

**Reusens Hydroelectric Project
(FERC No. 2376)**

DRAFT

**Application for License
Major Project – Existing Dam**

Exhibit G – Project Boundary Maps

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1 PROPOSED CHANGES TO THE EXISTING PROJECT BOUNDARY

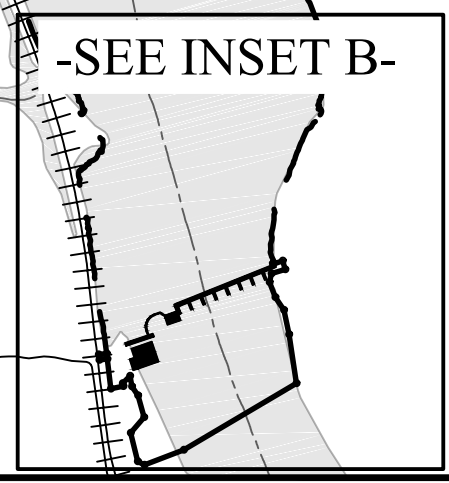
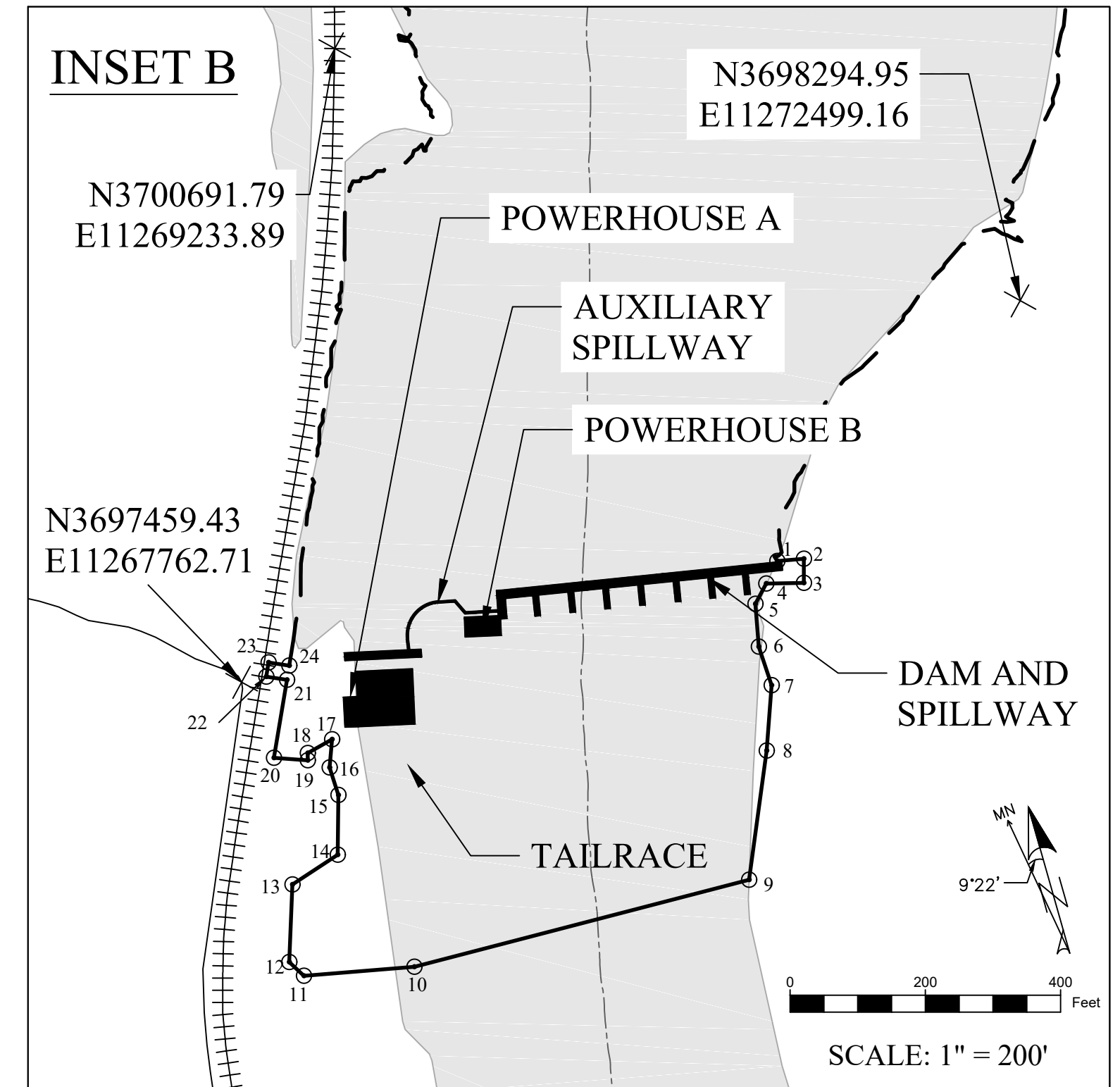
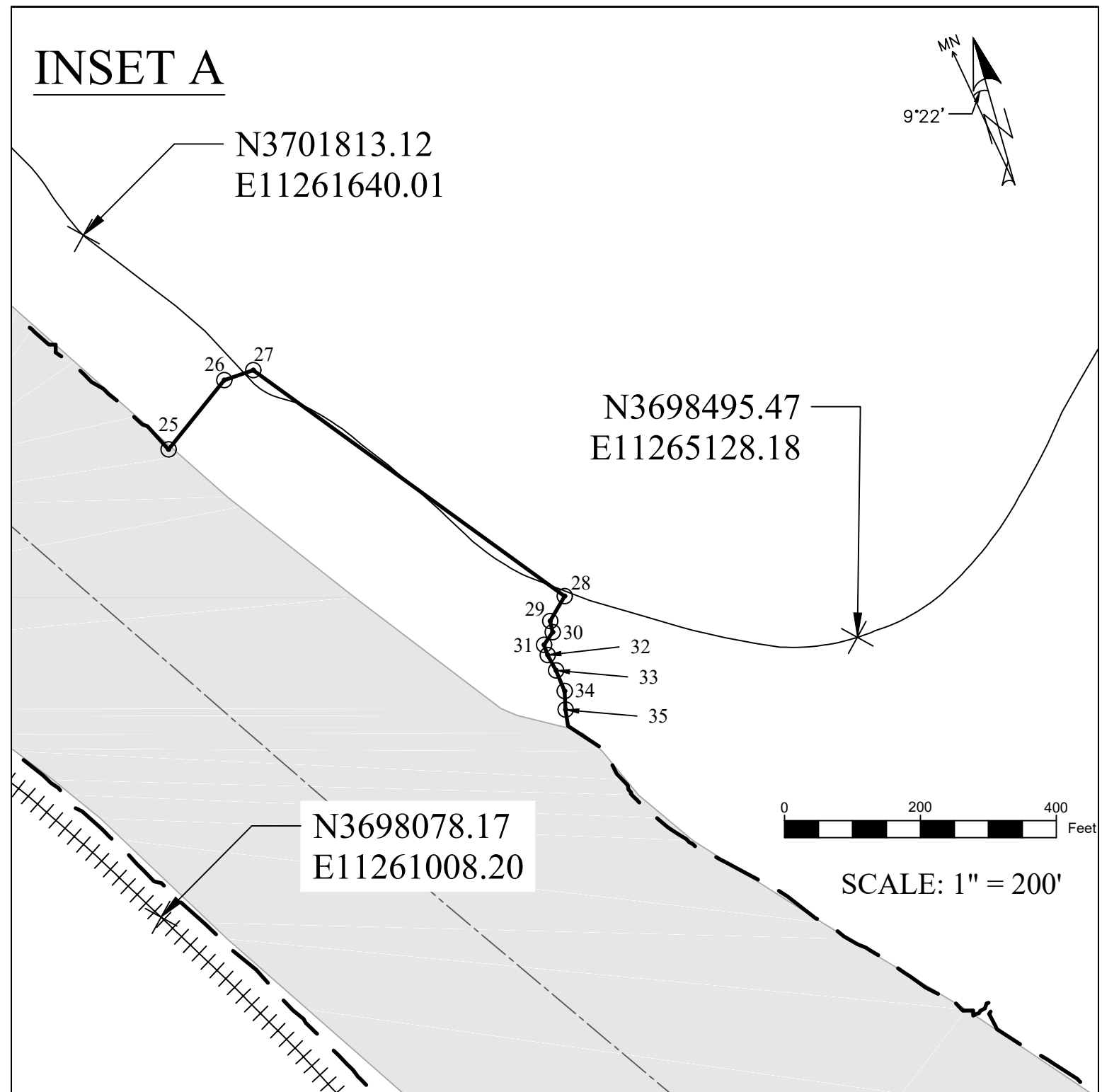
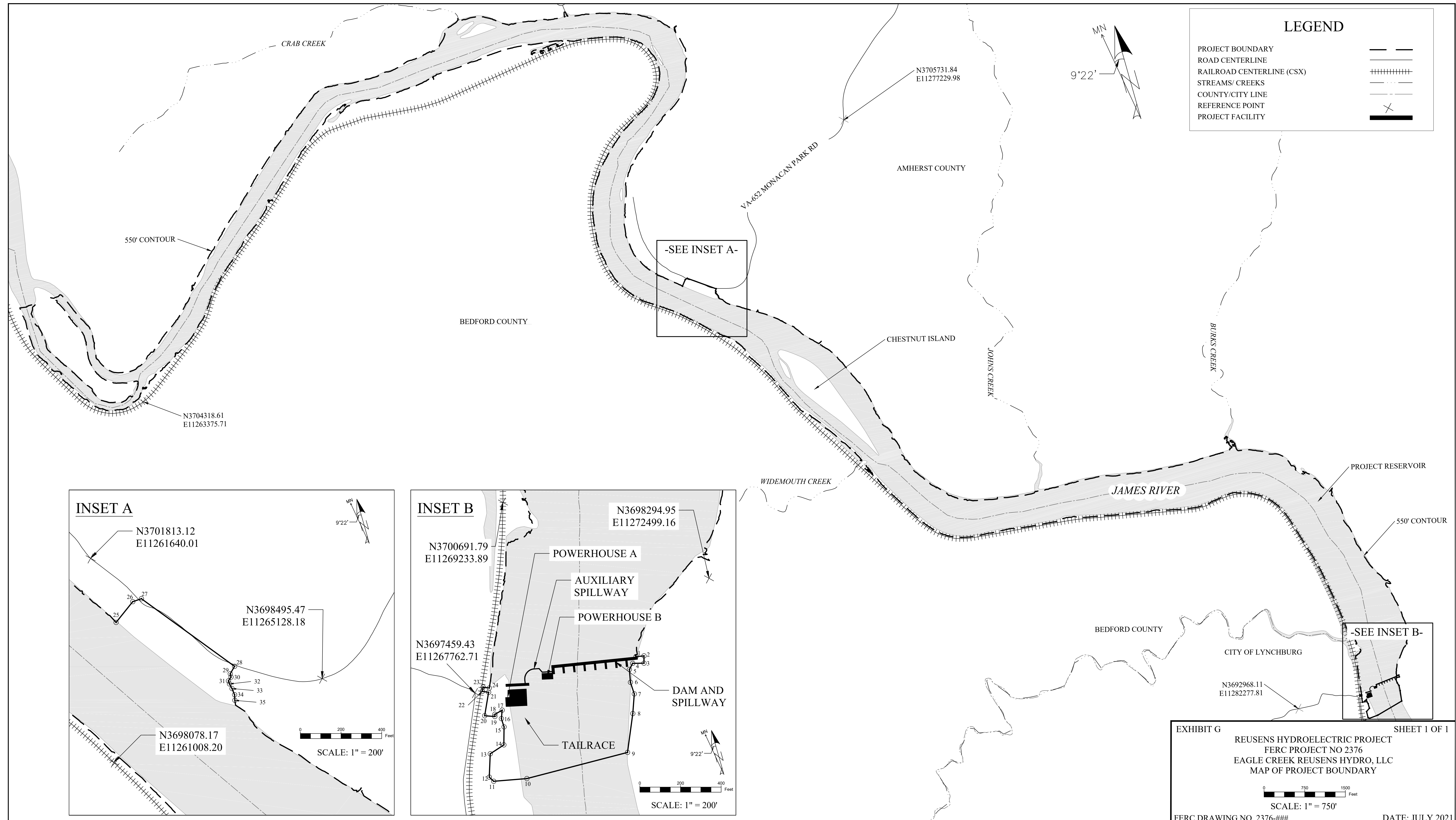
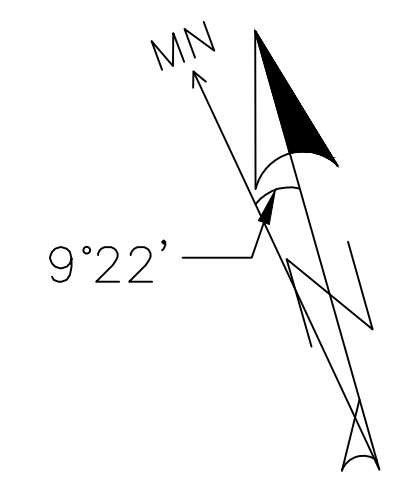
The project boundary approved in the March 18, 1994 license order (1994 License Order) was developed from topographic surveys performed by the Appalachian Power Company in 1927, 1928, and 1991. Recently, Light Detection and Ranging (i.e., LiDAR) was flown over the Project area from 2017 through 2018. As such, Reusens Hydro elected to utilize the more recent elevation data collected by the LiDAR to re-draw the Project boundary of the Project reservoir by following the reservoir contour of 550.00 feet NAVD88, except around Monacan Park and the principle Project structure described in Exhibit A other than the reservoir, which are described by metes and bounds. This resulted in a net reduction of approximately 38 acres of lands and waters. Therefore, Reusens Hydro proposes to remove 38 acres of land and water from the Project boundary because they do not serve a Project purpose. We note proposed removal of lands and water is based on better elevation data than was during the previous licensing.

Reusens Hydroelectric Project (FERC No. 2376)
EXHIBIT G – PROJECT BOUNDARY

Reusens Hydroelectric Project, P-2376				
Project Boundary Metes and Bounds Description				
Map Projection: NAD83 Virginia State Planes, South Zone, US Foot Date: July, 2021				
Metes and Bounds, Inset B				
Point No	Northing	Easting	Direction	Distance (ft)
1	3693047.25	11284188.39	N84°48'E	39.5
2	3693050.82	11284227.75	Due S	35.8
3	3693015.04	11284227.75	S88°48'W	55.8
4	3693013.88	11284171.94	S27°49'W	33.7
5	3692984.03	11284156.19	S4°19' E	63.4
6	3692920.82	11284160.96	S18°26'E	60.3
7	3692863.57	11284180.04	S4°14'W	96.9
8	3692766.96	11284172.89	S7°50'W	192.6
9	3692576.13	11284146.65	S75°25'W	511.5
10	3692447.32	11283651.68	S85°25'W	163.9
11	3692434.20	11283488.28	N45°38'W	27.9
12	3692454.48	11283466.81	N2°32' E	144.6
13	3692568.98	11283471.59	N56°33'E	80
14	3692613.11	11283538.38	N0°46'E	88.3
15	3692701.37	11283539.57	N17°56'W	42.6
16	3692741.92	11283526.45	N4°54' E	41.9
17	3692783.66	11283530.03	S60°28'W	41.1
18	3692763.39	11283494.25	Due S	10.7
19	3692752.65	11283494.25	N85°55'W	50.2
20	3692756.23	11283444.15	N9°28'E	117.2
21	3692871.78	11283463.44	N81°40'W	31.1
22	3692876.29	11283432.65	N9°31'E	21.3
23	3692897.29	11283436.17	S81°23'E	30.8
24	3692892.67	11283466.63	N9°48'E	18.7
Metes and Bounds, Inset A				
25	3703606.96	11273522.03	N38°55'E	131
26	3703708.85	11273605.84	N70°56'E	45
27	3703723.55	11273646.83	S54°1'E	566.2
28	3703390.81	11274105.00	S30°23'W	42.2
29	3703354.41	11274083.66	S13°0'E	16.7
30	3703338.09	11274087.43	S33°41'W	22.6
31	3703319.26	11274074.88	S18°26'E	15.8
32	3703304.20	11274079.90	S29°3'E	25.8
33	3703281.60	11274092.45	S22°37'E	32.6
34	3703251.48	11274105.00	S2°36'E	27.6
35	3703223.86	11274106.26	S8°58'E	24.1

LEGEND

PROJECT BOUNDARY	---
ROAD CENTERLINE	====
RAILROAD CENTERLINE (CSX)	+++++
STREAMS/ CREEKS	~~~~~
COUNTY/CITY LINE	- - - -
REFERENCE POINT	+
PROJECT FACILITY	█



- NOTES:**
1. ALL COORDINATES, BEARINGS AND AZIMUTHS DEPICTED ON THIS PLAT REFERENCE THE NAD83 HARN VIRGINIA STATE PLANE, SOUTH ZONE SYSTEM. ALL DISTANCES DEPICTED ON THIS PLAT ARE GIVEN IN US FEET. ALL ELEVATIONS ARE IN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 2. THE FERC BOUNDARY DEPICTED HEREON IS NOT INTENDED TO REPRESENT LEGAL PROPERTY BOUNDARIES OF BEDFORD HYDROELECTRIC PROJECT, LLC OR ADJACENT LAND OWNERS. THE LICENSEE OWNS IN SIMPLE FEE ALL LANDS WITHIN THE PROJECT BOUNDARY REQUIRED TO OPERATE THE FACILITY UNLESS OTHERWISE INDICATED. THIS EXHIBIT G IS A MAP OF THE FERC PROJECT BOUNDARY ONLY. THE PROJECT BOUNDARY IS POSITIONALLY ACCURATE TO ±40 FEET.



SIGNATURE / DATE

EXHIBIT G SHEET 1 OF 1
 REUSENS HYDROELECTRIC PROJECT
 FERC PROJECT NO 2376
 EAGLE CREEK REUSENS HYDRO, LLC
 MAP OF PROJECT BOUNDARY
 SCALE: 1" = 750'
 FERC DRAWING NO. 2376-### DATE: JULY 2021

I, _____, A LICENSED LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, HAVE REVIEWED THE REUSENS HYDROELECTRIC PROJECT BOUNDARY DEPICTED HEREON AND CERTIFY THAT THE PROJECT BOUNDARY IS POSITIONALLY ACCURATE TO THE BEST OF MY KNOWLEDGE.

**Reusens Hydroelectric Project
(FERC No. 2376)**

DRAFT

**Application for License
Major Project – Existing Dam**

**Exhibit H – Plans and Ability to Operate
the Project**

TABLE OF CONTENTS

1	INTRODUCTION	1
2	INFORMATION TO BE PROVIDED BY ALL APPLICANTS	1
2.1	Efficient and Reliable Electric Service	1
2.1.1	Increase Capacity or Generation Capacity	1
2.1.2	Coordination with Any Upstream or Downstream Water Resource Projects.....	1
2.1.3	Coordination of Operations with Electrical Systems	1
2.2	Applicants Short- and Long-Term Need for Electricity Generated by the Project.....	1
2.2.1	Reasonable Costs and Availability of Alternative Sources of Power..	1
2.2.2	Increase in Fuel, Capital, and Other Costs to Replace the Power Generated by the Project.....	2
2.2.3	Effects of Alternative Sources of Power.....	2
2.3	Need and the Reasonable Cost and Availability of Alternative Sources of Power.....	2
2.3.1	Average Annual Cost of the Power Produced by the Project.....	2
2.3.2	Projected Resources Required to Meet Capacity and Energy Requirements	3
2.3.3	Total Annual Cost and Merits of Each Alternative Source of Power ..	3
2.3.4	Effect on Providers of Alternative Sources of Power	3
2.4	Applicant Owned Industrial Facilities.....	3
2.5	Need for Power If the Applicant is a Tribe.....	3
2.6	Effect on Operations and Planning of the Applicant's Transmission System of Receiving or not Receiving the License	3
2.6.1	Effects of the Redistribution of Power Flows on Line Loading	3
2.6.2	Advantages of the Applicants Transmission System	3
2.6.3	Single-Line Diagram	3
2.7	Modifications of Project Facilities or Operations.....	4
2.8	Conformance of the Modification with a Comprehensive Plan for the Waterway	4
2.9	Financial and Personnel Resources.....	4
2.10	Notification of the Project to Expand and Encompass Additional Lands	4
2.11	Electricity Consumption Efficiency Improvement Program.....	4
2.11.1	Customer Energy Efficiency Program.....	4

Reusens Hydroelectric Project (FERC No. 2376)
EXHIBIT H – PLANS AND ABILITY TO OPERATE THE PROJECT

2.11.2	Compliance of Energy Conservation Programs with Regulatory Requirements	4
2.12	Names and Mailing Addresses of Affected Tribes.....	4
3	INFORMATION TO BE PROVIDED BY AN APPLICANT WHO IS AN EXISTING LICENSEE.....	6
3.1	Measures Taken or Planned to Ensure Safe Management, Operation, and Maintenance of the Project.....	6
3.1.1	Existing and Planned Operation of the Project during Flood Conditions.....	6
3.1.2	Warning Devices for Downstream Safety	6
3.1.3	Operational Changes that Might Affect the Emergency Action Plan ..	6
3.1.4	Existing and Planned Maintenance and Monitoring Programs and Monitoring Devices	6
3.1.5	Project Employee Safety and Public Safety Record	6
3.2	Current Operation of the Project	7
3.3	Project History and Upgrades to Operations and Maintenance Programs.....	7
3.4	Lost Generation Over the Previous Five Years.....	7
3.5	Record of Compliance with the Existing License Terms and Conditions.....	7
3.6	Licensee Actions Related to the Project that Affect the Public.....	7
3.7	Ownership and Operating Expense Reductions if the Project License was Transferred	7
3.8	Annual Fees for Use of Federal or Tribal Lands.....	8

LIST OF TABLES

Table 2.3.1-1.	Analysis of the costs of producing Project power.	5
Table 3.4-1.	Unscheduled outages at the Project since Reusens Hydro acquisition of the Project in 2017.	9

1 INTRODUCTION

18 CFR § 16.10(a) requires all applicants for a new license to provide certain information that pertains to an applicant's plans and ability to operate and maintain the project. Such information required in 18 CFR § 16.10(a) is provided in Section 2 of this Exhibit below. Furthermore, 18 CFR § 16.10(b) requires information to be provided by an applicant who is an existing licensee. The required information in 18 CFR § 16.10(b) is provided in Section 3 of this Exhibit below.

2 INFORMATION TO BE PROVIDED BY ALL APPLICANTS

2.1 Efficient and Reliable Electric Service

2.1.1 Increase Capacity or Generation Capacity

As discussed in Exhibit A, Reusens Hydro has no current plans to increase capacity of the Project. Reusens Hydro expects to maintain the high degree of process and controls to maintain the efficient use of the water supply to maximize the generation output and provide a reliable and environmentally sound source of generation. There is no request to increase capacity at this time. Reusens Hydro periodically re-evaluates its hydroelectric generating facilities to assess life-extension and upgrade alternatives. Should an economically feasible capacity expansion alternative be identified, Reusens Hydro will pursue a license amendment to increase capacity as appropriate.

2.1.2 Coordination with Any Upstream or Downstream Water Resource Projects

There are six other hydroelectric projects on the James River; all of which are located upstream of the Project. The Project is operated as a conventional hydropower facility in accordance with the current FERC license. While the licensees of the other hydropower projects on the James River do not necessarily coordinate the operations of their respective projects with those of the Project, operations are related as inflows to the Project are dependent on the operation of upstream projects. In addition, the proposed 4.5 MW Scott's Mill Hydroelectric Project (FERC No. 14687) is approximately 3.7 river miles downstream of the Project.

2.1.3 Coordination of Operations with Electrical Systems

Reusens Hydro is an independent power producer and sells electricity generated at the Project into the PJM RTO (Regional Transmission Organization). During daily operation of the project, generation can vary between the required minimum flow and full generating capacity, depending on inflow and impoundment storage. The Project is interconnected with American Electric Power's (AEP) transmission system.

2.2 Applicants Short- and Long-Term Need for Electricity Generated by the Project

2.2.1 Reasonable Costs and Availability of Alternative Sources of Power

Alternative sources of power could be obtained by purchasing power from electricity markets operated in the region. Power could also be supplied through the construction of new power

plants. Services to the grid would need to be provided by other existing projects, or in some other means by the system operator, if a new license for the Project is not granted. This would likely be the equivalent amount of power from the Virginia-Carolinas Electric Reliability Council (“VACAR”) with costs based on market pricing resulting from the operation of the electric market in Virginia by VACAR. Therefore, it is difficult for Reusens Hydro to speculate the cost and availability of such alternative sources of power, since the price and source can vary hourly.

2.2.2 Increase in Fuel, Capital, and Other Costs to Replace the Power Generated by the Project

Costs of replacing services produced by the Project would be passed to the consumer. This relates to reduced efficiency of other projects because they would need to modify operations to meet daily demand. Resulting loss in efficiencies caused by varying plant generation would increase fuel usage (in addition to increased emissions) and additional rate increases passed on to the customer base.

2.2.3 Effects of Alternative Sources of Power

Effects on the Applicants Customers

The primary purpose of the Project is to supply energy into the PJM-RTO market. As a hydropower facility, the Project provides an important source of renewable electricity. Alternative sources of power, many of which would most likely be sourced by coal, gas, and nuclear generation may need to adjust their production levels, which would reduce their overall efficiency. Energy production costs, environmental costs, and construction costs would be higher than the existing Project. The decommissioning of the Project’s generating facilities or the removal of the Project could result in increased costs to the consumer.

Effects on Operating and Load Characteristics

Reusens Hydro is an independent power producer and, as such, does not maintain a separate transmission system that could be affected by replacement or alternative power sources.

Effects on the Communities Served

The loss of the license for the Project would result in a loss of electrical generation to the PJM-RTO market and tax revenues for the adjoining City of Lynchburg and Bedford and Amherst Counties. In 2020, the Project contributed approximately \$[to be provided in the FLA] in State and local taxes. The governmental entities affected by this loss in revenue would ultimately have to seek a reduction in expenses or an increase in other sources of revenue.

2.3 Need and the Reasonable Cost and Availability of Alternative Sources of Power

2.3.1 Average Annual Cost of the Power Produced by the Project

The average annual cost of the power produced by the Project includes capital costs, operating costs, and costs associated with Project relicensing, including the proposed Protection Mitigation

and Enhancement (“PM&E”) measures. As described in Exhibit A, Reusens Hydro has presented its analysis of the costs of producing Project power. The total average annual cost of power produced by the Project is approximately \$[to be provided in the FLA] based on an operational average generation of 21,052 MWh of energy (Table 2.3.1-1).

2.3.2 Projected Resources Required to Meet Capacity and Energy Requirements

The Project serves a role in the regional energy market by providing an estimated 21,052 MWh of generation annually. The Project and other electric generating facilities owned and operated by the Reusens Hydro’s parent company and affiliates are non-regulated Qualifying Facilities or Exempt Wholesale Generators. Power generated by the Project is sold in an open, competitive market to respond to consumer demands.

2.3.3 Total Annual Cost and Merits of Each Alternative Source of Power

Reusens Hydro does not have alternative sources of power that could be provided should a license not be granted. As such, alternative sources of power to compensate for any potential losses should this Project not be licensed would need to be purchased from the open market.

2.3.4 Effect on Providers of Alternative Sources of Power

Reusens Hydro does not propose to change how the Project is currently operated; therefore, there is no effect on providers of alternative sources of power.

2.4 Applicant Owned Industrial Facilities

Not applicable; Reusens Hydro does not own or operate any industrial facilities.

2.5 Need for Power If the Applicant is a Tribe

Reusens Hydro is not an Indian tribe applying for a project on a tribal reservation; therefore, this section is not applicable.

2.6 Effect on Operations and Planning of the Applicant’s Transmission System of Receiving or not Receiving the License

2.6.1 Effects of the Redistribution of Power Flows on Line Loading

Reusens Hydro is an independent power producer and, as such, does not maintain a separate transmission system that could be affected by power flow redistribution.

2.6.2 Advantages of the Applicants Transmission System

Reusens Hydro does not have a transmission line as the point of interconnect is immediately outside the powerhouse.

2.6.3 Single-Line Diagram

A single-line diagram for the Project will be filed separately in CEII with the FLA.

2.7 Modifications of Project Facilities or Operations

Reusens has no plans to modify the existing generation facilities at the Project and does not propose to modify existing Project operations.

2.8 Conformance of the Modification with a Comprehensive Plan for the Waterway

The Project will be operated under the terms and conditions of a new license issued by the Commission, which will be based on the Commission's determination of the license terms and conditions that are best suited to comprehensive development of the waterway. The environmental impacts of the Project in the context of the James River are addressed in Exhibit E, along with the Project's consistency with comprehensive plans for the waterway.

2.9 Financial and Personnel Resources

Eagle Creek Renewable Energy, Reusens Hydro's parent company, is an owner and operator of 85 hydroelectric facilities, representing 620 MW of capacity across the United States. Reusens Hydro has the financial resources to maintain and operate the Project.

The Project has a full complement of operations personnel who perform all necessary day-to-day functions related to Project operations and maintenance. On-site staff are fully qualified to handle all aspects of the operation and maintenance of the Project. The Project is fully equipped to allow staff to perform all routine maintenance functions. All personnel receive training commensurate with their responsibilities in an ongoing effort to improve their ability to operate the Project in the safest and most efficient manner possible.

2.10 Notification of the Project to Expand and Encompass Additional Lands

Reusens Hydro currently has no plans to expand the project to encompass additional lands; therefore, any such notification is not applicable.

2.11 Electricity Consumption Efficiency Improvement Program

2.11.1 Customer Energy Efficiency Program

Reusens Hydro is an independent power producer and all power generated at the Project is sold to the PJM-RTO market. Reusens Hydro routinely strives to improve plant performance. Reusens Hydro does not transmit power or sell electricity to retail customers, and the Project does not have other venues for energy conservation programs.

2.11.2 Compliance of Energy Conservation Programs with Regulatory Requirements

Not applicable; Reusens Hydro is an independent power producer.

2.12 Names and Mailing Addresses of Affected Tribes

There are no Indian Tribes with land that will be affected by the Project. Refer to Section 2(v) of the Initial Statement for a list Tribes potentially affected by the Project.

Reusens Hydroelectric Project (FERC No. 2376)
EXHIBIT H – PLANS AND ABILITY TO OPERATE THE PROJECT

Table 2.3.1-1. Analysis of the costs of producing Project power.

Cost Descriptions	Capital Cost (\$)	Annual Cost (\$)
Annual operations and maintenance	<i>[to be provided in the FLA]</i>	
Annual insurance, taxes, and administrative costs		
Cost of relicensing		
Total		

3 INFORMATION TO BE PROVIDED BY AN APPLICANT WHO IS AN EXISTING LICENSEE

3.1 Measures Taken or Planned to Ensure Safe Management, Operation, and Maintenance of the Project

3.1.1 Existing and Planned Operation of the Project during Flood Conditions

The project is subject to Emergency Action Plan (“EAP”) requirements under Part 12-C of the Commission’s regulations. The project’s EAP outlines specific monitoring, response and communications actions by Reusens Hydro operations staff and emergency response authorities under various potential emergency levels. The EAP is maintained and tested annually in compliance with the Commission’s regulations and EAP guidelines.

3.1.2 Warning Devices for Downstream Safety

The Reusens dam is considered a high hazard potential structure and has a Dam Safety Surveillance and Monitoring Plan (“DSSMP”). There are warning signage is in place upstream and downstream of the Project facilities to warn the public of potentially hazardous conditions. The generating equipment and dam facilities are monitored from the powerhouse.

3.1.3 Operational Changes that Might Affect the Emergency Action Plan

There are no proposed changes either to the project operations or facilities that would affect the Project’s existing EAP.

3.1.4 Existing and Planned Maintenance and Monitoring Programs and Monitoring Devices

Over the previous license term, the previous licensee and subsequently Reusens Hydro has equipment to monitor water levels and other conditions at the Project. Headpond elevation is monitored on a continual basis. In addition to the aforementioned instrumentation, the Project is subject to regular visual inspections as part of the project DSSMP and the Reusens Hydro’s overall dam safety program. Additional information regarding dam safety and monitoring devices is classified as CEII and is on file with the Commission.

3.1.5 Project Employee Safety and Public Safety Record

Reusens Hydro manages the Project consistent with their long-standing commitment to employee safety. This commitment includes compliance with applicable local, state, and federal regulations regarding the safe operation of industrial and electrical facilities. As Reusens Hydro operates the Project’s generation facilities, this commitment is implemented primarily through a rigorous safety program. Detailed inspection and maintenance programs ensure employee and contractor safety relative to operating equipment and facilities. The safety program involves employee and contractor training sessions, as well as making safety information available to employees.

Reusens Hydro places a high priority on public safety at the Project, and maintains public safety measures (lighting, signage, markers, fencing, etc.) consistent with plans filed with the FERC Regional Office. In accordance with 18 CFR 12.10, Reusens Hydro files public safety incident reports with the Commission.

3.2 Current Operation of the Project

The operation of the Project is described in Exhibit B.

3.3 Project History and Upgrades to Operations and Maintenance Programs

Exhibit C provides the summary of the Project construction and commencement of commercial operation. Reusens Hydro does not propose any new upgrades to operations and maintenance programs.

3.4 Lost Generation Over the Previous Five Years

In order to maximize energy production from the facility, Reusens Hydro has a consistent record of addressing outages immediately and implementing preventative measures to prevent the occurrence and duration of future outages. Reusens Hydro acquired the Project in 2017 with the turbine-generator units in various states of disrepair and works continuously to operate the Project to full capacity. Since acquiring the Project, the Project has experienced [to be provided in the FLA] unscheduled outages, which are summarized in Table 3.4-1.

3.5 Record of Compliance with the Existing License Terms and Conditions

Over the term of the current license, the Project has been subject to FERC's standard operational and environmental inspections. Since acquiring the Project, there have been no major issues of noncompliance with terms and conditions of the existing license.

3.6 Licensee Actions Related to the Project that Affect the Public

The Project provides renewable electricity to PJM customers. This significantly affects the general public by providing a low-cost and renewable-energy source. Reusens Hydro also manages the Project to provide additional benefits to the local community, natural resources, recreation and the region at large. Visitors to the Project enjoy the recreational opportunities available. In addition to the benefits that Reusens Hydro provides to the area's natural resources and the recreating public, the Project contributes to the public benefit through the employment of full-time staff.

3.7 Ownership and Operating Expense Reductions if the Project License was Transferred

If the Project license were transferred to another entity, Reusens Hydro's cost of operating and maintaining the Project would be eliminated.

3.8 Annual Fees for Use of Federal or Tribal Lands

The Applicant does not pay annual charges for Federal or Indian tribal reservation lands because the Project does not occupy any such lands.

Reusens Hydroelectric Project (FERC No. 2376)
EXHIBIT H – PLANS AND ABILITY TO OPERATE THE PROJECT

Table 3.4-1. Unscheduled outages at the Project since Reusens Hydro acquisition of the Project in 2017.

Date and Time (mm/dd/yy hh:mm)		Outage Duration (hrs)	Description
Outage Start	Outage End		
<i>[to be provided in the FLA]</i>			