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

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

Dear Secretary:

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

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

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

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

   000112 -0142 -5
The proposed percent increases for each project are based on estimated values. Therefore, we are unable to determine the actual installed capacity from the information provided in the Plan. So that we can verify the actual installed capacity for each of the four projects, please provide generator nameplate capacities, or KVA (after rewinding process), turbines’ horsepower ratings, and power factor for each unit.

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

<table>
<thead>
<tr>
<th>FERC PROJECT No.</th>
<th>UNIT No.</th>
<th>GENERATOR KW (each)</th>
<th>GENERATOR KVA (each)</th>
<th>POWER FACTOR</th>
<th>TURBINE RATING (HP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10675</td>
<td>2, 3 &amp; 4</td>
<td>480</td>
<td>600</td>
<td>0.8</td>
<td>650</td>
</tr>
<tr>
<td>10676</td>
<td>3 &amp; 4</td>
<td>1800</td>
<td>2250</td>
<td>0.8</td>
<td>3000</td>
</tr>
<tr>
<td>10677</td>
<td>2 &amp; 3</td>
<td>1600</td>
<td>2000</td>
<td>0.8</td>
<td>2600</td>
</tr>
<tr>
<td>10678</td>
<td>3</td>
<td>1500</td>
<td>1875</td>
<td>0.8</td>
<td>2000</td>
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<tr>
<td>10678</td>
<td>4</td>
<td>2200</td>
<td>2750</td>
<td>0.8</td>
<td>3000</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>FERC PROJECT No.</th>
<th>UNIT No.</th>
<th>GENERATOR KW (each)</th>
<th>GENERATOR KVA (each)</th>
<th>POWER FACTOR</th>
<th>TURBINE RATING (HP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10675</td>
<td>2, 3 &amp; 4</td>
<td>633</td>
<td>633</td>
<td>1.0</td>
<td>650</td>
</tr>
<tr>
<td>10676</td>
<td>3 &amp; 4</td>
<td>2315</td>
<td>2315</td>
<td>1.0</td>
<td>3000</td>
</tr>
<tr>
<td>10677</td>
<td>2 &amp; 3</td>
<td>2050</td>
<td>2050</td>
<td>1.0</td>
<td>2600</td>
</tr>
<tr>
<td>10678</td>
<td>3</td>
<td>1500</td>
<td>1875</td>
<td>0.8</td>
<td>2080</td>
</tr>
<tr>
<td>10678</td>
<td>4</td>
<td>2200</td>
<td>2750</td>
<td>0.8</td>
<td>3000</td>
</tr>
</tbody>
</table>

**Correction:** The submitted Plan for P-10678 (Indian Orchard Project) indicated an anticipated 1500 KVA rating. The actual anticipated rating is 1550 KVA (2080 horsepower)
with a power factor of 1.0. It should also be noted that the turbine rating for Unit #3 will be increased with no changes proposed to the generator nameplate.

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

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

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

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

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

As indicated in Section 4 of the Plan, CEEMI proposes to release all minimum flows through a single gate at the dam. The alternative to split the flow was abandoned after a review by CEEMI determined that the cost savings from this alternative was not substantial and in
deference to the USFWS' concerns. The use of a single minimum flow gate at the dam is acceptable to both the USFWS and the Massachusetts Division of Fish and Wildlife (MADF W).

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

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

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

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

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

6. The exemption for P-10678 (Indian Orchard Project) requires a continuous minimum flow release of 247 cfs, or inflow, at the base of the dam. The minimum flow is released from canal drain gates at the base of the dam. In Appendix B of the Plan, the USFWS requested that CEEI consider installing some kind of bar rack or similar device to avoid large debris plugging the minimum flow drain gates. CEEI should review alternatives to protect the inlet gate and provide us with the alternative decided upon.
CEEMI has contacted the USFWS (John Warner on 11/12/99) to determine the actual need for any modifications of the present system. Historically the reduction of flow through the gate area has only been reduced (not stopped) on few occasions due to debris. However, to remove the debris the former project owners drained the canal causing interruptions to the minimum flow release. After discussion it was agreed that a protection device is not required at this time. Instead, CEEMI will modify its operational procedures to increase observations for debris buildup in the area and study the debris patterns over the next two years to confirm that modifications are not required. CEEMI will maintain the same level of reporting as has been historically supplied. In addition, CEEMI will review, with the USFWS, methods to remove any debris build without canal draining or interruptions to the minimum flow. If modifications are determined to be required before the end of the two year review period, CEEMI will consult with the USFWS and other resource agencies on the most appropriate method to correct the situation.

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

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

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

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

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

D) **Access to Middle Bypass Reach:** As indicated in Section 4 of the Plan access to the middle bypass section below the Dwight dam will not be pursued. Local community leaders oppose access to this area and the MADFW, the originator of
the issue, has indicated a deference to the local community. As also indicated in the Plan, there are several safety issues associated with access to this area.

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

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

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

Sincerely,

Consolidated Edison Energy Massachusetts, Inc

Mark Noyes
Vice President

AJN

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

TO: John Labiak, Kim Marsili
FROM: Alfred Nash
CC: Fred Szufnarowski (KA), John Warner (USFWS), Caleb Slater (MADFW)
DATE: November 23, 1999
RE: Putts Bridge Operations effect at Indian Orchard

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

METHODOLOGY

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

<table>
<thead>
<tr>
<th>EXEMPTION ORDER POND FLUCTUATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Project</td>
</tr>
<tr>
<td>Red Bridge</td>
</tr>
<tr>
<td>Putts Bridge</td>
</tr>
<tr>
<td>Indian Orchard</td>
</tr>
</tbody>
</table>

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

The Red Bridge, Putts Bridge and Indian Orchard Projects are each controlled by float switches that cause the units to "motor" when the minimum pond level is achieved. The units at each project are not taken off motoring until normal pond level conditions are restored. The 1989 turbine inspection at each of the projects indicated that the gate setting during motoring was approximately 20% gate. During periods of low flow, a single unit at the Putts Bridge Project is operated between the 60% and 80% gate opening. KA understands that the 60% gate opening may be more commonly used to reduce motor time of the unit. KA also reviewed the condition of using 100% gate opening.
To achieve the capacity increase required by the exemption order, CEEMI is proposing a new runner assembly at the Indian Orchard Project. Although the details of the new assembly will not be known for many months, KA assumed that a 10% increase in hydraulic capacity over the existing unit (#3) would be realized. Therefore the analysis assumed this increased discharge from the project.

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

RESULTS

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

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

CONCLUSION

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

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

<table>
<thead>
<tr>
<th></th>
<th>RED BRIDGE</th>
<th>PUTTS BRIDGE</th>
<th>INDIAN ORCHARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM FLOW (CFS)**</td>
<td>238</td>
<td>25</td>
<td>247</td>
</tr>
<tr>
<td>UNIT FLOW (CFS)**</td>
<td>615</td>
<td>725</td>
<td>690</td>
</tr>
<tr>
<td>PERCENT GATE AT MOTORING *</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>PERCENT GATE DURING GENERATION</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>STORAGE (acre)</td>
<td>185</td>
<td>65.4</td>
<td>74</td>
</tr>
<tr>
<td>DRAWDOWN (FEET) - SUMMER</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>STORAGE VOLUME (CF)</td>
<td>8058877.5</td>
<td>2648922.1</td>
<td>3223551</td>
</tr>
<tr>
<td>CONVERSION FOR STORAGE</td>
<td></td>
<td>43561.5 SF/ACRE</td>
<td></td>
</tr>
</tbody>
</table>

* FROM 1989 INSPECTION REPORT OR ASSUMED
** ASSUMES A 10% INCREASE IN CAPACITY AT INDIAN ORCHARD OVER THE EXISTING 825 CAP

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

Discharge from Red Bridge = minimum flow + motoring of unit,
                           Discharge = 361 cfs
                           Note: exceeded 65% of time annually

PUTTS BRIDGE PROJECT FLOWS

Hours that Putts Bridge can Generate with Storage and Inflow from Red Bridge
Time = storage / (min flow + Gen flow - Discharge)

Generation Time = 3.24 hours
Generation Discharge = 605 cfs

Hours Required to Recharge Putts B Pond

Project Discharge During Motoring (unit and min flow) = 170 cfs
Time recharge = storage / (Discharge - Discharge during motoring)

Time recharge = 4.14 hours
Note: generation at Red Bridge decreases time

INDIAN ORCHARD PROJECT FLOWS

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

Storage discharge time = storage / (min flow + motoring flow - inflow from PB))
Time Storage Discharge = 4.18 hours

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

Time to Recharge IO with PB motoring and PB generating
time = storage / (PB discharge + IO motoring + min flow)

Time to Recharge = 4.07 hours

Since recharge time is longer than generation time at Putts Bridge - determine available drawdown limit:
limit = (PB discharge - IO motoring - min flow (IO))*hours gen / surface storage
9.56 inches