APPENDIX AIR-3

Revised Saxon Falls Exhibit A

Saxon Falls Hydroelectric Project
FERC No. 2610

Revised Exhibit A
Description of Project

Final License Application

Prepared for

Northern States Power Company
a Wisconsin Corporation

Prepared by

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TABLES

APPENDICES[1]

[1] All Appendices are located in *Volume 3 of 4, Appendices.*

LIST OF ABBREVIATIONS

AC ....Alternating Current
cfs.................................cubic feet per second
DSM ....demand side management
FERC.............................Federal Energy Regulatory Commission
FLA................................Final License Application
hp ....Horsepower
kV ....Kilovolt
kW ....Kilowatt
NGVD............................National Geodetic Vertical Datum 1929
NSPW............................Northern States Power Company, a Wisconsin corporation
O&M ....Operation and management
Project ....Saxon Falls Hydroelectric Project
rpm ....Revolutions per minute
USGS ....United States Geological Survey
WDNR ....Wisconsin Department of Natural Resources

1. Project Description

The Saxon Falls Hydroelectric Project (Project) is located 4.3 miles upstream of the Montreal River's confluence with Lake Superior. It is located within the Town of Saxon in Iron County, Wisconsin and Ironwood Township in Gogebic County, Michigan. **Appendix A-1** of this application includes a map showing the general location of the Project. **Appendix A-2** includes an aerial photograph showing the Project's primary facilities. The Project includes a reservoir, dam, powerhouse, conduit, surge tank, penstocks, tailrace, transmission equipment, and appurtenant equipment. These features are described in the following paragraphs.[2]

2. Description of Dam Structures

The dam is 440 feet long[3] and 46.1 feet high[4] at its highest point. From right to left looking downstream[5], the main structures of the dam consist of a spillway, a non-overflow concrete gravity dam, an intake structure, a non-overflow mass concrete dam, and an earth embankment dam.

2.1 Spillway

The spillway is divided into three components: the right spillway abutment, the overflow spillway section, and the gated spillway section.

2.1.1 Right Spillway Abutment

The right spillway abutment has a top elevation of 1004.05 feet NGVD and consists of a concrete training wall founded on bedrock that is 50.6 feet long and 3.5 feet wide. A concrete core wall extends 20 feet into the earth fill to the right of the spillway. The purpose of the right spillway abutment is to direct flow on the right side of the spillway toward the river channel downstream.

2.1.2 Overflow Spillway Section

The overflow spillway is a reinforced concrete Ambursen-type structure that is 127 feet long, 62 feet wide at its base, and 32.9 feet high at the crest. The elevation of the crest is 997.0 feet National Geodetic Vertical Datum (NGVD) and 964.1 feet (NGVD) at the downstream apron.[6] It is founded on bedrock and the right end is keyed into the near vertical bedrock riverbank. The interior chamber of the overflow spillway is separated into bays by 2.5-foot-thick concrete buttresses spaced 16 feet on center. Each bay, except the last two bays on the right side, have vents and a drain on the downstream face of the structure. The left side of the leftmost bay is supported by one of the concrete piers located on either end of the gated spillway.

2.1.3 Gated Spillway Section

The gated spillway section is 30-feet-long, 65.6-feet wide at the base, and 40-feet-high. It is a mass concrete structure with an ogee-shaped crest and downstream face. The elevation of the gate sill is 984.1 feet. The gated spillway has an access tunnel that extends from the non-overflow concrete gravity dam section to the interior chamber of the overflow spillway section. Concrete

[2] Unless otherwise cited, all facility descriptions are from the Supporting Technical Information Document filed with the FERC on March 13, 2014 (NSPW, 2014).
[3] Dam length 190 feet, earthen embankment 250 feet in Exhibit F-2 plan view.
[4] Dam height of non-overflow concrete gravity dam section CC in Exhibit F-2.
[5] Direction of left or right, when describing facilities, is given looking downstream.
[6] All elevations in this document are referenced in the 1929 National Geodetic Vertical datum (NGVD).

piers are located on both ends of the gated spillway and support the steel radial-type gate, the concrete operator's deck, and gate hoist equipment. The radial-type gate is 13-feet-high by 26-feet-wide.[7] The gate hoist has an electric motor-driven lift mechanism that is manually operated.

2.2 Non-Overflow Concrete Gravity Dam

The non-overflow concrete gravity dam is 12 feet long, 29.2-feet-wide at its base, and 46.1-feet-high, with a crest elevation of 1,004.1 feet.[8] It was modified as part of a 1990 reconstruction of the intake structure. The structure sill still includes the remains of the 1990 concrete. There is a low-flow orifice outlet located on the downstream face between the dam and powerhouse that provides minimum flows to the river channel[9]. The downstream face of the concrete gravity dam slopes from the intake section to the gated spillway section.

2.3 Intake Structure

The intake structure was reconstructed in 1990. It consists of a mass concrete structure that is 19 feet long, 45.2 feet wide at its base, 36.6-feet-high and is located between the non-overflow concrete gravity dam and the non-overflow mass concrete dam. The elevation of the top of the intake structure is 1,004.1 feet. The intake structure controls flow into the steel conduit that extends downstream to the powerhouse. Trash racks, a flap gate for conduit dewatering, and a hoist for the flap gate are located on the upstream end of the intake structure. The flap gate is approximately 10.5 feet high by 8 feet wide and is constructed of steel. The trash racks are 20-feet-high by 15-feet-wide with 1-inch clear spacing.[10] A steel frame gatehouse, located over the intake structure, houses the gate hoist and operations and maintenance equipment.

2.4 Non-Overflow Mass Concrete Dam

The non-overflow mass concrete dam is 57 feet long, 53 feet wide at the base, and varies in height from 19.1 feet to 29.1 feet. It has a crest elevation ranging from 1,004.1 feet to 1,005.2 feet. It serves as a transition between the intake structure and the left earthen dam.

2.5 Left Earthen Dam

The left earthen dam is 260 feet long, 119.6 feet wide at its base, and 15 to 17.6 feet high.[11] It extends southeast from the non-overflow mass concrete dam. It has crest elevations ranging from 1,005.0 feet to 1,007.6 feet. It is an embankment dam constructed of a homogenous earth fill that includes a sheet pile cutoff wall driven into bedrock. Rip-rap has been placed on the upstream face to protect against wave action and a drain filter is located on the downstream side.

[7] Height measured from Exhibit F-2, Section BB.
[8] Height measured from Exhibit F-2, Section CC.
[9] The low-flow orifice outlet is composed of a 12-inch (inside diameter) ductile pipe imbedded in the non-overflow concrete gravity dam. The intake center elevation is 993.0 feet NGVD and the outlet center elevation is 969.42 feet NGVD. The upstream side of the pipe has a knife gate shutoff valve where the stem extends to the top of the section and can be adjusted with a horizontal hand wheel. The downstream end of the pipe is capped with a blind flange that acts as an orifice plate.
[10] The top of the trash racks is angled downstream 9 degrees from vertical, with a bar thickness of 0.25 inches. The rack is submerged during all times, and it is supported by the dam structure on the top and three 1.2-foot-high I-beam supports. There are no other vertical frame supports. The spacing of the bars is held in place by eight horizontal, 2-inch high tie bars welded to the downstream side of the 0.25-inch vertical trash rack bars. However, only five of the horizontal tie bars restrict flow beyond the restrictions provided by the other supports. The effective vertical height of the trash rack is 19.83 feet minus 4.43 feet or 15.4 feet. The effective width is 15 feet minus 3 feet or 12 feet total effective width. This results in an effective opening of approximately 184.8 square feet.
[11] Length from plan note in Exhibit F-2.

3. Description of Reservoir

The reservoir encompasses approximately 65.5 acres with a storage capacity of approximately 524 acre-feet at the maximum reservoir elevation of 997.0 feet. It has a maximum depth of 12 feet and an estimated average depth of 8 feet. The substrate consists of 70% sand, 0% gravel, 0% rock, and 30% muck (WI Department of Natural Resources, n.d.).

4. Description of Conveyance Systems

Conveyance systems at the Project consist of a steel conduit, a steel surge tank, and two steel penstocks.

4.1 Conduit

The conduit is a 5/16-inch-thick steel pipe with an inside diameter of 6 feet. It extends 1,607 feet downstream from the intake structure to the surge tank. The conduit crosses the Montreal River from the Wisconsin side to the Michigan side approximately 700 feet downstream of the dam. It is supported by six concrete piers and 29 ring anchor supports. Thrust blocks are located at each horizontal curve and expansion joints are located regularly along the length of the conduit.

4.2 Surge Tank

The surge tank is constructed on a reinforced concrete base and is located at the edge of the high riverbank on the Michigan side of the Montreal River overlooking the powerhouse. The surge tank is situated between the conduit and the steel penstocks which connect to the powerhouse. It is a 3/8-inch-thick steel-walled tank that is 23.5 feet in diameter and 59.5 feet high.

4.3 Penstocks

The penstocks consist of two steel pipes that extend 156 feet downward from the surge tank to the powerhouse. Each pipe is 1/2 inch in thickness and 54 inches in diameter. Each one has a butterfly valve located in a masonry gate house immediately downstream of the surge tank.

5. Description of Powerhouse

The reinforced concrete powerhouse is 52 feet long by 30 feet wide and is 16 feet high from the generator floor to the ceiling. The powerhouse is located in Michigan and has an average head of 135 feet. A footbridge crosses the Montreal River providing access to the powerhouse from the Wisconsin side. The bridge is approximately 200 feet long with a wooden bridge deck approximately 14 feet high over the river channel bottom at its highest point. The bridge is constructed with a 7-foot wide wooden walkway over a steel frame and rests on three concrete piers.

5.1 Turbines

The powerhouse contains two horizontal shaft, Francis-type units manufactured by the James A. Leffel Company and are rated at 1,000 horsepower (hp) each. The minimum flow to operate one turbine is 48 cfs. The maximum hydraulic capacity with both turbines operating is 170 cfs.

5.2 Generators

The Project features two General Electric 2,300-volt, 600 rpm, 0.8 power factor AC generators each with an original nameplate capacity of 625 kW and operating at a nominal voltage of 2,400. The generators were rewound in 1957 and are now rated at 750 kW each. The combined plant capacity is 1,500 kW.

6. Tailrace

Water is released from the powerhouse directly to the Montreal River. The Project boundary extends downstream on the Wisconsin side of the river for approximately 675 feet and on the Michigan side of the river for approximately 1,350 feet.

7. Transmission Equipment

There is a 0.25-mile-long, three phase overhead 2/0 wire 2.4 kV transmission line extending from the powerhouse to the non-project distribution substation. The 2.4 kV transmission line is isolated from the generators by 400 A generator breakers. The equipment required to transmit the electrical generation to the non-project, looped 34.5 kV electrical grid contains a three phase, 2,000 kVA, 2.4/34.5 kV step-up transformer. NSPW is the entity receiving the Project generation. As shown in Appendix A-4, the Saxon Falls substation is not used exclusively for the Project. The substation is also part of the looped 34.5 kV grid that also supports a 34.5 kV transmission line that is connected to Ironwood, Michigan and the Superior Falls substation. The Saxon Falls substation also supports a 12.4 kV distribution feeder to the Village of Saxon. The 2,000 kVA, 2.4/34.5kV step-up transformer only serves the Saxon Falls Project and is the point of interconnect with the looped 34.5 kV grid. NSPW also owns and maintains the non-project substation, the non-project 34.5 kV transmission line, and the non-project 12.4 kV distribution feeder.

8. Appurtenant Equipment

Appurtenant equipment includes, but is not limited to, bearing lubrication systems, generator ventilation systems, switchboards, additional gate hoist equipment, switchgear, protective devices, and metering devices.

9. Project Operation

The Project currently operates in a run-of-river mode where discharge measured immediately downstream of the Project tailrace approximates the sum of inflows into the Project reservoir. This operation mode protects water quality, fish, and wildlife resources in the Montreal River. A minimum aesthetic flow of 5 cfs or inflow, whichever is less, is currently released from the minimum flow outlet into the bypass reach of the Montreal River immediately below the Saxon Falls Dam during the ice-free season.

NSPW is proposing under the pending subsequent license to modify the minimum aesthetic flow requirements to the following:

- Maintain a minimum aesthetic flow of 5 cfs, or inflow, whichever is less, from the Saturday before Memorial Day to October 15[12], except on weekends and holidays, when a minimum aesthetic flow of 10 cfs, or inflow, whichever is less, will be released between the hours of 8 am to 8 pm.

[12] This timeframe provides for operational consistency as it aligns with the aesthetic flow timeframe at the downstream Superior Falls Project.

In order to minimize reservoir fluctuations, a minimum reservoir elevation of 997.0 feet (NGVD)[13] is required to be maintained between ice-out and June 1 and a minimum reservoir elevation of 996.5 feet is required to be maintained from June 2 to ice out.

Under the proposed operation, just prior to spring runoff, the Applicant may need to deviate from the maximum reservoir elevation (by no more than an increase of 0.5 feet) to remove ice from the downstream side of the radial-type gate for dam safety purposes. The duration of the deviation shall be no longer than necessary (normally less than a few days) to remove the ice and will be conducted as a planned deviation under the requirements outlined in Section 5.9 of Exhibit E.

The Project is operated in conjunction with the Superior Falls Project located a short distance downstream. Two operators are assigned to oversee the daily operation and routine maintenance of both Projects. Eight-hour coverage is provided five days a week, Monday-Friday. An operator for the facility is on call 24 hours per day, seven days per week. The plant is manually operated with controls installed for automatic shutdown in case of operational emergencies. Whenever a plant shutdown occurs or if high or low water occurs (reservoir elevation greater than 996.95 feet or lower than 996.60 feet NGVD), the continually staffed control center at the Licensee's Wissota Hydroelectric Project is automatically notified. Readings are taken every quarter hour at all times.

The trash rack is manually raked and any trash mixed with the aquatic vegetation and woody debris is removed and disposed of before the remaining material is flushed downstream. Raking occurs at least weekly during the spring season, after storms during the summer season, and at least weekly during the fall season. Raking is not normally required during the winter season. Large woody debris is typically not encountered at this facility.

For emergency operation of the facility, an operator is available 24 hours a day and can also be supported by the operator from White River Hydro, local line crews, the Ashland Bay Front Plant maintenance staff, and personnel from NSPW's Hydro Maintenance Department in Chippewa Falls, Wisconsin.

10. Safe Management, Operation, and Maintenance

NSPW has a robust Owners Dam Safety Program that incorporates all dam safety inspection components, monitoring responsibilities, and communications required for this dam classification. It also assures adequate resources are allocated for fulfillment of FERC dam safety requirements. The current Owners Dam Safety Program was revised and submitted to FERC on June 28, 2019 (NSPW, 2019).

NSPW developed a public safety plan in consultation with the FERC. The plan is reviewed on an annual basis to determine if changes are necessary. The plan was last updated in 2015 (NSPW, 2015).

As a result of a July 2016 flood incident, NSPW improved communication at the facility by installing cell phone boosters in the Superior Falls Dam Office. In addition, cell phone coverage has improved in the general locale. NSPW did not need to update rating curves for this facility.[14]

[13] The current license lists the elevations in mean sea level, which is not a true survey datum. NGVD 1929 was created to approximate mean sea level. Therefore, for the purposes of listing the elevations in a true survey datum, all elevations are listed herein as NGVD 1929.
[14] See Accession No. 20170531-5159.

11. Average Annual Generation

Average annual generation for the Saxon Falls Project averaged approximately 10,015.3 Megawatt-hours (MWh) for the five-year period ending in 2021.

12. River Flow Characteristics

Streamflow information from the United States Geological Survey (USGS) Gaging Station No. 04029990 was used to develop flow duration curves for the Montreal River. According to the National Water Information System Web Interface, daily discharge values are provided by NSPW from the gage location (Saxon Falls powerhouse) listed as Latitude 46.53689°N, Longitude -90.37990°W (US Geological Survey, n.d.).[15] The gage location has a drainage area of 262 square miles. Based on the data for the analyzed period of October 1, 1986 to December 2021[16], the average annual calendar year flow at the Project was 313 cfs; the maximum annual calendar year flow at the Project was 604 cfs in 2016; and the minimum annual calendar year flow was 154 cfs in 1987.

Streamflow duration data show the percentage of time a given flow is equaled or exceeded. Monthly flow duration curves and the annual exceedance table are based on data collected for the period of record from October 1, 1986 to December 31, 2021 and are included in **Appendix A-4. Table A-1** shows the monthly minimum, mean, median and maximum flow at the Project**.** The daily inflows into the Project exceed the minimum hydraulic capacity of 48 cfs 98.65% of the time and exceed the maximum hydraulic capacity of 170 cfs 55.16% of the time.

Table A-1. Monthly Minimum, Mean, Median, and Maximum Flow at the Project

Month	Minimum Flow (cfs)	Mean Flow (cfs)	Median Flow (cfs)	Maximum Flow (cfs)
January	60	162	167	480
February	55	173	167	1,700
March	64	400	205	4,100
April	85	990	628	8,840
May	60	537	260	8,520
June	40	278	200	3,510
July	40	266	170	10,000
August	25	163	120	2,550
September	17	154	100	1,450
October	30	239	154	5,200
November	53	233	189	2,880
December	48	191	167	1,500
Calculated using mean daily flow data				

NSPW is not proposing any changes to Project operations with the exception of a change in the timing and an increase in the minimum flow being released into the bypass reach for aesthetic purposes.

[15] Since flow data is provided by NSPW, there is no physical gage in this location.
[16] There is no available flow data prior to October 1, 1986. The flow duration curves use data from October 1, 1986 to December 31, 2021. USGS data was used from October 1, 1986 to September 30, 2015. Data from October 1, 2015 to December 31, 2021 was provided by NSPW as operational data.

13. Purpose of the Project

The purpose of the Project is to generate renewable hydroelectric energy. NSPW is a public utility that produces, purchases, transmits, and distributes power to retail customers. The power generated by the Saxon Falls Project is delivered to NSPW's system for sale to customers.

14. Estimated Project Cost

The Project is an existing FERC licensed facility. As of December 31, 2021 the net book value (net investment) was calculated at $83,561 and the gross book value was calculated at $1,768,688. These figures will include the land and land rights, structures and improvements, waterway improvements, generating equipment, accessories, and miscellaneous equipment.

15. Estimated Costs of Proposed Environmental Measures

The estimated capital and annual Operation and Maintenance (O&M) costs for proposed environmental measures are outlined in **Table A-2**.

Table A-2 Estimated Capital and Annual O&M Costs for Proposed Environmental Measures in 2022 Dollars

<table>
<tr><th colspan="2">Item</th><th>Capital Cost</th><th>O&M Cost</th></tr>
<tr><td colspan="2">Develop Aquatic and Terrestrial Species Plan and conduct biennial invasive surveys</td><td>$40,000</td><td>$35,000[17]</td></tr>
<tr><td colspan="2">Develop Historic Resources Management Plan and conduct shoreline erosion surveys every 5 years</td><td>$20,000</td><td>$15,000[18]</td></tr>
<tr><td colspan="2">Develop an Operation Monitoring Plan</td><td>$25,000</td><td>$5,000</td></tr>
<tr><td rowspan="4">Saxon Falls Boat Launch, Canoe Portage Take-out Improvements</td><td>Relocate canoe portage from left side of dam to boat launch area and relocate or add directional signage, as necessary</td><td>$10,000</td><td>$3,000</td></tr>
<tr><td>Conduct maintenance of boat launch area via grading or addition of gravel</td><td>$3,000</td><td>$0 Additional Cost</td></tr>
<tr><td>Add new directional signage along relocated canoe portage route</td><td>$2,000</td><td>$400</td></tr>
<tr><td>Review Part 8 signage and update as necessary to meet current FERC standards</td><td>$2,000</td><td>$0 Additional Cost</td></tr>
<tr><td rowspan="4">Saxon Falls Scenic Overlook Improvements</td><td>Establish and maintain scenic overlook as a FERC-approved recreation site, including parking lot and portable toilet</td><td>$0</td><td>$10,000</td></tr>
<tr><td>Install safety signage directing recreationists to stay behind safety fencing</td><td>$1,000</td><td>$200</td></tr>
<tr><td>Review Part 8 signage and update as necessary to meet current FERC standards</td><td>$2,000</td><td>$0 Additional Cost</td></tr>
<tr><td>Trim trees blocking view of the falls</td><td>$0</td><td>$1,000</td></tr>
<tr><td>Saxon Falls Tailwater</td><td>Review Part 8 signage and update as necessary to meet current FERC standards</td><td>$2,000</td><td>$400</td></tr>
</table>

[17] This cost is per survey event.
[18] This cost is per survey event.

Item		Capital Cost	O&M Cost
Access, Canoe Portage Put-in Improvements	Replace signage on gate prohibiting use of the stairs to access the tailwater area	$500	$100
	Develop a program where an electronic key can be purchased (for a one-time fee). The key would provide access through the locked gate at the top of the stairs which leads to the tailwater area.	$30,000	$5,000
	Add daily flow information to website	$30,000	$2,500
Saxon Falls Whitewater Release	Conduct two annual whitewater releases, each for a duration of 3 hours, between the months of May and September.	$NA	$5,000
Saxon Falls Whitewater Release	Conducting the whitewater releases as proposed will increase the generation from 4,154 MWh/year to 4,177 MWh/year for a dry season (2012 model year), from 6,360 MWh/year to 6,366 MWh/year for a normal season (2003 model year), and from 9,405 MWh/year to 9,410 MWh/year for a wet season (2016 model year).[19]	$NA	$(163)[20]
Saxon Falls Whitewater Recreation Plan	Develop a Whitewater Recreation Plan in consultation with AW and NPS that includes the following items: • Number, timing, and duration of flows to be released • Ramping rates • Details on the proposed access improvements, including the card reader access system • Details on providing online access to flow information (average daily flows).	$25,000	$0
Saxon Falls Increased Aesthetic Flow	Increasing the aesthetic flow as proposed[21], will decrease the generation from 4,154 MWh/year to 4,142 MWh/year for a dry season (2012 model year), from 6,360 MWh/year to 6,345 MWh/year for a normal season (2003 model year), and from 9,405 MWh/year to 9,401 MWh/year for a wet season (2016 model year).[22]	$0	$410[23]
Bald Eagle Measures	Review WDNR Natural Heritage Inventory for presence of bald eagle nests within 660 feet of proposed ground disturbing activities at recreation sites and schedule activities to occur between August 1 and January 15 (outside the nesting season) for any work within 660 feet of any eagle nest.	$0	$0**

[19] This information was calculated using the preliminary Reservoir Flow Routing Model filed with the Commission on August 18, 2023 as Appendix E-28 of the Final License Application for the Gile Flowage Storage Reservoir Project (FERC Project #: 15055). See Accession # 20230818-5101.

[20] This value is based upon 6 MWH of lost generation per normal year and replacement value of power of $27.32/MWH as stated in Exhibit H of the Final License Application for the Superior Falls Hydroelectric Project (FERC Project No. 2587) and Accession No. 20221230-5395.

[21] Change releases from the period each year of Saturday before Memorial Day to October 15 where 5 cfs is released 24 hours per day to releasing an additional 5 cfs between 8 am and 8 pm on the weekends.

[22] This information was calculated using the preliminary Reservoir Flow Routing Model filed with the Commission on August 18, 2023 as Appendix E-28 of the Final License Application for the Gile Flowage Storage Reservoir Project (FERC Project #: 15055). See Accession # 20230818-5101.

[23] This value is based upon 15 MWH of lost generation per normal year and replacement value of power of $27.32/MWH as stated in Exhibit H of the Final License Application for the Superior Falls Hydroelectric Project (FERC Project No. 2587) and Accension No. 20221230-5395.

Item		Capital Cost	O&M Cost
NLEB and Tricolored Bat Measures	Restrict tree removal activities (>3" diameter) to outside of the NLEB pup season (i.e., June 1 to July 31) and follow the current USFWS NLEB and Tricolored Bat guidance. No bats will be removed from structures without prior consultation with USFWS.	$0	$0**
Erosion and Siltation	Install erosion and sediment control BMPs prior to beginning any ground disturbing activities at recreation sites. Disturbed soils will be permanently stabilized with mulching, seeding, and/or rock upon completion of the work.	$0	$0**
Total Cost		**$192,500**	**$82,847**

*cost per survey event

** Cost of these measures are already included in current O&M expenses and will not result in additional capital or O&M costs.

16. License Application Development Costs

The costs for NSPW to relicense under the Traditional Licensing Process through the filing of the FLA are estimated to be $316,432.

17. Estimated Value of On-Peak and Off-Peak Power

The Project operates in a run-of-river mode of operation; therefore, this section is not applicable.

18. Average Annual Increase or Decrease in Project Generation and Value of Power Due to Changes in Project Operations

NSPW is proposing to increase the minimum flow released into the bypass reach from 5 cfs to 10 cfs. It is estimated the change will have no material effect on power generation at the Saxon Falls Project. The average annual amount and value of project power for the term of the new license is projected to remain the same.

19. Remaining Undepreciated Net Investment, or Book Value, of the Project

The undepreciated net investment of the Project is $83,561 (book cost of $1,768,688 less accumulated depreciation of $1,685,127).

20. Annual Operation and Management Costs

The average annual cost to operate and maintain the Saxon Falls Project for the period 2017-2021 is $362,536. These costs are outlined in **Table A-3** and include general O&M expenses, insurance, taxes, and depreciation. A breakdown of the individual components of the general O&M expense category is shown in **Table A-4**.

Table A-3 Annual Operation and Management Costs

Item	Cost
General O & M Expenses (5-year average)	$230,107
Insurance	N/A[24]
2021 Property Taxes	$46,206
2021 Depreciation	$86,223
Average Annual O & M Cost	**$362,536**

Table A-4 Cost Breakdown of General O&M Expense Category[25] (2017 to 2021)

Cost	2017	2018	2019	2020	2021	2017-2021 Mean
Employee Expenses	$15,720	$9,978	$13,127	$2,728	$24,456	$13,202
Labor	$197,415	$157,676	$148,130	$93,699	$219,001	$163,184
Materials & Commodities	$28,883	$16,106	$17,168	$8,835	$11,098	$16,418
IT Costs	$225	$62	-	-	-	$143
Miscellaneous	$39,427	$38,024	$20,962	$22,140	$17,912	$27,693
Outside Services	$7,268	$33,937	$4,601	$1,960	-	$11,941
Total General O&M Costs	**$288,938**	**$255,783**	**$203,988**	**$129,363**	**$272,466**	**$230,107**

21. One-Line Diagram of Electrical Circuits

The One-line Diagram of Electrical Circuits is shown in **Appendix A-4**.

22. Lands of the United States

There are no federal lands located within the Project boundary.

23. Public Utilities Regulatory Policy Act

NSPW is not seeking benefits under the Public Utility Regulatory Policies Act (PURPA) as it pertains to the Project.

24. Supporting Design Report

The supporting design report is considered Critical Energy Infrastructure Information and has been filed as such as a separate document.

[24] NSPW pays a lump sum for insurance costs per operating company (i.e., NSPW, NSPM), therefore there are no insurance costs specific to the Saxon Falls Project
[25] Includes administrative costs

25. Applicant's Electricity Consumption Efficiency Improvement Programs

The Applicant is committed to energy conservation by using demand side management (DSM) measures as a means to meet customer energy needs. Cost-effective DSM resources, in the form of capacity and energy savings, are in essence "purchased" from the customer through incentives, subsidies, rate structures, or other means needed to meet system DSM goals and commitments. NSPW offers programs for the residential sector, business sector, and agricultural sectors. Specific options in these programs include but are not limited to:

Residential Programs

- Residential Rate Plans
    - Time of Day Service
    - Optional Off-Peak Service
    - Savers Switch Credit
- Residential Rewards {Focus on Energy (FOE)[26]}
    - Energy Saving Tips
    - Home rebates
        - Home Performance
        - Simple Energy Efficiency
        - New Homes
- Renewable Choices
    - Renewable Connect
    - Solar Connect Community
    - Net metering

Business Programs

- Equipment Rebates
- Energy Audits
- Renewable Programs
    - Renewable Connect
    - Solar
    - Working with Third Party Providers
- Energy Efficient Buildings
    - Multi-Family Building Efficiency (FOE)
    - Custom Efficiency
    - Efficient Facilities (FOE)
    - Energy Benchmarking
- Rate Programs
    - Electric Rate Savings
    - Savers Switch for Business

[26] Funded through the Focus on Energy® program. Focus on Energy® is Wisconsin's energy efficiency and renewable resource program. It is funded by Wisconsin's investor-owned utilities and participating municipal and electric cooperative utilities, including NSPW's parent company, Xcel Energy.

Farm Programs

- Farm Rewiring
- Agriculture and Farm Rebates

The Applicant's conservation programs have been approved by the Public Service Commission of Wisconsin.

26. Works Cited

NSPW. (1988). *Application for a Minor Water Power Project Pursuant to Section 4 (e) of the Federal Power Act for the Saxon Falls Hydro Project, FERC No. 2610, FERC Accession No. 19881221-0406.* December 16, 1988.

NSPW. (2014). *Saxon Falls Hydroelectric Project, FERC No. 2610 Supporting Technical Information Document.* March 13, 2014.

NSPW. (2015). *Revised Public Safety Plans (NSP-Wisconsin, NSP-Minnesota)et. al. under P-1982, et. al., FERC Accession No 20150831-5285.* August 31, 2015.

NSPW. (2019). *Revisions to Owners Dam Safety Program under P-2056, et. al., FERC Accession No. 20190628.* June 28. 2019.

US Geological Survey. (n.d.). *USGS 0429990 Montreal River At Saxon WI. National Water System Information System: Web Interface*. Retrieved April 26, 2022, from https://waterdata.usgs.gov/nwis/dv?referred_module=sw&site_no=04029990.

WI Department of Natural Resources. (n.d.). *WDNR Lakes Pages-Saxon Falls Flowage*. Retrieved September 19, 2019, from https://dnr.wi.gov/lakes/lakepages/LakeDetail.aspx?wbic=2941100&page=facts.