July 1 - March 30
- Indian Orchard
  247 cfs min. flow (or inflow, if less), 1-ft. drawdown year-round

- Dwight
  258 cfs min. flow (or inflow, if less), 1-ft. drawdown year-round

<u>Proposed</u>

- Red Bridge
  237 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1- June 30 and 2-ft. from July 1 - March 30.
- Putts Bridge
  25 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1- June 30 and 2-ft. from July 1 - March 30.
- Indian Orchard
  247 cfs min. flow (or inflow, if less), 0.5-ft. drawdown April 1- June 30 and 1-ft. drawdown from July 1 - March 30.
- Dwight
  258 cfs min. flow (or inflow, if less), 0.25-ft. drawdown when boards are up and no fluctuation when boards are down.

As originally exempted, the mandated flows were to be released via special minimum flow turbines. This idea was subsequently found to be uneconomical, and alternative release mechanisms were investigated. Also, in order to meet the requirements for being exempted, project capacity upgrades are necessary. CEEMI submitted a development plan in June, 1999 that outlined how upgrading the existing facilities would result in meeting that criterion.

To date; we believe the following issues have been resolved to our satisfaction:

- Bypass flow rates and release mechanisms at each project, with the exception of Putts Bridge.
- Impoundment fluctuation levels. The proposed changes to limit drawdowns at Indian Orchard to 0.5-ft from April 1 - June 30, and at Dwight to within 0.25-ft. when boards are up, should ensure that continuous and stable minimum flows are maintained below those projects.
- Proposed capacity upgrades. None of the upgrades should influence the minimum flows or drawdown limits for each project.

Two issues that remain outstanding include:

- The Putts Bridge bypass flow. We never approved the reduced flow as a permanent measure. Before approving this change as a permanent condition of the exemption, a water quality study must be performed to verify that the lower flow will protect water quality in the bypass reach. It is our understanding that the study will occur this summer. Once we receive the study results we will make a final decision on the minimum bypass flow needed at Putts Bridge.
- A revised Monitoring Plan. A condition of each exemption was the development of a plan to monitor headpond elevations and bypass flows. On March 11, 1993 the previous owner of the projects submitted a Monitoring Plan for our review. Since the original plans were filed and approved, major changes in the methods of releasing the bypass flows have been made

at the projects, requiring the development of a revised Monitoring Plan. You should provide us with a plan that (1) details the flow release structures and locations, (2) describes the mechanisms used to monitor headpond elevation and minimum flows, (3) specifies how often maintenance and calibration of the monitoring and recording equipment takes place, (4) states how bypass flows will be maintained during any periodic maintenance activities that require the impoundment to be drawn down below the level of the flow release structures, and (5) states how frequently and in what form the data are recorded. A calculation sheet that verifies the discharge of each release structure (i.e., slide/canal gate, board notches and dam spill) under all operating ranges should be included.

Per Condition 8 of the Exemptions from Licensing, we hereby modify our original terms and conditions for the subject exemptions as follows:

Red Bridge
Modify the following conditions to read:

5. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Fish and Wildlife Service for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Fish and Wildlife Service within 30 days from a request for the records.

The following new condition is to be added to the original nine.

10. In the event that any dam maintenance or emergency drawdown is required, the Exemptee shall continue to operate the project such that the minimum flows are maintained downstream of the project at all times. If during reservoir refilling, inflow to the project is less than the required minimum flow, the Exemptee shall withhold not more than 10% of project inflow.

All other conditions are to be retained in their entirety.

Putts Bridge
Modify the following conditions to read:

3. An interim minimum flow of 25 cubic feet per second, or inflow to the project, whichever is less, shall be continuously released at the project dam to the bypassed reach. This release may be modified if results of a water quality study indicate that 25 cfs is insufficient to protect water quality in the bypass reach.

5. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Fish and Wildlife Service for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according

to the plan and provide records of these data to the Fish and Wildlife Service within 30 days from a request for the records.

The following new condition is to be added to the original nine.

10. In the event that any dam maintenance or emergency drawdown is required, the Exemptee shall continue to operate the project such that the minimum flows are maintained downstream of the project at all times. If during reservoir refilling, inflow to the project is less than the required minimum flow, the Exemptee shall withhold not more than 10% of project inflow.

All other conditions are to be retained in their entirety.

Indian Orchard

Modify the following conditions to read:

4. The exemptee shall operate the project to limit drawdown of the project impoundment to no more than 0.5-feet below the top of the flashboards (or dam crest if boards are out) from April 1 through June 30. From July 1 through March 30, the Exemptee shall limit drawdown to no more than one foot below the top of the flashboards (or dam crest if boards are out).

5. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Fish and Wildlife Service for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Fish and Wildlife Service within 30 days from a request for the records.

The following new condition is to be added to the original nine.

10. In the event that any dam maintenance or emergency drawdown is required, the Exemptee shall continue to operate the project such that the minimum flows are maintained downstream of the project at all times. If during reservoir refilling, inflow to the project is less than the required minimum flow, the Exemptee shall withhold not more than 10% of project inflow.

All other conditions are to be retained in their entirety.

Dwight

Modify the following conditions to read:

4. The Exemptee shall operate the project to limit drawdown of the project impoundment to no more than 0.25 feet below the top of the flashboards. When boards are out, the Exemptee shall maintain a minimum of five inches of spill over the dam crest to maintain the minimum bypass flow specified in Condition #3.

5. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Fish and Wildlife Service for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Fish and Wildlife Service within 30 days from a request for the records.

The following new condition is to be added to the original nine.

10. In the event that any dam maintenance or emergency drawdown is required, the Exemptee shall continue to operate the project such that the minimum flows are maintained downstream of the project at all times. If during reservoir refilling, inflow to the project is less than the required minimum flow, the Exemptee shall withhold not more than 10% of project inflow.

All other conditions are to be retained in their entirety.

Thank you for this opportunity to comment. If you have any questions, please contact Melissa Grader of this office at (603) 225-1411.

Sincerely,

Michael J. Bartlett
Supervisor
New England Field Office

cc: **John Labiak, CEEMI**
Caleb Slater, MA DFW
FERC/DLC
FERC/OHL
Reading File

es: MGrader:1-27-00:(603)225-1411

Commonwealth of Massachusetts

MASTER FILE

Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

February 15, 2000

RE: Chicopee River Projects:
Dwight – 11675
Red Bridge – 11676
Putts Bridge – 11677
Indian Orchard - 11678

Mark Noyes
CEEMI
111 Broadway, 16th Floor
New York, NY 10006

Dear Mr. Noyes,

The Massachusetts Division of Fisheries and Wildlife (Division) is the state agency responsible for the protection and management of the fish and wildlife resources of the Commonwealth. As such, we have prepared the following comments in response to the Federal Energy Regulatory Commission's December 29, 1999 Order Amending Exemptions for the Red Bridge, Putts Bridge, Indian Orchard, and Dwight Projects, located on the Chicopee River in Massachusetts.

As originally exempted, each project had specific minimum flows and allowable impoundment drawdowns.

Original Conditions

Red Bridge

237 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1- June 30 and 2-ft. from July 1 - March 30

Putts Bridge

247 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1- June 30 and 2-ft. from July 1 - March 30

Indian Orchard

247 cfs min. flow (or inflow, if less), 1-ft. drawdown year-round

Dwight

258 cfs min. flow (or inflow, if less), 1-ft. drawdown year-round

Proposed Conditions

Red Bridge

237 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1- June 30 and 2-ft. from July 1 - March 30.

Putts Bridge

25 cfs min. flow (or inflow, if less), 1-ft. drawdown April 1- June 30 and 2-ft. from July 1 - March 30.

Indian Orchard

247 cfs min. flow (or inflow, if less), 0.5-ft. drawdown April 1- June 30 and 1-ft. drawdown from July 1 - March 30.

Division of Fisheries & Wildlife
Field Headquarters, One Rabbit Hill Road, Westboro, MA 01581 (508) 366-4470
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement

Dwight

258 cfs min. flow (or inflow, if less), 0.25-ft. drawdown when boards are up and no fluctuation when boards are down.

The original exemptions required that the minimum flows were to be released via new minimum flow turbines. This idea was subsequently found to be uneconomical, and alternative release mechanisms were investigated. The original exemptions also required project capacity upgrades. CEHMI submitted a development plan in June 1999 that outlined how upgrading the existing facilities would result in meeting that criterion.

We believe the following issues have been adequately addressed:

Minimum bypass flows and release mechanisms at each project, with the exception of Putts Bridge.

Impoundment fluctuation levels, specifically the proposed changes to limit drawdowns at Indian Orchard to 0.5-ft from April 1 - June 30, and at Dwight to within 0.25-ft. when boards are up, should ensure that continuous and stable minimum flows are maintained below those projects.

The proposed capacity upgrades should influence the minimum flows or drawdown limits for each project.

Unresolved issues:

The Putts Bridge bypass flow. We have not agreed to the reduced flow as a permanent condition of the exemption. Before we do so, a water quality study must be performed to verify that the lower flow will protect water quality in the bypass reach. It is our understanding that the study will occur this summer. Once we receive the study results we will make a final decision on the minimum bypass flow needed at Putts Bridge.

Revised Monitoring Plan. A condition of each exemption was the development of a plan to monitor headpond elevations and bypass flows. On March 11, 1993 the previous owner of the projects submitted a Monitoring Plan for our review. Since that time, major changes in the methods of releasing the bypass flows have been made at the projects. We believe that these changes require the development of a new Monitoring Plan. You should provide us with a plan that (1) details the flow release structures and locations, (2) describes the mechanisms used to monitor headpond elevation and minimum flows, (3) specifies how often maintenance and calibration of the monitoring and recording equipment takes place, (4) states how bypass flows will be maintained during any periodic maintenance activities that require the impoundment to be drawn down below the level of the flow release structures, and (5) states how frequently and in what form the data are recorded. A calculation sheet that verifies the discharge of each release structure (i.e., slide/canal gate, board notches and dam spill) under all operating ranges should be included.

Per Condition 8 of the Exemptions from Licensing, we hereby modify our original terms and conditions for the subject exemptions as follows:

Red Bridge

Modify the following conditions to read:

6. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Division for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Division within 30 days from a request for the records.

The following new condition is to be added to the original nine.

10. In the event that any dam maintenance or emergency drawdown is required, the Exemptee shall continue to operate the project such that the minimum flows are maintained downstream of the project at all times. If during reservoir refilling, inflow to the project is less than the required minimum flow, the Exemptee shall withhold not more than 10% of project inflow.

All other conditions are to be retained in their entirety.

Putts Bridge

Modify the following conditions to read:

2. An interim minimum flow of 25 cubic feet per second, or inflow to the project, whichever is less, shall be continuously released at the project dam to the bypassed reach. This release may be modified if results of a water quality study indicate that 25 cfs is insufficient to protect water quality in the bypass reach.

6. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Division for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Division within 30 days from a request for the records.

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All other conditions are to be retained in their entirety.

Indian Orchard

Modify the following conditions to read:

3. The exemptee shall operate the project to limit drawdown of the project impoundment to no more than 0.5-feet below the top of the flashboards (or dam crest if boards are out) from April 1 through June 30. From July 1 through March 30, the Exemptee shall limit drawdown to no more than one foot below the top of the flashboards (or dam crest if boards are out).

6. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Division for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Division within 30 days from a request for the records.

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All other conditions are to be retained in their entirety.

Dwight

Modify the following conditions to read:

3. The Exemptee shall operate the project to limit drawdown of the project impoundment to no more than 0.25 feet below the top of the flashboards. When boards are out, the Exemptee shall maintain a minimum of five inches of spill over the dam crest to maintain the minimum bypass flow specified in Condition #3.

6. The Exemptee shall, within six months from the date of issuance of the Order Amending Exemptions, present to the Division for approval, a plan for monitoring project impoundment level and instantaneous bypass flow releases. Following approval of the plan, the Exemptee shall measure and record impoundment level and flows according to the plan and provide records of these data to the Division within 30 days from a request for the records.

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All other conditions are to be retained in their entirety.

Sincerely,

Caleb Slater, Ph.D.
Anadromous Fish Project Leader

cc: John Labiak, CEEMI
Melissa Grader, USFWS
FERC