

Appendix – 1

Background Information for Questionnaire items 1 through 12

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APPENDIX 1-3-e-1

Description of Millers Rivers' Dams & Tributaries

The Millers River Basin drains approximately 390 square miles¹ and lies within the larger Connecticut River Basin. There are **ten (10) dams** on the main stem of the Millers River. These dams are identified as follows beginning with the head waters:

1. Upper Naukeag Lake Dam (non FERC Regulated)
2. Lower Naukeag Lake Dam (non FERC Regulated)
 3. Whitney Dam (non FERC Regulated)
 4. Hunts Pond Dam (P-8012-MA)
 5. Tannery Dam (P-8895-MA)
6. Birch Hill Dam (Army Corps Flood Control Dam)
 7. Cresticon Upper Dam (P-10163-MA)
 8. Cresticon Lower Dam (P-10163-MA)
9. L. S. Starrett Company Dam (non FERC Regulated)
10. New Home Dam (P-6096-MA)

The Millers River's headwaters are in fed from tributaries in Rindge and New Ipswich New Hampshire and **Lake Monomonac** in Winchendon on the North Branch of the Millers River and formed by numerous ponds including **Upper & Lower Naukeag Lake** and **Sunset Lake** in Ashburnham, MA on the main stem of the Millers River. The North Branch joins the Millers River main stem at **Whitney Pond Dam** in Winchendon Center. The outlet of Whitney Pond Dam discharges directly into impoundment formed by **Hunts Pond Dam**. A section of Route 12 and a section of High Street cross the Hunts Pond Dam Impoundment. More specific information about the Hunts Pond Dam is included with Appendix 1-12-1 Facility Description. After Hunts Pond Dam the Millers River continues west through a short stretch of rapids to the impoundment of **Tannery Pond Dam**. After Tannery Pond Dam and about a 2 mile stretch of rapid flowing waters the river slows, becomes deeper, and then turns north until reaching the Winchendon Wastewater Treatment Plant (WWTP). The river then turns south as it passes through a massive flat area which is part of the Army Corp **Birch Hill Flood Control Project**. Before leaving the Birch Hill Flood Control Project area the river turns west and joins with the Otter River. Birch Hill Dam is one of two flood control dams in the basin built by the Corps. After flow is discharged from Birch Hill Dam, it becomes swifter just above Route 68 in South Royalston. The river begins a southwest course fluctuating between rapids and semi-uniform flow. For the next five miles the river flows through a largely undeveloped area dropping over 225 feet. The flow is then impounded by the dam at the old Union Twist Drill Company in Athol, called L.P. Athol Hydroelectric Project. There are two impoundments in succession at the L.P. Athol Project - **Cresticon Upper Dam** and **Cresticon Lower Dam**. After passing a short rapid section the flow is impounded at the **L. S. Starrett Company Dam** (Crescent Street Dam). The river flows

¹ Taken from Water Resources of Massachusetts US Geological Survey Water Resources Investigations Report 90-4144.

west to its confluence with the Tully River, then southwest, passing under Route 2A to the Athol-Orange town line where it continues in a northwest direction to **New Home Dam** in Orange Center. From New Home Dam the next 10.5 miles of river flows swiftly, passing Erving Paper and the Erving Center WWTP. The river then flows through the Village of Millers Falls where it receives the effluent from the Erving POTW#1. It then flows past the old dam at Route 63 and a short distance farther before entering the backwater of the Connecticut River in Gill.

River Flows are manipulated from several different impoundments within the Millers River Watershed. Army Corps Projects at Tully Lake & Birch Hill manipulate reservoir levels for flood control. Lake Monomonac, Lower Naukeag Lake and Sunset Lake Pond levels are reduced in the fall and are refilled in the spring impacting downstream river flows. Whitney Pond Dam, a non-generating facility, is manually operated by the Town of Winchendon in response to flows.

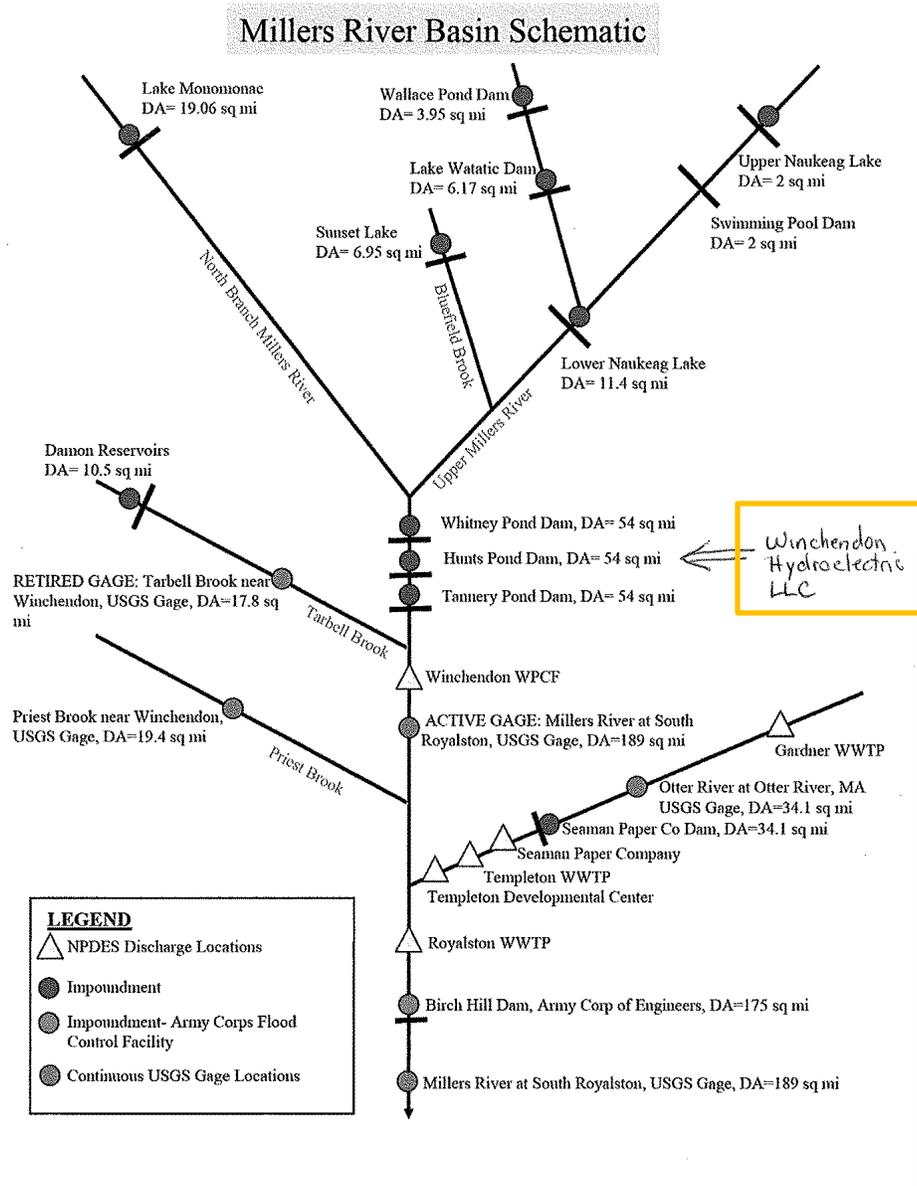
The Winchendon Hydroelectric Project is situated upstream of six (6) dams located on the Millers River and downstream of 3 other dams on the main stem of the Millers River. One (1) of the other six downstream dams is a hydroelectric facility owned and operated by an O'Connell affiliated company located at the New Home Dam (Mini-Watt Hydroelectric LLC).

Hunts Pond Dam is the middle of three dams in series (Whitney Dam (non-generating dam) is upstream and Tannery Dam (P-8895) is downstream)² on the Millers River in Winchendon, Massachusetts. Starrett, Cresticon Lower, Cresticon Upper, Birch Hill and Tannery Pond dams are owned and controlled by unrelated entities as are all of the projects on the upstream tributaries of the Millers River.

² Whitney (operated by the Town of Winchendon) and Tannery Dams are owned and controlled by unrelated entities.

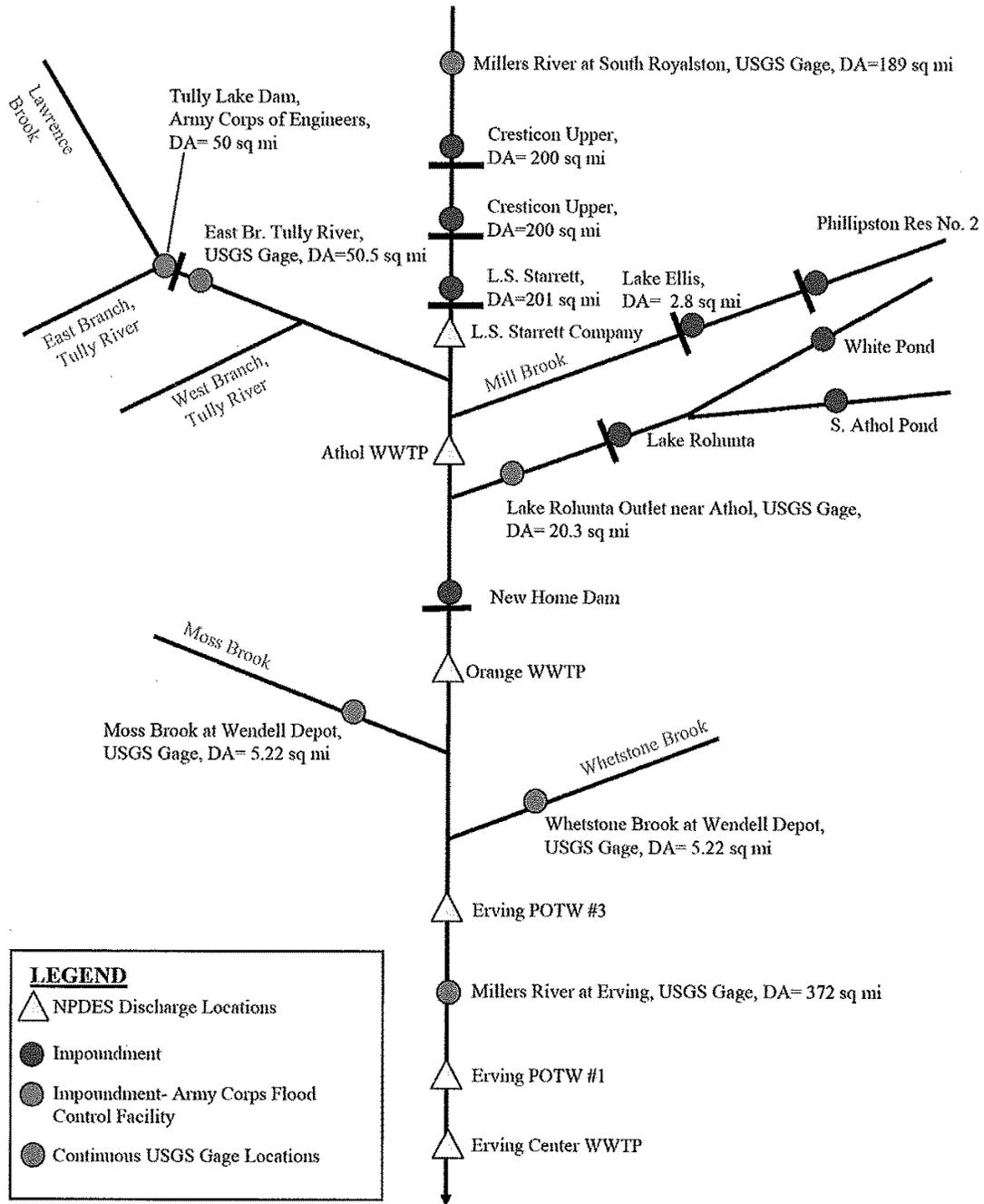
APPENDIX 1-3-e-2

Schematic Map of Millers Rivers' Dams & Tributaries³



³ Taken from Massachusetts Department of Environmental Management *Hydrologic Assessment of the Millers River* Final Report, April 2003
 LIHI Certification Application
 Hunts Pond Dam
 Submitted by Owner: Winchendon Hydroelectric LLC
 Appendix 1 Page 4 of 72
 3/11/2014

Millers River Basin Schematic (continued)



Appendix 1-5-1

10 Year Energy Production Record with Average Calculation

<u>Appendix 1-5-1, 10 Year Energy Production Record with Average Calculation</u>											
Hunts Pond Dam											
Winchendon Hydroelectric LLC											
Historical Generation with 10 Year average											
Month	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	10 year Ave
JAN	7,875	29,779	38,491	51,273	60,583	44,681	42,602	32,596	27,631	9,215	34,473
FEB	15,994	17,884	12,839	38,975	50,392	10,144	51,857	16,644	12,551	9,047	23,633
MAR	27,320	38,910	35,202	34,267	21,334	42,555	59,528	54,954	8,913	9,841	33,283
APR	35,809	55,665	54,762	45,816	7,500	52,964	44,136	44,037	11,279	11,709	36,368
MAY	44,617	49,251	38,464	48,936	35,847	37,541	25,764	25,306	5,428	12,755	32,391
JUN	37,182	39,818	10,768	30,310	44,440	8,558	12,489	35,099	1,300	7,516	22,748
JUL	1,474	1,446	788	17,358	14,709	996	16,626	38,914	0	483	9,279
AUG	0	12,357	7,484	2,612	1,343	166	30,690	17,309	0	2,549	7,451
SEP	66	5,889	21,518	3,842	975	0	26,914	2,387	0	10,231	7,182
OCT	5,812	27,810	24,761	34,073	26,647	3,486	18,111	15,881	5,294	10,730	17,261
NOV	31,006	44,997	24,691	59,994	56,261	26,683	46,125	45,999	11,872	10,285	35,791
DEC	41,230	50,692	59,323	52,335	33,445	22,410	50,932	41,171	12,752	10,592	37,488
TOT	248,385	374,499	329,091	419,791	353,476	250,183	425,774	370,298	97,020	104,956	297,347

APPENDIX 1-6-1

FERC ORDER GRANTING EXEMPTION FROM LICENSING
ISSUED FEBRUARY 19, 1985

(We apologize for the poor quality of the copy.)

This condition is the best quality that could be provided from FERC library)

SOERC/60,181

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Mason & Parker Manufacturing Company, Inc.) Project No. 8012-001

ORDER GRANTING EXEMPTION FROM LICENSING OF A
SMALL HYDROELECTRIC PROJECT OF 5 MEGAWATTS OR LESS

(Issued February 19, 1985)
The Applicant filed an application for exemption from all
18 C.F.R. Part 4 Subpart K (1980) implementing Part Section
408 of the Energy Security Act (ESA) of 1980 for a project as
described in the attached public notice. 2/

Notice of the application was published in accordance with Section
408 of the ESA and the Commission's rules. The Commission
was requested from interested Federal and State agencies including
the U.S. Fish and Wildlife Service and the State Fish and Wildlife
Commission. Comments and recommendations were received from the
agencies. No objections were filed. No agency has any objections
relevant to issuance of this exemption.

Standard Article 2, included in this exemption, requires compliance
with any terms and conditions that Federal or State fish and
wildlife agencies have determined appropriate to prevent loss
or damage to fish and wildlife resources. The terms and

conditions referred to in Article 2 are contained in my letters
of comment by these agencies which have been forwarded to the
Applicant in conjunction with this exemption. 2/

Should the Applicant contest any terms or conditions that were
proposed by Federal or State agencies in their letters of comment
within the scope of Article 2, the Commission shall
determine whether the proposed terms or conditions are outside
the scope of Article 2.

Based on the terms and conditions required by Federal and
State fish and wildlife agencies, the environmental information
submitted in support of this exemption, other public comments, and
the Commission's review of the information, the Commission has not a
major Federal action significantly affecting the quality of
the human environment.

It is ordered that:

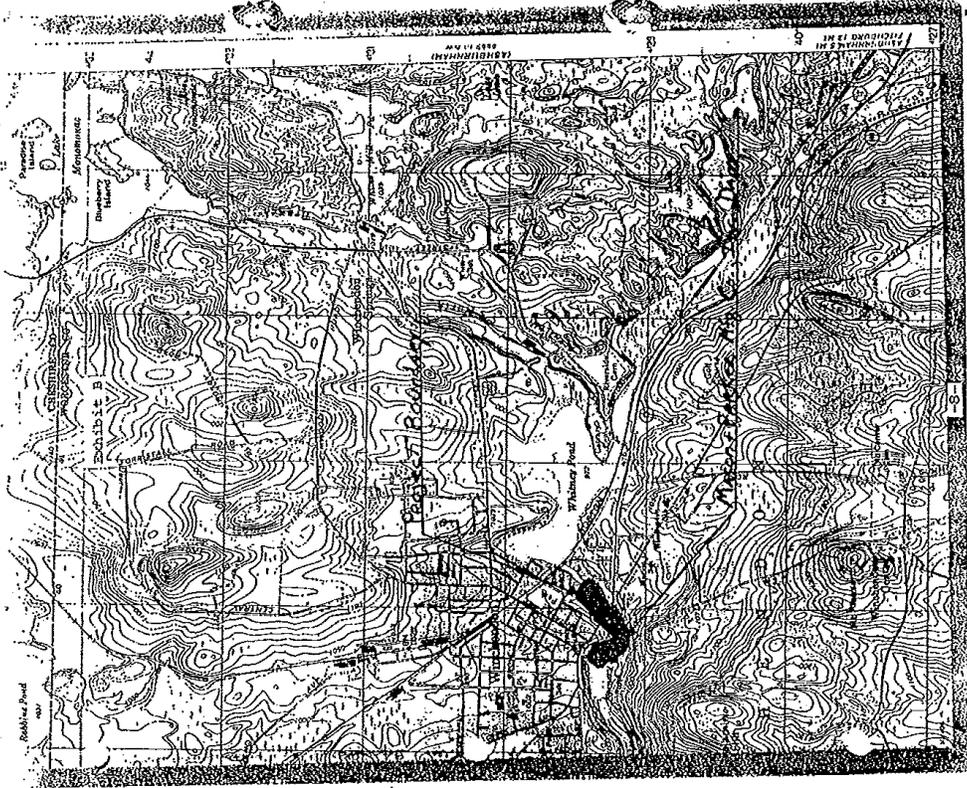
(1) The Hunts Pond Dam Project No. 8012, as described and
designated in Mason & Parker Manufacturing Company's applica-
tion filed on September 7, 1984, is exempted from all of the
requirements of the Federal Energy Regulatory Act, including licensing,
subject to the standard articles 1, 2, 3, 4, 5, and 6, of the
regulations attached hereto as Form 8-2, 18 C.F.R. 34.106-45 Fed.
Reg. 78115 (November 19, 1980), and the following Special Article.

Article 5. Any exempted small hydroelectric power project
shall be a dam which is more than 33 feet in height above
surroundings more than 2,000 square feet of water, or has a significant
high hazard potential, as defined in 33 CFR Part 229, is subject
to the following provisions of 18 CFR Part 12:

1/ Where 5 Parker Manufacturing Company, Inc. Project No. 8012,
dated September 7, 1984.

2/ The 95-264, 84 Stat. 411, Section 408 of the ESA amends
Title 18, Sections 405 and 408 of the public utility
Regulatory Policies Act of 1978 (16 U.S.C. 552705 and 2708).

3/ Authority to act on this matter is delegated to the Director,
Office of Hydropower Licensing, under 3375-314 of the Commission's
regulations, 49 Fed. Reg. 29,369 (1984). Orders issued July 27,
1984, are hereby affirmed. Any party within 30 days
of its issuance pursuant to rule 1902, 18 C.F.R. 382.1902,
may file a petition for review with the Commission. The
appeal and prerequisites for filing an application for rehearing
as provided in Section 313(a) of the Act, filing an appeal
order, or any other day of the Commission's active date of this
order, shall be the day of the Commission's order, except as
specifically directed by the Commission.



D3a. Agency Comments - The U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the State Fish and Game Agency(ies) are requested, for the purposes of the Energy Security Act of 1980, to file within 60 days from the date of issuance of this notice appropriate terms and conditions to protect any fish and wildlife resources or to otherwise carry out the provisions of the Fish and Wildlife Coordination Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of exemption must be clearly identified in the agency letter. If an agency does not file terms and conditions within this time period, that agency will be presumed to have none. Other Federal, State, and local agencies are requested to provide any comments they may have in accordance with their duties and responsibilities. No other comments confined to substantive issues relevant to the granting of an exemption. If the agency does not file comments within 60 days from the date of issuance of this notice, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

Kenneth F. Plumb
Secretary

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Notice of Application Filed with the Commission
(December 13, 1984)

Take notice that the following hydroelectric application has been filed with the Federal Energy Regulatory Commission and is available for public inspection:

- a. Type of Application: Exemption (\$M or Less)
- b. Project No: 8012-001
- c. Date Filed: September 7, 1984
- d. Applicant: Mason & Parker Manufacturing Company, Inc.
- e. Name of Project: Hunts Pond Dam Project
- f. Location: On the Millers River, in the Town of Winchendon, Worcester County, Massachusetts
- g. Filed Pursuant to: Section 408 of the Energy Security Act of 1980, 16 U.S.C. §§2705 and 2708 ~~24~~ ~~24~~
- h. Contact Person: Charles Andeava, Mason & Parker Manufacturing Company, 28 Front Street, Winchendon, Massachusetts 01475
- i. Consent Date: J1413 285
- j. Description of Project: The proposed project would consist of: (1) the existing 16-foot-high, 181-foot-long, concrete Hunts Pond Dam; (2) the impoundment having a surface area of 13 acres, a storage capacity of 120 acre-feet, and a normal water surface elevation of 954.1 feet MVD; (3) a proposed intake structure; (4) a proposed powerhouse containing two generating units having a total installed capacity of 120 kW; (5) a proposed 200-foot-long 4.16-kV transmission line; and (6) appurtenant facilities. The applicant estimates that the annual generation would be 593,663 kWh. The estimated costs of constructing this project would be \$250,000.
- k. Purpose of Project: All project power generated would be sold to the Massachusetts Electric Company.
- l. This notice also consists of the following Standard paragraphs: 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- m. Purpose of Exemption: An exemption, if issued, gives the licensee priority of control, development, and operation of the project under the terms of the exemption from licensing, and protects the licensee from permit or license applicants that would seek to take or develop the project.

80-3-21

- 3 -

- (i) Section 12.4(b)(1)(i) and (ii), (2)(i), (iii)(A), and (B), (iv), and (v);
- (ii) Section 12.4(c);
- (iii) Section 12.5;
- (iv) Subpart C; and
- (v) Subpart D.

For the purposes of applying these provisions of 18 CFR Part 12, the exempted project is deemed to be a licensed project development and the owner of the exempted project is deemed to be a licensee.

Quentin A. Edson
Quentin A. Edson
Director, Office of
Hydropower Licensing

§ 4.106 Standard terms and conditions of exemption from licensing.
Any exemption from licensing granted under this subpart for a small hydroelectric power project is subject to the following standard terms and conditions:

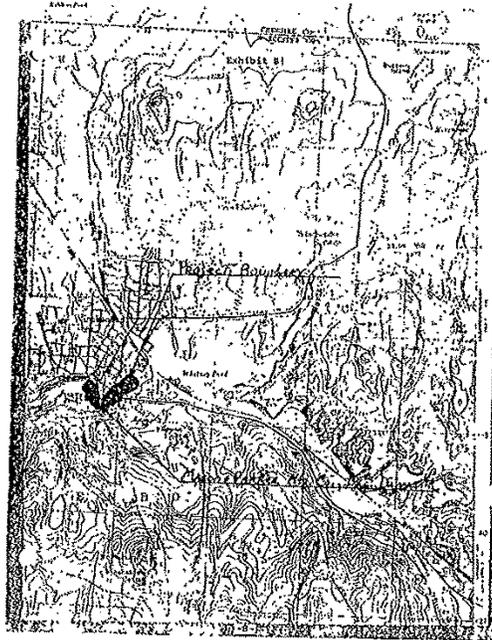
(a) Article 1. The Commission reserves the right to conduct investigations under sections 4(g), 306, 307, and 311 of the Federal Power Act with respect to any acts, complaints, facts, conditions, practices, or other matters related to the construction, operation, or maintenance of the exempt project. If any term or condition of the exemption is violated, the Commission may revoke the exemption, issue a suitable order under section 4(g) of the Federal Power Act, or take appropriate action for enforcement, forfeiture, or penalties under Part III of the Federal Power Act.

(b) Article 2. The construction, operation, and maintenance of the exempt project must comply with any terms and conditions that any Federal or state fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish or wildlife resources or otherwise to carry out the purposes of the Fish and Wildlife Coordination Act, as specified in Exhibit X of the application for exemption from licensing or in the comments submitted in response to the notice of the exemption application.

(c) Article 3. The Commission may accept a license application by any qualified license applicant and revoke this exemption if actual construction or development of any proposed generating facilities has not begun within 18 months, or been completed within four years, from the date on which this exemption was granted. If an exemption is revoked, the Commission will not accept a subsequent application for exemption within two years of the revocation.

03a. Agency Comments - The U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the State Fish and Game agencies are requested, for the purposes set forth in Section 108 of the Energy Security Act of 1980, to file within 60 days from the date of issuance of this notice appropriate terms and conditions to protect any fish and wildlife resources or to otherwise meet the provisions of the Fish and Wildlife Coordination Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of exemption must be clearly identified in the agency letter. If an agency does not file terms and conditions within this time period, that agency will be presumed to have none. Other Federal, State, and local agencies are requested to provide any comments they may have in accordance with their duties and responsibilities. No other formal comments for comments will be made. Comments should be confined to substantive issues relevant to the granting of an exemption. If an agency does not file comments within 60 days from the date of issuance of this notice, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the applicant's representatives.

Yvonne F. Plutz
Secretary



(d) Article 4. This exemption is subject to the navigation servitude of the United States if the project is located on navigable waters of the United States.

(e) Article 5. This exemption does not confer any right to use or occupy any Federal lands that may be necessary for the development or operation of the project. Any right to use or occupy any Federal lands for those purposes must be obtained from the administering Federal land agencies. The Commission may accept a license application by any qualified license applicant and revoke this exemption, if any necessary right to use or occupy Federal lands for those purposes has not been obtained within one year from the date on which this exemption was granted.

P-8012-001

Mick

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Notice of Application Filed with the Commission
(December 13, 1984)

Take notice that the following hydroelectric application has been filed with the Federal Energy Regulatory Commission and is available for public inspection:

- a. Type of Application: Exemption (SHE or Less)
- b. Project No: 8012-001
- c. Date Filed: September 7, 1984
- d. Applicant: Mason & Parker Manufacturing Company, Inc.
- e. Name of Project: Bunts Pond Dam Project
- f. Location: On the Millers River, in the Town of Winchendon, Worcester County, Massachusetts
- g. Filed Pursuant to: Section 408 of the Energy Security Act of 1980, 16 U.S.C. §§2705 and 2708 ~~as amended.~~
- h. Contact Person: Charles Andrews, Mason & Parker Manufacturing Company, 28 Front Street, Winchendon, Massachusetts 01475
- i. Comment Date: JAN 4 1985
- j. Description of Project: The proposed project would consist of: (1) the existing 16-foot-high, 184-foot-long, concrete Bunts Pond Dam; (2) the impoundment having a surface area of 13 acres, a storage capacity of 120 acre-feet, and a normal water surface elevation of 954.4 feet NGVD; (3) a normal water surface elevation of 954.4 feet NGVD; (3) a proposed intake structure; (4) a proposed powerhouse containing 120 kW; (5) a proposed 200-foot-long 4.76 KV transmission line; and (6) appurtenant facilities. The applicant estimates that the annual generation would be 593,663 kWh. The estimated costs of constructing this project would be \$250,000.
- k. Purpose of Project: All project power generated would be sold to the Massachusetts Electric Company.
- l. This notice also consists of the following standard paragraphs: A1, A9, B, C, D3A
- m. Purpose of Exemption: An exemption, if issued, gives the licensee priority of control, development, and operation of the project under the terms of the exemption from license. The licensee must seek exemption from permit or license applicants that would seek to take or develop the project.

FEDERAL ENERGY REGULATORY COMMISSION
RECEIVED

JAN - 7 1985

NEW YORK, N. Y.

DC-A-21

A9. Notice of intent --- A notice of intent must specify the exact name, business address, and telephone number of the prospective applicant, include an unequivocal statement of intent to submit, if such an application may be filed, either (1) a preliminary permit application or (2) a license, small hydroelectric exemption, or conduit exemption application, and be served on the applicant(s) named in this public notice.

A1. Exemption for Small Hydroelectric Power Project under SWR Capacity --- Any qualified license or conduit exemption applicant desiring to file a competing application must submit to the Commission, on or before the specified comment date for the particular application, either a competing license or conduit exemption application that proposes to develop at least 7.5 megawatts in that project, or a notice of intent to file such an application. Any qualified small hydroelectric exemption applicant desiring to file a competing application must submit to the Commission, on or before the specified comment date for the particular application, either a competing small hydroelectric exemption application or a notice of intent to file such an application. Submission of a preliminary notice of intent allows an interested person to file the competing license, conduit exemption, or small hydroelectric exemption application no later than 120 days after the specified comment date for the particular application. Applications for preliminary permit will not be accepted in response to this notice.

P. Comments, Protests, or Motions to Intervene - Anyone may submit comments, protest, or a motion to intervene in accordance with the provisions of the Rules of Practice and Procedure, 18 C.F.R. §§ 21.21, 21.22, 21.23, 21.24. In determining the appropriate action to take, the Commission will consider all protests or other comments filed but all those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

C. Filing and Service of Responsive Documents - Any filings must bear in all cases the title "COMMENTS", "NOTICE OF INTENT TO FILE COMMENTS", "MOTION TO INTERVENE", "PROTEST", or "MOTION TO INTERVENE", as applicable, and the Project Number of the particular application to which the filing is in response. Any of the above named documents must be filed by providing the original and those copies which the Federal Commission's regulations to: Kenneth F. Plumb, Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E. Washington, D.C. 20426. An additional copy must be sent to: Branch, Chief, Director, Division of Project Management, Commission of Hydropower Licensing, Federal Energy Regulatory Commission, 208 8th St. at the above address. A copy of any notice of intent to file a protest or motion to intervene must also be served upon each representative of the Applicant specified in the particular application.

APPENDIX 1-6-2

FERC ORDER AMENDING EXEMPTIONS ISSUED August 22, 2013

20130822-3026 FERC PDF (Unofficial) 08/22/2013

144 FERC ¶ 62,155
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Winchendon Hydroelectric LLC

Project No. 8012-007

ORDER AMENDING EXEMPTION FROM LICENSING (5 MW OR LESS)

(Issued August 22, 2013)

1. On April 5, 2013, Winchendon Hydroelectric LLC, exemptee for the Hunts Pond Dam Hydroelectric Project No. 8012, filed an application to replace two cross-flow turbines with a total generator nameplate capacity of 320 kilowatts (kW) with a single double regulated Kaplan unit with a generator capacity of 100 kW. In addition, the exemptee is proposing to conduct repairs and maintenance as required by the Commission's Division of Dam Safety, and to temporarily draw down the head pond reservoir elevation for these repairs. The project is located on Millers River in Worcester County, Massachusetts.

Background

2. The exemption for the Hunts Pond Dam Hydroelectric Project was issued February 19, 1985, and amended June 27, 1991.¹ The project currently consists of: (a) the existing 16-foot-high, 184-foot-long, concrete Hunts Pond dam; (b) the impoundment having a surface area of 13 acres, a storage capacity of 120 acre-feet, and a normal water surface elevation of 954.4 feet National Geodetic Vertical Datum (NGVD); (c) an intake structure; (d) a powerhouse containing two generating units having a total authorized installed capacity of 320 kW;² (e) a 200-foot-long 4.16-kV transmission line; and (f) appurtenant facilities. The annual generation of the project was originally estimated to be 593,663 kWh.

3. The additional capacity authorized in the June 27, 1991 Order Amending Exemption was never installed due to changes in ownership and bankruptcy. The current exemptee operates the project and maintains the facility at its original exemption capacity of 120 kW, and the project operates in a run-of-river mode.

¹ *Mason & Parker Manufacturing Company, Inc.*, 30 FERC ¶ 62,181 (1985); and, *Mason & Parker Manufacturing Company, Inc.*, 55 FERC ¶ 62,301 (1991).

² The June 27, 1991 Order Amending Exemption authorized a change in the project's total nameplate capacity, from 120 kW to 320 kW.

Project No. 8012-007

2

Proposed Action

4. As stated in their April 5, 2013 filing, the exemptee intends to replace the two cross-flow turbines with a combined authorized installed capacity of 320 kW, with one new double-regulated Kaplan turbine and a 100 kW nameplate generator. With the turbine replacement, the design hydraulic capacity value will be reduced from the existing units at approximately 172 cubic feet per second (cfs) to the new unit at approximately 110 cfs. The operation of the site will remain run-of-river after the construction is completed. The exemptee reports that the historical data shows the energy production to be approximately 305,000 kWh per year. The exemptee states that the new Kaplan turbine is estimated to produce an additional 201,000 kWh per year more than the existing installed units, resulting in an estimated new annual production value of 506,000 kWh.

5. In addition to the turbine replacement, the exemptee plans to address maintenance and repairs to spalled concrete and stoplog and needle beam replacement at the dam, as required by the Commission's Division of Dam Safety's New York Regional Office (D2SI New York Regional Office). The exemptee plans to begin construction in the summer of 2013, with the possible project completion date of December 2013, or summer of 2014 if there are any construction delays.

6. In order to accommodate the maintenance and repairs as described above, the exemptee plans to temporarily draw down the head pond reservoir from a normal operating elevation of 954.6 feet NGVD to below the crest of the dam, located at 948.2 feet NGVD, with a lower limit of 944.48 feet NGVD, which is the bottom of the intake channel. The exemptee states that flows through the project will be coordinated with river flows and rain events to maintain minimum flows or inflow at all times.

Consultation

7. Prior to filing the amendment application with the Commission, the exemptee consulted with U.S. Fish and Wildlife Service (FWS) and the Massachusetts Division of Fisheries and Wildlife (Massachusetts DFW). Both agencies stated they had no objections to the proposed changes, with the understanding that the hydraulic capacity and the minimum flow requirement were not being altered.

Project No. 8012-007

3

8. The U.S. Department of the Interior (Interior), on behalf of the FWS, is requesting that Condition No. 2 of the August 24, 1984 mandatory terms and conditions for the project be modified as follows, to clarify that the mode of project operation should be instantaneous run-of-river:

The exemptee shall operate the project in an instantaneous run-of-river mode, whereby inflow to the project will equal outflow from the project at all times, and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the exemptee, or for short periods upon mutual agreement between the exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife.

9. The Interior is also requesting that, based on Condition No. 8 of the mandatory terms and conditions³ for the project, the exemptee develop a compliance monitoring plan for its approval, within three months of completion of project construction.

Public Notice

10. On May 13, 2013, the Commission issued public notice that the amendment application was accepted for filing, and soliciting motions to intervene, protests, comments and terms and conditions. In response to the Commission's public notice, a filing was made by the Massachusetts DFW on May 31, 2013, stating it has no objection to the exemptee's proposal.

Administrative Conditions

Construction

11. To ensure a safe and adequate project, as shown in ordering paragraph (F), the exemptee must perform all turbine replacement work in consultation with the Commission's D2SI New York Regional Office. The exemptee shall not start any construction activities for the turbine replacement before receiving a prior authorization from the Commission's D2SI New York Regional Office.

12. In addition, as shown in paragraph (G), the exemptee shall conduct all maintenance and repairs to spalled concrete, stoplog and needle beam maintenance and replacement at the dam in coordination with the Commission's D2SI New York Regional Office. The exemptee shall not start any construction activities for the repairs and

³ On February 4, 1985, the Interior added an eighth condition to the project's mandatory terms and conditions.

Project No. 8012-007

4

maintenance required by D2SI, before receiving prior authorization from the Commission's D2SI New York Regional Office.

Discussion

13. Upon completion of the turbine replacement, the project will have a total installed capacity of 100 kW. The decrease in the generating capacity would not result in any additional adverse environmental effects. Therefore, the exemption will be amended, as stated in ordering paragraph (B), to show the project's total authorized nameplate capacity to be 100 kW.

14. In addition, the proposed drawdown for construction requested by the Commission's D2SI New York Regional Office will be authorized to occur for twelve weeks from the start of construction of the turbine replacement, along with maintenance and repairs to spalled concrete as required by D2SI. In ordering paragraph (C) we are granting a temporary drawdown to conduct the turbine replacement and necessary required repairs for twelve weeks from the start date of construction. In the event that the drawdown will need to last longer than twelve weeks, we are requiring the exemptee to file a request for an extension of time. Accordingly, ordering paragraph (H) of this order requires the exemptee to commence construction of the project works authorized in this order within 1 year of the issuance date of this order and shall complete construction within 2 years of the issuance date of this order.

15. The Interior's request to modify Condition No. 2 of the August 24, 1984 mandatory terms and conditions is within the scope of the Interior's right to modify the terms and conditions⁴, and is set forth in Appendix A of this order and incorporated into the exemption by ordering paragraph (D). In ordering paragraph (D), the Commission requires that the exemptee operate the project in an instantaneous run-of-river mode at all times, as required by the FWS. In addition, if the run-of-river mode is modified for an operating emergency or upon mutual agreement with the agencies, we are requiring the exemptee to notify Commission within 10 days of each such incident. In ordering paragraph (E), the Commission is requesting that the exemptee submit a compliance monitoring plan, as required by Condition No. 8 of the Interior's terms and conditions, for Commission approval within 3 months of the completion of construction of the proposed project changes.

⁴ As stated in Condition No. 6 of the Interior's mandatory terms and conditions, the Interior has the right to modify the terms and conditions as needed to protect fish and wildlife resources.

Project No. 8012-007

5

Conclusion

16. The exemptee's proposal to replace two cross-flow turbines with a total authorized capacity of 320 kW to a single double regulated Kaplan unit with a generator capacity of 100 kW would improve the efficiency of the project, while having no significant impact on the environment. In addition, the repairs to spalled concrete and stoplog and needle beam replacement at the dam are necessary and required by the Commission's D2SI New York Regional Office. The need to draw down the project head pond reservoir from a normal operating elevation is necessary to safely conduct the repairs and maintenance and to replace the turbines. The exemptee does not anticipate environmental impacts due to construction activities and has submitted all proposed activity to the FWS and Massachusetts DFW for review. Therefore, the amendment application will be granted, as considered herein.

The Director orders:

(A) The exemption for the Hunts Pond Dam Hydroelectric Project, FERC No. 8012, is amended as provided by this order, effective the day this order is issued.

(B) The project works as shown in paragraph (j) of Appendix A of the exemption are revised to the following:

The project consists of: (a) the existing 16-foot-high, 184-foot-long, concrete Hunts Pond dam; (b) the impoundment having a surface area of 13 acres, a storage capacity of 120 acre-feet, and a normal water surface elevation of 954.4 feet National Geodetic Vertical Datum (NGVD); (c) an intake structure; (d) a powerhouse containing one generating unit having a total authorized installed capacity of 100 kW; (e) a 200-foot-long 4.16-kV transmission line; and (f) appurtenant facilities. The annual generation of the project is estimated to be 506,000 kWh.

(C) The exemptee may temporarily reduce the head pond reservoir from a normal operating elevation of 954.6 feet NGVD to below the crest of the dam, located at 948.2 feet NGVD, with a lower limit of 944.48 feet NGVD. The drawdown is authorized for twelve weeks from the start of the project construction described above. If the temporary modification is to last longer than twelve weeks, a request must be filed with the Commission for an extension of time. In addition, a letter is to be filed with the Commission when normal operating conditions resume.

(D) The exemptee shall operate the project in an instantaneous run-of-river mode, subject to the conditions submitted by the U.S. Department of the Interior, as those conditions are set forth and modified in Appendix A to this order, whereby inflow to the project will equal outflow from the project at all times, and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be

Project No. 8012-007

6

temporarily modified if required by operating emergencies beyond the control of the exemptee, or for short periods upon mutual agreement between the exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife. If the run-of-river mode is modified, the exemptee is required to notify the Commission within ten days of each such incident.

(E) The exemptee shall file, for Commission approval, a compliance monitoring plan. The compliance monitoring plan shall be filed within three months of completion of construction and shall show documentation of consultation with the U.S. Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife at least 30 days prior to filing.

(F) The exemptee must perform all work regarding the turbine replacement in consultation with the Commission's Division of Dam Safety and Inspections New York Regional Office. The exemptee shall not start any construction activities for the turbine replacement before receiving a prior authorization from the Commission's New York Regional Office.

(G) The exemptee must perform all work regarding the spalled concrete repairs as required by the Commission's Division of Dam Safety and Inspections New York Regional Office. The exemptee shall not start any construction activities for the required repairs and maintenance before receiving a prior authorization from the Commission's New York Regional Office.

(H) The exemptee shall commence construction of the project works authorized in this order within 1 year of the issuance date of this order and shall complete construction within 2 years of the issuance date of this order.

(I) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2006), and the Federal Energy Regulatory Commission's regulations at 18 C.F.R. § 385.713 (2012). The filing of a request for rehearing does not operate as a stay of the effective date of this order, or of any other date specified in this order. The exemptee's failure to file a request for rehearing shall constitute acceptance of this order.

Kelly Houff
Chief, Engineering Resources Branch
Division of Hydropower Administration
and Compliance

Project No. 8012-007

7

APPENDIX A

U.S. Department of the Interior on behalf of
the U.S. Fish and Wildlife Service
Section 30(c) Conditions of the Federal Power Act
Filed on March 27, 2013

Modified Condition No. 2

1. The exemptee shall operate the project in an instantaneous run-of-river mode, whereby inflow to the project will equal outflow from the project at all times, and water levels above the dam are not drawn down for the purpose of generating power. Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the Exemptee, or for short periods upon mutual agreement between the Exemptee, the U.S. Fish and Wildlife Service, and the Massachusetts Division of Fisheries and Wildlife.

Appendix 1-6-3

Annual Self-Reported Compliance Records



O'CONNELL DEVELOPMENT GROUP
480 Hampden Street, P.O. Box 867, Holyoke, MA 01041-0867
413-534-0243 • FAX 413-538-6179

12/21/2011

Mr. Gerald L. Cross, P.E.
Regional Engineer
Federal Energy Regulatory Commission
Division of Dam Safety and Inspections
New York Regional Office
19 West 34th Street - Suite 400
New York, New York 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Cross

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on August 10, 2009.

Run of river operation continues to be maintained and controlled utilizing a PLC and SCADA control system installed in 1996. The control system has been periodically upgraded as technology advances and the basic operating parameters fine tuned with regard to turbine and generator operation. Complete plant status is data logged at 30 minute intervals and the plant is interrogated or visited daily by plant operators. Each operator is equipped with a P.C. at their home so plant conditions or alarms can be monitored and addressed immediately and real time information can be displayed on each system. Dialers at the site alert operators of any problems or alarms occurring on a 24 hour, seven day a week basis. The control system has proven to be dependable and reliable and provides remote interface with the plant at any time.

Maintenance of public safety devices is performed as needed.

No accidents, injuries or emergency events have ever taken place at the facility .

Hunts Pond Hydroelectric continues to be operated and maintained to our high standards as well to the compliance terms, conditions, and special requirements set forth in our exemption and the FERCS regulations.

Should you require any further information or clarification on this matter, please contact me at (413) 534-4660, ext. 131 or at the mailing address above.

Sincerely,
O'Connell Energy Group

Steven M. Berry
Operations Manager

■ DEVELOPMENT ■ FINANCE ■ PROJECT MANAGEMENT ■ ENERGY/ENVIRONMENTAL



O'CONNELL DEVELOPMENT GROUP
480 Hampden Street, P.O. Box 867, Holyoke, MA 01041-0867
413-534-0243 • FAX 413-538-6179

12/16/2010

Mr. Peter Valeri, P.E.,
Regional Engineer
Federal Energy Regulatory Commission
Office of Energy Projects
Division of Dam Safety and Inspections
New York Regional Office
19 West 34th Street - Suite 400
New York, New York 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Valeri

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on August 10, 2009.

Run of river operation continues to be maintained and controlled utilizing a PLC and SCADA control system installed in 1996. The control system has been periodically upgraded as technology advances and the basic operating parameters fine tuned with regard to turbine and generator operation. Complete plant status is data logged at 30 minute intervals and the plant is interrogated or visited daily by plant operators. Each operator is equipped with a P.C. at their home so plant conditions or alarms can be monitored and addressed immediately and real time information can be displayed on each system. Dialers at the site alert operators of any problems or alarms occurring on a 24 hour, seven day a week basis. The control system has proven to be dependable and reliable and provides remote interface with the plant at any time.

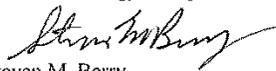
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Should you require any further information or clarification on this matter, please contact me at (413) 534-4660, ext. 131 or at the mailing address above.

Sincerely,
O'Connell Energy Group


Steven M. Berry
Operations Manager

■ DEVELOPMENT ■ FINANCE ■ PROJECT MANAGEMENT ■ ENERGY/ENVIRONMENTAL

LIHI Certification Application
Hunts Pond Dam
Submitted by Owner: Winchendon Hydroelectric LLC
Appendix 1 Page 24 of 72
3/11/2014



O'CONNELL DEVELOPMENT GROUP
480 Hampden Street, P.O. Box 867, Holyoke, MA 01041-0867
413-534-0243 • FAX 413-538-6179

12/29/2009

Mr. Peter Valeri, P.E.,
Regional Engineer
Federal Energy Regulatory Commission
Office of Energy Projects
Division of Dam Safety and Inspections
New York Regional Office
19 West 34th Street - Suite 400
New York, New York 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

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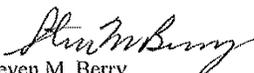
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Sincerely,
O'Connell Energy Group


Steven M. Berry
Operations Manager

■ DEVELOPMENT ■ FINANCE ■ PROJECT MANAGEMENT ■ ENERGY/ENVIRONMENTAL

LIHI Certification Application
Hunts Pond Dam
Submitted by Owner: Winchendon Hydroelectric LLC
Appendix 1 Page 25 of 72
3/11/2014



O'CONNELL DEVELOPMENT GROUP
480 Hampden Street, P.O. Box 867, Holyoke, MA 01041-0867
413-534-0243 • FAX 413-538-6179

12/30/2008

Mr. Charles P. Goggins
Federal Energy Regulatory Commission
Office of Energy Projects
New York Regional Office
19 West 34th Street - Suite 400
New York, New York 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Goggins,

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on June 14, 2006.

Run of river operation continues to be maintained and controlled utilizing a PLC and SCADA control system installed in 1996. The control system has been periodically upgraded as technology advances and the basic operating parameters fine tuned with regard to turbine and generator operation. Complete plant status is data logged at 30 minute intervals and the plant is interrogated or visited daily by plant operators. Each operator is equipped with a P.C. at their home so plant conditions or alarms can be monitored and addressed immediately and real time information can be displayed on each system. Dialers at the site alert operators of any problems or alarms occurring on a 24 hour, seven day a week basis. The control system has proven to be dependable and reliable and provides remote interface with the plant at any time.

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Sincerely,
O'Connell Energy Group

Steven M. Berry
Operations Manager

■ DEVELOPMENT ■ FINANCE ■ PROJECT MANAGEMENT ■ ENERGY/ENVIRONMENTAL



O'CONNELL ENERGY GROUP

57 Suffolk Street, Suite 200, Holyoke, MA 01040

413-534-4660 • FAX 413-536-4911

December 28, 2007

Mr. Charles P. Goggins
Federal Energy Regulatory Commission
New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Goggins

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on June 14, 2006.

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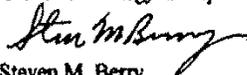
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A DIVISION OF O'CONNELL DEVELOPMENT GROUP

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Should you require any further information or clarification on this matter, please contact me at (413) 534-4660, ext. 131 or at the mailing address above.

Sincerely,
O'Connell Energy Group


Steven M. Berry
Operations Manager



O'CONNELL DEVELOPMENT GROUP
480 Hampden Street, P.O. Box 867, Holyoke, MA 01041-0867
413-534-0243 • FAX 413-538-6179

December 27, 2006

Mr. Anton J. Sidoti
Federal Energy Regulatory Commission
New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Sidoti:

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on June 14 of this year.

Run of river operation continues to be maintained and controlled utilizing a PLC and SCADA control system installed in 1996. The control system has been periodically upgraded as technology advances and the basic operating parameters fine tuned with regard to turbine and generator operation. Complete plant status is data logged at 30 minute intervals and the plant is interrogated or visited daily by plant operators. Each operator is equipped with a P.C. at their home so plant conditions or alarms can be monitored and addressed immediately and real time information can be displayed on each system. Dialers at the site alert operators of any problems or alarms occurring on a 24 hour, seven day a week basis. The control system has proven to be dependable and reliable and provides remote interface with the plant at any time.

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Sincerely,
O'Connell Energy Group

Steven M. Berry
Operations Manager

■ DEVELOPMENT ■ FINANCE ■ PROJECT MANAGEMENT ■ ENERGY/ENVIRONMENTAL



O'CONNELL DEVELOPMENT GROUP INC.
57 Suffolk Street, Suite 200, Holyoke, MA 01040
413-534-4660 • FAX 413-536-4911

Dec. 8,, 2005

Mr. Anton J. Sidoti
Federal Energy Regulatory Commission
New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Sidoti:

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on December 10, 2002.

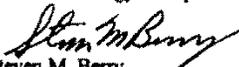
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Should you require any further information or clarification on this matter, please contact me at (413) 534-4660, ext. 131 or at the mailing address above.

Sincerely,
O'Connell Energy Group


Steven M. Berry
Operations Manager

■ DEVELOPMENT ■ FINANCE ■ PROJECT MANAGEMENT ■ ENERGY/ENVIRONMENTAL



DEC 30 2004

O'CONNELL ENERGY GROUP

57 Suffolk Street, Suite 200, Holyoke, MA 01040

413-534-4660 • FAX 413-536-4911

Dec. 27, 2004

Mr. Anton J. Sidoti
Federal Energy Regulatory Commission
New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Sidoti:

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on December 10, 2002.

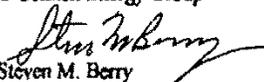
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Sincerely,
O'Connell Energy Group


Steven M. Berry
Operations Manager

A DIVISION OF O'CONNELL DEVELOPMENT GROUP INC.



O'CONNELL ENERGY GROUP

57 Suffolk Street, Suite 200, Holyoke, MA 01040

413-534-4660 • FAX 413-536-4911

Dec. 17, 2003

Mr. Anton J. Sidoti
Federal Energy Regulatory Commission
New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Sidoti:

This correspondence responds to the Commission's request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on December 10, 2002.

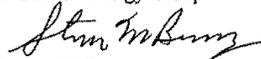
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Should you require any further information or clarification on this matter, please contact me at (413) 534-4660, ext. 131 or at the mailing address above.

Sincerely,
O'Connell Energy Group


Steven M. Berry
Operations Manager

A DIVISION OF O'CONNELL DEVELOPMENT GROUP INC.



O'CONNELL ENERGY GROUP

57 Suffolk Street, Suite 200, Holyoke, MA 01040

413-534-4660 • FAX 413-536-4911

FILED
02 MAR 20 PM 1:29
FEDERAL ENERGY
REGULATORY COMMISSION

January 9, 2002

Mr. Anton J. Sidoti
Federal Energy Regulatory Commission
New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Re: Project Compliance 8012 MA , Hunts Pond Dam

Dear Mr. Sidoti:

This correspondence responds to the Commissions request regarding supervision and compliance of project 8012 MA ,Hunts Pond Dam.

Operation of this facility remains unchanged since the last field inspection by your staff on July 28, 2000.

Run of river operation continues to be maintained and controlled utilizing a PLC and SCADA control system installed in 1996. The control system has been periodically upgraded as technology advances but the basic operating parameters remained unchanged with regard to turbine and generator operation. Complete plant status is data logged at 30 minute intervals and the plant is intergated daily by plant operators. Each operator is equipped with a P.C. at their home so plant conditions or alarms can be monitored and addressed immediately and real time information can be displayed on each system. Dialers at the site alert operators of any problems or alarms occurring on a 24 hour, seven day a week basis. The control system has proven to be dependable and reliable and provides remote interface with the plant at any time.

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Should you require any further information or clarification on this matter, please contact me at (413) 534-4660, ext. 131 or at the mailing address above.

FERC - NYRO
RECEIVED

MAR 19 2002

NEW YORK, NY

Sincerely,
O'Connell Energy Group

Steven M. Berry
Steven M. Berry
Operations Manager

020325 0499-3

FERC DOCKETED

A DIVISION OF O'CONNELL DEVELOPMENT GROUP INC.

Appendix 1-6-4

FERC Inspection Reports

FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections – New York Regional Office
19 West 34th Street, Suite 400
New York, NY 10001

Telephone No. (212) 273-5900

Fax No. (212) 631-8124

In reply, refer to:

**P-8012-MA Hunts Pond
NATDAM ID No. MA00634**

**P-6096-MA New Home
NATDAM ID No. MA00501**

Inspection Follow Up

August 22, 2012

**Mr. Steven Berry
Operations Manager
57 Suffolk Street, Suite 200
Holyoke, MA 01040**

Dear Mr. Berry:

This letter summarizes our findings from the inspections of the Hunts Pond and New Home projects that were performed on July 17, 2012 by Mr. Noel Aglubat. We thank you and your staff for courtesies extended during this inspection. The project's features and associated facilities were noted to be in satisfactory conditions. However, as a result of our dam safety inspections, the following items were noted that are in need of follow-up actions:

1. During this inspection significant vegetative brush was observed at the New Home, South Bank powerhouse adjacent to the auxiliary spillway (see attached Photo). Please remove the vegetation when flows allow.
2. Concrete spalling on the central pier of the Hunts Pond spillway was observed during this inspection. Please continue to visually monitor the condition of the spillway and repair as necessary.

*Contains Critical Energy Infrastructure Information
- Do Not Release -*

Since additional research goes into the preparation of our reports, please be advised that we may have additional comments at that time. In the interim, should you have any questions, please contact Mr. Noel Aglubat at (212) 273-5907 or by e-mail at Noel.Aglubat@ferc.gov. Your continued cooperation is appreciated.

Sincerely,



Gerald L. Cross, P.E.
Regional Engineer

Contains Critical Energy Infrastructure Information
- Do Not Release -

OPERATION REPORT
(Electronically Submitted)
FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF ENERGY PROJECTS
DIVISION OF DAM SAFETY AND INSPECTIONS
New York Regional Office

For the period December 10, 2002 to June 14, 2006

Exemptee O'Connell Energy Group Project No. 8012-MA
Project Name Hunts Pond (NATDAM ID No. MA00634)
Location Millers River Franklin MA
(Waterway and/or reservation) (County) (State)
Exemption issued February 19, 1985 Expires:N/A Type: Case Specific
Date of last amendment June 27, 1991 – Change in Capacity
Inspected by Dr. Richard R. Zavesky; Theresa Luback Date: June 14, 2006

Parts of Project inspected Dam, powerhouse, intake and appurtenant structures

Weather Partly cloudy, rainy; temperatures mid 80's°F

Accompanied by Steve Berry, Operations Manager – O'Connell Energy Group

Summary

Based on a review of available information and field inspection, the Exemptee is in compliance with the exemption requirements during this report period.

Overall, project structures and related equipment are operational and maintained. Some deterioration exists but is not severe enough to warrant immediate remedial action.

Project security was discussed during the current Operation Inspection and any follow-up was provided as needed.

There are no other matters of immediate interest to the Commission.

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Project 8012-MA, Hunts Pond

2

Submitted September 18, 2006

Dr. Richard R. Zavesky
Senior Civil Engineer

Theresa Luback
Intern Civil Engineer

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PERTINENT DATASHEET
FERC-D2SI - New York Regional Office

General Data

Dam Number: 08012-01-01	River: Millers River
Project Name: Hunts Pond	River Mile:
Exemptee: -----	Drainage Area (sq/mi): 54
Exemptee: O'Connell Engineering & Financial, Inc.	Seismic Zone: 2
Applicant/Other: -----	D/S Hazard: Low
Development: Hunts Pond	DS City: Winchendon
Lake Name: Hunts Pond	DS City Distance (mi): 0
Dam Name: Hunts Pond	Dam Completion Date: 1936
State, County: MA Worcester	
USGS Quad: Winchendon	
Latitude: 42.6791	
Longitude: -72.0478	

Hydrologic Data

PMF (cfs): -99
 IDF (cfs): -99
 100-YR Flood (cfs): 940
 Flood of Record (cfs): 8,500
 Date Flood of Record: 9/22/1938
 Average Flow (cfs): 87
 Minimum Flow Required (Y/N): Y
 Minimum flow (cfs): 25

Reservoir Data

Surface Area (acres):
 Maximum: 13
 Normal: 13
 Minimum: 13
Pool Elevation (msl)
 Maximum: 954.40
 Normal: 954.40
 Minimum: 952.40
Storage (acre-ft)
 Maximum: 120
 Normal: 120
 Minimum: 115

Project Works

Type of Dam
 Type 1: Concrete
 Type 2: Gravity
 Type 3:
 Dam Height (ft): 15
 Dam Crest Elevation (msl): 947.8
 Length of Dam (ft): 184
 Flashboards Installed (Y/N): N
 Flashboard Elevation (msl): -99.0
 Overflow Spillway Length (ft): 97
 Overflow Spillway Crest Elev. (msl): 947.8
 Number of Gates: 0
 Number of Powerhouses: 1
 Authorized Gen. Capacity (KW): 120
 Number of Generating Units: 2
 Number of Penstocks: 0
 Number of Canals: 0
 Number of Tunnels: 0
 Number of Locks: 0

Safety Requirements

Consultants Safety Inspection Report
 Report Required (Y/N) N
 Latest Report Submitted
Emergency Action Plan (EAP)
 EAP Status: Not Required
 Latest EAP/ EAP Modification:
Boat Restraining Barrier: Mo. Day
 Required (Y/N): N Date In: -99 -99
 Date Out: -99 -99

Gate Count by Type

Tainter	Vert Lift	Slide	Drum	Bascule
0	0	0	0	0
Needle	Roller	Valve	Flap	Other
0	0	0	0	0

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A. Downstream Hazard Potential

The Hunts Pond Project is located on the Millers River in an urban area of the Town of Winchendon, Worcester County, Massachusetts. Based on the dam height, the relatively small storage capacity of the project impoundment, downstream topography and observations during the inspection, the failure of Hunts Pond Dam would result in no loss of life or significant impacts to downstream property. In the event of flooding there is an arched roadway dam located upstream of the Hunts Pond Dam that would serve as a temporary dam and may minimize the amount of water downstream.

No change in the current hazard potential classification is required at this time. There are commercial establishments and parked vehicles just downstream along the riverbanks that might sustain some water damage in the event of a failure. Near-dam breaches can produce water depths about 2/3 the dam's height or 10 ft in the case of this impoundment. The river walls and abutting terrace grades should be checked for relative elevation above stream bottom.

B. Project Safety and Maintenance**1. Reservoir and Downstream Channel Conditions**

Reservoir	Y/N	Comment, Explanation, and Description
1. Signs of shoreline instability?	N	There were no signs of shoreline instability observed during the inspection.
2. Sedimentation?	N	
3. Debris?	N	None observed.
4. Ice related problems?	Y	During the winter some ice formation has been observed in the project reservoir.
5. Operating constraints?	N	
6. Environmental concerns?	N	None reported.
7. Other Comments?	N	Downstream area with commercial establishments at risk of potential flooding (cf. Photograph No. 12)

Downstream Channel (Below project)	Y/N	Comment, Explanation, and Description
1. Eroding or back cutting?	N	No erosion or sloughing of the river channel below either powerhouse was observed during the inspection.
2. Sloughing?	N	Not observed.
3. Obstruction?	N	
4. Other Comments?	N	

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2. Dams, Dikes and Appurtenant Structures

The Hunts Pond Project consists of a 15-foot high concrete gravity dam, with timber stoplog bays on the spillway crest held in place by steel framework; an access walkway; a forebay and intake structure; and a powerhouse containing two units with a total installed capacity of 120-kW.

Concrete Dam	Y/N	Comment, Explanation, and Description
1. Alignment	Y	
a. Misalignment?	N	Concrete Sills Are Submerged and not Observable
b. Displacement?	N	
c. Rotation?	N	
2. Deterioration	Y	Minor Detected
a. Cracking?	N	
b. Spalling?	Y	Some spalled concrete was noted on the spillway pier.
c. Exposed Reinforcement?	N	
d. Loss of joint fillers?	N	
e. Scaling?	N	
3. Seepage	N	
a. Where?		
b. Quantity?		
4. Drains	N/A	
a. Box-Drain outlets?		
b. Weep Holes?		
5. Abutment & Foundation Contacts		
a. Abutment instability?	N	
b. Erosion?	Y	There is undercutting of the concrete (cf. Photograph No. 11 & 15)
c. Undercutting?	N	
d. Visible displacement?	N	
e. Seepage from contact?	N	
f. Boils downstream?	N	
g. Springs?	N	
h. Abutment shoreline	Y	At the time of inspection there was adequate

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freeboard?		abutment freeboard (cf. Photograph No. 11), on the right dam of the dam there is occasional flooding of an adjacent residence due to the height of water storage reservoir upstream of the dam (cf. Photograph No. 9)
6. Galleries	N/A	
a. Displacement	N/A	
b. Deterioration	N/A	
1. Cracking?	N/A	
2. Spalling?	N/A	
3. Exposed reinforcement?	N/A	
4. Loss of joint fillers?	N/A	
5. Leakage?	N/A	
6. Scaling?	N/A	
c. Drains		Unknown
1. Structure drains?	N/A	
2. Foundation drains?	N/A	
3. Maintenance & inspection program?	N/A	
4. Gutter deposits?	N/A	
7. Instrumentation	N	
a. Are there		
1. Piezometers?		
2. Weirs?		
3. Settlement monuments?		
4. Observation wells?		
5. Other?		
b. Are readings		
1. Available?		
2. Plotted?		
3. Taken periodically?		
4. Submitted periodically?		
c. Evaluated?		
d. Adequacy?		
8. Other Comments?		

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Spillway	Y/N	Comment, Explanation, and Description
1. Gates	N/A	
a. Mechanical equipment operable?		
b. Are gates remotely controlled?		
c. Are gates maintained?		
2. Concrete Conduits	N/A	
a. Cracking?		
b. Deterioration?		
c. Erosion?		
d. Exposed reinforcing?		
e. Are joints displaced?		
f. Are joints leaking?		
3. Metal Conduits	N/A	
a. Is metal corroded?		
b. Is conduit cracked?		
c. Are joints displaced?		
d. Are joints leaking?		
4. Energy Dissipater	N/A	
a. Deterioration?		
b. Erosion?		
c. Exposed Reinforcement?		
5. Metal Appurtenances	Y	
a. Corrosion?	Y	Rust on Operation Deck (cf. Photographs No. 1, 2, 3, and 4)
b. Breakage?		
c. Secure Anchorages?	Y	The metal Operation Deck appears to be accurately secured. (cf. Photographs No. 2, 3)
6. Discharge Channel	N/A	
a. Undercutting?		
b. Erosible?		
c. Obstruction?		
d. Other?		

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7. Sealed Conduits	N/A	
a. Location?		
b. Properly Maintained?		
8. Other Comments?	Y	There is only a small outlet in the project (cf. Photograph No. 3)

Intake	Y/N	
1. Equipment		
a. Trash boom?	N	
b. Trash racks?	Y	
c. Trash rake?	N	
d. Mechanical equipment operable?	Y	Generators inside the powerhouse (cf. Photograph No. 5)
e. Intake gates?	Y	
f. Are gates and racks maintained?	Y	Upon the time of inspection the gates and racks were operating and appeared to be maintained.
2. Concrete Surfaces	Y	
a. Cracking?	Y	Minor cracking and deterioration was observed on the downstream side of both of the power canal walls. (cf. Photograph No. 11)
b. Deterioration?	Y	
c. Erosion?	N	
d. Exposed reinforcement?	N	
e. Joints displaced?	N	
f. Joints leaking?	N	
3. Conduits	N/A	
a. Cracking?		
b. Deterioration?		
c. Erosion?		
d. Exposed reinforcement?		
e. Joints displaced?		
f. Joints leaking?		
4. Power Canals & Locks	N/A	
a. Slope protection?	N	

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b. Trees & brush?	N	
c. Erosion?	N	
d. Seepage?	N	
e. Animal burrows?	N	
f. Buried conduits?	N	
g. Wall deterioration?	N	
5. Metal Appurtenances	Y	
a. Corrosion?	N	
b. Breakage?	N	
c. Secure anchorages?	Y	The metal appurtenances appeared to be secured at the time of inspection.
6. Penstocks	N/A	
a. Materials deteriorated?		
b. Joints leaking?		
c. Supports adequate?		
d. Anchor blocks stable?		
7. Other Comments?		

3. Power Plant

Powerhouse	Y/N	Comment, Explanation and Description
1. Are generating units operable?	Y	Unit No.1 was generating at 71kW and Unit No.2 was generating at about 13kW. (cf. Photograph No. 13)
2. Any shutdowns since last inspection?	N	
3. Is auxiliary equipment operable?	Y	
4. Proper maintenance?	Y	
5. Deterioration?		
a. Cracking?	N	
b. Spalling?	N	
c. Exposed reinforcement?	N	
d. Loss of Joint Fillers?	N	
6. Galleries?	N/A	
a. Displacement?		
b. Deterioration?		

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1. Cracking?		
2. Spalling?		
3. Exposed reinforcement?		
4. Loss of joint fillers?		
5. Leakage?		
6. Scaling?		
c. Drains?		
1. Structure drains?		
2. Foundation drains?		
3. Maintenance and inspection program?		
4. Gutter deposits?		
7. Any changes to structure?	N	
8. Any changes to equipment?	N	
9. Instrumentation?	N	
a. Are there		
1. Piezometers?		
2. Weirs?		
3. Settlement monuments?		
4. Observation wells?		
5. Other?		
b. Are readings		
1. Available		
2. Plotted?		
3. Taken periodically?		
4. Submitted periodically?		
c. Evaluation?		
d. Adequacy?		
e. Current drawings?		
10. Other comments		

4. Emergency Action Plan

An Emergency Action Plan is not required since the failure of Hunts Pond Dam would not result in loss of life or significantly impact downstream property. During the inspection downstream of the facility was inspected and the only potential issue is the retaining wall adjacent to a commercial building. (cf. **Photographs No. 7 and 15.**)

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Observations during the inspection revealed no changes in upstream or downstream conditions that would affect the current low hazard potential classification of this structure. The current Emergency Action Plan is sufficient for the project however it is subject to change if the data requested in the follow-up letter would require it necessary.

Emergency Action Plan	Y/N	Comment, Explanation, and Description
1. Current plan posted?	N/A	Not required.
2. Understood by operator?		
3. Warning systems?		
4. Certification of last test?		
5. Remote operation?		
6. Adequate?		
7. Habitable structures?	Y	Commercial structures immediately downstream of Hunts Pond Dam are situated above the river channel. (cf. Photograph Nos. 7 and 15)
8. Recreation areas?	N	
9. Changed hazard potential?	N	Hunts Pond Dam is presently classified as a low hazard potential structure.
10. New development?	N	
11. Other comments?		

5. Exemptee's Inspection Program

Exemptee Inspection Program	Y/N	Comment, Explanation, and Description
1. Does one exist?	Y	The Exemptee inspects all project structures each year.
2. Adequate surveillance?	Y	Daily during periods of generation; three times a week when not generating.
a. Project structures?	Y	
b. Penstocks?	N/A	
c. Conduits through dams?	N/A	
d. Drainage systems?	N/A	
e. Other?	N	
3. Frequency?	Y	Annually.
4. Documentation?	Y	Detailed inspection report.
5. Performed by whom?	Y	Exemptee personnel.

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6. Other comments?		
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C. Environmental Requirements

Article 2 of the exemption requires the Exemptee to discharge a minimum flow of 25 cfs or inflow, whichever is less, downstream of the project site for the protection of aquatic habitat. Minimum flow is released through a combination of leakage from the spillway stoplog bays, the forebay drain gate and/or powerhouse generation.

D. Public Safety

PUBLIC SAFETY	Y/N	Comment, Explanation, and Description
1. Approved Public Safety Plan?	Y	Filed in August 1997.
2. Adequate barriers upstream from spillway/intake?	N/A	Closed for public use.
3. Adequate fencing?	Y	
4. Adequate signs and signals?	Y	(cf. Photograph No. 14)
5. Adequate utility line clearance?	N/A	
6. Accidents and incidences?	N	None reported this inspection period.
7. Other comments?	Y	Security at the project site was also discussed during the inspection and appropriate follow-up measures provided as needed.

E. Project Compliance

1. Unauthorized Project Maintenance or Uses

While the project is unmanned neighboring companies and houses would assist by contacting the owner and informing them of any trespassing issues that may have occurred.

2. Exemption Compliance

Based on a review of all available information and field observations, the Exemptee is in compliance with the exemption requirements during this report period.

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Compliance	Y/N	Comment, Explanation, and Description
1. Adequate flow records?	Y	
2. Adequate gauging facilities?	Y	
3. Exemption terms and conditions reviewed?	Y	
4. Compliance with exemption terms and conditions?	Y	
5. Adequate erosion control measures?	N/A	
6. Part 8 applicable?	N/A	
7. Part 8 sign(s) adequate?	N/A	
8. Copy of exemption and recreation plan available at Exemptee's area office?	N/A	
9. Other comments?	N	

F. Specific Findings and necessary Follow-up Action

Comments, Specific Findings and Necessary Follow-Up Actions
<p>Overall, project structures and related equipment are operational and maintained, except for some spalled concrete on the spillway pier and cracked and deteriorated concrete on the spillway side of the forebay wall. The Exemptee installed a new intake gate and operator during summer 2002. Project security was discussed during the current Operation Inspection and any follow-up was provided as needed.</p> <p>There are no operation and maintenance items that require immediate follow-up action at this time.</p>

Attachments: Descriptive Sheet
Topographic Map
Aerial Photograph
Photo Location Map
Set of 15 Photographs

cc: Director, D2SI
FERRIS, D2SI-NYRO
Zavesky, R., Luback, T./ds

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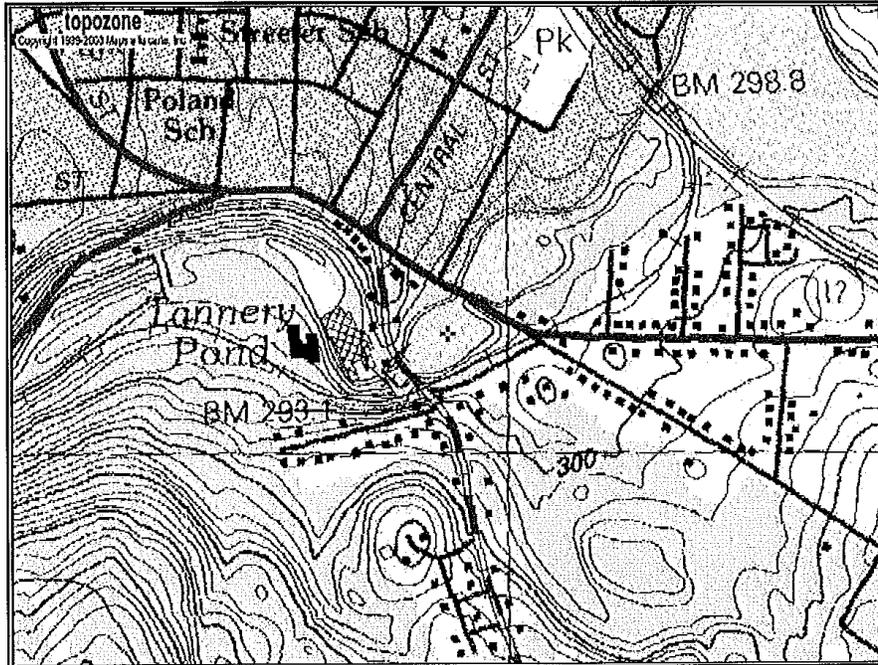


Figure 1 - Topographic Map of Project Location.

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Figure 2 - *Satellite map of project location from Google.*

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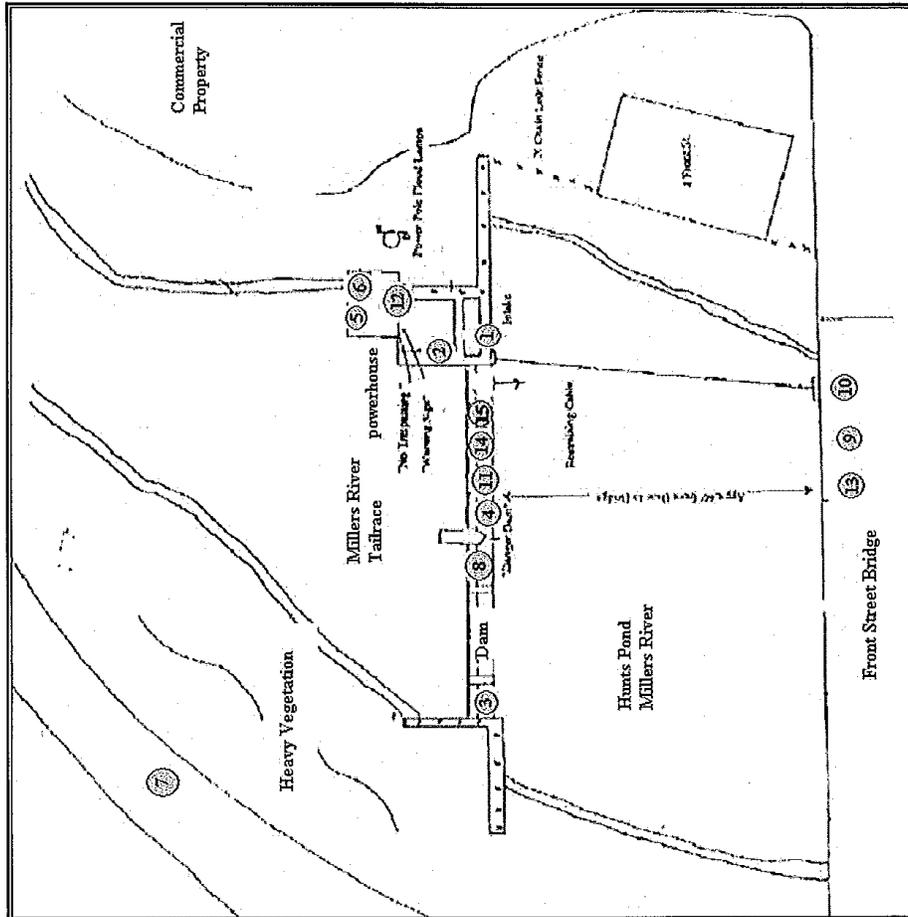
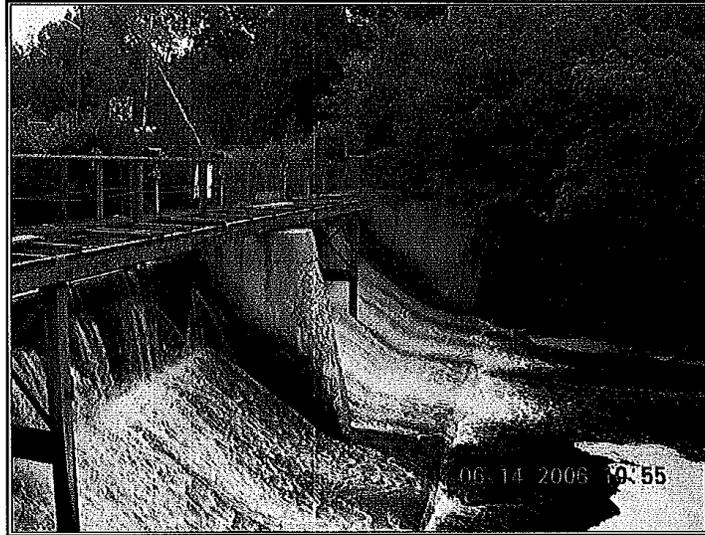


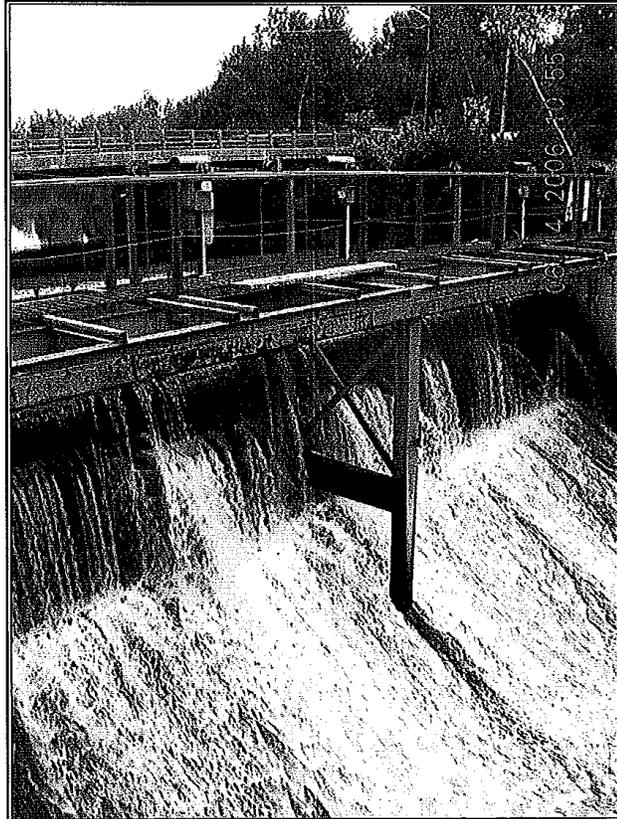
Figure 3 - Photo Location Map of Hunts Pond.

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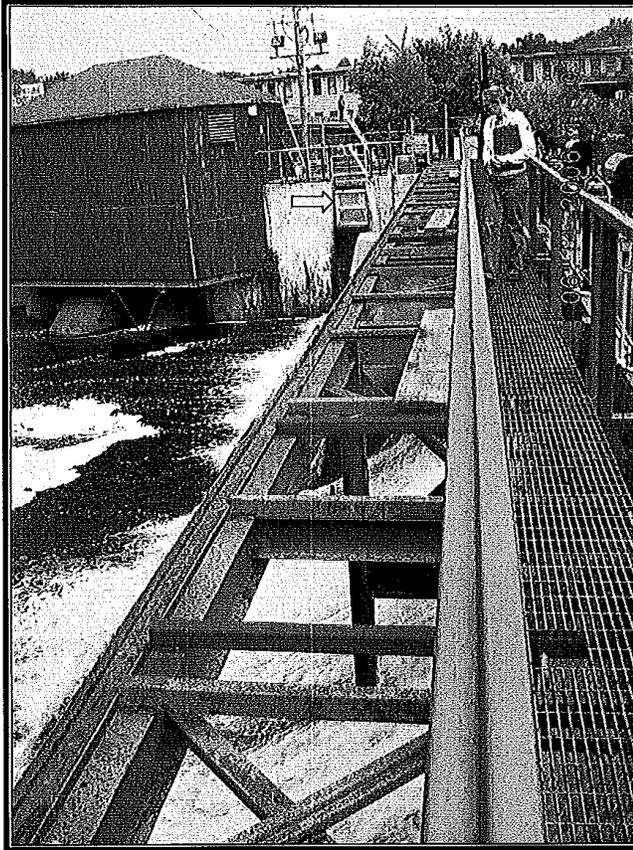
Photograph No. -1- *Hunts Pond Dam looking along the downstream face toward the left abutment.*

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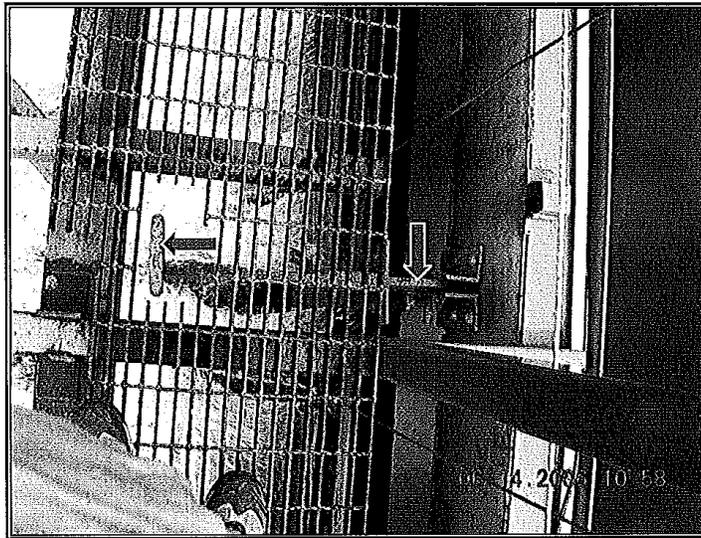
Photograph No. -2- Downstream face of Hunts Pond Dam looking from the Powerhouse.

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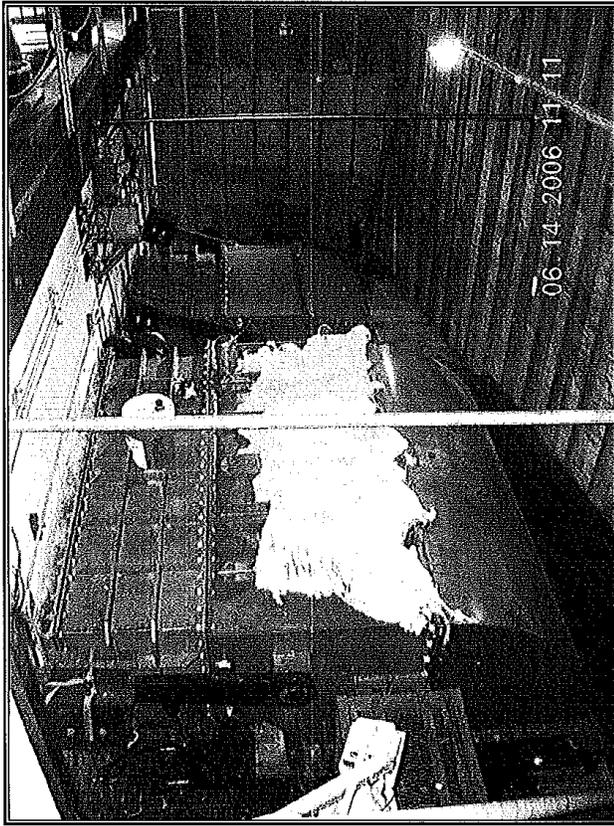
Photograph No. 3 - Forebay stoplog section looking west from the walkway over the dam.

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Photograph No. 4 – Stanchion Tripping Mechanism. Pin at Right is Removed Prior to Pulling Handle at Left.

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Photograph No. 5 – Powerhouse interior with Multi-Size Cross Flow Units.

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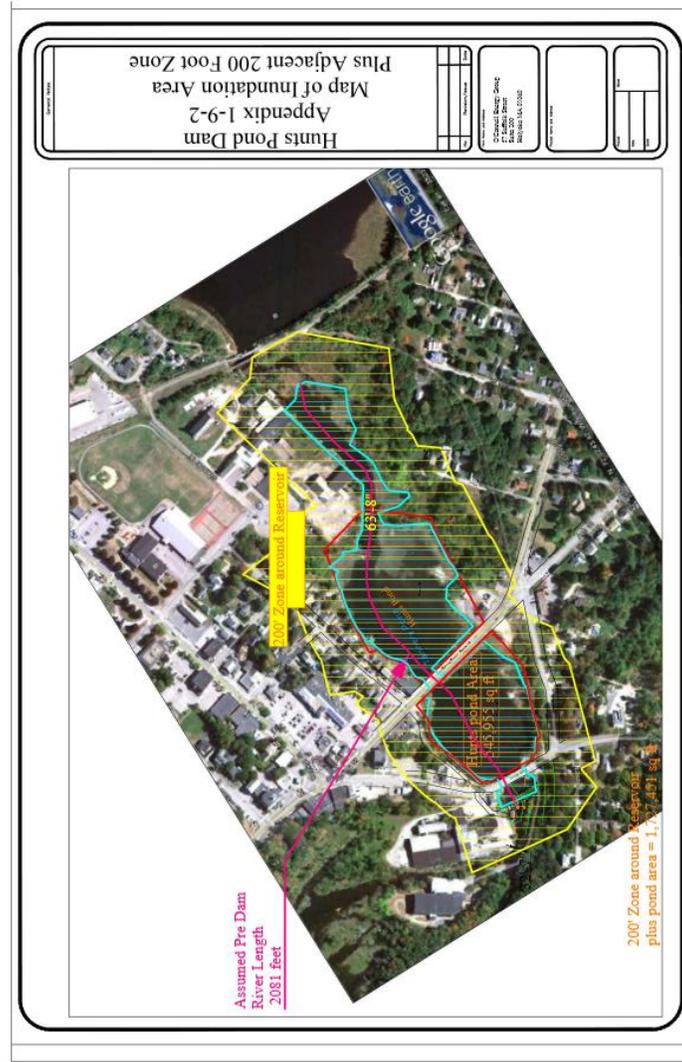
Appendix 1-9-1

Inundated Land Calculation

The width, area and length calculations were compiled using NID Records, Google Earth and USGS topographical maps (See Appendix 1-9-2 for Map). The impoundment is approximately 13 Acres in area with a length of 2,081 feet at normal operating elevation of 954.4 msl. No historical information is available to determine actual pre-dam river width. Therefore an estimate of pre-dam river area was developed using the existing river widths upstream and downstream of the current dam impoundment. The downstream river width is 33 feet and the upstream river width is 64 feet with a calculated average river width of 48 feet. The approximate pre-dam river area is 2.3 acres. Therefore the net area inundated by the Hunts Pond Dam facility is approximately 10.7 acres.

Appendix 1-9-2

Map of Inundated Land & 200 Foot Adjacent Zone



APPENDIX 1-11-1

AGENCY CONTACTS

FERC Exemption History

A list of contacts that have been involved in proceedings involving the operations of the Facility either during the licensing proceedings or thereafter are listed below as provided by the FERC eLibrary Database.

Filed Date	Party	Notes
1/27/1984	Mason & Parker	Preliminary Application
2/28/1984	FERC	Acceptance of Application
3/26/1984	FERC	Formal Notice
4/19/1984	EPA	Water Quality Concerns
5/8/1984	Historical Commission	
5/17/1984	Army Corps	
5/14/1984	Mason & Parker	Not on List of Historic Places
5/24/1984	Department of Interior	
7/31/1984	FERC	Preliminary Permit Issued
8/8/1984	Historical Commission	
8/24/1984	USF&W	
9/6/1984	Mason & Parker	Exemption Application
11/27/1984	FERC	Acceptance of Application
12/13/1984	FERC	Formal Notice
1/16/1985	Army Corps	
1/18/1985	MA Audubon Society	
1/21/1985	Department of Interior	
1/28/1985	National Marine Fisheries Services	
2/4/1985	Department of Interior	
2/19/1985	FERC	Exemption Issued
3/27/1991	Mason & Parker	Request for Capacity increase
6/27/1991	FERC	Exemption Amendment Issued
3/27/2013	Department of Interior	Agency Comment Letter
5/31/2013	MA Division of Fisheries & Wildlife	Agency Comment Letter
8/22/2013	FERC	Exemption Amendment Issued

Agency Contact Information

Army Corps of Engineers
Steve Andon; (978) 318-8007
steve.a.andon@usace.army.mil

Federal Energy Regulatory Commission
Kimberly D. Bose, Secretary; (202) 502-8400
kimberly.bose@ferc.gov

Federal Energy Regulatory Commission – New York Regional Office
Gerald L. Cross, Regional Engineer; (212) 273-5911
gerald.cross@ferc.gov

Dept of the Interior - Fish and Wildlife Service
Thomas R Chapman, Supervisor, NE Field Office
John Warner; (603) 223-2541, x-15
john_warner@fws.gov
Melissa Grader; (413) 548-9138
Melissa_Grader@fws.gov

National Marine Fisheries Service
Marjorie Mooney; (508) 495-2000
Marjorie.Mooney-Seus@noaa.gov

Massachusetts Department of Environmental Protection
Robert D. Kubit; (508) 767-2854
robert.kubit@state.ma.us

Massachusetts Division of Fisheries and Wildlife
Caleb Slater; (508) 389-6331
caleb.slater@state.ma.us

Massachusetts Historical Commission (SHPO)
Brona Simon; (617) 727-8470
mhc@sec.state.ma.us

MA Audubon Society
Gail Yeo, Regional Director, Central/West Region 781-259-9500
gyeo@massaudubon.org

APPENDIX 1-12-1

Description of the Facility

The Winchendon Hydroelectric Project holds a FERC Exemption (FERC No. P-8012-MA) with 0.12 MW installed capacity and is operated as a run of river project located at approximately river mile 37.9 on the Millers River in the Town of Winchendon in Worcester County, Massachusetts with latitude /longitude coordinates of 42.6791/-72.0478. The river mile location was determined from the New England Army Corps of Engineers Map identified as Millers River Watershed Profiles dated June 1972 Plate F-23. The project street address is 28 Front Street, Winchendon where the powerhouse and dam is located on the north side of the river.

The Hunts Pond Dam FERC Exemption was issued February 19, 1985 and subsequently amended on June 27, 1991 by Mason & Parker (a manufacturer with principle place of business located at the site). Sometime between June 27, 1991 and May 13, 1992 the facility was transferred to Behrens Energy Systems. Behrens Energy Systems failed shortly after purchasing the facility and the facility fell into bankruptcy. The facility was purchased from bankruptcy by O'Connell Development Inc. in 1996. The Project is now owned by Winchendon Hydroelectric, LLC ("WH"), a wholly owned subsidiary of O'Connell. Prior to the bankruptcy purchase an inspection occurred with former operator of the plant on July 25, 1995 and at that time the operator indicated the unit had been off line for 2 to 3 years which would place the time that unit went off line around 1992 to 1993. FERC records indicate the unit went off line in February 1993 which is in general conformity with the operator's recollection of the operating period. O'Connell repaired the existing units, updated the control system and returned the plant to operating condition. Hunts Pond Dam has been operated by O'Connell since 1996. The Project has been in continuous compliance with its requirements for exemption from licensing since 1996.

The project works include a dam, an intake structure and a single powerhouse with two generating units. The turbine draft tubes discharge directly to the river with normal tail water elevation is 940.8 feet (no tailrace channel water is discharged directly back to the river with no tailrace channel adjacent to the base of the dam with backwater from the turbine discharge providing a wetted area to the base of the dam).

The Hunts Pond Dam creates an average 7.5-foot deep, 120-acre impoundment that is 2,081 feet long, with a normal surface elevation of 954.4 feet USGS datum. The impoundment extends approximately 2,081 feet upstream of the dam, in an easterly direction; with the maximum surface area is approximately 13 acres and storage capacity of 120 acre-feet. The drainage area at the facility is 54 square miles.

The concrete dam primary components, in order from south to north, consist of concrete south abutment, concrete Ogee dam with center abutment, concrete intake structure and concrete

north abutment. Total length of dam including abutments is 184 feet. According to FERC records the dam was constructed in 1936. The dam crosses the Millers River in a roughly north to south direction. The toe of the dam is irregular but in general approximately 939.4 msl.

The facility's principle features are further defined as follows:

The concrete south abutment is approximately 32 feet long from the embedment into the embankment to the Ogee section of the dam and is backed by earthen fill for the entire length on the downstream side of the abutment. The top elevation of the center abutment is 956.6 msl.

The Ogee section of the dam is approximately 97 feet long including the center abutment. The top elevation of the Ogee dam is 947.8 msl. Total height of Ogee Dam section is 8.4 feet. The top elevation of the center abutment is 956.6 msl. Total height of the center abutment is 17.2 feet. The Ogee Dam upstream to downstream width is approximately 20.5 feet. Along the top of the concrete Ogee dam section is a 6.6' high Marden Style needle and stop log flashboard installation. The permitted top elevation of the stop logs is equal to the pond surface elevation of 954.4 feet msl.

The intake structure is located at the dam on the north side of the river. There is one steel head gate on the intake structure with dimensions 10.5 feet wide by 8.0 feet high and is equipped with chain hoist to raise and lower the gate. The head gate requires manual operation and is used for maintenance purposes only. The intake structure is approximately 25 feet long by 14 feet wide by 14.33 feet high. Normal water depth in the intake structure is 12.42 feet deep. There is a trash rack installed at the end of the intake structure just before the power house. The trash racks are constructed with 1" spacing and design water flow of 172 cfs with velocity of 1.94 fps. The floor and walls of the intake are constructed in concrete.

The concrete north abutment is approximately 41 feet long extending from the intake structure into the north embankment and is backed by earthen fill for the entire length on the downstream side of the abutment. The top elevation of the north abutment is 956.6 msl.

There are no proposed design changes to the dam or intake structures. The total existing and proposed head at Hunts Pond Dam is 13.6 feet. The total existing and proposed hydraulic capacity is 172 cfs.

Existing Generating Equipment at the Facility The existing facility has one (1) powerhouse. The powerhouse is wood frame construction and was built in 1985. The Powerhouse receives the reservoir water from the intake structure. Water is discharged directly back to the river with no tailrace channel adjacent to the base of the dam with backwater from the turbine discharge providing a wetted area to the base of the dam. The design operating head is 13.6'. The average design flow is based on the 20% value of the flow duration curve or about 150 cfs. The maximum turbine capacity of the project is 172 cfs. Two (2) Mason Parker Cross Flow Turbines are housed in the Powerhouse one with generator nameplate ratings of 30 kW and the second with a nameplate of 90 kW for a total installed capacity is 120 kW. The turbines are

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1980's vintage that were custom built for this site. The generators produce energy at 208 and 480 volts which is transformed up to 4160 volts and interconnects to NGRID distribution system. There is no onsite energy use except for station service. The station has a 10 year historic average production of 297,347 kWh and an engineer's estimated annual production of 600,000 kWh.

Proposed Improvements Generating Equipment Replacement The scope of work for the proposed improvements includes the following: replacement of two (2) – cross-flow turbines with a combined installed capacity of 120 kW with one (1) new - double regulated Kaplan turbine and a 100 kW nameplate generator. The operation of the site will remain “run of the river” after improvements are complete in accordance with Winchendon's current Exemption.

The FERC exemption for this project was issued on August 24, 1984 with USFWS comments that require the following:

- The facility is operated in a run-of-river mode.
- The tailrace discharge is located at the base of the dam, thus there is no bypassed reach channel. The exemption requires an instantaneous minimum release of 25 cfs (historical median August Flow) or inflow to the project; whichever is less.
- The owner is required to provide fish passage facilities when prescribed by the US Fish and Wildlife Service and/or the Massachusetts Division of Fisheries and Wildlife.

The FERC Exemption was amended on August 22, 2013 with no changes to the original requirements.

APPENDIX 1-12-2

Mode of Operation

The Winchendon Hydroelectric Project is operated in a run of river mode. The station is operated automatically by a PLC. The operating mode of the Winchendon Hydroelectric 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 electrical generation.

River flow through the facility is by leakage through the wooden stop log structure, flow over the dam and flow through the hydroelectric turbines. The FERC Exemption for the Hunts Pond Dam as issued on December 28, 1984 for the project requires a minimum flow of 25 cubic feet per second (CFS) or inflow be passed through the project at all times.

Existing Standard Operating Procedure

The existing facility has two (2) cross flow turbines that can be operated in automated level control. Each cross flow unit has two (2) modulating intake wicket gates sized for 1/3rd and 2/3rds opening that adjust from minimum position of 1/3rd opening to full opening with both wicket gates open. Under normal operating conditions T1 (the 30 kW turbine) is the first on and last off, minimum flow regulating turbine. T1 will begin operation based upon head pond level of approximately one-half inch (0.5") above the crest of the dam and automatically adjusts turbine gate settings to maintain this head pond elevation.

Decreasing River Flow Condition - Upon sensed decrease in pond elevation turbine gates will modulate to a closed position. Based upon a computer algorithm for time and pond level the turbine gates will continue to close in an attempt to maintain head pond elevation of 0.5" above the crest of the dam. If T1 is at minimum gate position and head pond level decreases to below 0.5" above the dam then T1 will shut off and therefore all turbines will be off. Human operator actions will be implemented if pond level continues to drop (with all units off and long range weather forecast indicating no or minimal precipitation). These actions include but not limited to closing of manually operated head gates to minimize leakage through the turbines thus preserving the head pond surface elevation.

Increasing River Flow Condition - Upon a sensed increase in pond level turbine gates will modulate open. Based upon a computer algorithm for time and pond level the turbine gates will continue to open in an attempt to maintain head pond level of 0.5" above the dam. If pond level continues to rise after T1 has reached full gate the Turbine T2 (90 kW turbine) will be started and ramped up to minimum gate and assume level control while simultaneously reducing T1 to a minimum gate setting. If the sensed pond level continues to rise then Turbine T2 will continue to open gate up to maximum position and T1 will be restarted to meet full output of the facility.

If head pond continues to rise, representing increasing river flows, when both turbines are on and at full capacity then a high water alarm is sent to the operator's office and each operators home. At this level human operator input is required for manual remote operation of the stop logs to allow high water flows to pass at the dam.

The sequence of operation is reversed for decreasing river flow conditions from high river flows back to the decreasing river flow condition.

All operations are subject to conditions beyond the control of the facility operators including power outages, equipment failures, signal variations due to temperature, fouling of sensors by river debris, etc.

Proposed Standard Operating Procedures with 1 Double regulated Kaplan turbine

The Proposed Standard Operating Procedure is accomplished by maintaining head pond elevation as similar to the existing Standard Operating Procedures described above. For all river flows up to approximately 110 cfs pond level is controlled by operating the proposed new single unit, double regulated Kaplan turbine and flows are calculated based upon turbine equipment performance curves, recorded head and gate position. Above 110 cfs the stop logs at the dam are operated similar to the description provided for the existing SOP. The new control system will record the following points:

1. Date and time stamp corresponding to sensor input
2. Head pond elevation input from sensor
3. Tail water elevation input from sensor
4. Net head (calculated Head Pond minus tail water elevations)
5. Turbine Wicket Gate position input from sensor
6. Flow over the dam by calculation Bazins Formula $Q = 0.66 \times c(B-.2H) \times (2g)^{0.66} \times H^{1.5}$ (Valid only to elevation 956.6 then overtops dam)
7. Flow through Turbine T1 (by calculation as discussed below)
8. Total of all flows through the facility

Turbine Flow Calculation - There are two (2) points that are recorded by level monitoring devices (one for head pond elevation and one for tail water elevation) and one (1) point each (gate position) monitored for the new turbine. The combination of the input from the three (3) points are then used within the computer to calculate the water flow based upon the attached new double regulated Kaplan equipment performance curves. The result of the calculation will be recorded within the computer and be available for download and printing to demonstrate stream flows through the turbines.

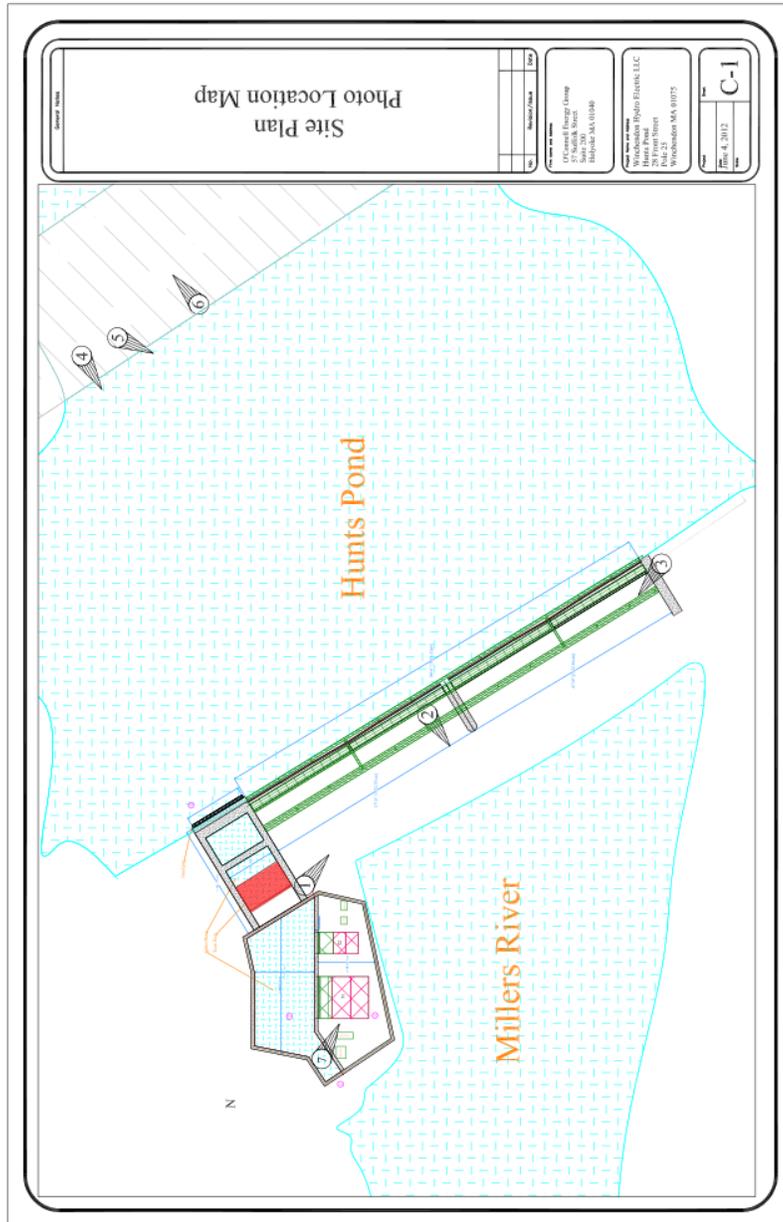
Operation & Maintenance of Flow Monitoring Equipment

Level control is provided by input to the programmable logic controller (PLC) from transducers located as shown on the attached Site Configuration and River Flow Schematic Plan. Level transducers are installed in stilling wells at all locations. An operator makes daily inspections at the site and control alarms are automatically dialed out to the operator after normal operating hours. These alarms include high and low water level conditions during generating periods. During the daily inspections water levels are observed and adjustments are made in the PLC input from transducers and set points if needed based upon the operator observations. As part of this project a staff gage will be installed adjacent to the head pond level transducer providing a numerical indicator of pond elevation. Calibrations of the level transducers are made during the installation. If the operator cannot make adjustments through the PLC during daily inspections or the transducers input is providing erroneous information the transducer is replaced. A spare level transducer is maintained in a spare parts inventory.

APPENDIX 1-12-3

Site Plan of the Facility and Photo Location Map

The site plan of the Winchendon Hydroelectric Project is attached and titled “Appendix 3-3 Site Plan of the Facility and Photo Location Map.”

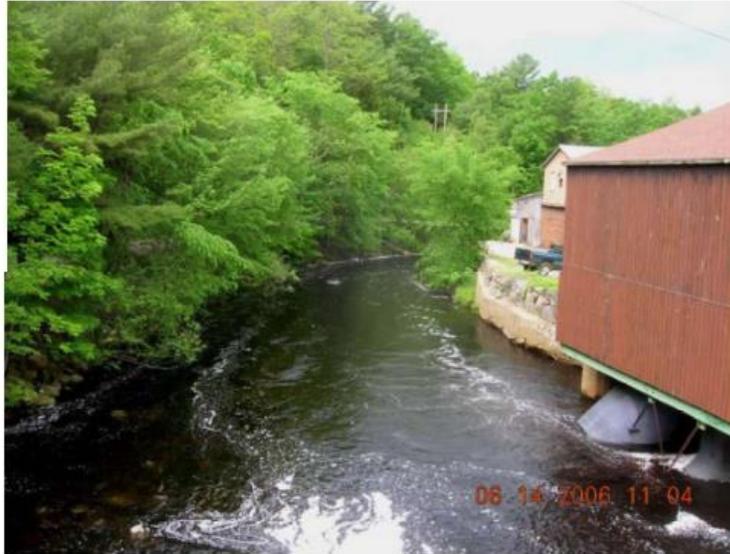


APPENDIX 1-12-4

Facility Photos



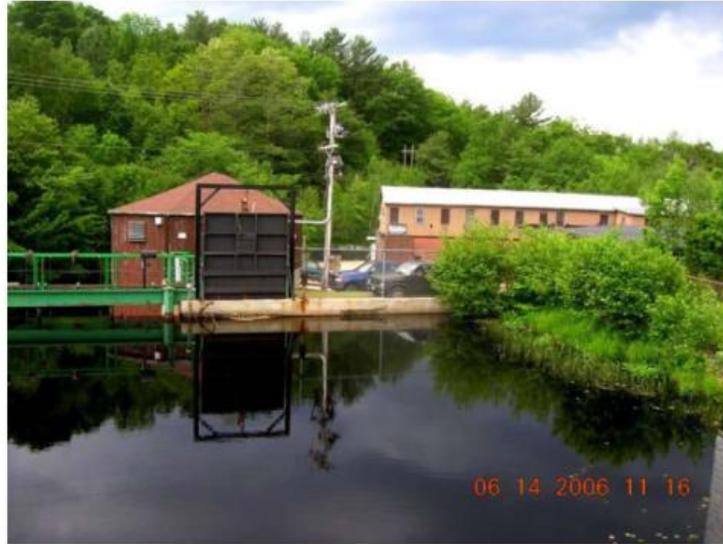
Photograph No. 1- *Downstream Face of Hunts Pond Dam from Power House looking toward the South Abutment.*



Photograph No. 2 - *Downstream tailrace of the Hunts Pond project.*



Photograph No. 3 - *Walkway over the Dam & Marden Style Needle and Stop log section looking North.*



Photograph No. 4 –Hunts Pond North End of Dam, Intake Gate & Powerhouse, North Abutment.



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Photo Journal June 1, 2012
Contains Critical Energy Infrastructure Information
Do not release – Protection provided under 18 CFR § 388.112

Photograph No. 5 – *Hunt's Pond Dam- South Abutment & Center Dam*



Photograph No. 6 – *Bridge upstream from Hunts Pond Dam. The Picture was taken from the bridge in the previous picture.*