

FEDERAL ENERGY REGULATORY COMMISSION
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December 1, 2014

OFFICE OF ENERGY PROJECTS

Project No. 2680-108 - Michigan
Ludington Pumped Storage
Hydroelectric Project
Consumers Energy Company
DTE Electric Company

William A Schoenlein
Manager Hydro and Renewable Generation
Consumers Energy
3525 S. Lakeshore Drive
Ludington, MI 49431

**Reference: Study Plan Determination for the Ludington Pumped Storage
Hydroelectric Project**

Dear Mr. Schoenlein:

Pursuant to 18 C.F.R. § 5.13(c) of the Commission's regulations, this letter contains the study plan determination for the Ludington Pumped Storage Hydroelectric Project No. 2680 (Ludington Project). This determination is based on the study criteria set forth in section 5.9(b) of the Commission's regulations, applicable law, Commission policy and practice, and the record of information.

Background

On July 7, 2014, Consumers Energy Company and DTE Electric Company (Consumers and DTE), co-licensees for the project, filed their proposed plan for six studies on fish and aquatic resources, wildlife and botanical resources, recreation, and cultural resources in support of their intent to relicense the project.

Consumers and DTE held an Initial Study Plan Meeting on July 31, 2014. On November 3, 2014, Consumers and DTE filed a Revised Study Plan, consisting of the same six proposed studies. Comments on the Revised Study Plan were filed by the Little River Band of Ottawa Indians (Little River Band) on November 13, 2014, and by Pere Marquette Charter Township on November 18, 2014. An additional study not proposed by Consumers and DTE was requested by the Little River Band to: (1) quantify adult

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lake sturgeon entrainment at the project; and (2) assess the need and potential for additional measures to be implemented at the project to reduce lake sturgeon entrainment.

Study Plan Determination

As indicated in Appendix A, of the six studies proposed by Consumers and DTE, four are approved as filed and two are approved with staff-recommended modifications. The lake sturgeon entrainment study requested by the Little River Band is not approved. The reasons for not adopting certain requested modifications to the study plan and the requested additional study are discussed in Appendix B. Although Commission staff considered all study plan criteria in section 5.9 of the Commission's regulations, only the study criteria that are particularly relevant to this determination are referenced in Appendix B.

Nothing in this study plan determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies. In addition, Consumers and DTE may choose to conduct any study, or portion of a study, not specifically required herein that they feel would add pertinent information to the record.

Within 60 days of this study plan determination, a schedule for Study 1 (Fish and Aquatics Resources) that includes the information specified in Appendix B must be filed with the Commission. Pursuant to section 5.15(c)(1) of the Commission's regulations, the Initial Study Report for all studies in the approved study plan must be filed by December 2, 2015.

If you have any questions, please contact Janet Hutzel at (202) 502-8675, or via email at janet.hutzel@ferc.gov.

Sincerely,

Jeff C. Wright
Director
Office of Energy Projects

Enclosures: Appendix A – Summary of determinations on proposed and requested study modifications, and the additional study requested
Appendix B – Staff's recommendations on proposed and requested study modifications and the additional study requested

cc: Mailing List

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APPENDIX A**SUMMARY OF DETERMINATIONS ON PROPOSED AND REQUESTED
STUDY MODIFICATIONS, AND THE ADDITIONAL STUDY REQUESTED**

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
1 – Fish and Aquatic Resources	Consumers and DTE		X	
2 – Wildlife Resources	Consumers and DTE	X		
3 – Botanical Resources	Consumers and DTE	X		
4 – Recreation Resources	Consumers and DTE		X	
5 – Historical Resources Survey	Consumers and DTE	X		
6 – Archeological Resources Survey	Consumers and DTE	X		
7 – Lake Sturgeon Entrainment	Little River Band of Ottawa Indians			X

APPENDIX B

STAFF'S RECOMMENDATIONS ON PROPOSED AND REQUESTED STUDY MODIFICATIONS AND STUDIES REQUESTED

The following discusses staff's recommendations on the studies proposed by Consumers Energy Company and DTE Electric Company (Consumers and DTE), requests for study modifications, and a request for an additional study not adopted by Consumers and DTE. We base our recommendations on the study criteria outlined in the Commission's regulations [18 C.F.R. section 5.9(b)(1)-(7)].

I. Requests for Study Modifications

Study 1 – Fish and Aquatic Resources

The project tailrace is a 1,100-foot-wide, 1,200-foot-long excavated channel which is protected on each side by 1,600-foot-long jetties that extend into Lake Michigan and a 1,850-foot-long breakwater located about 2,700 feet from shore. Fish located within and adjacent to the tailrace, including those utilizing project structures (i.e., jetties and breakwater) for habitat, have the potential to become entrained into the project facilities when the project is operating in a pumping mode to refill the reservoir. A fish barrier net is currently installed and operated on an annual basis (i.e., from approximately mid-April to mid-October) to minimize fish losses at the project.¹

The goal of the study is to evaluate existing fish entrainment abatement technologies and engineering alternatives that could be implemented in addition to, or instead of the seasonal fish barrier net, to further reduce fish entrainment mortality at the project.

Applicants' Proposal

Consumers and DTE propose to evaluate a variety of physical, behavioral, operational, and structural fish protection options. The study will consider the applicability, feasibility and practicality, effectiveness, and total cost (capital and annual operating and maintenance) of each technology, if applied to the project.

¹ The fish barrier net extends from the shore a short distance north of the tailrace, out into Lake Michigan around the jetties and breakwater, and then back to shore a short distance south of the tailrace, thereby enclosing the tailrace, jetties, and breakwater.

Discussion and Staff Recommendation

In its September 25, 2014 comments on the proposed study plan, Commission staff requested clarification of the proposed schedule for the various memos and reports (i.e., deliverables) to be provided for the fish and aquatic resources study. In section 6.6, *Schedule*, the revised schedule provides details of the timing of the tasks and deliverables for the various components of the study. However, portions of the revised schedule are confusing and inconsistent with the schedule discussed in section 6.4, *Study Methodology*. For example, section 6.4 states that the task 3 report will be submitted to the Scientific Advisory Team (SAT)² on April 1, 2015, but section 6.6 gives a task 3 completion date of April 15, 2015. Also, section 6.4 states that the task 4 draft report will be submitted to the SAT on September 30, 2015, and then included in the Initial Study Report after receiving comments from the SAT. However, section 6.6 gives a completion date of August 1, 2015 for task 4. Section 6.4 states that the task 5 summary report will be provided to the SAT on March 1, 2016, and subsequently included in the Initial Study Report after receiving the comments from the SAT. Similarly, section 6.6 gives a completion date of March 1, 2016 for task 5. However, the due date for the filing of the Initial Study Report is December 2, 2015, which is before the completion date for the task 5 summary report detailed in sections 6.4 and 6.6. Section 6.6 also has a line item labeled “Draft report to SAT for review and comment” due on June 1 to June 30, 2016, and a line item labeled “Final Report” due on July 15, 2016. It is unclear whether these line items pertain to the task 5 report, or whether they pertain to an overall report on the fish and aquatic resources study.

An accurate schedule is needed for this study to provide the participants with a clear understanding of the timelines and consultation requirements associated with each of the five tasks associated with the study, as well as the deliverables that would be provided by Consumers and DTE. Therefore, we recommend that within 60 days from the issuance of this determination, Consumers and DTE file a schedule that clarifies: (1) when the various task reports (including any memos from the Expert Panel) and draft study report will be completed, provided to the SAT for review, and filed with the Commission; and (2) when the final report will be filed with the Commission. The schedule should also clarify which reports would be included in the Initial Study Report and which reports will be included in the Updated Study Report [section 5.9(b)(6)].

² The SAT comprises individuals representing the licensees, Department of the Interior, Michigan Department of Natural Resources (Michigan DNR), National Wildlife Federation, Michigan United Conservation Clubs, and tribal parties.

Study 4 –Recreation Resources

The goal of the study is to identify recreation resource opportunities, uses, and needs for the project using a number of approaches, including: (1) a project recreation facilities inventory and conditions assessment; (2) a recreation questionnaire; and (3) a recreation visitor use assessment.

Applicants' Proposal

Consumers and DTE propose to conduct an inventory of site conditions, spot counts,³ and interviews at the Mason County Campground, Mason County Picnic Area, Upper Reservoir Observation Platform, Lake Michigan Overlook, and Pigeon Lake North Pier,⁴ project recreation sites located within the project boundary. Consumers and DTE also propose to conduct interviews at the Hull Field, a radio controlled model airplane field adjacent to the campground and located in the project boundary.⁵ The proposed study also includes the preparation of a map that identifies land ownership and acreages available for public access and recreational opportunities.

Comments

The Pere Marquette Charter Township (Township) requests that the recreation resource study include the following Township recreation sites because they are in the vicinity of the project: (1) the Lake Michigan Public Beach site adjacent to Buttersville Park (Buttersville Beach); and (2) the informal fishing access site at the Pere Marquette River mouth near the Pere Marquette Highway, referred locally as the Twin Bridges site.⁶ The Township also comments that figure 4 of the recreation resource study fails to summarize the total acreage of project lands unavailable for public use.

³ During the spot counts, surveyors will stay at the recreation site for a short amount of time to record the number of vehicles, the number of users observed, and their observed recreational activity.

⁴ The Pigeon Lake North Pier is a project-related recreation site located in Port Sheldon, MI, which is about 70 miles south of the project. The site, located within the project boundary, is owned and operated by Consumers and DTE.

⁵ The Hull Field is managed by Twisted Sticks Radio Control.

⁶ Buttersville Beach is owned by Dow Chemical and managed by the Township. The Twin Bridges site is owned by Dow Chemical and Michigan DNR, but is not managed by any entity.

Discussion and Staff Recommendation

The proposed study would assess project effects on recreation and the need for project-related recreation facilities. The two Township recreation sites, located several miles north of the project boundary, are not affected by project operation or maintenance and do not provide access to project land or water. Because of the lack of a nexus between the project and the two recreation sites, there is no justification for requiring Consumers and DTE to include the Township sites as part of the study [section 5.9(b)(5)].

Figure 4 in the recreation resources study shows the total number of acres associated with the Mason County campground, Hull Field, Upper Reservoir Observation Platform, and Lake Michigan Overlook; all located within the project boundary. The figure does not differentiate between the areas within the project boundary that are available and unavailable (e.g., fenced) for public access and recreation. Developing a map that provides such information would help identify recreation and public access areas that are available at the project. Therefore, we recommend that Consumers and DTE revise figure 4 to show the areas that are available and unavailable to the public, and include the acreage for these areas [section 5.9(b)(4)]. We estimate that the cost and effort of these revisions to the map would be minimal [section 5.9(b)(7)].

Study 5 – Historical Resources Survey

The goal of the study is to identify historic structures within the project's Area of Potential Effect (APE). If historic structures are present and eligible or listed on the National Register of Historic Places (historic properties), Consumers and DTE will identify and assess any potential adverse effects resulting from continued project operation or maintenance.

Applicants' Proposal

Consumers and DTE propose to consult with the Michigan State Historic Preservation Officer (Michigan SHPO) and other stakeholders to develop the APE for the project. The proposed methodology for the historic structures survey would conform to the professional standards and guidelines established by the Michigan SHPO, and include: (1) a review of previous surveys in the area; and (2) if necessary, a field survey of above-ground resources within the project's APE.

Comments

The Township requests that the Father Marquette Shrine site be included in the historical resources survey. The Township states that while the Father Marquette Shrine site is not affected by project operation, the site should be included in the project's APE

because the boat launch parking at the site was expanded by the Great Lakes Fishery Trust (Great Lakes Trust) to accommodate increased fishing access.⁷

Discussion and Staff Recommendation

An APE is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist” [36 C.F.R. 800.16(d)]. The Father Marquette Shrine site is located along the northwest shore of Pere Marquette Lake, not Lake Michigan, about 3 miles north of the project. As acknowledged by Township, the site is not being affected by project operation or maintenance. Because of the lack of a nexus between the project and the Father Marquette Shrine site, there is no justification for requiring Consumers and DTE to include the site as part of the APE [section 5.9(b)(5)].

II. Study Requested but not Adopted by Consumers and DTE

Lake Sturgeon Entrainment Study

Study Request

The Little River Band of the Ottawa Indians (Little River Band) submitted a study request with an objective of quantifying adult lake sturgeon entrainment at the project during the early fall to early spring months when the fish barrier net is not installed (i.e., mid-October through mid-April), and assessing the need and potential measures to reduce lake sturgeon entrainment at the project when the net is not deployed. The Little River Band states that although annual fish entrainment studies are currently conducted during the spring through fall months when the fish barrier net is deployed (i.e., mid-April through mid-October), there is currently no study during the early fall through early spring months that evaluates lake sturgeon mortality caused by project operations when the fish barrier net is not deployed [section 5.9(b)(4)].

Consumers and DTE did not adopt the request for a lake sturgeon entrainment study, request because: (1) although little information exists on lake sturgeon movement in the project area during the winter, few lake sturgeon have been documented to be present in the project area during other times of the year; (2) few lake sturgeon would be likely to be present in the project area during the winter months based upon previous lake sturgeon studies and existing literature; (3) the cost of conducting the study would likely be high (estimated by Consumers and DTE to be in the hundreds of thousands of dollars)

⁷ The Great Lakes Trust, which is governed by a board of trustees and the SAT, was established to help mitigate for Lake Michigan fishery resources affected by project operation. Consumers and DTE annually contribute to funding of the Great Lakes Trust.

and time-consuming (a multi-year effort that extends beyond the relicensing period); (4) Consumers and DTE already provide annual fish mitigation contributions to fund the Great Lakes Trust, which funds lake sturgeon research and recovery; (5) there are safety concerns associated with conducting the study during the winter on Lake Michigan; and (6) other stakeholders have not requested a lake sturgeon entrainment study.

Consumers and DTE state that they reviewed the references used by the Little River Band to support the need for the study and concluded that those references document movement of lake sturgeon during warm water periods of the year, and none of them document movement specific to the colder weather period when the fish barrier net is not deployed. Consumers and DTE provide additional references that describe lake sturgeon winter movements and habitat preferences, which indicate that during the winter months, lake sturgeon seek out deeper and lower water velocity areas, and exhibit limited movement. Consumers and DTE acknowledge that lake sturgeon may occasionally occur in the Ludington area of Lake Michigan during the winter months, but would not likely be attracted to the project intake, which has high water velocities. In response to the Little River Band's recommendation to use hydroacoustics as a potential methodology to conduct the study,⁸ Consumers and DTE note that the SAT is currently developing a scope of work for studying the feasibility of using hydroacoustics at the project, as mandated by the Order Approving Settlement Agreement Regarding Fishery Issues,⁹ and that many aspects of employing that technology remain to be worked out. Consumers and DTE continue to maintain that a winter lake sturgeon entrainment study is not warranted.

In its comments on the revised study plan, the Little River Band states that Consumers and DTE's decision that the study is not warranted fails to acknowledge the Little River Band's treaty rights and the important subsistence and cultural practices involving lake sturgeon that the treaty protects. The Little River Band states that Consumers and DTE have not adequately demonstrated that its recommended study is not warranted, and that information provided by Consumers and DTE is contradictory and shows that lake sturgeon may occupy the same depths as found in the Ludington Project area. The Little River Band states that because Consumers and DTE failed to provide conclusive and consistent data, the Little River Band continues to request its lake sturgeon entrainment study.

⁸ The Little River Band states using hydroacoustics to conduct the study would enable data to be gathered safely during the winter months because data could be collected remotely with limited risk to personnel conducting the study.

⁹ See 74 FERC ¶ 61,055 (1996).

Discussion and Staff Recommendation

Both the Little River Band and Consumers and DTE have provided a substantial amount of information and literature citations regarding seasonal (both summer and winter) lake sturgeon habitat preferences and annual migration patterns. We agree with Consumers and DTE that generally these data show adult lake sturgeon overwinter in deep-water areas with low water velocities, and that the spatial extent of winter movement for this species is limited. The project tailrace area exhibits characteristics (e.g., strong water currents) that are not consistent with those the literature has identified as being favorable for lake sturgeon winter habitat. Additionally, it is doubtful whether better information than that currently present in the existing literature will be obtained by a winter-time study at the Ludington Project, especially given the difficult, if not impossible, winter-time sampling conditions in Lake Michigan that are caused by high winds, waves, and the presence of ice.

While the Little River Band has suggested a range of potential sampling techniques (e.g., hydroacoustics, impoundment netting, etc.) that could be used at the project during the winter, few specific details of the suggested methodologies, including a schedule with appropriate field season(s) and duration, have been provided by the Little River Band [section 5.9(b)(6)]. The Little River Band states that gillnet surveys will have “a cost commensurate with current monthly barrier net monitoring” and two fixed-position automated hydroacoustic monitors could be purchased for approximately \$200,000 for a single season. Consumers and DTE estimate that the cost of the requested study would be higher (i.e., on the order of several hundreds of thousands of dollars). However, even at the lower estimate of \$200,000, we conclude that the cost and effort [section 5.9(b)(7)] of the study do not justify the minimal benefit that the additional information may provide.

As part of the proposed fish and aquatic resources study plan, Consumers and DTE propose to evaluate entrainment abatement and engineering alternatives in a manner that considers the species and size of fish present, the seasons that the various measures can be employed, and the potential effectiveness of those measures. As part of this study, Consumers and DTE propose to take into consideration alternatives to protect lake sturgeon that may be present in the project area on a year-round basis. Therefore, we expect that these study results along with existing information will be sufficient to support an analysis of determining whether additional or alternative fish entrainment abatement options are necessary and feasible at the project to protect lake sturgeon on a seasonal basis.

For the reasons discussed above, we do not recommend that Consumers and DTE be required to develop the requested lake sturgeon entrainment study.

Document Content(s)

P-2680-108Letter5.DOC.....1-10