MANISTEE RIVER

TIPPY HYDROELECTRIC PROJECT (P-2580)
HODENPYL HYDROELECTRIC PROJECT (P-2599)

These two projects on the Manistee River are part of the Settlement Agreement filed on December 7, 1992 that includes a total of 11 projects (3 on the Muskegon, 6 on the Au Sable and 2 on the Manistee River).

A. SUMMARY

1. License Issued: July 15, 1994
2. Expiration: June 30, 2034
3. Waterway: Manistee River
4. Capacity: Total for two projects 37.1 MW (megawatts)
   (Hodenpyl- 17 MW, Tippy- 20.1 MW)
5. Licensee: Consumers Power Company (Now Consumers Energy)
6. Counties:
   Tippy – Manistee County, MI
   Hodenpyl – Manistee & Wexford Counties, MI
7. Federal Lands: Manistee National Forest
8. Brief Project Descriptions:
   a. Tippy (P-2580)
      - Two existing earth embankment dam sections
      - An impoundment with storage area of 1,100 acre-feet
      - A powerhouse containing 3 generating units
      - Transmission facilities, and appurtenant facilities
      - Stronach Dam, on the tributary Pine River which flows into the mainstem Tippy impoundment

   b. Hodenpyl (P-2599)
      - Two existing earth embankment dam sections
      - An existing impoundment with a storage area of 1,665 acre-feet
      - A powerhouse containing 2 generating units
      - Transmission facilities, and appurtenant facilities

9. Settlement Agreement: Filed with FERC Dec 1992; SA includes a total of 11 projects (3 on the Muskegon, 6 on the Au Sable and 2 on the Manistee River)
10. Parties to SA:
    a. Consumers Power
    b. U.S. Forest Service (FS)
    c. U.S. Fish and Wildlife Service (FWS)
    d. National Park Service (NPS)
    e. Michigan Department of Natural Resources (MI DNR)

f. State Historic Preservation Officer (Preservation Officer)

B. IMPORTANT PROVISIONS IN LICENSE/SA

The provisions in the SA are applicable to all projects that are incorporated under this SA.

AuSable River	Cooke	P-2450
	Five Channels	P-2453
	Foote	P-2436
	Alcona	P-2447
	Loud	P-2449
	Mio	P-2448
Muskegon River	Rogers	P-2451
	Hardy	P-2452
	Croton	P-2468
Manistee River	Hodenpyl	P-2599
	Tippy	P-2580

1. Decommissioning [Reference: License Article 204]

The SA requires Consumers to study decommissioning of all of its dams, including reviewing what steps were necessary, what options for retirement exist for each facility, the likelihood of early retirement, and costs associated with retiring the entire project. By 2004, Consumers will begin consultations with state and federal agencies. In a report published in 2007, Consumers stated that the cost of removal would be $99 million. They have no plans to retire any of the dams before the licenses expire in 2034.

2. Stronach Dam Removal

The Stronach Dam located on the Pine River, 3.5 miles above the confluence of the Manistee River impounds an area of 66 acres. The dam itself is a 30 foot-high earth embankment.

Parties to the SA agree to remove the Stronach dam in two stages, to restore the Manistee River to a free flowing condition. Beginning in the first year during Stage I, Consumers Power would improve the existing dam site access road and remove the existing sand deposits and concrete wall. Five years later, Stage II would remove the remaining structures in the development.

3. Water Quality [Reference: License Article 405]

Funding

Under the SA, Consumers shall provide 1.75 million (in 1992 dollars) for study, planning, design and construction of water quality enhancements, including D.O. enhancement measures and water temperature enhancement measures for its hydroelectric projects on the Muskegon, Au Sable, and Manistee Rivers.

Flows

Consumers will install and maintain a flow gauge with telemetry upstream of the Tippy reservoir on the Pine River at High School Bridge and a flow gauge with telemetry downstream of Tippy at High Bridge.

Consumers will also install and maintain a flow gauge with telemetry upstream of the Hodenpyl reservoir at Sherman and a flow gauge with telemetry downstream of Hodenpyl at the scenic trail footbridge.

Temperature

Following minimum water temperature are required downstream of the projects:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hodenpyl	38	38	43	54	65	68	68	68	63	56	48	40
Tippy	38	38	43	54	65	68	68	68	63	56	48	40

Dissolved Oxygen

Hodenpyl/Tippy Project – No less than 7 mg/L in the project tailwaters.

4. Funding for Gauge and Water Quality (WQ) monitoring [Reference: License Article 407]

The license requires Consumers to fund $500,000 (in 1992 dollars) to construct new or upgrade existing stream flow gauging and WQ monitoring facilities for all 11 projects on 3 rivers.

5. *Land Management Plan* [Reference: License Article 412]

Consumers will prepare following plans:

a. Northern Bald Eagle Management Plan
b. Indiana bat Plan
c. Wildlife Management Plan
d. Buffer Zone Management Plan
e. Erosion Control and Sedimentation Plan
f. Recreation Plan
g. Stronach Dam Removal Plan (See No. 2 above)

6. *Other Activities* [Reference: License Article 416]

Consumers will not require prior Commission approval for activities like

a. Landscape plantings
b. Non-commercial piers, landings, docks or similar structures that accommodate no more than 10 watercrafts at a time
c. Embankments, retaining walls or similar structure for erosion control

C. STATUS AS OF 2008

The settlement required Consumers Energy to conduct water quality evaluation at its eleven hydro projects The Water Quality Evaluation Reports were completed in 2002 and reviewed jointly by the resource agencies and the MHRC. A Mitigation Study Plan for the Hodenpyl Project began in mid-April, 2003 after ice out and continued through September 30. Meteorological and water quality field data were collected and data put into the Water Quality Computer Model (CE-QUAL-W2 software developed by the U.S. Army Corps of Engineers).

The modeling consultants proceeded to develop outflow water temperature projections under varying weather and cold water volume input levels. The model output is expected to suggest when the cold water inputs will be most effective on a daily basis throughout the summer season. Upwelling the cold water into the plant intake zone using a device called a air diffuser appears to be the best option.

A major problem at Hodenpyl was the very high leakage at the spill gates. Cold water that could be retained for use at critical times is lost on a continuing basis. Consumers Energy submitted a plan to FERC for approval to replace all six spill gates. Consumers Energy replaced three of the spill gates in 2006 and completed the remaining three in October, 2007.

In June, 2007, Consumers Energy installed a soaker-hose diffuser upwelling system in Hodenpyl Pond for testing. The diffuser system lowers downstream temperature for the fishery habitat by upwelling cooler hypolimnetic water into the withdrawal zone and subsequently cools the water released from Hodenpyl. The system operates by releasing compressed air through a grid of flexible hoses laid out on the bottom near the project intake. As air is released through this grid, it rises to the surface carrying colder water with by creating a current.

Different air flows were tested to determine a flow rate that provided optimal cooling, but did not unnecessarily deplete the cold-water supply. The test also looked at operating the system during different time periods and what water temperature should act as the trigger for activating the system.

The testing results demonstrated that a reduction in outflow temperature of about 2.5 degrees to 3^{o}F can be achieved at an optimal flow of about 100 cubic feet per minute

of air through the system. A trigger water temperature of 71^{o}F was recommended for starting the system. And the test concluded that the system achieved optimal results if it is run between midnight and 6 a.m., when it mimics and builds on the natural cooling of the stream that occurs at night.

A full test of the system of the system was successfully conducted during the summer of 2008 and the permanent version of the system will be installed in the spring of 2009 for operation when called for by the protocol.

Because of the success at Hodenpyl, the MMAC Team has requested data collection begin in the summer of 2009 at Tippy dam for developing the water quality computer model for Tippy.

MI DNR Fish Contribution Projects

Consumers will make the annual fish contributions for FY 2009 and amortized payment for 2001/2002 in accordance with the 10/31/2005 FERC Order. The MMAC Team will consult on HIA project proposals and forward recommendations to MDNR.

Projects completed in FY 2008 were finalization the Stronach Dam Study with $5,000 from the HIA Account and $15,000 from Consumers. Funding of the Wheeler Creek Dam Removal Study on the Manistee River System in the amount of $45,000. McCarthy Sand Trap on the Manistee River System in the amount of $3,500.

Projects approved for FY 2009 were Wheeler Creek Dam removal with $100,000 from the HIA Account, State Road crossing on Silver Creek on the Pine River with $90,000 from the HIA Account, Tippy Dam angler improvements with $60,000 from the HIA Account, and Bear Creek Habitat Improvement with $8,000 from the HIA Account.

Project Retirement Study

Consumers has completed consultations with the Resource Agencies, MHRC and general public on a plan for studying the costs that would be associated with potential retirement of the 11 projects. The study plan was filed with FERC on January 13, 2005 and approved by FERC on April 7, 2005. A final report was filed with FERC by Consumers in May, 2007 which covered the planning, conducting, and studies on the cost of retiring each of the eleven Consumers project. Instead of submitting a plan for establishing a trust fund for funding the retirement costs through its retail and wholesale general rate filings, Consumers proposed to recover its projected retirement costs through its depreciation rates.

Although the license articles state that upon receiving the study report, and after public notice and opportunity for hearing, FERC may issue such orders with respect to project retirement and financing as it deems appropriate, FERC issued a final order

approving the retirement study report. The MDNR and MHRC have filed for Rehearing of the Order raising the following issues:

1. The Commission has failed to public notice the Retirement Study Report and provide the opportunity for hearing before issuing an Order with respect to project retirement and financing.
2. There are technical concerns regarding the Retirement Study Reports and the conclusions derived in them.
3. Is Consumers Energy's plan for funding retirement costs a viable approach?
4. The proposed funding plan submitted by Consumers does not meet the requirements and intent of the terms of the Settlement Agreement.

The resource agencies and MHRC began negotiations with Consumers to resolve the issues. In March, 2008 the resource agencies and MHRC entered into a Settlement Agreement with Consumers resolving the various issues regarding the Retirement Study Reports. Consumers, the resource agencies and the MHRC agree to consult in 2001 regarding possible updating of all or part of the retirement study reports. Consumers is also willing to discuss at that same time whether it would be appropriate to revise the Article 404/405 water quality enhancement spending provision. This will allow time to evaluate the effectiveness of the current or proposed projects in progress against the remaining dollars in the Article 404/405 account at that time to determine if adjustment to the commitment may be appropriate. In the meantime, Consumers and the Resource Agencies and MHRC will continue to cooperatively work toward the water quality objectives contained in Articles 404 and 405.

Manistee River Projects (2 developments)

D. Update

Post-license Activities:

The Manistee River Projects are owned by Consumers Energy. The Manistee-Muskegon-Au Sable (MMAU) Coordination Team coordinates implementation of the 40-year FERC License conditions and the Settlement Agreement provisions. The team is comprised of parties to their 1992 Settlement Agreement from Consumers Energy, US Forest Service, US Fish and Wildlife Service, Michigan DNR, and the Michigan Hydro Relicensing Coalition. Each year Consumers Energy publishes the "Hydro Reporter" (last published in 2019) which reports general information on their hydropower projects activities in the areas of fish habitat improvement, reforestation on project lands, protection of historic places, and implementation of environmental goals.

https://www.consumersenergy.com/-/media/CE/Documents/electric-generation/hydro-reporter.ashx?la=en&hash=E2A183EFFC1A2723936D92BE51876576

Updated February 2020