Environmental Assessment: Non-Capacity Amendment Application

BARTLETTS FERRY PROJECT
FERC Project No. 485-065
Georgia/Alabama

Re-published as DOE/EA-2299

U.S. Department of Energy, Loan Programs Office – Title XVII Energy Infrastructure Reinvestment Program

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Title: Environmental Assessment for Non-Capacity Amendment Application, Bartletts Ferry Project (FERC Project No. 485-065), Georgia/Alabama

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Proposed Action

The United States Department of Energy (DOE), Loan Programs Office (LPO) may provide loan guarantees for energy infrastructure projects under section 1706 of Title XVII of the Energy Policy Act of 2005 (Energy Policy Act), as amended by the Inflation Reduction Act of 2022 (42 U.S.C. 16517) (the EIR Program). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (42 U.S.C. 16517(a)(2)).

LPO is considering whether to issue a loan guarantee of a funding facility to the Georgia Power Company (GPC or Applicant) pursuant to its authority under the EIR Program. In its application, GPC has identified the **Bartletts Ferry Generating Units 1-4 Upgrade Project (Project)** for inclusion in the funding facility that is the subject of DOE's loan guarantee. The Bartletts Ferry Project is located on the Georgia-Alabama border on the Chattahoochee River in Harris County, Georgia, and Lee and Chambers counties, Alabama.

GPC proposes to upgrade the four generating units in the west powerhouse (Bartletts Ferry Units 1-4), allowing the facility to continue to meet the operational requirements of its existing Federal Energy Regulatory Commission (FERC) license. Specifically, GPC proposes to replace existing turbine runners, rehabilitate and replace generators, and upgrade the cooling system in the west powerhouse (Bartletts Ferry Units 1-4). The modernization of each unit is scheduled to occur over one year, for a total of four years to complete the project. In addition to the specific scope that was included and required in the FERC license amendment application, the Project also consists of common support systems replacements, balance of plant replacements, and safety and environmental improvements.

The Project does not require new facilities to be constructed and would take place inside the powerhouse, on major project works, and within designated work areas in Lee County, Alabama. Ground disturbance is limited to three temporary work areas that are required for contractor parking, material laydown, and construction trailers for workers. The work areas are located within

previously disturbed areas and do not impact cultural, biological, or historic features. The Project does not require a reservoir drawdown and Lake Harding will operate under the current FERC license conditions. In addition, the project will not interfere with GPC's ability to operate the Project to supplement flows over weekend periods to support downstream minimum flow requirements.

Existing roads will be utilized to access the powerhouse and work areas associated with the project. The project would extend the lifetime of the turbine units in the west powerhouse beyond the term of the current license, which expires December 21, 2044.

The purpose and need for DOE's proposed action, the issuance of a Federal loan guarantee, is to implement DOE's authority under Title XVII of the Energy Policy Act, as amended.

National Environmental Policy Act Review

The decision whether to provide a loan guarantee (federal financial assistance) constitutes a major Federal action (42 United States Code (USC) 4336e (10)(A) and 42 USC 4336e (10)(B)(iii), which requires DOE to conduct an environmental review under the National Environmental Policy Act (NEPA). In accordance with the Council on Environmental Quality's (CEQ) Memorandum to the Heads of Federal Departments and Agencies, issued on February 19, 2025, and with Executive Order 14154 issued on January 20, 2025, DOE LPO is conducting this environmental review accordance with DOE's NEPA implementing procedures consistent with the text of NEPA, E.O. 14154, and the CEQ memorandum. LPO is using the NEPA process to inform its decision whether to issue a loan guarantee to the Applicant to support the Project.

Pursuant to NEPA, an *Environmental Assessment (EA) for Non-Capacity Amendment Application, Bartletts Ferry Project* (March 2023) was prepared by the Applicant and, at FERC's request, was included as Exhibit E in GPC's Amendment Application. DOE was not a cooperating agency in the preparation of the FERC EA. Subsequently, DOE has conducted an independent review of the FERC EA and has determined that the actions analyzed in FERC's EA and DOE's proposed action are substantially the same. Additionally, the FERC EA meets the standards for a sufficient environmental assessment under the DOE's NEPA procedures.

DOE will rely upon the FERC EA for its decision-making and, accordingly, is re-publishing the FERC EA as DOE/EA-2299, along with DOE's draft Finding of No Significant Impact for a 30-day public comment period.

Required Consultations and Other Reviews

Endangered Species Act, Section 7

Section 7 of the Endangered Species Act (ESA)[1] requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened or endangered species or result in the destruction or adverse modification of the critical habitat of such species.

[1] 16 U.S.C. § 1536.

On June 30, 2025, LPO received an official species list indicating potential for eight federally threatened, endangered, candidate, or experimental non-essential species with potential to occur in the Project area: alligator snapping turtle (*Macrochelys temminckii*); tricolored bat (*Perimyotis subflavus*); monarch butterfly (*Danaus plexippus*); whooping crane (*Grus americana*); purple bankclimber (*Elliptoideus sloatianus*); Georgia rockcress (*Arabis georgiana*); fringed campion (*Silene polypetala*); and relict trillium (*Trillium reliquum)*. There is no designated critical habitat in the project area.

Given that Project activities would occur within the existing powerhouse, on major project works, and on associated previously disturbed work/laydown areas and would not require any tree cutting, vegetation clearing, reservoir drawdown, or disturbance of substrates in the reservoir, LPO has reached a *no effect* determination for its action.

National Historic Preservation Act, Section 106

Under section 106 of the National Historic Preservation Act (NHPA),[2] and its implementing regulations,[3] federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (National Register), defined as historic properties, and afford the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment on the undertaking.

The Project is subject to the provisions of a 2013 Programmatic Agreement (PA) among FERC and the Georgia and Alabama SHPOs. The PA requires GPC to implement its Historic Properties Management Plan (HPMP) for the term of its license. The HPMP also specifies that in the event that a Project-related activity cannot be modified to avoid an adverse effect on an historic property within the Project's area of potential effects (APE), Georgia Power would consult with the Georgia SHPO, Alabama SHPO, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Kialegee Tribal Town, United Keetoowah Band of Cherokee Indians in Oklahoma, and Muscogee (Creek) Nation, as provided for under the HPMP, to identify, and if necessary implement, appropriate measures.

The Project includes upgrading the four generating units in the NRHP-eligible west powerhouse by replacing the turbine runners, generators, and intake trash racks. On March 8, 2022, GPC provided an overview and assessment of the Project to the Alabama SHPO, represented by the Alabama Historical Commission (AHC), and the Georgia SHPO, represented by the Georgia Department of Community Affairs – Historic Preservation Division (HPD). By letters dated April 5 and 7, 2022, the AHC and HPD, respectively, concurred that these activities would cause an unavoidable adverse effect on historic properties (the NRHP-eligible Bartletts Ferry west powerhouse). GPC, FERC, and the SHPOs developed a memorandum of agreement (MOA) to resolve adverse effects, stipulating the completion of Level II Historic American Engineering Record (HAER) documentation and the installation of interpretative signage that would be located in public access areas in both Alabama and Georgia, which would describe the history of

[2] 54 U.S.C. § 306108.

[3] 36 C.F.R. pt. 800 (2021).

the project, historic powerhouse operations, and current modernization efforts. The MOA was executed on March 18, 2024, thereby satisfying the FERC's obligations under the NHPA as the lead federal agency for the undertaking.

GPC's application for a Federal loan guarantee from DOE LPO for the Project introduces an additional Federal nexus triggering a review of this undertaking under Section 106 of the NHPA. FERC remains the lead federal agency for the undertaking. DOE LPO consulted with the FERC and the Georgia SHPO to document DOE LPO's concurrence with the terms of the MOA as well as FERC's and SHPO's concurrence that the MOA resolves the adverse effects on historic properties inclusive of the proposed Federal financial support from DOE LPO for the undertaking.

Notice of Floodplain Action and Proposed Statement of Findings

Pursuant to 10 CFR Part 1022, DOE must review all actions to determine whether projects are located within 100- and 500-year floodplains. This Project is located within the 100-year floodplain and regulatory floodway (Federal Emergency Management Agency Flood Insurance Rate Maps, 01081C0140G and 13145C0162D). No project components would be located in the 500-year floodplain.

The alternatives before DOE include: (1) to provide Federal financial assistance for the Project; or (2) not provide Federal financial assistance for the Project. No siting alternatives were considered by DOE.

Project activities would occur within the existing powerhouse, on major project works, and on associated previously disturbed work/laydown areas and would not require any tree cutting, vegetation clearing, reservoir drawdown, or disturbance of substrates in the reservoir. DOE's proposed statement of findings is that base flood elevations would not be affected by the Project.

At the end of the public comment period (described below), DOE will consider all substantive comments received and prepare a final floodplain statement of findings.

Public Involvement

DOE did not participate as a cooperating agency in the preparation of the FERC EA; therefore, DOE is re-publishing the EA as DOE/EA-2299 for a period of 30 days. DOE's EA is available at the following locations:

- DOE LPO website: https://www.energy.gov/lpo/environmental-assessments
- DOE NEPA website: https://www.energy.gov/nepa/office-nepa-policy-and-compliance

Draft Finding of No Significant Impact

Based on DOE/EA-2299, DOE has determined that providing a federal loan guarantee to GPC for the **Bartletts Ferry Generating Units 1-4 Upgrade Project** will not have a significant effect on the human environment. The preparation of an environmental impact statement is therefore not required, and DOE is issuing this Finding of No Significant Impact. This Finding of No Significant Impact should not be construed as a final decision about the issuance of a loan guarantee.

_____ _____

Todd Stribley Date
NEPA Compliance Officer
DOE Loan Programs Office

Applicant Prepared Environmental Assessment for Non-Capacity Amendment Application

Bartletts Ferry Project

FERC No. 485

Prepared for:

Georgia Power Company

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March 2023

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ACRONYMS, ABBREVIATIONS AND DEFINITION OF TERMS

A	
ACF Basin	Apalachicola-Chattahoochee-Flint Basin
ADCNR	Alabama Department of Conservation and Natural Resources
ADEM	Alabama Department of Environmental Management
AHC	Alabama Historical Commission
Amendment Application	Application for Non-Capacity Amendment
APE	Area of Potential Effect
APEA	Applicant Prepared Environmental Assessment
B	
Bartletts Ferry Hydroelectric Project	Bartletts Ferry Project
Bartletts Ferry Reservoir	Lake Harding
BCC	Birds of Conservation Concern
BCRs	Bird Conservation Regions
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
C	
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
CSOs	combined sewer outflows
CZMA	Coastal Zone Management Act
CWA	Clean Water Act
D	
DO	Dissolved Oxygen
E	
EFH	Essential Fish Habitat
ESA	Endangered Species Act
F	
°F	Fahrenheit
fps	feet per second
F&W	Fish and Wildlife
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
G	
Georgia DNR	Georgia Department of Natural Resources
Georgia EPD	Georgia Environmental Protection Division
Georgia HPD	Georgia Historic Preservation Division
Georgia Power	Georgia Power Company
Goat Rock Lake	Goat Rock Reservoir

I

IPaC	Information Planning and Conservation

L

Lake Harding	Bartletts Ferry Reservoir

M

MCWPR	Middle Chattahoochee Water Planning Region
mgd	million gallons per day
mg/l	milligrams per liter
MLRA	Major Land Resource Area
msl	mean sea level
MW	Megawatt

N

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places

P

PA	Programmatic Agreement
PD	Plant datum
PME	Protection, Mitigation, and Enhancement Measures
PWS	Public Water Supply

S

SEPA	Southeastern Power Administration
SHPO	State Historic Preservation Office

U

USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
U.S.C	U.S. Code

W

WPCP	Water Pollution Control Plant
WQC	Water Quality Certification

1.0 INTRODUCTION

Georgia Power Company (Georgia Power) owns and operates the 173-megawatt (MW) Bartletts Ferry Hydroelectric Project (Bartletts Ferry Project) licensed by the Federal Energy Regulatory Commission (FERC), Project No. 485. The existing Bartletts Ferry Project license was issued December 22, 2014[1] and expires December 21, 2044. The Bartletts Ferry Project is located on the mainstem Chattahoochee River in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The Bartletts Ferry Project consists of a dam, two powerhouses (west and east), and a reservoir, known as Lake Harding (Figure 1-1). The Bartletts Ferry dam is located at river mile (RM) 177.9, approximately 23.5 miles downstream of the U.S. Army Corps of Engineers' (USACE) West Point Dam (RM 201.4). Lake Harding is a 12.7-mile long, 5,850-acre reservoir at normal full pool elevation 521 feet plant datum (PD)[2]. At normal full pool, the total reservoir storage of Lake Harding is 181,000 acre-feet, of which 57,600 acre-feet (between 510 and 521 feet) is usable for hydropower generation. The west shoreline of the Chattahoochee River in the Bartletts Ferry Project is the border between Alabama and Georgia[3].

Georgia Power proposes to upgrade the four generating units in the west powerhouse, which includes replacing the turbine runners, generators, and intake trashracks (Proposed Action). Upgrading the generating units will allow the Bartletts Ferry Project to continue to meet the operational requirements of its existing license. This modification requires an Application for Non-Capacity Amendment (Amendment Application) to FERC license No. 485. Georgia Power consulted with appropriate agencies and submitted the Amendment Application to FERC on May 6, 2022[4]. Documentation of consultation on the Amendment Application is provided in Appendix A. Georgia Power filed information pertaining to the laydown/work areas on October 25, 2022[5] to supplement the May 6, 2022 Amendment Application.

On January 26, 2023, FERC requested that Georgia Power file an Exhibit E to provide information on the effects of the Proposed Action and to describe the potential for a reservoir drawdown and associated effects on Project resources. Therefore, Georgia Power

[1] Accession No. 20141222-3010
[2] Plant datum = mean sea level (MSL) + 0.84 feet
[3] The majority of the reservoir lies within Georgia. The Halawakee Creek and Osanippa Creek embayments are located within Alabama.
[4] Accession No. 20220506-5211
[5] Accession No. 20221025-5204

is filing this Exhibit E in the form of an Applicant Prepared Environmental Assessment (APEA) that analyzes the effects of implementing the Proposed Action on the Bartletts Ferry Project's environmental, recreational, socioeconomic, and cultural resources.

Georgia Power did not have a finalized contractor's plan when it filed the original amendment application on May 6, 2022, and it was unknown if a reservoir drawdown would be required. As described in Section 2.2.1, a contractor's plan has since been finalized and no reservoir drawdown will be required. The Proposed Action was revised to eliminate the reservoir drawdown and Georgia Power consulted with agencies on this change (see Appendix B).

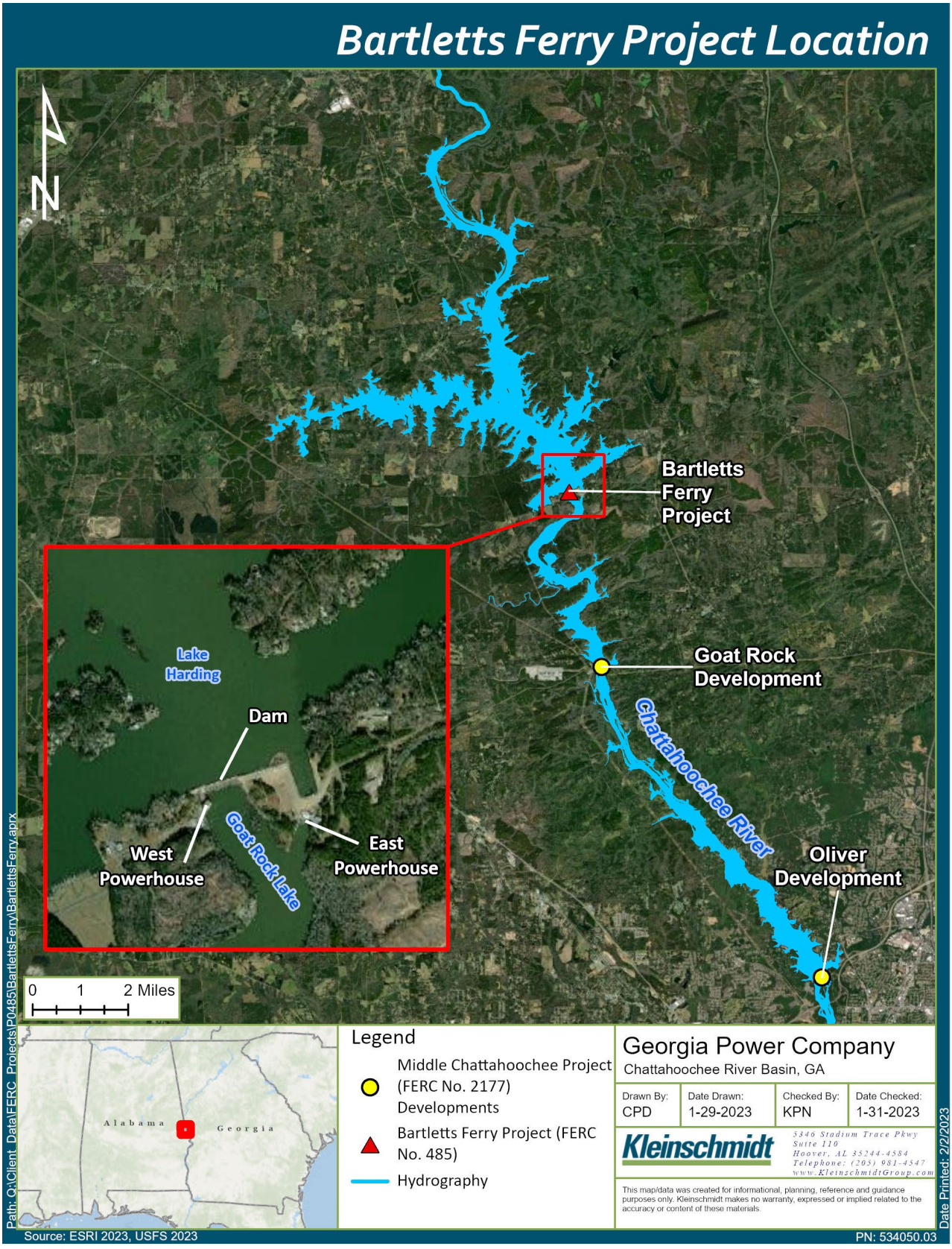

Figure 1-1 Bartletts Ferry Project Location

1.1 Statutory and Regulatory Requirements

Georgia Power, as licensee for the Bartletts Ferry Project, is subject to the requirements of the Federal Power Act (FPA) and other statutes that may be applicable in the FERC license amendment process. The potentially applicable statutory requirements are summarized below.

1.1.1 Section 401 of Clean Water Act

Under Section 401(a)(1) of the Clean Water Act (CWA), an applicant for a federal license or permit to conduct an activity that may result in discharge into waters of the United States must provide the licensing or permitting agency with a water quality certification (WQC) that the discharge would not violate water quality standards from the applicable state. In Georgia, WQCs are issued by the Georgia Environmental Protection Division (Georgia EPD) as part of the Georgia Department of Natural Resources wetland regulatory program via O.C.G.A. Title 12 Chapter 5-21.

The work proposed in this Amendment Application will occur at the west powerhouse located in the state of Georgia and the associated discharge originates in the state of Georgia. Georgia Power consulted with Georgia EPD on March 14, 2022. Georgia EPD confirmed that a WQC is not required for the Proposed Action in this Amendment Application. Georgia EPD is requiring Georgia Power to implement a Georgia EPD-approved Dissolved Oxygen and Water Temperature Monitoring Plan following the unit upgrade at the west powerhouse to ensure Georgia's water quality standards for dissolved oxygen (DO) and temperature in this section of the Chattahoochee River are met. Georgia Power consulted with Georgia EPD in preparing the draft Dissolved Oxygen and Water Temperature Monitoring Plan. On April 26 and 27, 2022, Georgia EPD provided comments which Georgia Power incorporated into the draft Dissolved Oxygen and Water Temperature Monitoring Plan. On May 6, 2022, ADEM requested to be included in any water quality monitoring reporting. Georgia Power proposes to amend license article 403 Tailrace Water Quality Enhancement to add aeration as a DO enhancement option and amend article 404 to implement the Dissolved Oxygen and Water Temperature Monitoring Plan.

1.1.2 Endangered Species Act

Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threated and endangered species or result in the destruction or adverse modification of

their designated critical habitat. The Georgia Department of Natural Resources (Georgia DNR) is authorized by O.C.G.A. Title 27 Chapter 3 Article 3 (§ 27-3-132) as well as Rule 391-4-10 and the Endangered Wildlife Act of 1973 to make decisions, approve permits and determine potential impacts to any resident species as endangered, threatened, rare or unusual species. The Alabama Department of Conservation and Natural Resources (ADCNR) is authorized by Alabama Code Section 9-2-2 to "protect, conserve, and increase the wildlife of the state" and under Alabama Administrative Code r. 220-2-.92 to protect nongame species. Information on federal threatened and endangered species potentially occurring within the area of the Proposed Action was determined by the USFWS Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) tool. In preparing the May 6, 2022 Amendment Application, the IPaC tool was reviewed for the entire project because Georgia Power was considering a drawdown. The results of this review produced the following list: the federally endangered plant, Relict Trillium (*Trillium reliquum*), the threatened Wood Stork (*Mycteria americana*), Purple Bankclimber (*Elliptoideus sloatian*us), Georgia Rockcress (*Arabis georgiana*), and the candidate species Monarch Butterfly (*Danaus plexippus*) are known to occur in the Bartletts Ferry Project vicinity, but outside the Bartletts Ferry Project boundary. The Amendment Application stated, "should a drawdown be required to complete the proposed work described in this Amendment Application, the Wood Stork may be affected by reducing suitable foraging habitat (USFWS 2007) and the Purple Bankclimber (USFWS 2020; Ingram et al. 2013) by periodically desiccating the littoral zone".

The Proposed Action was revised based on a new construction plan that eliminates the need for a reservoir drawdown, so as a component of this APEA, Georgia Power used the ECOS IPaC tool to produce a new report for the defined Action Area. In contrast to the list that was produced for the Amendment Application, the Wood Stork and Relict Trillium are no longer potentially occurring in the revised Action Area; however, the alligator snapping turtle (*Macrochelys temminckii*) and fringed campion (*Silene polypetala*) were added as potentially occurring in the revised Action Area. The Monarch Butterfly, Purple Bankclimber, and Georgia Rockcress remained on the IPaC report. The new IPaC report is discussed in Section 9 and provided in Appendix C.

1.1.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Act, first passed in 1976, fosters long-term biological and economic sustainability of the nation's marine fisheries extending to 200 nautical miles from shore. This act is the primary law governing marine fisheries management in United States federal waters. The Magnuson-Stevens Act requires the eight regional Fishery

Management Councils, in collaboration with National Oceanic and Atmospheric Administration (NOAA), to consider essential fish habitat (EFH) in resource management decisions. Congress defines EFH as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth and maturity." The designation and consideration of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. There is no EFH located in the Bartletts Ferry Project and therefore, EFH consultation pursuant to Section 305(b) of the Magnuson-Stevens Act is not required.

1.1.4 Coastal Zone Management Act

Pursuant to Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), 16 United States Code (U.S.C.) Section 1456(3)(A), FERC must receive concurrence from the state CZMA agency that the project is not within or affecting the state's coastal zone prior to issuing a license. The State of Georgia's coastal zone includes the counties of Effingham, Chatham, Wayne, Bryan, Liberty, Long, McIntosh, Glynn, Brantley, Camden, and Charlton.[6] The State of Alabama's coastal zone extends inland to the continuous 10-foot elevation contour in Baldwin and Mobile Counties.[7] The Bartletts Ferry Project is not located within the coastal zone of either Georgia or Alabama and does not affect any coastal zone resource within either state.

1.1.5 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires FERC to consider potential adverse effects to historic properties prior to issuing the Order approving a license amendment. FERC executed a Programmatic Agreement (PA) (in accordance with License Article 412) with the Georgia State Historic Preservation Office (SHPO) and the Alabama SHPO, and invited Georgia Power, the Alabama- Coushatta Tribe of Texas, the Alabama-Quassarte Tribal Town, the Kialegee Tribal Town, the United Keetoowah Band of Cherokee Indians in Oklahoma, and the Muscogee (Creek) Nation to concur with the stipulations of the PA; Georgia Power concurred. The PA requires the licensee to implement the Historic Properties Management Plan (HPMP), filed on September 18, 2012.

Georgia Power consulted with the Georgia Department of Community Affairs – Historic Preservation Division (HPD) and Alabama Historical Commission (AHC) regarding the Proposed Action. By letters dated April 5 and 7, 2022, the AHC and HPD, respectively,

[6] O.C.G.A. Section 12-5-322(4).
[7] Alabama Code Section 9-7-15; ADEM Admin. Code R. 335-8-1-.02(k).

concurred that there will be an unavoidable adverse effect to historic properties within the Project's area of potential effect (APE), as defined in 36 code of federal regulations (C.F.R) § 800.5(d)(1). Both agencies recommended that mitigation include development of a Level II Historic American Engineering Record (HAER) documentation and the installation of interpretative signage to educate the public about the history of the Project, both of which would be included in a memorandum of agreement (MOA) under Section 106 consultation. Georgia Power provided HPD and AHC with the draft MOA on April 19, 2022, and Georgia Power filed the MOA and consultation package with FERC on May 23, 2022[8].

1.1.6 Bald and Golden Eagle Act

The Bald and Golden Eagle Protection Act (BGEPA) was originally enacted in 1940 (16 U.S.C 668-668d) to protect eagles from human-induced alterations and human interactions. As defined in 50 C.F.R., Part 22, permits are required for the "taking" (meaning to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb), possession, and transportation with the United States of bald eagles and golden eagles and their parts, nests, and eggs. Georgia Power's Bald Eagle Management Plan (pursuant to License Article 408) aims to conserve and protect active bald eagle nests and roost sites within the Bartletts Ferry Project Boundary.

[8] Accession No. 20220523-5069

2.0 PROPOSED ACTION & ALTERNATIVES

This section describes Georgia Power's Proposed Action and the no-action alternative for the Bartletts Ferry Project.

2.1 No Action Alternative

Under the no-action alternative, the Bartletts Ferry Project would remain unimproved aside from routine maintenance and aging equipment (i.e., turbine runners would not be replaced).

2.1.1 Existing Project Facilities and Operations

The Bartletts Ferry Project consists of a dam, two powerhouses (west and east), a reservoir, and recreation facilities. The Bartletts Ferry Project includes a 12.7-mile-long, 5,850-acre reservoir (Lake Harding), with total and usable storage capacities of 181,000 and 57,600 acre-feet, respectively, at a normal full pool elevation of 521.0 feet PD. Lake Harding is formed by the Project's 2,052-foot-long west dam and 915-foot-long east dam. The west dam includes a non-gated auxiliary labyrinth spillway; a non-overflow section; a west powerhouse intake; and a gated spillway section equipped with 19 radial gates, two trash gates, and two spillway bays. The east dam consists of a non-overflow section. The west and east dams are separated by a 650-foot-long intake canal, which passes flows to the intake for the east powerhouse through two 25-foot-diameter penstocks. The west powerhouse intake is integral with the west dam and passes flows from Lake Harding, through four 15-foot-diameter penstocks, to the west powerhouse. The east powerhouse discharges into an approximately 800-foot-long tailrace in the backwaters of the Goat Rock Reservoir (Goat Rock Lake). The west powerhouse discharges to an approximately 1,700-foot-long backwater section of the Goat Rock Lake.

The west powerhouse houses three 15-MW and one 20-MW vertical Francis turbine-generator units, which total 65 MW. Power from the four west units is passed to a substation located adjacent to the powerhouse. The east powerhouse houses two 54-MW vertical Francis turbine-generator units, which total 108 MW. Power from the two east units is passed to a substation adjacent to the east powerhouse.

The Bartletts Ferry Project is operated in a modified run-of-river mode to provide generation during peak demand periods. The Bartletts Ferry Project periodically operates outside the peak demand period to pass excess inflows necessary to maintain water surface elevations in Lake Harding. Inflow to Lake Harding is passed through either the

west powerhouse or east powerhouse and discharged directly into the upper end of the Middle Chattahoochee Project's Goat Rock Lake, with no intervening riverine or bypassed reach. Pursuant to License Article 401, Georgia Power operates the Bartletts Ferry Project to maintain the reservoir elevation between 518- and 521-feet PD 99 percent of the hours each calendar year, and between 519- and 521-feet PD at least 85 percent of the hours each calendar year.

The Bartletts Ferry Project is operated in coordination with flow releases from the USACE upstream West Point Dam. West Point Dam controls about 82 percent of the inflow into the Bartlett Ferry Project, with the remaining 18 percent coming from tributaries feeding into Lake Harding. The Bartletts Ferry Project and West Point Dam typically release water for generation on the same daily schedule. Consequently, the elevation of Lake Harding gradually drops over the course of the day until peaking releases from West Point Dam arrive 4 to 6 hours later, which refill Lake Harding.

Georgia Power's downstream Middle Chattahoochee Project (FERC No. 2177) is subject to multiple flow requirements. From time to time, Georgia Power uses storage from the Bartletts Ferry Project to assist in meeting these flow requirements, by supplementing the USACE reduced weekend releases from West Point Dam. If Georgia Power releases these supplemental flows on the weekends, Lake Harding can drop 0.75 to 1.0 foot, but remains within elevations 518.0 and 521.0 feet. During low-inflow and drought conditions, Georgia Power operates the Bartletts Ferry Project in much the same way as under normal operation. Lake levels generally are maintained at 519.0 feet. Depending on the severity of the drought and unscheduled flow reductions from West Point Dam, the level of Lake Harding may drop below elevation 519.0 feet; however, the duration typically does not exceed one week. The Bartletts Ferry Project is not designed to provide flood control and lacks sufficient storage to do so. Consequently, during flood conditions, after maximizing turbine discharge (about 24,000 cubic feet per second (cfs)), the 19 radial spillway gates are opened so that discharge matches inflow. Once the capacity of the spillway gates is reached, the additional flow would be passed over the auxiliary labyrinth weir spillway so that the Bartletts Ferry Dam is not overtopped.

2.2 Proposed Action

2.2.1 Proposed Project Facilities and Operations

Georgia Power proposes to upgrade the four generating units in the west powerhouse by replacing the turbine runners, performing extensive refurbishment on the generators, and

replacing the intake trashracks. The west powerhouse work is scheduled to begin in mid-2023, with a unit upgrade each year beginning approximately mid-year 2023[9], and in 2024, 2025, and 2026, pending approval of the Amendment Application. The rated capacity[10] is 15 MW each for units 1 through 3 and 20 MW for unit 4. Following the upgrade, units 1 through 3 will have an approximate 18 MW rated capacity and unit 4 will have an approximate 23 MW rated capacity. Existing maximum hydraulic capacity is approximately 2,330 cfs for units 1 and 2, approximately 2,260 cfs for unit 3, and 2,880 cfs for unit 4. There will be a 5 cfs increase in the maximum powerhouse hydraulic capacity (9800 to 9805 cfs) and a rated powerhouse generating capacity increase of 13.65 MW (65 MW to 78.65 MW).

Table 2-1 provides the rated generating and maximum hydraulic capacities of the existing west powerhouse units with the expected performance of the upgraded units. Performance of the upgraded units may vary slightly based on final design, head conditions, and fabrication.

[9] Schedule changes were identified in a Georgia Power letter to FERC dated December 2, 2022 (Accession No. 20221202-5073.

[10] Rated capacity is "best gate". The existing capacity shown on the equipment nameplate of the turbines in the west powerhouse of the Bartletts Ferry Project represents a full gate, maximum capacity, not the FERC nameplate capacity, which is defined as the best gate turbine setting. Georgia Power will correct this error when new equipment nameplates are installed after the Proposed Action is completed

Table 2-1 Bartletts Ferry West Powerhouse Existing and Proposed Hydraulic Capacities and Rated Capacity

Unit	Existing Rated (Best Gate/Most Efficient) Capacity (MW)	Existing Max Hydraulic Capacity (cfs)	Proposed Rated (Best Gate/Most Efficient) Capacity (MW)	Proposed Rated (Best Gate/Most Efficient Hydraulic Capacity (cfs)	Proposed Full Gate/Max Capacity after Upgrade (MW)	Proposed Max Hydraulic Capacity (cfs) after Upgrade
1	15	2330	18.4	2080	20.2	2335
2	15	2330	18.4	2080	20.2	2335
3	15	2260	18.45	2090	19.5	2250
4	20	2880	23.4	2660	25	2885

Georgia Power's proposed new turbine runners for three of the units are aerating turbines manufactured by Voith. Voith developed a model to predict the instantaneous DO uptake capability of the proposed turbines. The proposed aerating turbine runners in units 1, 2 and 4 would assure the project's ability to continue to achieve Georgia water quality standards (further discussed in Section 6.2.2.). Therefore, as part of the Amendment Application, Georgia Power requests to amend Article 403 Tailrace Water Quality Enhancement and Article 404 Tailrace Water Quality Monitoring of the Bartletts Ferry Project license to include aerating turbines as an option for dissolved oxygen (DO) enhancement and to implement the proposed Dissolved Oxygen and Water Temperature Monitoring Plan following the unit upgrades to assure Georgia water quality standards are met with aerating units.

As part of the unit upgrade, Georgia Power proposes to install new trashracks with a similar configuration to the existing trashracks. The existing trashracks are composed of 5/16-inch bars placed 4 and 5/16 inches on center and will be replaced with 3/8 inch bars placed 4 inches on center. The depth of trashracks will remain unchanged. Calculated approach velocities with the new trashracks installed are estimated to be 2.12 and 2.74 feet per second (fps) at best and full gate flows, respectively. Existing approach velocities, ranging from 2.64 to 3.5 ft/s, were field measured by divers in 2015 after the installation of stoplogs that were approved to be used as a DO enhancement measure.

The Proposed Action will be completed one unit at a time and will be occur behind the plant's maintenance stoplogs so no reservoir drawdown is needed. The maintenance stoplogs are routinely used to isolate one unit at a time from the water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations of all other available units at the powerhouse. These maintenance stoplogs are different than the DO stoplogs which were specifically fabricated and installed at the Bartletts Ferry's west powerhouse Units 1-4 for DO enhancement approved in the 2014 relicense order. Each turbine unit has been scheduled to occur over one year, so a total duration of four years will be needed to complete the Proposed Action. During unit work, Georgia Power will pass all inflows through the eastern powerhouse or other units in the western powerhouse. Only units that have either a DO stoplog or an aerated turbine unit will be operated in the west powerhouse to ensure water quality standards are met for the construction duration.

The Proposed Action does not require a reservoir drawdown, and Lake Harding will operate under the current license conditions, within an elevation range of 518 to 521 feet PD 99 percent of the time, and within an elevation range of 519 to 521 ft PD at least 85

percent of the time, excluding fall maintenance and system emergency drawdowns. In addition, the Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project's (FERC No. 2177) minimum flow requirements in Columbus, Georgia.

Construction lay down areas are located in previously disturbed areas and do not impact any cultural, biological, or historic features[11]. Construction lay down areas are further discussed in each resource section of this APEA.

Figure 2-1 depicts the three planned work areas (Work Areas) associated with the Proposed Action at the Bartletts Ferry Project as described below.

- Work Area 1: Temporary contractor parking for modernization work at Units 1-4 powerhouse. Work consists of minor grading and placement of a gravel parking surface[12].
- Work Area 2: Temporary material laydown area for modernization work at Unit 1-4 powerhouse. Work consists of minor grading and placement of gravel. A concrete crane pad will also be constructed for material handling. Four shallow soil borings of maximum 20' depth or to refusal were performed in August 2022 to determine the bearing capacity of the soil. Borings were advanced using hollow stem augers.
- Work Area 3: Temporary "Construction Village" (trailers) for modernization work at Units 1-4 powerhouse. Work consists of minor grading and placement of gravel to create pads for temporary trailers. Trailers will be utilized by the contractor and by Southern Company construction management personnel.

[11] Georgia Power filed information pertaining to the laydown/work areas on October 25, 2022 (Accession No. 20221025-5204) to supplement the May 6, 2022 Amendment Application.

[12] This work was described in a letter to the FERC dated June 6, 2022 and was accepted by the FERC in a letter dated June 13, 2022.

Figure 2-1 Construction Lay Down Areas

3.0 CUMULATIVE EFFECTS ANALYSIS

According to the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) (40 C.F.R. § 1508.7), a cumulative effect is an impact on the environment resulting from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities. Based on information in this APEA and consultation to date, no resources have the potential to be cumulatively affected by the Proposed Action at the Bartletts Ferry Project.

4.0 GENERAL DESCRIPTION OF THE RIVER BASIN

The Chattahoochee River has a drainage area of 8,770 square miles and flows approximately 430 miles from the Blue Ridge Mountains in the Chattahoochee National Forest in Georgia to its confluence with the Flint River. The Chattahoochee River includes five federal projects operated by USACE: Buford Dam (Lake Lanier), West Point Dam, Walter F. George Lock and Dam (Lake Eufaula), George W. Andrews Lock and Dam, and Jim Woodruff Lock and Dam (Lake Seminole). Georgia Power has licenses for seven projects on the Chattahoochee River. One is north of Atlanta, Georgia and the remaining six are located along the Fall Line near Columbus, Georgia. These projects are Morgan Falls Dam, Langdale Dam, Riverview Dam, Bartletts Ferry Dam, Goat Rock Dam, Oliver Dam, and North Highlands Dam (USACE 2010) (Figure 4-1).

Water use and returns in the Apalachicola-Chattahoochee-Flint (ACF) basin include public supply, self-supplied domestic, self-supplied commercial, industrial, mining, agricultural (crop irrigation, livestock, and aquaculture), and thermoelectric-power generation (Lawrence 2016). Significant portions of the basin upstream of the Bartletts Ferry Project are classified for municipal water supply, and numerous drinking water intakes are located both upstream and downstream of the Bartletts Ferry Project. Other primary uses of the Chattahoochee River in the vicinity of the Bartletts Ferry Project include hydropower generation and energy, fishing, aquatic life, recreation, industrial water supply, and agriculture (Southern Company Generation Hydro et al. 2012).

The predominant land uses in this portion of the Middle Chattahoochee River basin in Georgia are forested lands interspersed with row crops, pasture lands, active timber operations, and areas of new development (Southern Company Generation Hydro et al. 2012).

4.1 Topography

The Bartletts Ferry Project is located on the Chattahoochee River in the Southern Piedmont Major Land Resource Area (MLRA) (SCS 1983). The area's general topography is characterized by rolling hills and ridges (Marbut 1913). The region is dissected by an intricate system of perennial streams and intermittent drainageways (Marbut 1913). Nearly level alluvial plains are found along the river channel and many of its tributaries (SCS 1983).

4.2 Climate

The climate in the Bartletts Ferry Project area is known for long, hot summers, due to moist tropical air from the Gulf of Mexico that persistently covers the region. Winters are typically cool and short, with an occasional cold wave that moderates in 1 or 2 days. Average annual rainfall for the region is 47 inches, as measured in Columbus, Georgia, approximately 15 miles south of the Bartletts Ferry Project. Annual temperatures average 65.6 degrees Fahrenheit (°F) with an average low temperature of 55°F and an average high temperature of 76°F (U.S. Climate Data 2023).

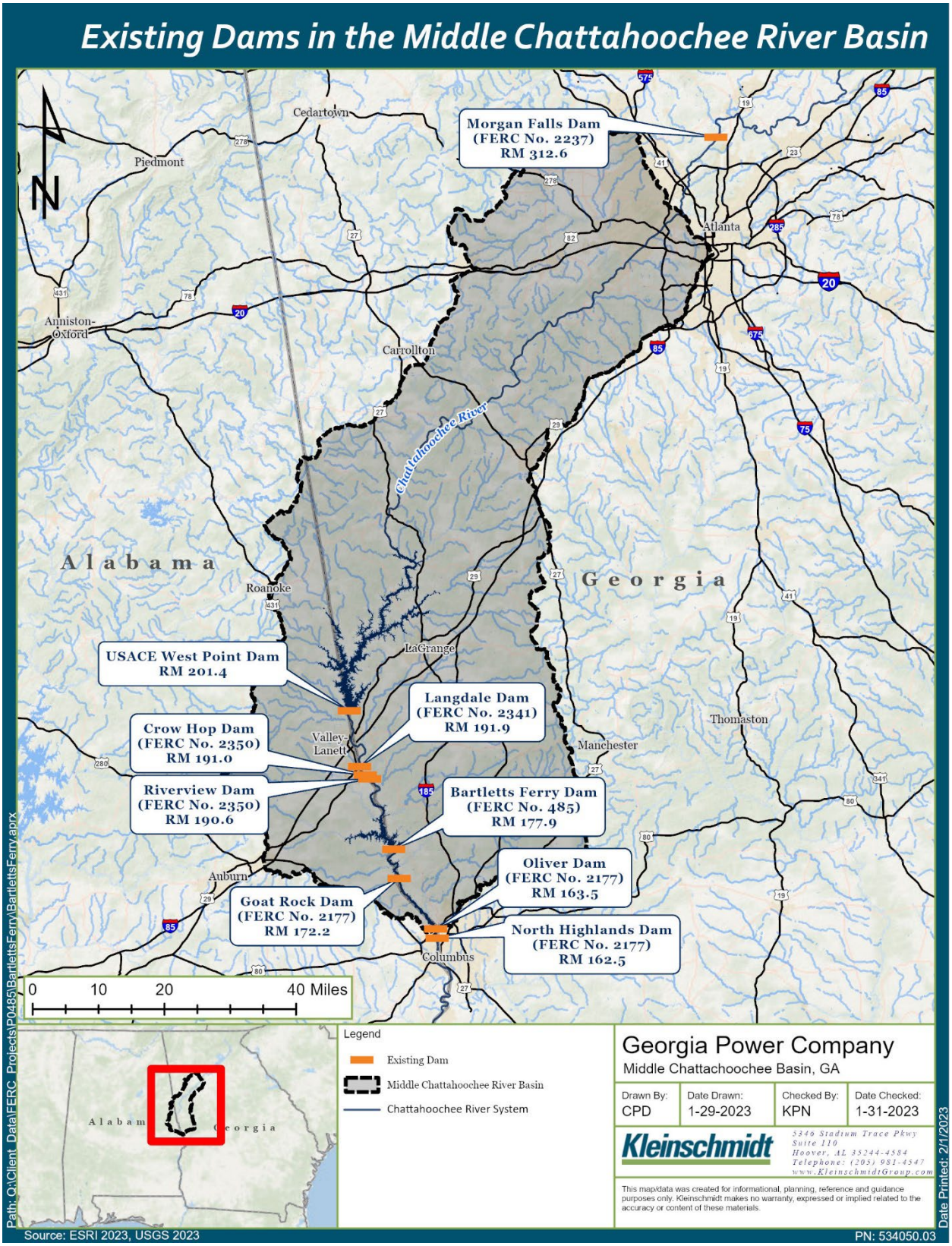

Figure 4-1 Dams within the Middle Chattahoochee River Basin

4.3 References

Lawrence, S.J. 2016. Water use in the Apalachicola-Chattahoochee-Flint River Basin, Alabama, Florida, and Georgia, 2010, and water-use trends, 1985–2010: U.S. Geological Survey Scientific Investigations Report 2016–5007. Available online at https://pubs.usgs.gov/sir/2016/5007/sir20165007.pdf. Accessed January 2023.

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Soil Conservation Service (SCS). 1983. U.S. Department of Agriculture. Soil Survey for Muscogee County, Georgia. Athens, Georgia: College of Agriculture.

U.S. Army Corps of Engineers (USACE). 2010. Mobile District Website. Appendix C: Apalachicola-Chattahoochee-Flint (ACF) Basin Detailed Analysis. Available online at https://www.sam.usace.army.mil/Portals/46/docs/planning_environmental/acf/docs/appendixC.pdf. Accessed January 2023.

U.S. Climate Data. 2023. Monthly Climate Columbus-Fort Benning, Georgia. URL: https://www.usclimatedata.com/climate/columbus-fort-benning/georgia/unitedstates/usga0133. Accessed January 2023.

5.0 GEOLOGICAL AND SOIL RESOURCES

5.1 Affected Environment

There are three level III ecoregions in the Chattahoochee River Basin in the states of Georgia and Alabama: Blue Ridge, Piedmont, and Southeastern Plains (USEPA 2011). The head waters of the Chattahoochee River originate in the Blue Ridge ecosystem, where it briefly flows through an area defined by a geological history of mountains. A sharp change in altitude carries the Chattahoochee River into the lower relief Piedmont ecosystem characterized by rolling hills (GDNR 1997). From the Piedmont ecosystem, the Chattahoochee River is guided northeast to southwest by a narrow zone of intensely sheared rocks known as the Brevard Fault Zone. The river eventually cuts across a less resistant portion of the fault zone and veers south along the Alabama/Georgia border to the Bartletts Ferry Project location. Approximately 16 RMs south of the Bartletts Ferry Project is the Fall Line, which marks the transition between the Piedmont ecoregion and the Southeastern Plains. This area is underlain with Precambrian and Paleozoic crystalline rocks (predominantly gneiss and schists with lesser amounts of metamorphosed volcanic rocks, metamorphosed sedimentary rocks, and granites) and the unconsolidated Pliocene, Cretaceous, and Tertiary sands of the Southeastern Plains (GDNR 1997).

The Piedmont ecoregion can be further divided into two level IV ecoregions: Southern Inner Piedmont, located north of the Brevard Fault Zone, and the Southern Outer Piedmont, located south of the Brevard Fault Zone. The Bartletts Ferry Project is located within the Southern Outer Piedmont, which is dominated by gneiss, schist, and granite (USEPA 2011).

The soil composite at the Bartletts Ferry Project generally consists of sandy loams (Figure 5-1).

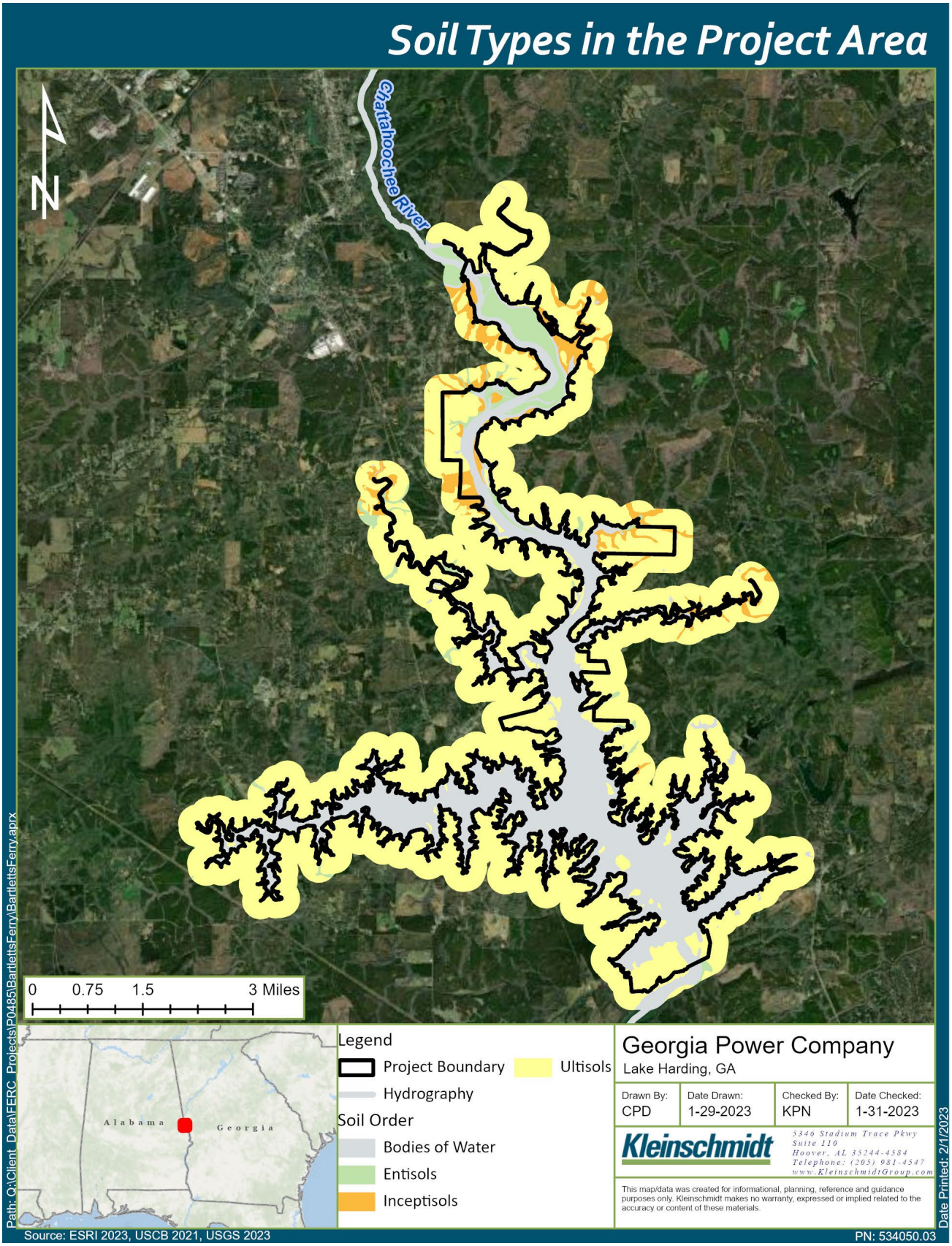

Figure 5-1 Soil Types at the Bartletts Ferry Project

Table 5-1 Soils and Associated Characteristics at the Bartletts Ferry Project

Soil Order	Map unit Name	Wind Erodibility Group	Wind Erodibility Index	Soil Loss Tolerance Factor	K-Factor Rock Free	Acres	Percent
Bodies of Water	Water	NA	NA	NA	NA	5495.9	23.7
Entisols	Buncombe loamy sand, 0 to 2 percent slopes, occasionally flooded	2	134	5	0.0	417.0	1.8
Entisols	Cartecay silt loam, 0 to 1 percent slopes	5	56	4	0.2	11.8	0.1
Entisols	Congaree loam	5	56	5	0.3	0.0	0.0
Entisols	Sandy alluvial land, poorly to somewhat poorly drained	5	56	4	0.3	151.6	0.7
Entisols	Toccoa sandy loam, 0 to 2 percent slopes, frequently flooded	3	86	5	0.3	163.4	0.7
Inceptisols	Chewacla loam, 0 to 2 percent slopes, frequently flooded	5	56	5	0.3	599.3	2.6
Inceptisols	Chewacla sandy loam	3	86	5	0.3	85.7	0.4
Inceptisols	Louisa gravelly sandy loam, moderately steep and steep	5	56	2	0.4	49.2	0.2
Inceptisols	Louisa stony sandy loam, steep	5	56	2	0.3	309.6	1.3
Inceptisols	Seneca sandy loam	3	86	5	0.3	0.4	0.0
Inceptisols	Starr soils	5	56	5	0.2	6.2	0.0
Ultisols	Cecil cobbly loam, 10 to 25 percent slopes	7	38	4	0.2	305.3	1.3
Ultisols	Cecil sandy loam, 2 to 6 percent slopes	3	86	5	0.2	456.8	2.0
Ultisols	Cecil sandy loam, 2 to 6 percent slopes, moderately eroded	3	86	5	0.2	34.7	0.1
Ultisols	Cecil sandy loam, 6 to 10 percent slopes	3	86	5	0.2	101.6	0.4
Ultisols	Cecil sandy loam, 6 to 10 percent slopes, moderately eroded	3	86	5	0.2	126.6	0.5
Ultisols	Gullied land	5	56		0.5	265.7	1.1
Ultisols	Hard Labor-Appling complex, 2 to 6 percent slopes	3	86	5	0.3	33.1	0.1
Ultisols	Hard Labor-Appling complex, 6 to 10 percent slopes, moderately eroded	3	86	5	0.3	1.9	0.0
Ultisols	Helena sandy loam, 2 to 6 percent slopes	3	86	5	0.3	20.4	0.1
Ultisols	Hiwassee fine sandy loam, eroded, sloping	3	86	5	0.2	28.4	0.1
Ultisols	Hiwassee sandy loam, 6 to 10 percent slopes	3	86	5	0.2	70.9	0.3
Ultisols	Lloyd clay loam, severely eroded, gently sloping	6	48	5	0.2	6.7	0.0
Ultisols	Lloyd loam, 2 to 6 percent slopes, moderately eroded	5	56	5	0.3	15.0	0.1

Soil Order	Map unit Name	Wind Erodibility Group	Wind Erodibility Index	Soil Loss Tolerance Factor	K-Factor Rock Free	Acres	Percent
Ultisols	Lloyd loam, 6 to 10 percent slopes, moderately eroded	5	56	5	0.3	39.7	0.2
Ultisols	Louisburg-Wateree complex, 10 to 25 percent slopes	3	86	5	0.2	176.5	0.8
Ultisols	Madison clay loam, severely eroded, gently sloping	6	48	5	0.2	9.9	0.0
Ultisols	Madison gravelly clay loam, 10 to 15 percent slopes, severely eroded	7	38	4	0.2	359.8	1.6
Ultisols	Madison gravelly clay loam, 6 to 10 percent slopes, severely eroded	7	38	4	0.2	236.3	1.0
Ultisols	Madison gravelly clay loam, severely eroded, moderately steep	7	38	5	0.2	34.0	0.1
Ultisols	Madison gravelly clay loam, very severely eroded, sloping	7	38	5	0.2	3.2	0.0
Ultisols	Madison gravelly clay loam, very severely eroded, strongly sloping	7	38	5	0.2	18.1	0.1
Ultisols	Madison gravelly fine sandy loam, 15 to 25 percent slopes	5	56	5	0.2	4.9	0.0
Ultisols	Madison gravelly fine sandy loam, 6 to 10 percent slopes, moderately eroded	5	56	5	0.2	10.8	0.0
Ultisols	Madison soils, eroded, strongly sloping, graphitic	3	86	5	0.2	3.7	0.0
Ultisols	Pacolet sandy loam, 1 to 6 percent slopes	3	86	5	0.2	389.0	1.7
Ultisols	Pacolet sandy loam, 10 to 15 percent slopes	3	86	5	0.2	2609.9	11.3
Ultisols	Pacolet sandy loam, 10 to 15 percent slopes, moderately eroded	3	86	5	0.2	1683.7	7.3
Ultisols	Pacolet sandy loam, 15 to 25 percent slopes, moderately eroded	3	86	5	0.2	2641.3	11.4
Ultisols	Pacolet sandy loam, 6 to 10 percent slopes	3	86	5	0.2	4114.9	17.8
Ultisols	Pacolet sandy loam, 6 to 10 percent slopes, moderately eroded	3	86	5	0.2	2023.7	8.7
Ultisols	Stony land	7	38	3	0.4	13.8	0.1
Ultisols	Towaliga-Pacolet complex, 6 to 15 percent slopes, stony	6	48	5	0.2	2.4	0.0
Ultisols	Wickham fine sandy loam, 6 to 10 percent slopes	3	86	5	0.3	9.4	0.0
					Total	**23142.2**	**100.0**

5.2 Environmental Analysis

Land disturbing activities are limited to the lay down and construction equipment staging areas (Work Areas). These areas are previously disturbed (e.g., parking areas, cleared lots, industrial areas). All three Work Areas are located on the Alabama side of the Bartletts Ferry Project and require minor grading and placement of gravel for different uses: Work Area 1 will be used as a temporary gravel parking area; Work Area 2 will include a concrete crane pad for material handling, and Work Area 3 will include gravel pads for temporary trailers to house personnel. The land disturbance associated with the Proposed Action does not require a National Pollutant Discharge Elimination System (NPDES) permit.

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. Therefore, there are no anticipated impacts such as erosion on the Lake Harding shorelines. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project's minimum flow requirements in Columbus, Georgia. Supporting these requirements would continue to protect geological and soil resources in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend.

Impacts to geological and soil resources at the Bartletts Ferry Project will be temporary and minimal, limited to the construction and movement of equipment associated with the Proposed Action.

5.3 Protection, Mitigation, and Enhancement Measures

Georgia Power will implement construction best management practices (BMPs). BMPs are vegetative measures and structural practices that control the erosion of soil and the resulting sedimentation. The three Work Areas are located within Alabama, and although Alabama does not have a state-mandated buffer, Georgia Power will apply the Georgia Soil and Water Conservation Commission Manual for Erosion and Sediment Control guidelines to lands in Alabama. Construction BMPs including silt fence and gravel topping, at minimum, and Georgia Power will follow the most up to date guidelines to minimize erosion in the lay down and construction staging areas.

5.4 Unavoidable Adverse Effects

Short-term unavoidable adverse impacts associated with minor grading include potential increase in erosion at the Work Areas. These impacts are temporary during construction periods and would not impact the Bartletts Ferry Project post-construction.

5.5 References

Georgia Department of Natural Resources, Environmental Protection Division (GDNR). 1997. Chattahoochee River Basin Management Plan 1997. Accessed January 2023.

U.S. Environmental Protection Agency (USEPA). 2011. Ecoregions of Alabama and Georgia. ftp://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/al/alga_front.pdf. Accessed January 2023.

6.0 WATER RESOURCES

6.1 Affected Environment

6.1.1 Water Quantity

The Middle Chattahoochee River Basin (HUC 03130002) has a drainage area of 4,514-square-miles (USGS 2023a). West Point Dam controls about 82 percent of the inflow into the Bartletts Ferry Project. Tributary watersheds and the mainstem Chattahoochee River between West Point Dam and Bartletts Ferry Dam comprise about 18 percent of the drainage area upstream of the Bartletts Ferry Project (Southern Company Generation Hydro et al. 2012). Major tributaries to the Bartletts Ferry Reservoir include Flat Shoals Creek, House Creek, and Mountain Oak Creek in Georgia, and Osanippa Creek and Halawakee Creek in Alabama.

Georgia Power operates the Bartletts Ferry Project in a modified run-of-river mode for the generation of peaking power. Operation is limited by and subject to the receipt of flows from the USACE upstream West Point Dam, which operates as a peaking plant. Peaking at Bartletts Ferry often coincides with peaking at West Point. This operation lowers Lake Harding for several hours until the West Point peaking release arrives and refills the reservoir. Georgia Power normally operates Lake Harding between elevations 519- and 521-feet PD, with normal daily fluctuations near 0.75 feet (Southern Company Generation Hydro et al. 2012).

The Bartletts Ferry Project discharges directly into the upper end of Goat Rock Lake. There is no intervening or bypassed reach of river, and no instantaneous discharge requirement. Inflow and outflow at the Bartletts Ferry Project are approximately equal on a weekly basis. Although the powerhouses operate about 50 percent of the time, Georgia Power routinely releases water from the Bartletts Ferry Project over weekend periods to supplement flows and support the minimum flow requirements at the downstream Middle Chattahoochee Hydroelectric Project (FERC No. 2177) in Columbus, Georgia (Southern Company Generation Hydro et al. 2012).

Approximately 82 percent of the inflows to Bartletts Ferry are comprised of the USACE's West Point Dam discharges. The West Point Dam typically peaks Monday through Friday with only minimum flow (670 cfs, through their minimum flow unit) being released Saturday and Sunday, and Monday through Friday when not peaking. When peak generating, the USACE uses either 1 or 2 units. West Point Dam discharges 8,275 cfs and

15,875 cfs (including the minimum flow discharge) for generation with 1 and 2 generating units, respectively. The USACE generates during peak demand periods as scheduled by the Southeastern Power Administration (SEPA).

The drainage area of the Chattahoochee River at the West Point Dam is approximately 3,539 square miles and approximately 4,238 square miles at Bartletts Ferry Dam (USGS 2023b). Based on a proration of discharges measured at the Chattahoochee River at West Point gage (USGS Station No. 02339500; discharge area of 3,539-square-miles), estimated monthly average flows from 2008 to 2021 ranged from a monthly average of 4,070 cfs in August to 8,917 cfs in February (Table 6-1) (USGS 2023a, USGS 2023b).

Table 6-1 Prorated Mean Monthly Discharge at Bartletts Ferry Dam Based on 2008 – 2021 Data from USGS Station No. 02339500

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Discharge	8,367	8,917	8,522	7697	6,152	4,609	4,129	4,070	4,309	4,512	5,773	8,092

Source: USGS 2023a, USGS 2023b

The Bartletts Ferry Project lies within the state of Georgia's Middle Chattahoochee Water Planning Region (MCWPR). According to the MCWPR 2017 Regional Water Plan, water withdrawals in the basin are primarily used for public supply (12.39 million gallons per day [mgd]), irrigation (0.54 mgd), and livestock (0.18 mgd) (MCWPC 2017).

Surface water withdrawals supply the vast majority of water uses in the Bartletts Ferry Project vicinity. Two local governmental entities (the city of Opelika and Harris County Water Works) withdraw surface water from Lake Harding within the Bartletts Ferry Project boundary. The Water Utilities Board of the City of Opelika, Alabama is currently authorized to withdraw up to 42 mgd for municipal supply and the intake structure has a critical elevation of 505.84 feet PD. Harris County Water Works is permitted by Georgia EPD to withdraw a monthly average of 3 mgd for municipal supply and the intake structure has a critical elevation for the intake of 509.44 feet PD (Southern Company Generation Hydro et al. 2012).

Downstream of Bartletts Ferry Dam, four water supply intakes withdraw a total average flow of about 138.5 mgd for public supply and thermoelectric power generating purposes (Southern Company Generation Hydro et al. 2012).

6.1.2 Water Quality

Designated water uses are assigned by the state of Georgia to all surface waters. These classifications are determined to be the best utilization of the surface water from an environmental and economic standpoint. Georgia's use classification for Lake Harding is "Recreation" and "Drinking Water." The state of Alabama use classifications for the Chattahoochee River in Lake Harding are Fish and Wildlife (F&W) (for the segment upstream of Osanippa Creek), and Public Water Supply, Swimming and Other Whole Body Water-Contact Sports, and Fish and Wildlife (PWS/S/F&W) (for the segment downstream of Osanippa Creek) (Southern Company Generation Hydro et al. 2012).

Wastewater facilities in Atlanta, approximately 100 miles upstream of the Bartletts Ferry Project, treat over 400 mgd of wastewater, and discharges most of its treated wastewater into the Chattahoochee River Basin (CWI 2000). Wastewater discharges, sanitary and combined sewer overflows (CSOs), and urban non-point source runoff from Atlanta are the main sources of contaminant and nutrient loading in the Chattahoochee River (Frick et al. 1998; Couch et al. 1996; CWI 2000). Several municipal and industrial water users discharge treated wastewater to the Chattahoochee River in the vicinity of the Bartletts Ferry Project between West Point Dam and Columbus. None of these facilities discharge to Lake Harding within the Bartletts Ferry Project Boundary. Three facilities with a permitted capacity of about 50 mgd discharge treated wastewater to the Chattahoochee River several miles downstream of the Bartletts Ferry Project (Southern Company Generation Hydro et al. 2012).

Previous monthly vertical profile monitoring in Lake Harding indicated that the lower end of the reservoir is a warm monomictic lake typical of deeper southeastern reservoirs. Monthly water quality monitoring data indicated good overall water quality conditions in Lake Harding. DO concentrations recorded at a depth of 1 meter (m) , the depth at which Georgia DO criteria apply, varied seasonally between 4.6 milligrams per liter (mg/L) and 11.9 mg/L and averaged from 8.5 to 9.5 mg/L. Average DO values recorded to a depth of 2 m below the reservoir surface, encompassing the 1.5-m depth at which Alabama DO criteria apply, ranged similarly from 8.4 to 9.5 mg/L. With the exception of a single value of 3.1 mg/L recorded at the 2-m depth in the Osanippa Creek embayment, DO values to a depth of 2 m varied between 4.4 and 12.9 mg/L, higher than the instantaneous DO criterion of 4 mg/L for Georgia. Surface water temperatures measured ranged from 3.4ºC in winter to 32.9ºC in summer. Average surface water temperatures ranged from 18.6ºC in the Mountain Oak Creek embayment to 21.5ºC at the west dam forebay. A single August ambient temperature measurement in the west dam forebay (32.9ºC) was higher

than the Georgia and Alabama water temperature criterion of 32.2ºC (90ºF) (Southern Company Generation Hydro et al. 2012).

In accordance with License Article 403, Georgia Power installed stoplogs in front of Bartletts Ferry units 1 through 4 to physically raise the depth in the reservoir from which water is withdrawn for generation which resulted in improved DO in the tailrace. A 3-year tailrace monitoring study conducted from 2015 through 2017 demonstrated that tailrace DO meets the 4.0 milligram per liter (mg/L) instantaneous and 5.0 mg/L daily Georgia water quality standards for DO. The Bartletts Ferry Project's east powerhouse located on the eastern side of the river achieved the Georgia DO water quality standards without modifications.

6.2 Environmental Analysis

6.2.1 Water Quantity

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project minimum flow requirements in Columbus, Georgia. Supporting these requirements would continue to enhance water quantity in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend. Therefore, there are no anticipated impacts to water quantity at the Bartletts Ferry Project.

6.2.2 Water Quality

Georgia Power's proposed new turbine runners are aerating turbines manufactured by Voith. Voith developed a model to predict the instantaneous DO uptake capability of the proposed turbines. The model indicates that while one aerating unit is operating in the west powerhouse, there is an instantaneous uptake of 4.4 - 4.5 mg/L, when incoming DO is at a worst case of 2.5 mg/L and temperature is 31.5° C. The predictive instantaneous DO uptake would result in a minimum tailrace DO content of 6.9/7.0 when an aerating unit operates by itself. The model assessed the number of aerating units that would be needed to achieve Georgia's water quality standards for DO in a mixed operation scenario (aerating plus non aerating units) up to the full discharge capacity of the west powerhouse and found only two aerating units are needed in mixed flow.

Georgia Power is proposing to aerate units 1, 2, and 4, to provide one additional aerating unit as a back-up in case of outage. Once aerating turbines are operational, the stoplogs will be removed as the units will pull water from the original intake elevation. DO in the discharges from the new turbine runners in the west tailrace will be increased, when compared to discharges resulting from the existing DO enhancement resulting from DO stoplogs placement at the west powerhouse.

By design, the expected temperature change in the tailrace due to the upgraded turbine coolers will range from 0.1 to 0.2 degrees Fahrenheit depending on the time of the year.

The Amendment Application proposes a change to the existing DO enhancement measures at the Bartletts Ferry Project. The Dissolved Oxygen and Water Temperature Monitoring Plan (Appendix D) will demonstrate Georgia Power's ability to continue to comply with Georgia DO and temperature water quality standards following the unit upgrades at the compliance point which is located at the confluence of the east and west powerhouse tailraces. Georgia Power provided a copy of that plan and the draft Amendment Application to EPD and ADEM on May 3, 2022. EPD concurred with the plan and application on May 3, 2022. On May 6, 2022, ADEM requested to be included in any water quality monitoring reporting. Georgia Power will share the water quality results with ADEM.

Georgia Power requests amendment of Article 403 Tailrace Water Quality Enhancement and Article 404 Tailrace Water Quality Monitoring of the Bartletts Ferry Project license to implement the proposed Dissolved Oxygen and Water Temperature Monitoring Plan following the unit upgrades at the Bartletts Ferry west powerhouse. Documentation of consultation specific to the review of the draft Amendment Application and the Revised Proposed Action is provided in Appendix A and B.

Work associated with the replacement of the trashracks at the intake will occur behind stoplogs; no impacts are anticipated. Land disturbing activities associated with the Proposed Action are limited to a less than one-acre; therefore, the Proposed Action does not require a NPDES permit and is not anticipated to impact water quality in Lake Harding.

6.3 Protection, Mitigation, and Enhancement Measures

Georgia Power will continue to implement the Dissolved Oxygen and Water Temperature Monitoring Plan in accordance with the schedule agreed upon with Georgia EPD. In addition, Georgia Power will implement construction BMPs, which include vegetative measures and structural practices that control the erosion of soil and the resulting

sedimentation. Construction BMPs include silt fence and gravel topping, at minimum, and Georgia Power will follow the most up to date Georgia Soil and Water Conservation Commission Manual for Erosion and Sediment Control to address potential sedimentation and water turbidity.

6.4 Unavoidable Adverse Effects

Short-term unavoidable adverse impacts associated with minor grading include potential increase in erosion at the Work Areas. These impacts are temporary during construction periods and would not impact the Bartletts Ferry Project post-construction.

6.5 References

Clean Water Initiative (CWI). 2000. Final report of the Clean Water Initiative. A project of the Metro Atlanta Chamber of Commerce and the Regional Business Coalition, Inc. November 2000.

Couch, C. A., E. H. Hopkins, and P. S. Hardy. 1996. Influences of environmental settings on aquatic ecosystems in the Apalachicola-Chattahoochee-Flint River basin. U.S. Geological Survey National Water-Quality Assessment Program. Water-Resources Investigations Report 95-4278.

Frick, E. A., D. J. Hippe, G. R. Buell, C. A. Couch, E. H. Hopkins, D. J. Wangsness, and J. W. Garrett. 1998. Water quality in the Apalachicola-Chattahoochee-Flint River basin, Georgia, Alabama, and Florida, 1992-95. U.S. Geological Survey Circular 1164.

Middle Chattahoochee Water Planning Council (MCWPC). 2017. Middle Chattahoochee Regional Water Plan. Available online at: https://waterplanning.georgia.gov/water-planning-regions/middle-chattahoochee-water-planning-region/middle-chattahoochee-regional. Accessed January 2023.

Southern Company Generation Hydro Services, CH2MHILL, and Geosyntec Consultants. 2012. Bartletts Ferry Hydroelectric Project FERC Project Number 485. Volume 2 Public Exhibit E.

United States Geological Survey (USGS). 2023a. USGS Stream Stats. https://streamstats.usgs.gov/ss/. Accessed January 2023.

United States Geological Survey (USGS). 2023b. USGS 02339500 Chattahoochee River at West Point, GA. https://waterdata.usgs.gov/nwis/uv?02339500. Accessed January 2023.

7.0 FISH AND AQUATIC RESOURCES

7.1 Affected Environment

Lake Harding consists of 156 miles of shoreline and is relatively deep with bottom substrates composed of lacustrine sediments characterized by uniform, fine-textured materials. Impounded waters dominate aquatic habitats in the Bartletts Ferry Project vicinity and, therefore, the principal fisheries inhabiting the project waters are reservoir fisheries. Riverine flow characteristics and rocky substrates are limited mainly to the upstream end of the Bartletts Ferry Project in the Riverview shoals area (Southern Company Generation Hydro Services et al. 2012).

The Chattahoochee River and its tributaries in the vicinity of the Bartletts Ferry Project support about 63 species of fish in 15 families, mostly warm-water species of minnows, sunfishes, suckers, and catfishes. Ten of the species are believed to be non-native to the ACF basin. Georgia Power fishery surveys conducted in 2010 in Lake Harding, the Riverview shoals area at the upstream end of the Bartletts Ferry Project, the lower free flowing reaches of larger tributaries entering Lake Harding, and the Bartletts Ferry tailrace area reported the occurrence of 37 fish species (Southern Company Generation Hydro Services et al. 2012).

Georgia WRD and ADCNR have conducted standardized fishery surveys in Bartletts Ferry Reservoir since 1990. The surveys documented the occurrence of over 40 species of fish within the Bartletts Ferry Project Boundary. The principal sport fishes inhabiting Lake Harding include Largemouth Bass (*Micropterus salmoides*), Spotted Bass (*Micropterus punctulatus*), bluegill (*Lepomis macrochirus*), Redear Sunfish (*Lepomis microlophus*), striped bass (*Morone saxatilis*), hybrid striped bass-white bass (hybrid bass) (*Morone chrysops x M. saxatilis*), channel catfish (*Ictalurus punctatus*), black crappie (*Pomoxis nigromaculatus*), and a variety of sunfishes. The forage species gizzard shad also occurs in abundance in Lake Harding (Southern Company Generation Hydro Services et al. 2012).

Shoal bass is also a principal sport fish at the upper end of Lake Harding in the Riverview shoals area (Southern Company Generation Hydro Services et al. 2012). Shoal Bass are endemic to the ACF basin (Williams and Burgess 1999) and is a species of concern. One of the largest causes for concern is the loss of habitat to impoundments[13] (Williams and

[13] Under proceedings for the Langdale Project (P-2341) and Riverview Project (P-2350), Georgia Power is proposing to remove these projects to promote river restoration and enhance shoal bass habitat.

Burgess 1999), but other concerns are water quality, sedimentation, regulated flows, and cold water releases from Buford Dam (Williams and Burgess 1999); note that Buford Dam is in the upper ACF basin and does not directly affect the Bartletts Ferry Project.

GDNR manages the Striped Bass fishery in Lake Harding by stocking fingerlings in most years as part of a collaborative basin-wide program with ADCNR. The presence of striped bass in the reservoir prior to the stocking program indicates that striped bass stocked upstream in West Point Lake occasionally pass through the turbines at West Point Dam and move downstream (Southern Company Generation Hydro Services et al. 2012).

7.1.1 Freshwater Mussels and Benthic Macroinvertebrates

Georgia Power conducted surveys for freshwater mussels in Lake Harding and the lower reaches of the tributaries entering Lake Harding in 2009, and in the Bartletts Ferry tailrace in 2010 and Riverview shoals area in 2010 and 2020. The 2010 surveys documented 858 live mussels representing a total of six native species (none are federally listed). The invasive, exotic Asian clam (*Corbicula fluminea*) was the most abundant bivalve species observed at every location.

Live specimens of four native mussel species were found in shallow reservoir and tributary shoreline habitats within the Bartletts Ferry Project boundary around Lake Harding. The species included, in descending order of abundance, eastern floater (*Pyganodon cataracta*), paper pondshell (*Utterbackia imbecilis*), giant floater (*Pyganodon grandis*), and southern rainbow (*Villosa vibex*). In addition to the four native species found in the reservoir, one additional native mussel species, the Washboard (*Megalonaias nervosa*), was collected in the Bartletts Ferry tailrace in 2010.

In the upstream area of Lake Harding in the Riverview shoals, researchers collected two mussel species: Gulf spike (*Elliptio pullata*) (9 individuals) and southern rainbow (3 individuals), as well as the Asian clam, an invasive species. The Asian clam was observed throughout the surveyed area in quantities too numerous to count (Ecological Solutions 2020).

7.2 Environmental Analysis

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend

periods to support the downstream Middle Chattahoochee Project minimum flow requirements in Columbus, Georgia. Supporting these requirements would continue to enhance aquatic resources in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend.

As hydropower dams operate, some of the fish present in the reservoir are entrained or passed through the turbine. In most cases, these fish are passed into the river below unharmed; however, some may be injured or killed due to strikes from turbine blades or rapid pressure changes. The sizes of fish that could potentially be entrained at a hydropower project are determined by the width of the trashracks at the intake. Fish that are too large (i.e., wide) to fit through the trashracks are not susceptible to entrainment.

Georgia Power proposes to install new trashracks with a similar configuration to the existing trashracks. The existing trashracks are composed of 5/16-inch bars placed 4 and 5/16 inches on center and will be replaced with 3/8 inch bars placed 4 inches on center. The depth of trashracks will remain unchanged. Calculated approach velocities with the new trashracks installed are estimated to be 2.12 and 2.74 fps at best and full gate flows, respectively. Existing approach velocities, ranging from 2.64 to 3.5 fps, were field measured by divers in 2015 after the installation of stoplogs that were approved to be used as a DO enhancement measure. Although the clear spacing between bars decreases slightly with the new trashracks, they are estimated to result in a decrease of 0.52 – 0.56 fps compared to the existing trashracks' field measured velocities. The decreased approach velocities associated with the proposed trash racks would result in negligible changes in the potential for fish entrainment compared to existing conditions. Work associated with the replacement of the trashracks at the intake will occur behind stoplogs; no impacts are anticipated.

7.3 Protection, Mitigation, and Enhancement Measures

Georgia does not propose any PME measures for fish and aquatic resources.

7.4 Unavoidable Adverse Effects

The Proposed Action to replace the existing trashracks at the Bartletts Ferry Project would have no expected impact on fish or mussel populations and therefore no unavoidable adverse effects.

7.5 References

Ecological Solutions, Inc. 2020. Freshwater Mussel Survey Report -Langdale and Riverview Hydroelectric Projects, FERC Project Numbers 2341 and 2350.

Southern Company Generation Hydro Services, CH2MHILL, and Geosyntec Consultants. 2012. Bartletts Ferry Hydroelectric Project FERC Project Number 485. Volume 2 Public Exhibit E.

Williams, J. D., and G. H. Burgess. 1999. A new species of bass, Micropterus cataractae (Teleostei: Centrarchidae), from the Apalachicola River basin in Alabama, Florida, and Georgia. Bulletin of the Florida Museum of Natural History 42(2):80-114.

8.0 WILDLIFE AND TERRESTRIAL RESOURCES

8.1 Affected Environment

8.1.1 Wildlife Resources

The shorelines and adjoining mixed forests and wetlands of Lake Harding provide high-quality habitat for many wildlife species occurring in the Bartletts Ferry Project area. Common terrestrial mammals include gray squirrel (*Sciurus carolinensis*), white-tailed deer (*Odocoileus virginianus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), eastern cottontail (*Sylvilagus floridanus*), Virginia opossum (*Didelphis virginiana*), and coyote (*Canis latrans*). Beaver (*Castor canadensis),* muskrat (*Ondatra zibethicus*), and river otter (*Lontra canadensis*) inhabit wetlands and other aquatic habitats (Southern Company Generation Hydro Services et al. 2012).

Common reptile and amphibian species in the Bartletts Ferry Project area include marbled salamander (*Ambystoma opacum*), eastern (red-spotted) newt (*Notophthalmus viridescens*), spring peeper (*Pseudacris crucifer*), chorus frog (*Pseudacris spp.*), bullfrog (*Lithobates catesbeianus*), eastern leopard frog (*Lithobates pipiens*) southern cricket frog (*Acris gryllus*), snapping turtle (*Chelydra serpentina*), eastern box turtle (*Terrapene carolina carolina*), eastern fence lizard (*Sceloporus undulatus*), green anole (*Anolis carolinensis*), scarlet snake (*Lampropeltis elapsoides*), black rat snake (*Pantherophis obsoletus*), corn snake (*Pantherophis guttatus*), garter snake (*Thamnophis sirtalis*), eastern hognose snake (*Heterodon platirhinos*), copperhead (*Agkistrodon contortrix*), and canebrake rattlesnake (*Crotalus horridus*) (Southern Company Generation Hydro Services et al. 2012).

The bird community is likely diverse based on the diversity of aquatic, wetland, and upland terrestrial habitats within the Bartletts Ferry Project Vicinity, which is located along the flighway used by many neotropical migratory bird species. Of the approximately 100 bird species that use the habitat within the Bartletts Ferry Project Vicinity, some of the more common species include American crow (*Corvus brachyrhynchos*), northern cardinal (*Cardinalis cardinalis),* northern mockingbird (*Mimus polyglottos*), blue jay (*Cyanocitta cristata*), eastern towhee (*Pipilo erythrophthalmus*), chimney swift (*Chaetura pelagica*), Carolina wren (*Thryothorus ludovicianus*), mourning dove (*Zenaida macroura*), red-winged blackbird (*Agelaius phoeniceus*), wood thrush (*Hylocichla mustelina*), and tufted titmouse (*Baeolophus bicolor*). Several species of waterfowl and wading birds occur year-round, with Pied-billed grebe (*Podilymbus Podiceps*), Canada goose (*Branta canadensis*), mallard

(*Anas platyrhynchos*), and wood duck (*Aix sponsa*) commonly observed on Lake Harding. Great blue heron (*Ardea Herodias*) and great egret (*Ardea alba*) are commonly observed wading birds (Southern Company Generation Hydro Services et al. 2012).

8.1.2 Terrestrial Resources

Mixed pine/hardwood forest and pine forest dominate the vegetative cover (approximately 77 percent) of the Bartletts Ferry Project Area. The remaining is considered developed land (19 percent), grassland habitat (1 percent), and 3 percent is divided among hardwood forest (including oak communities), scrub-shrub habitat, rock outcrops, wetlands, and areas dominated by exotic invasive species (Southern Company Generation Hydro Services et al. 2012). The hardwood forest and mixed pine-hardwood forests at the Bartletts Ferry Project are dominated by white oak (*Quercus alba*), water oak (*Quercus nigra*), pignut hickory (*Carya glabra*), sweet gum (*Liquidambar styraciflua*), and red maple (*Acer rubrum*), with interspersed loblolly pine (*Pinus teada*). Pine plantations are not common within the Bartletts Ferry Project Boundary but are common 2,000 feet beyond. During a 2010 survey, Georgia Power observed a total of 260 plant species. Relatively common exotic invasive species include Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), mimosa tree (*Albizia julibrissin*), golden bamboo (*Phyllostachys aurea*), popcorn tree (*Triadica sebifera*), and Chinese wisteria (*Wisteria sinensis*) (Southern Company Generation Hydro Services et al. 2012). There were some potentially occurring federally listed plant species identified the USFWS ECOS IPaC report which are discussed in Section 9.

8.1.3 Wetlands

Plant surveys at the Bartletts Ferry Project identified 80 species of aquatic and wetland plants. Common aquatic species include alligator weed (*Alternanthera philoxeroides*), primrose willow (*Ludwigia peploides*), and parrot's feather (*Myriophyllum aquaticum*) (Southern Company Generation Hydro Services et al. 2012).

There are 6,664.5 acres of wetlands within a quarter-mile buffer of the Bartletts Ferry Project, including Lake and Riverine Designations (USFWS NWI 2023) (Table 8-1; Figure 8-1).

Table 8-1 Wetlands within a Quarter Mile Buffer of the Bartletts Ferry Project

Wetland Type	Acreage
Freshwater Emergent Wetland	53.88
Freshwater Forested/Shrub Wetland	826.66
Lake	5,590.65
Riverine	126.19
Freshwater Pond	47.12
Grand Total	6644.50

Source: USFWS NWI 2023

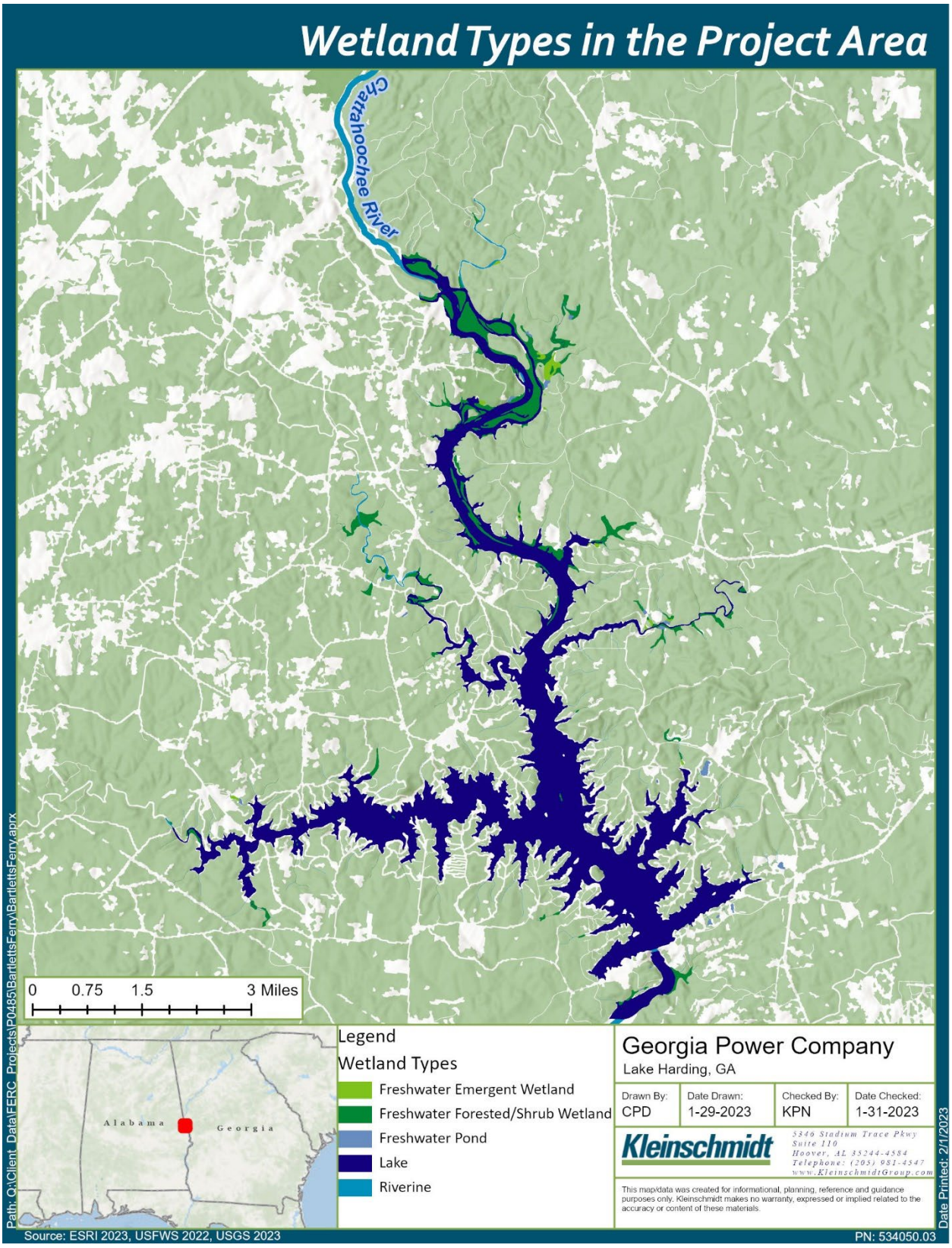

Figure 8-1 Wetlands within a Quarter Mile Buffer of Bartletts Ferry Project

8.2 Environmental Analysis

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project minimum flow requirements in Columbus, Georgia. Supporting these requirements would continue to enhance wildlife and terrestrial resources (including wetlands) in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend. Therefore, there are no anticipated impacts to wildlife, terrestrial, and wetland habitat related to the Proposed Action.

Impacts to wildlife and terrestrial resources at the Bartletts Ferry Project, if any, will be temporary, minimal, and limited to the construction associated with the Proposed Action. Work associated with the replacement of the trashracks at the intake will occur behind stoplogs; no impacts are anticipated. The Proposed Action involves temporary construction lay down and parking areas. Noise from the construction activities may temporarily displace wildlife using those areas, however, these areas are within a landscape of substantial human activity, so any impacts are expected to be minor and temporary. No wetlands are anticipated to be affected by the Proposed Action.

8.3 Protection, Mitigation, and Enhancement Measures

Any potential wetland areas would be avoided during the Proposed Action. There are no additional PME measures proposed for wildlife, terrestrial, or wetland resources.

8.4 Unavoidable Adverse Effects

No unavoidable adverse effects are anticipated as a result of implementing the Proposed Action.

8.5 References

Southern Company Generation Hydro Services, CH2MHILL, and Geosyntec Consultants. 2012. Bartletts Ferry Hydroelectric Project FERC Project Number 485. Volume 2 Public Exhibit E.

United States Fish and Wildlife Service (USFWS). 2023. National Wetlands Inventory (NWI), Online Wetlands Mapper. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/. USFWS, Washington D.C.

9.0 RARE, THREATENED, AND ENDANGERED SPECIES

9.1 Affected Environment

9.1.1 Threatened and Endangered Species

A USFWS Information Planning and Conservation (IPaC) report related to the Proposed Action at the Bartletts Ferry Project (Project Code: 2023-0047263 generated on February 20, 2023) listed 5 threatened, endangered, or candidate species potentially occurring in nearby areas Table 9-1 (Appendix C). There is no designated Critical Habitat for any species within the IPaC Action Area.

Table 9-1 Potentially occurring Federally Listed Species Near the Action Area

Common Name	Scientific Name	Status	Critical Habitat?
Reptiles			
Alligator Snapping Turtle	*Macrochelys temminckii*	Proposed Threatened	No
Insects			
Monarch Butterfly	*Danaus plexippus*	Candidate	No
Flowering Plants			
Fringed Campion	*Silene polypetala*	Endangered	No
Georgia Rockcress	*Arabis georgiana*	Threatened	Yes, but not in Action Area
Clams			
Purple Bankclimber (mussel)	*Elliptoideus sloatianus*	Threatened	Yes, but not in Action Area

Alligator Snapping Turtle (G3, S3 Alabama, S3 Georgia) occupies deep, slow-moving reaches of rivers and larger streams of the southeastern U.S.; individuals can live for several decades and commonly weigh in excess of 100 lbs. Populations declined in recent history primarily as a result of overharvest for the commercial soup industry; continuing threats include deliberate and incidental capture and habitat alteration. Recovery is likely hampered by a low reproductive rate. This species was proposed for listing as threatened in 2021; therefore, no targeted surveys were conducted during the previous relicensing process.

Purple Bankclimber (G2, S1 Alabama, S2 Georgia) is a relatively large mussel native to the Apalachicola-Chattahoochee-Flint and Ochlocknee river systems. Populations have declined drastically due to various factors affecting habitat and the species has not been

detected in the Chattahoochee River since a single specimen was observed below the Bartletts Ferry Dam in Goat Rock Lake in 2001. A study concluded that the single old specimen appeared to be a survivor of a remnant population following original impounding of the river and did not indicate the presence of a viable reproducing population (Zuiderveen et al., 2002). Subsequent surveys since 2001 in the Bartletts Ferry relicensing did not find additional specimens.

Monarch Butterfly (G4, S5 Alabama, S4 Georgia) has a complex life history involving an annual cycle of multiple short-lived generations and long-distance migration; most of the entire population winters on a few forested acres in Mexico. Though they are still found widespread across the country, numbers have dropped dramatically in recent years primarily from habitat loss. This species lays its eggs only on milkweeds; the foliage is consumed by the larvae and the assimilated toxins help provide protection from predators. Adults feed on nectar from a variety of flowering plants.

Fringed Campion (G2, S2 Georgia) is a highly endangered perennial herb found on stream slopes and terraces in mature hardwood forests on low-acid soils. Declines are attributed to habitat alteration and competition from exotic species. The species is no longer known to occur in Alabama, and the nearest Georgia record is several miles to the east in Crawford County, Georgia (Georgia DNR 2022).

Georgia Rockcress (G1, S1 Alabama, S1 Georgia) is a perennial herb that occurs on certain rocky bluffs in Georgia and Alabama. Populations appear to have declined because of habitat alteration and competition from exotic plants. The nearest known population occurs 3.3 miles downstream in Georgia near Goat Rock Dam; this area is designated as Critical Habitat.

9.1.2 USFWS Birds of Conservation Concern

There are five migratory Birds of Conservation Concern (BCC) potentially occurring in the Bartletts Ferry Project Area: Chimney Swift (*Chaetura* pelagica), Prairie Warbler (*Dendroica discolor*), Prothonotary Warbler (*Protonotaria citrea*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), and Wood Thrush (*Hylocichla mustelina*). Each of these species is designated as a BCC throughout its range in the United States (ECOS 2023).

The Bald Eagle (*Haliaeetus leucocephalus*) was also listed as a non-BCC designated bird but is protected under the Bald and Golden Protection Act (USFWS 2022). Georgia Power implements a Bald Eagle Management Plan under Article 408 of the Bartletts Ferry Project license. Once annually during the nesting season, Georgia Power surveys for the presence

of active bald eagle nests within the Bartletts Ferry Project boundary. Georgia DNR currently conducts aerial eagle nesting surveys of the area every two years. Survey results are provided to each organization. The nearest known eagle nest is 4,000 feet south of the west powerhouse and 2,900 feet southeast of the nearest laydown area (Work Area 1), putting it well beyond the area of potential disturbance (typically 660 feet) as defined by the National Bald Eagle Nest Management Guidelines (USFWS 2007).

9.2 Environmental Analysis

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. During May 2022 consultation, USFWS specified an interest in further consultation regarding a potential drawdown for the purposes of discussing potential impacts to Wood Stork. The revised Proposed Action does not include a drawdown and Georgia Power provided this information to USFWS. A new IPaC report was requested and as discussed in Section 1.1.1, the Wood Stork is no longer listed on the IPaC report.

The proposed laydown areas have a history of heavy disturbance and consist mostly of frequently mowed grass, improved driving and parking facilities, and roadside embankments. No suitable habitat for any of the potentially occurring federally listed plants occurs in the Action Area, therefore the Proposed Action will have no impact on listed Flowering Plants.

No specimens of Purple Bankclimber nor Alligator Snapping Turtle were found during previous field surveys and would not be expected to occur in the Action Area; therefore, the Proposed Action should have no impact on these aquatic species.

Monarch Butterfly habitat will not be impacted because the work occurs within the powerhouse, on the dam structure itself, and at the highly disturbed Work Areas. The Proposed Action will not affect milkweeds or foraging habitat. The powerhouse, dam, and highly disturbed Work Areas do not contain suitable forested nesting or foraging habitat for the Prothonotary Warbler, the Wood Thrush, or the Red-headed Woodpecker. Similarly, the Work Areas do not contain suitable open shrub habitat for the Prairie Warbler. Chimney swifts likely forage overhead but no roosting or nesting sites are known in the Action Area.

The nearest bald eagle nest is located 4,000 feet south of the west powerhouse and 2,900 feet southeast of the nearest Work Area and is not anticipated to be impacted by the Proposed Action. No impacts to nesting behavior or nest success are anticipated. Bald

eagles likely forage for fish, waterbirds, and carrion in the vicinity of the dam but food resources and availability would not likely be impacted by the Proposed Action because Bald eagles are accustomed to human and mechanical activity.

9.3 Protection, Mitigation, and Enhancement Measures

There are no additional PME measures proposed for Rare, Threatened, and Endangered species or for Birds of Conservation Concern.

9.4 Unavoidable Adverse Effects

There are no unavoidable adverse effects identified for rare, threatened, and endangered species.

9.5 References

Georgia Department of Natural Resources. 2022. Species Account for the Fringed Campion (*Silene polypetala*). Available online at: Georgiabiodiversity.org.

U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines.

U.S. Fish and Wildlife Service (USFWS). 2023. IPaC Report. Bartletts Ferry Project. Project Code: 2023-0047263 generated on February 20, 2023.

Zuiderveen, J.A. and R.C. Stringfellow. 2002. Survey for the Purple Bankclimber (*Elliptoideus sloatianus*) and other Native Mussels in the Upper Reach of the Goat Rock Impoundment. Prepared for Georgia Power Company by Columbus State University, Columbus, GA.

10.0 RECREATION RESOURCES

10.1 Affected Environment

There are numerous regional recreation facilities and opportunities within a one-hour drive (i.e., 60-mile radius) of the Bartletts Ferry Project, including 25 state parks, national forests, and wildlife management areas (WMAs). In addition, there are six other major hydropower developments that offer similar recreation opportunities. The Goat Rock, Oliver, and North Highlands developments of the Middle Chattahoochee Project are immediately downstream of the Bartletts Ferry Project. West Point Lake, located about 23 miles upstream of Bartletts Ferry Dam, provides 525 miles of shoreline for fishing, camping, boating, and other recreational activities. Other major lakes within an hour's drive of the Bartletts Ferry Project include Walter F. George Reservoir downstream of Columbus and Lake Martin, Yates Reservoir, and Thurlow Reservoir on the Tallapoosa River in Alabama to the northwest of the Bartletts Ferry Project (Southern Company Generation Hydro Services et al. 2012).

There are six Project recreation facilities that provide public access to Lake Harding: Blanton Creek Park and Idle Hour Park in Georgia, and Po Boy Landing, Halawakee Boat Access, Chattahoochee Valley Park, and Riverview Park in Alabama. Two private marinas also provide boating access to Lake Harding. In addition, Georgia Power's Sandy Point Access Area, located immediately downstream of the Bartletts Ferry Project provides boating access and trail access to the Bartletts Ferry tailrace area (Southern Company Generation Hydro Services et al. 2012).

10.2 Environmental Analysis

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project minimum flow requirements in Columbus, Georgia. Georgia. Supporting these requirements would continue to enhance recreation resources in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend. Recreation facilities at the Bartletts Ferry Project will be available during the Proposed Action and will not be impacted by the

proposed Work Areas. Therefore, there are no anticipated impacts to recreation resources related to the Proposed Action.

10.3 Protection, Mitigation, and Enhancement Measures

There are no PME measures associated with recreation resources.

10.4 Unavoidable Adverse Effects

Short-term unavoidable adverse impacts associated with the Proposed Action include potential undesirable views to recreation users around the Bartletts Ferry dam due to construction equipment and activity. These impacts are temporary during construction periods and would not impact the Bartletts Ferry Project post-construction.

10.5 References

Southern Company Generation Hydro Services, CH2MHILL, and Geosyntec Consultants. 2012. Bartletts Ferry Hydroelectric Project FERC Project Number 485. Volume 2 Public Exhibit E.

11.0 LAND USE AND AESTHETIC RESOURCES

11.1 Affected Environment

11.1.1 Land Use

The predominant land uses within the Bartletts Ferry Project Boundary (other than open water) are forest/undeveloped areas, pasture/grasslands, and wetlands with approximately 5 percent being used for low or high intensity urban areas. The majority of these higher intensity uses are located adjacent to the southern Bartletts Ferry Project shoreline, such as along Halawakee Creek in Alabama and the southeastern shoreline in Georgia (Southern Company Generation Hydro Services et al. 2012).

11.1.2 Aesthetic Resources

Public access points offer diverse views of the Lake Harding shorelines, and tailrace areas. Views at the Bartletts Ferry Project are generally of an undisturbed shoreline, surrounded by forested areas with interspersed residential development or recreational access locations. The southern shoreline of Lake Harding is more developed. Views along the lower portions of Lake Harding is considered medium density residential with large estates, small mobile homes, and private recreation-based businesses. Bartletts Ferry Dam and associated structures, including the steep, rocky tailrace channel, dominate the view below the dam. The narrow portions of the upper Lake Harding provide the most natural views of undeveloped forested shorelines, wetlands, and waters with visible current from upstream dam releases (Southern Company Generation Hydro Services et al. 2012).

11.2 Environmental Analysis

11.2.1 Land Use

There are no impacts to land use at the Bartletts Ferry Project as the lay down and parking areas are located on lands that are previously disturbed.

11.2.2 Aesthetic Resources

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project minimum flow

requirements in Columbus, Georgia. Georgia. Supporting these requirements would continue to enhance aesthetic resources in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend.

Because there is no proposed drawdown, views of the water levels on Lake Harding will not be affected by the Proposed Action. Effects on aesthetic resources will be temporary limited to minimal visual and auditory effects during construction associated with the Proposed Action.

11.3 Protection, Mitigation, and Enhancement Measures

Georgia Power does not propose any PME measures for land use or aesthetic resources.

11.4 Unavoidable Adverse Effects

Short-term unavoidable adverse impacts associated with the Proposed Action include an increase in noise and undesirable views around the Bartletts Ferry dam due to construction equipment and activity. These impacts are temporary during construction periods and would not impact the Bartletts Ferry Project post-construction.

11.5 References

Southern Company Generation Hydro Services, CH2MHILL, and Geosyntec Consultants. 2012. Bartletts Ferry Hydroelectric Project FERC Project Number 485. Volume 2 Public Exhibit E.

12.0 CULTURAL (HISTORIC AND ARCHAEOLOGICAL) RESOURCES

12.1 Affected Environment

Georgia Power conducted two archaeological surveys at the Bartletts Ferry Project in 1984 during the drawdown for construction of the east powerhouse. Of the 152 sites recorded in 1984, none were recommended eligible for listing on the National Register of Historic Places (NRHP). Phase 1 archaeological surveys were performed in selected shoreline and upland areas in 2009 and 2010 and identified 14 new sites, 1 previously identified site, and 8 isolated finds. Two of these sites were recommended potentially eligible for NRHP-listing.

The Bartletts Ferry Project was completed in 1926 and consists of two powerhouses, dam, dikes, spillways, fifteen support buildings, a flood control weir, and a 5,850-acre reservoir (Lake Harding). During the relicensing process for the current license, the facility was determined eligible for listing on the NRHP as a historic district under Criterion A at the state level for its association with broad patterns of local and state history. It was also determined eligible for the NRHP under Criterion C because of its distinctive construction characteristics. The second powerhouse (east powerhouse), new intake, dike, and flood control weir (all constructed after 1980) were not considered character-defining features but would require reevaluation once they reach 50 years of age. The Bartletts Ferry dam and original powerhouse (west powerhouse) were also determined individually eligible under Criteria A and C. The character-defining features of the original powerhouse include the overall form of the powerhouse and specific elements such as window fenestration, as well the generating units.

FERC executed a Programmatic Agreement (PA) (in accordance with License Article 412) with the Georgia SHPO and the Alabama SHPO, and invited Georgia Power, the Alabama-Coushatta Tribe of Texas, the Alabama-Quassarte Tribal Town, the Kialegee Tribal Town, the United Keetoowah Band of Cherokee Indians in Oklahoma, and the Muscogee (Creek) Nation to concur with the stipulations of the PA; Georgia Power concurred. The PA and License Article 412 requires the licensee to implement the Historic Properties Management Plan (HPMP) filed on September 18, 2012.

In accordance with the PA and HPMP, Georgia Power provides annual cultural resources monitoring reports for the Bartletts Ferry Project. The 2022 Cultural Resources Monitoring

report for the Bartletts Ferry Project was filed with FERC on December 28, 2022[14] and is summarized in Table 12-1.

[14] Accession No. 20221228-5199

Table 12-1 Bartletts Ferry Project Annual Cultural Resources Monitoring – 2022

Site	Description	National Register Status	Land Use	Current Condition	Recommendation
9HS461	Prehistoric occupation	Potentially Eligible	Unimproved forest	Undisturbed	Continue monitoring
9HS460	Prehistoric occupation	Potentially Eligible	Unimproved forest	Undisturbed	Continue monitoring

12.2 Environmental Analysis

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project minimum flow requirements in Columbus, Georgia. Georgia. Supporting these requirements would continue to protect cultural resources in the Chattahoochee River downstream by maintaining adequate flow regimes and moderating fluctuations of Middle Chattahoochee reservoirs over the weekend. With the absence of a reservoir drawdown, additional shoreline would not be exposed compared to baseline conditions, reducing the potential for cultural resources to be exposed, and potentially looted. The two potentially eligible cultural resources that are currently being monitored are located in the upper reaches of Lake Harding and will not be affected by construction activities related to the Proposed Action. Therefore, there are no anticipated adverse impacts to cultural resources.

The areas selected for parking and materials laydown are located in previously disturbed areas. The Work Areas have been previously investigated, but no historic properties were identified. On April 26, 2022, a Georgia Power cultural resource specialist visited the proposed Work Areas and identified no cultural materials above the surface. Exposed subsoil at the surface and limited subsurface testing also identified no cultural materials and confirmed that the Work Areas were previously disturbed. Additionally, the Proposed Action does not include subsurface disturbance; therefore, there is no potential to affect cultural resources.

The Proposed Action includes upgrading the four generating units in the NRHP-eligible west powerhouse by replacing the turbine runners, generators, and intake trashracks. Georgia Power consulted with the Georgia Department of Community Affairs – Historic Preservation Division (HPD) and Alabama Historical Commission (AHC) regarding the upgrade and maintenance activities. By letters dated April 5 and 7, 2022, the AHC and HPD, respectively, concurred that there will be an unavoidable adverse effect to historic properties within the Project's area of potential effect (APE), as defined in 36 CFR § 800.5(d)(1). Both agencies recommended that mitigation include development of a Level II Historic American Engineering Record (HAER) documentation and the installation of interpretative signage to educate the public about the history of the Project, both of which would are included in a memorandum of agreement (MOA) under Section 106

consultation. Georgia Power provided HPD and AHC with the draft MOA on April 19, 2022, and Georgia Power filed the draft MOA with FERC (after the 30-day agency comment period concluded) on May 23 2022[15]. As of the date of this APEA, that draft MOA is still under review by FERC.

12.3 Protection, Mitigation, and Enhancement Measures

Georgia Power will implement the stipulations of the MOA once approved by FERC to protect, mitigate and enhance cultural resources at the Bartletts Ferry Project.

12.4 Unavoidable Adverse Effects

By letters dated April 5 and 7, 2022, the AHC and HPD, respectively, concurred that there will be an unavoidable adverse effect to historic properties within the Bartletts Ferry Project's area of potential effect (APE), as defined in 36 C.F.R § 800.5(d)(1). As discussed above, the mitigation for these adverse effects are stipulated in the May 23, 2022 MOA.

12.5 References

Southern Company Generation Hydro Services, CH2MHILL, and Geosyntec Consultants. 2012. Bartletts Ferry Hydroelectric Project FERC Project Number 485. Volume 2 Public Exhibit E.

[15] Accession No. 20220523-5069

13.0 SOCIOECONOMIC RESOURCES

13.1 Affected Environment

Located on the border between Alabama and Georgia, the Bartletts Ferry Project is located in Harris County, Georgia, and Lee and Chambers Counties, Alabama. Ladonia and Phenix City, Alabama and Columbus, Georgia are within 20-miles of the Bartletts Ferry Dam. The following is a summary of socioeconomic data for these three counties and three nearby cities (including population patterns, average household income, and employment sectors).

Based on the April 1, 2020 census, the estimated population of Lee County, Alabama was 140,247, representing a 24.2 percent increase from the April 1, 2010 census (U.S. Census Bureau 2022). The estimated population of Chambers County, Alabama was 34,772, representing a 1.6 percent increase from the April 1, 2010 census. The estimated population of Harris County, Georgia, was 34,668, representing an 8.3 percent increase from the April 1, 2010 census (U.S. Census Bureau 2022). Table 13-1 summarizes the population estimates for these three counties and for the states of Alabama and Georgia as reported in the 2010 and 2020 U.S. Census, as estimated by the U.S. Census Bureau for 2021.

Table 13-1 Estimated Population of Lee and Chambers Counties, Alabama and Harris County, Georgia and the States of Alabama and Georgia

County/ State	2010 Census	2020 Census	Percent Change 2010-2020	2021 Estimates	Percent Change 2020-2021
Lee County, AL	140,247	174,241	24.2%	177,218	1.7%
Chambers County, AL	34,215	34,772	1.6%	34,541	-0.7%
Harris County, GA	32,024	34,668	8.3%	35,626	2.8%
Alabama	4,779,736	5,024,279	5.1%	5,039,877	0.3%
Georgia	9,687,653	10,711,908	10.6%	10,788,029	0.7%

Source: U.S. Census Bureau 2022

Lee County, Alabama is approximately 607.54-square-miles, Chambers County, Alabama is approximately 596.56-square-miles, and Harris County, Georgia is approximately

463.80-square-miles. Based on population estimates for 2020, Lee County, Alabama had a population density of 286.8 people per square-mile, which was higher than the state average density of 99.2 people per square-mile. Chambers County, Alabama had a population density of 58.3 people per square-mile, which was lower than the state average density. The population density for Harris County, Georgia was 74.7 people per square-mile, lower than the state average of 185.6 people per square-mile (U.S. Census Bureau 2022).

The 2017-2021 estimated median household income for Lee County, Alabama, Chambers County, Alabama, and Harris County, Georgia was $57,191, $47,232, and $82,244, respectively. The 2021 poverty rate was 18.0 percent in Lee County and 19.7 percent in Chambers County, compared to 16.1 percent in Alabama. The poverty rate was 8.2 percent in Harris County, compared to 14.0 percent in Georgia (U.S. Census Bureau 2022). Table 13-2 provides the household and family distribution and income for Lee and Chambers Counties, Alabama and Harris County, Georgia.

Table 13-2 Household Incomes and Distributions for Lee and Chambers Counties, Alabama and Harris County, Georgia

	Lee County, Alabama	Chambers County, Alabama	Harris County, Georgia
2017-2021 Households	63,122[1]	13,123[1]	12,194[1]
2017-2021 Approximate Number of Persons per Household	2.63[1]	2.61[1]	2.77[1]
2017-2021 Percentage of Population in Civilian Labor Force	59.4%[1]	56.3%[1]	60.1%[1]
2017-2021 Median Household Income	$57,191[1]	$47,232[1]	$82,244[1]
2021 Population Below Poverty Level	18.0%[1]	19.7%[1]	8.2%[1]
December 2022 Unemployment Rate	2.0%[2]	2.3%[3]	2.4%[4]

Source: U.S. Census Bureau 2022[1]; FRED 2023a[2]; FRED 2023b[3]; FRED 2023c[4]

Three cities near the Bartletts Ferry Project were reviewed for socioeconomic data, including Ladonia and Phenix City, Alabama, and Columbus, Georgia (Table 13-3).

Table 13-3 2020 Population Statistics for Cities Near the Bartletts Ferry Project

	Ladonia, AL[1]	Phenix City, AL[2]	Columbus, GA[3]
Population	3,609	36,461	195,418
Population increase/decrease (from 2019 to 2020)	6.43%	-0.2%	-0.16%
Median Household Income	$39,569	$41,842	$47,418
Poverty Rate	26.1%	24.7%	20%

Source: Data USA 2020a[1]; 2020b[2]; 2020c[3]

Table 13-4 provides data on employment industry distribution in Ladonia and Phenix City, Alabama and Columbus, Georgia. In Ladonia, Alabama, the largest industries are accommodation and food services, construction, and health care and social assistance (Data USA 2020a). In Phenix City, Alabama, the largest industries are retail trade, health care and social assistance, and manufacturing (Data USA 2020b). The largest industries in Columbus, Georgia are health care and social assistance, retail trade, and accommodation and food service (Data USA 2020c).

Table 13-4 2020 Employment Statistics for Cities Near the Bartletts Ferry Project

	Ladonia, AL[1]	Phenix City, AL[2]	Columbus, GA[3]
Public Administration	1.36%	6.67%	6.23%
Manufacturing	7.1%	13.1%	9.8%
Retail Trade	10%	15.5%	11.6%
Healthcare and Social Assistance	15.7%	15.4%	14.4%
Educational Services	5.23%	6.76%	9.43%
Construction	16.1%	4.79%	4.58%
Transportation and Warehousing	1.79%	4.0%	3.94%
Administration Support and Waste Management Services	5.38%	4.53%	4.35%
Other Services, Except Public Administration	14.8%	2.71%	4.5%
Accommodation and Food Services	17.3%	8.36%	9.97%

Source: Data USA 2020a[1]; 2020b[2]; 2020c[3]

13.2 Environmental Analysis

The Proposed Action does not require a drawdown of Lake Harding; therefore, Georgia Power will continue operating the Bartletts Ferry Project under the current license

conditions described in Section 2.1.1. The Proposed Action will not interfere with Georgia Power's ability to operate the Bartletts Ferry Project to supplement flows over weekend periods to support the downstream Middle Chattahoochee Project minimum flow requirements in Columbus, Georgia. Georgia. Therefore, there are no anticipated impacts to socioeconomic resources.

13.3 Protection, Mitigation, and Enhancement Measures

Georgia Power does not propose any PME measures for socioeconomic resources.

13.4 Unavoidable Adverse Effects

There are no unavoidable adverse effects identified for socioeconomic resources.

13.5 References

Data USA. 2020a. Ladonia, AL. Available online at: https://datausa.io/profile/geo/ladonia-al/. Accessed February 2023.

Data USA. 2020b. Phenix City, AL. Available online at: https://datausa.io/profile/geo/phenix-city-al/. Accessed February 2023.

Data USA. 2020c. Columbus, GA. Available online at: https://datausa.io/profile/geo/columbus-ga. Accessed February 2023.

FRED Economic Research (FRED). 2023a. Unemployment Rate in Lee County, AL. Available online at: https://fred.stlouisfed.org/series/ALLEEC5URN. Accessed February 2023.

FRED Economic Research (FRED). 2023b. Unemployment Rate in Chambers County, AL. Available online at: https://fred.stlouisfed.org/series/ALCHAM7URN. Accessed February 2023.

FRED Economic Research (FRED). 2023c. Unemployment Rate in Harris County, GA. Available online at: https://fred.stlouisfed.org/series/GAHARR5URN. Accessed February 2023.

U.S. Census Bureau. 2021. QuickFacts for Georgia; Alabama; Harris County, Georgia; Chambers County; Lee County, Alabama. Available online at: https://www.census.gov/quickfacts/fact/table/GA,AL,harriscountygeorgia,chamberscountyalabama,leecountyalabama/PST045222. Accessed January 2023.

APPENDIX A

CONSULTATION ON AMENDMENT APPLICATION (2022)

U.S. Fish and Wildlife Service

From: Bauer, Eric F
To: O"Rouke, Patrick Michael
Cc: Crabbe, Melissa C.
Subject: Re: [EXTERNAL] Bartlett"s Ferry Modernization Consultation
Date: Tuesday, March 1, 2022 12:18:46 PM
Attachments: image001.png
image002.png
image003.png

Patrick,

Thanks for this additional information. We don't have any additional concerns besides those previously discussed in the meeting:

1) having an operation plan to improve DO below the dam by stipulating when the non-aerated unit would be used (i.e. it shouldn't be the lone unit in operation unless there's an emergency of some sort). Although current operations meet GA water quality standards improving DO when possible would benefit all aquatic species.

2) if a draw down is required for work, that drawdown should proceed at a rate that allows mussels to track the receding water line and avoid impacting spawning beds of centrarchids (I assume this latter issue is something y'all typically consider in similar situations).

Based on the information provided we don't anticipate negative impacts to water temperature and the new approach velocities should decrease risk of entrainment of fishes.

-Eric

Eric F. Bauer, PhD
(he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
US Fish and Wildlife Service
RG Stephens, Jr. Federal Building
355 East Hancock Avenue, Room 320, Box 7
Athens, GA 30601
Office #: 706-613-9493

Direct Line: 706-208-7519
Teams: eric_bauer@fws.gov (preferred)

From: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Sent: Friday, February 18, 2022 8:06 AM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Subject: RE: [EXTERNAL] Bartlett's Ferry Modernization Consultation

Eric, thank you for meeting with us on Wednesday. I've attached the briefing documents we referenced in our discussion as well as a summary of our call that will be filed with FERC. Also, below is some additional information about operations that Melissa pulled together for us regarding unit operations. Let me or Melissa know if you have any additional questions.

Patrick

Georgia Power filed an Operations Primer with FERC at the beginning of the Bartletts Ferry Relicensing. The operations primer contains summary analyses describing how the plant is operated and I am pulling from that document to answer your question on the frequency that we currently run all four units at Bartletts Ferry west powerhouse. Table 2 of the operations primer is provided below showing that the maximum hydraulic capacity of the plant is 24,200 cfs. The average annual inflow is 6,120 cfs. Figure 3 of the operations primer copied below shows an example of a medium inflow week with inflows near the average. This is an example of typical operations. As a modified run-of-river operation, inflows are stored in Lake Harding and then discharged from the plant through the units during the daily peak demand period. During this average scenario in Figure 3, Bartletts Ferry's peaking operations involved an outflow of around 14,000 cfs – 16,000 cfs (see the yellow line on the Figure 3 graph below). Looking at some recent operation records, it looks like the plant has been generating with Units 5 and 6, in the east powerhouse and either 1 or 2 units in the west powerhouse to pass a 14,000 – 16,000 cfs discharge. (Note, this sequence is a trend and not a requirement of any sort.) Figure 21 shows a 7 day average inflow/outflow for Bartletts Ferry. The fourth unit in the west powerhouse would likely be the last unit to be brought online. Around 95% of the time, flows are less than conditions that would warrant the use of that final west powerhouse unit. I am happy to discuss these graphs further with Dr. Bauer or he may also review the full version of the Operations Primer in Appendix D of the Bartletts Ferry PAD here: https://elibrary.ferc.gov/eLibrary/docinfo?accession_number=20090506-5112 [gcc02.safelinks.protection.outlook.com]

Table 2
Data on Bartletts Ferry Turbines

UNIT	Nameplate Capacity MW	Maximum Hydraulic Capacity CFS	Commercial Operation Date
1	15	2,330	1926
2	15	2,330	1926
3	15	2,260	1928
4	20	2,880	1951
5	54	7,200	1985
6	54	7,200	1985

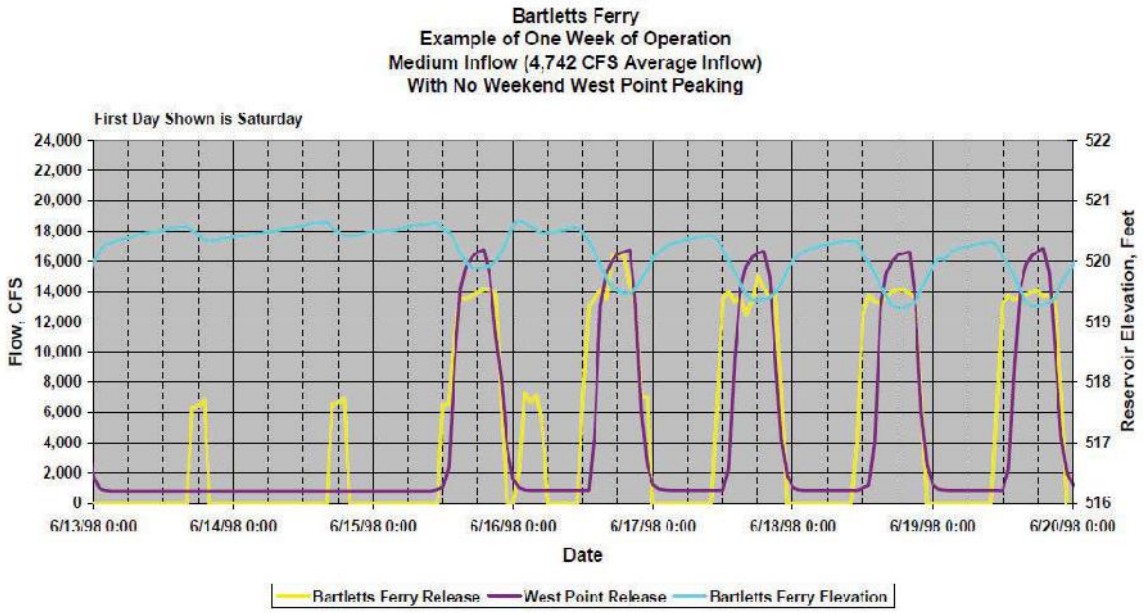

FIGURE 3

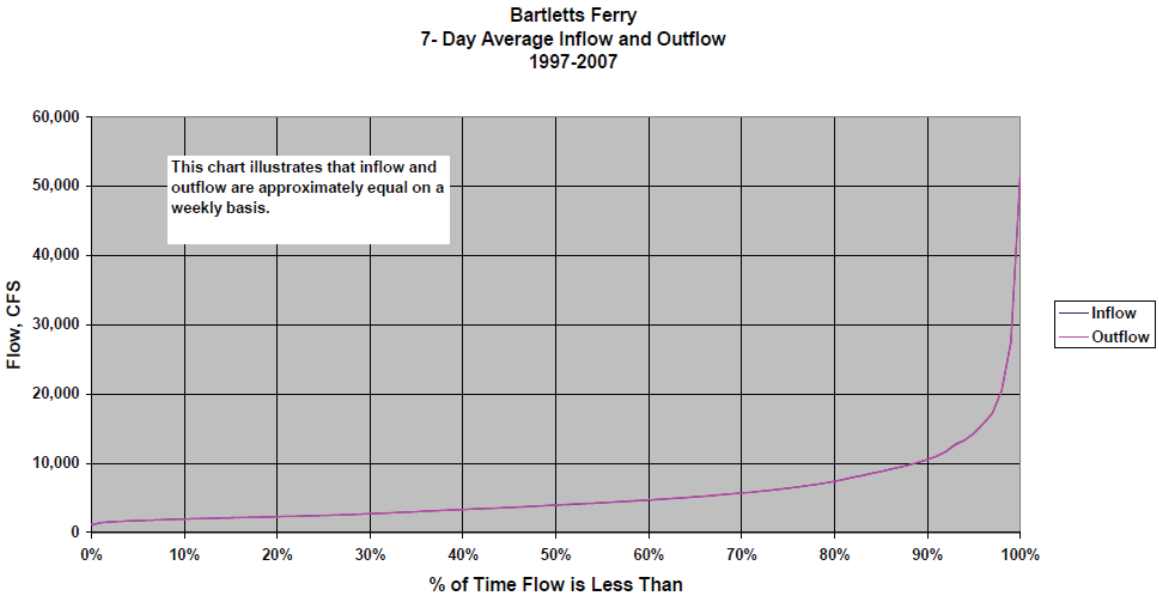

FIGURE 21

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Monday, February 14, 2022 8:05 AM
To: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Cc: Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: Re: [EXTERNAL] Bartlett's Ferry Modernization Consultation

Good morning Patrick,

I'm free all day this Wednesday but otherwise my schedule is pretty full this week. Just let me know what time you want to meet, if Wednesday works. And I have more open spots Tues-Thurs next week as well if Wednesday doesn't work.

-Eric

Eric F. Bauer, PhD
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From: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Sent: Friday, February 11, 2022 4:39 PM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: [EXTERNAL] Bartlett's Ferry Modernization Consultation

Eric, thank you for your response on the initial Goat Rock modernization consultation. We're also going to be doing a modernization project at Bartlett's Ferry, and that one is a little more involved, so we'd like to jump on a Teams call with you to discuss the project. Can you let me know if you've got some time in the next couple of weeks to set up a call? I'm fairly open except for next Friday (2/18).

Thanks, and I look forward to talking with you soon.

Patrick

Patrick O'Rouke
Fisheries Biologist
Georgia Power

pmorouke@southernco.com
241 Ralph McGill Blvd.
Atlanta, GA 30308
(404) 506-5025 (Office)
(470) 426-5322 (Cell)

Crabbe, Melissa C.

From: O'Rouke, Patrick Michael
Sent: Friday, February 18, 2022 8:07 AM
To: Bauer, Eric F
Cc: Crabbe, Melissa C.
Subject: RE: [EXTERNAL] Bartlett's Ferry Modernization Consultation
Attachments: 2022 02 16 USFWS Bartletts Ferry Consult Form.pdf; Agency Brief Bartletts Ferry Unit UpgradesFinal.pdf; BF Powerhouse and spillway layout.pdf; Chattahoochee River Map.pdf

Eric, thank you for meeting with us on Wednesday. I've attached the briefing documents we referenced in our discussion as well as a summary of our call that will be filed with FERC. Also, below is some additional information about operations that Melissa pulled together for us regarding unit operations. Let me or Melissa know if you have any additional questions.

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Georgia Power filed an Operations Primer with FERC at the beginning of the Bartletts Ferry Relicensing. The operations primer contains summary analyses describing how the plant is operated and I am pulling from that document to answer your question on the frequency that we currently run all four units at Bartletts Ferry west powerhouse. Table 2 of the operations primer is provided below showing that the maximum hydraulic capacity of the plant is 24,200 cfs. The average annual inflow is 6,120 cfs. Figure 3 of the operations primer copied below shows an example of a medium inflow week with inflows near the average. This is an example of typical operations. As a modified run-of-river operation, inflows are stored in Lake Harding and then discharged from the plant through the units during the daily peak demand period. During this average scenario in Figure 3, Bartletts Ferry's peaking operations involved an outflow of around 14,000 cfs – 16,000 cfs (see the yellow line on the Figure 3 graph below). Looking at some recent operation records, it looks like the plant has been generating with Units 5 and 6, in the east powerhouse and either 1 or 2 units in the west powerhouse to pass a 14,000 – 16,000 cfs discharge. (Note, this sequence is a trend and not a requirement of any sort.) Figure 21 shows a 7 day average inflow/outflow for Bartletts Ferry. The fourth unit in the west powerhouse would likely be the last unit to be brought online. Around 95% of the time, flows are less than conditions that would warrant the use of that final west powerhouse unit. I am happy to discuss these graphs further with Dr. Bauer or he may also review the full version of the Operations Primer in Appendix D of the Bartletts Ferry PAD here: https://elibrary.ferc.gov/eLibrary/docinfo?accession_number=20090506-5112

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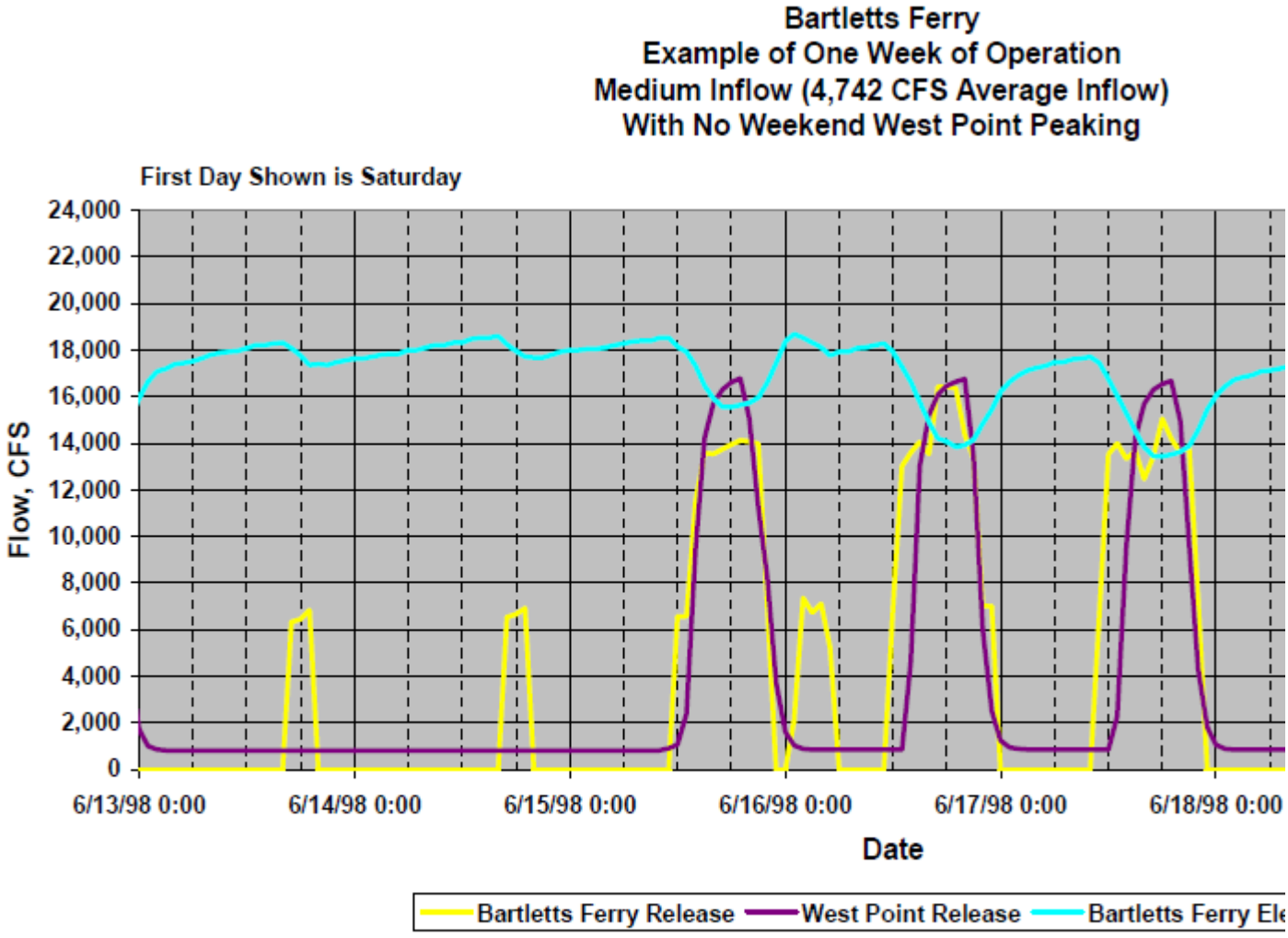

FIGURE 3

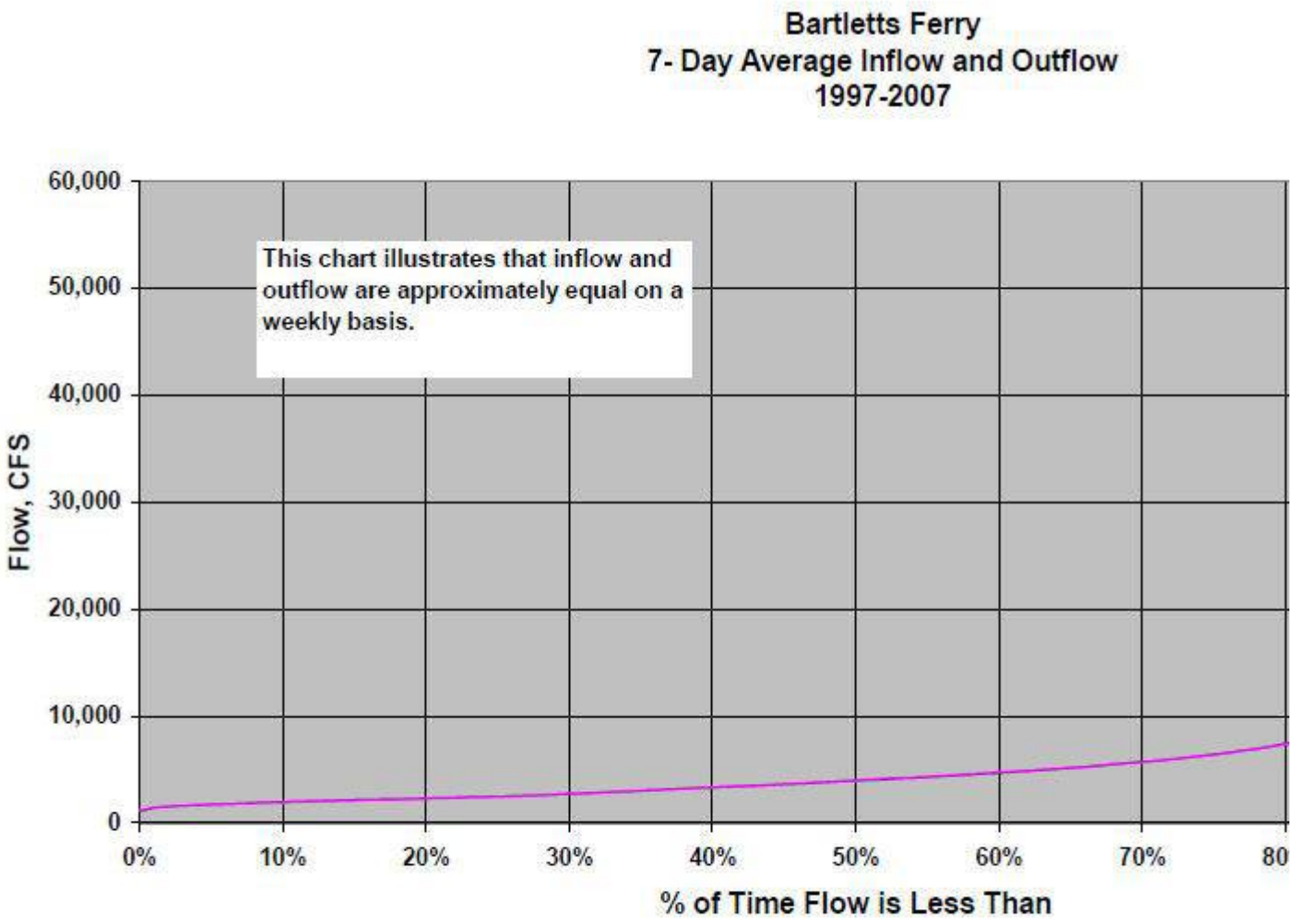

FIGURE 21

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Sent: Monday, February 14, 2022 8:05 AM
To: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Cc: Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: Re: [EXTERNAL] Bartlett's Ferry Modernization Consultation

---

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-Eric

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Thanks, and I look forward to talking with you soon.

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Georgia Power

Bartletts Ferry Hydroelectric Project

FERC Project #485

Communication Date: February 16, 2022

Communication Type: Teams Web-Meeting/Phone

List and attach pertinent written correspondence:

Map of Dams/River

Aerial View of Bartletts Ferry Project Operations Area

Agency Briefing Card

List persons attending from Southern Company/Georgia Power:

Southern Company: Melissa Crabbe, P.E. and Laurie Munn, P.E.

Georgia Power Company (Georgia Power): Patrick O'Rouke and Tony Dodd

List organization name and persons attending from other organization:

U.S. Fish and Wildlife Service - Dr. Eric Bauer,

Subject: Consultation on the Modernization of the Bartletts Ferry Powerhouse

Comments/Discussions/Requests:

Consultation occurred via Teams virtual meeting on February 16, 2022, follow up occurred on February 17, 2022.

February 16, 2022 Consultation

On February 16, 2022, Southern Company/Georgia Power met via Teams and phone with Dr. Eric Bauer of the U.S. Fish and Wildlife Service and discussed the upgrades that Georgia Power has planned for the Bartletts Ferry West Powerhouse. The following items were discussed during the meeting:

- Overview of project location
- Overview of the Bartlett/s Ferry Project facilities
- Overview of the briefing card detailing resource agency points of interest for the proposed modernization of Bartletts Ferry Powerhouse
- USFWS questioned if Georgia Power would include in its license amendment proposal, an operating procedure for sequencing generating units to successfully utilize the aerating units to meet dissolved oxygen standards.
- USFWS questioned how frequently Georgia Power operates all 4 units in the western powerhouse.
    - Georgia Power will look through the project operation analyses that were filed with FERC during its 2009-2014 Bartlett's Ferry relicensing. Additional information will be provided to USFWS.
- Georgia Power is looking to obtain early pre-filing comments from resource agencies prior to filing the amendment application.

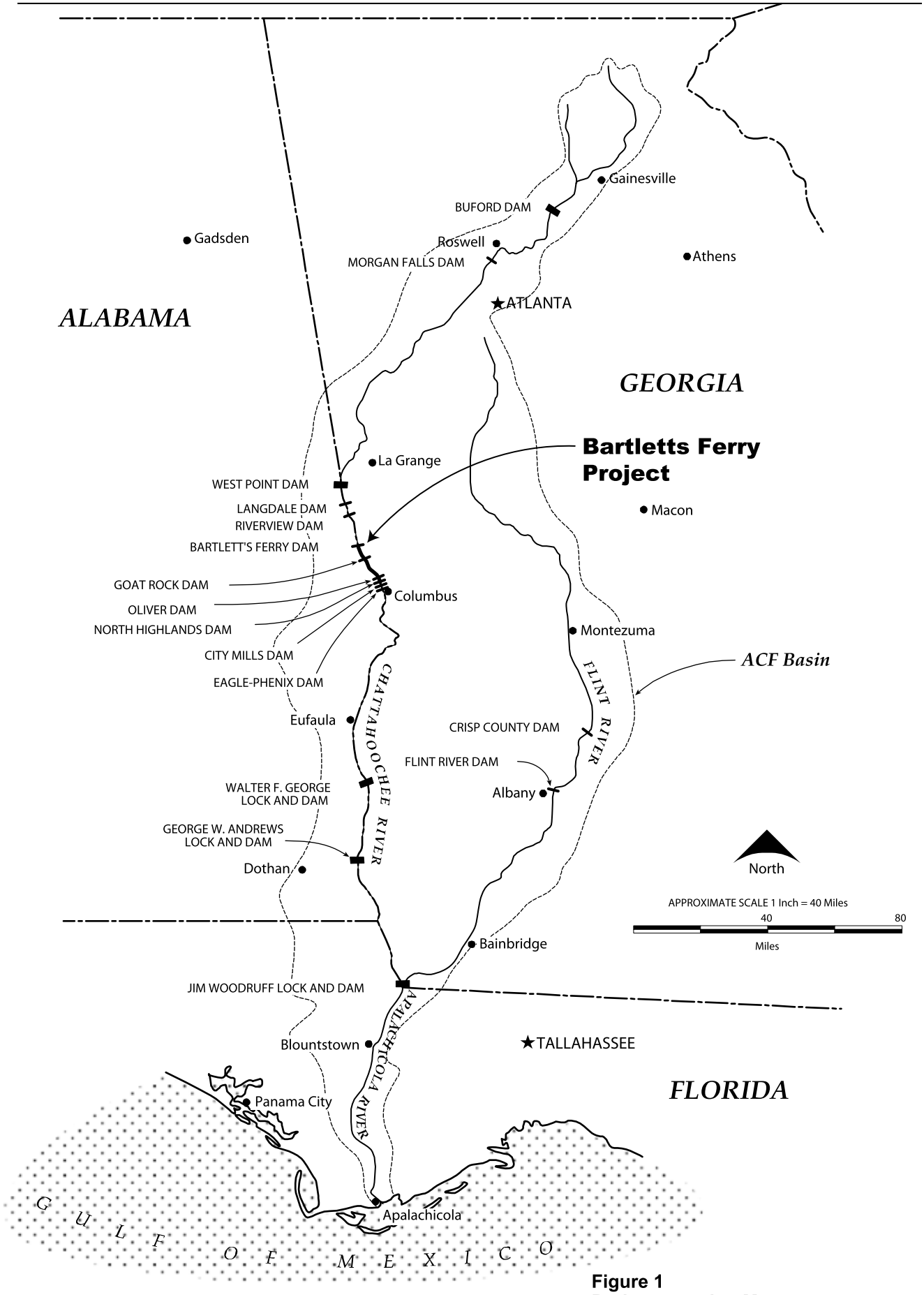

Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

CH2MHILL

Georgia Power

Bartletts Ferry Project (FERC No. 485) License Amendment
Bartletts Ferry Modernization

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- Following the upgrade, Georgia Power will operate the Bartletts Ferry powerhouse with no change to existing lake levels at Lake Harding.

- Upon issuance of the current FERC license (Issued December 22, 2014), Georgia Power installed stoplogs in front of Bartletts Ferry Units 1-4 to physically raise the depth in the reservoir from which water is taken for generation, resulting in improved dissolved oxygen (DO) in the tailrace. This was proposed by Georgia Power during FERC relicensing and on July 28, 2014 Georgia EPD issued a Water Quality Certificate requiring the proposal. The 3-year monitoring study demonstrated that the stoplog installation resulted in improved DO that meets the 4.0 mg/L instantaneous and the 5.0 mg/L daily state water quality standards. The second powerhouse at Bartletts Ferry located on the eastern side of the river achieved water quality standards without modifications because that intake is set higher in the water column.

- New turbine runners proposed for this modernization are aerating turbines manufactured by Voith. Voith modeling indicates that while operating there is an instantaneous uptake of 4.4-4.5 mg/L resulting in tailrace of 6.9/7.0 when the unit operates by itself and that only two aerating units are needed in mixed flow (aerating + non aerating) to achieve water quality standards. Georgia Power is proposing to aerate Units 1,2, and 4, so that

- operators always have two aerating units to operate with two non-aerating units to achieve water quality standards, and then one additional aerating turbine as a back-up in case of outage.

- It is possible that a lake drawdown may be needed during the construction period of the modernization project. If so, Georgia Power will consult with the Georgia Department of Natural Resources, the Alabama Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service as required by Article 401 of the Bartletts Ferry license.

- Approach velocities expected with new trashracks are estimated to be 2.12 and 2.74 foot per second (ft/s) at best and full gate flows, respectively. Existing approach velocities are 2.64 to 3.5 ft/s. This is a decrease of 0.52 – 0.56 ft/s with the existing trashracks. The existing trashracks will be replaced with a similar configuration. The existing 5/16 inch bars with 4 inch spacing will be replaced with 3/8 inch bars placed 4 inches on center. The depth of the trashracks will remain unchanged.

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Georgia Department of Natural Resources

Environmental Protection Division

Crabbe, Melissa C.

From: Dodd, Anthony Ray
Sent: Tuesday, February 15, 2022 12:03 PM
To: Wiedl, Stephen
Cc: Zeng Wei (wei.zeng@dnr.ga.gov); Dr. Booth
Subject: Georgia Power's Hydro Generation - modernization tasks for Bartlett's Ferry Dam
Attachments: Brief Bartletts Ferry Unit UpgradesFinal_copy.pdf

Hi Stephen,

I'm reaching out to you all on behalf of Georgia Power's Hydro Generation team as we plan for modernization tasks at our FERC-licensed Bartlett's Ferry Dam on Lake Harding (briefing sheet card attached). We are inviting you to meet with our team to learn about the scope of work that will involve installation of upgraded aerating turbines and related components. We reached out earlier to ADEM about this project owing to its border location on the Chattahoochee River. We'll also be consulting separately with USFWS and GAWRD Fisheries for the same purpose. What's the possibility that you could be available for a Teams meeting with us in the near future to discuss this project? I think up to 1.5 hrs would be an adequate time to cover everything with Q&A. Please see the general time slots and dates I've added below, and let me if any of those work for your schedule(s).

9-12 Feb 28
8:30-10 Mar 1
1 -2 Mar 3
11-2 Mar 4

Thank you and please let me know if you have any questions.
Tony

Tony Dodd
Natural Resources Specialist
Georgia Power Company
241 Ralph McGill Blvd, NE
Atlanta, GA 30308
Cell: 404-434-9412
Desk: 404-506-5026
Email: ardodd@southernco.com

Georgia Power

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Georgia Power

Bartletts Ferry Hydroelectric Project
FERC Project #485

Communication Date: March 14, 2002

Communication Type: Teams Web-Meeting/Phone

List and attach pertinent written correspondence:

Map of Dams/River
Aerial Photo of Bartletts Ferry Project Facilities
Agency Briefing Card

List persons attending from Southern Company/Georgia Power:

Southern Company: Courtenay O'Mara, P.E. and Melissa Crabbe, P.E.
Georgia Power Company (Georgia Power): Tony Dodd, Patrick O'Rouke

List organization name and persons attending from other organization:

Georgia EPD – Dr. Liz Booth, Dr. Wei Zeng, Steve Wiedl, Bradley Smith

Subject: Consultation on the Modernization of the Bartletts Ferry Powerhouse

Comments/Discussions/Requests:

Consultation occurred via Teams virtual meeting on March 14, 2022

March 14, 2022 Consultation

On March 14, 2022, Southern Company/Georgia Power met via Teams and phone with Dr. Liz Booth, Dr. Wei Zeng, Steve Wiedl, and Bradley Smith of the Georgia Environmental Protection Division (Georgia EPD) and discussed the upgrades that Georgia Power has planned for the Bartletts Ferry West Powerhouse. The following items were discussed during the meeting:

- Overview of project location
- Overview of the Bartlett/s Ferry Project facilities
- Overview of the briefing card detailing resource agency points of interest for the proposed modernization of Bartletts Ferry Powerhouse
- The modernization will include refurbishment of turbines and generators and replacement of intake trash racks in the western powerhouse containing Units 1-4. The modernization will result in an increase in generating capacity, and relatively no change to intake approach velocities, temperature in discharges, or maximum hydraulic capacities.
- The bulk of the discussion was around the proposed change to the dissolved oxygen enhancement system. The current DO enhancement measure is stoplogs that have been placed just upstream of each intake to force intakes to pull water for generation from higher in the water column. Waters higher in the water column contain higher dissolved oxygen content than the waters that exist lower in the water column at the intake elevation. When modernized, the stop logs will be removed and the units will pull from the original intake elevation. Three of the four generating units in the west powerhouse will receive Voith aerating turbines with an ***uptake*** capability of 4.4 mg/l. The expected uptake is such that, based on a Voith model, Georgia Power will only need to install 3 aerating turbines to meet water quality criteria. The fourth turbine will not need to have aerating capability.
- We reviewed Condition 4 of the water quality certification which states, "Georgia Power must notify EPD of any modifications to the proposed operational measures to enhance summer dissolved oxygen levels in the tailrace area." EPD will consult with Georgia Power on the proposed change in the dissolved oxygen enhancement measures at Bartletts Ferry under the existing Water Quality Certification. EPD will require Georgia Power to implement an EPD-approved Dissolved Oxygen Monitoring Plan following the modernization to ensure Georgia's water quality criteria for dissolved oxygen in this section of the Chattahoochee River is met (daily average of 5.0 mg/L and no less than 4.0 mg/L at all times).
- It was agreed that the draft monitoring plan would proposed the same monitoring point as was used following FERC's December 22, 2014 Order Issuing New License for the Bartletts Ferry Project, which triggered implementation of a

water quality monitoring period from 2015-2017 after the implementation of the stoplog dissolved oxygen enhancement measure.

- Georgia EPD would like to know more about deployment of new units and operational sequencing of all 6 of the Bartletts Ferry generating units during the 4-Year construction period before they can consider when and how long the monitoring can be conducted.

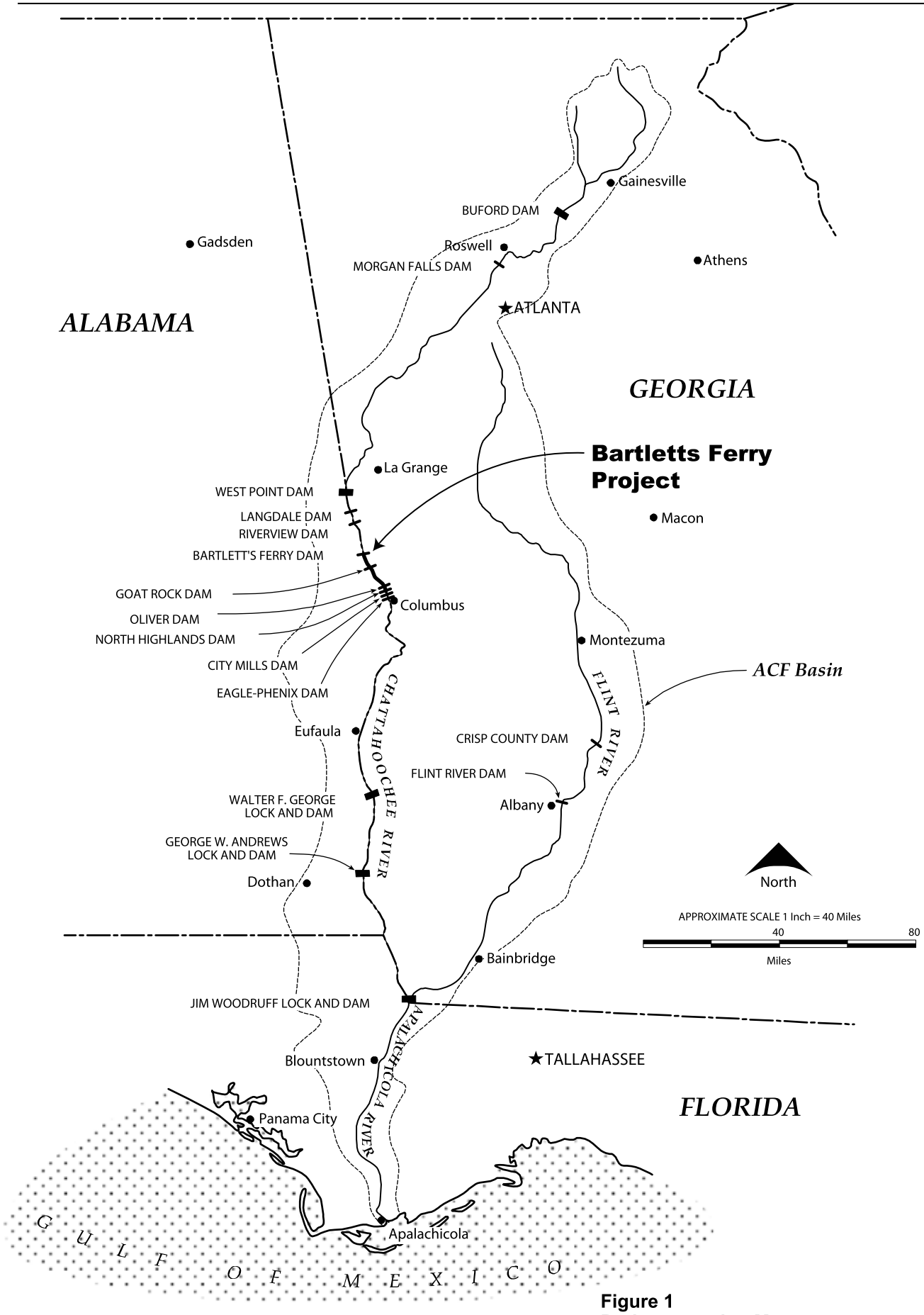

Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

CH2MHILL

Georgia Power

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From: Booth, Elizabeth
To: Dodd, Anthony Ray
Cc: Zeng, Wei
Subject: RE: Bartlett"s Ferry Modernization DO Monitoring Plan
Date: Friday, April 29, 2022 12:34:23 PM

EXTERNAL MAIL: Caution Opening Links or Files

Tony, that language works and if you want to go back to monthly maintenance of the monitors that may be adjusted based on field observations that would be fine. I just wanted the flexibility for modifying the schedule to be included in the monitoring plan. Thanks Liz

---

From: Dodd, Anthony Ray <ARDODD@southernco.com>
Sent: Friday, April 29, 2022 12:31 PM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Cc: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Subject: Re: Bartlett's Ferry Modernization DO Monitoring Plan

Hi Liz
Did you have a chance to see my recent proposed wording revision for item 5 for Bartletts for a monitoring? If you generally agree with that, then we will include wording to that effect in the study plan and propose license amendment.
Thanks,
Tony

Get Outlook for iOS

From: Dodd, Anthony Ray
Sent: Thursday, April 28, 2022 10:19:10 AM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Cc: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Subject: RE: Bartlett's Ferry Modernization DO Monitoring Plan

Thank you, Liz.
I understand your concern about the potential variability in rate of biofouling. I can honestly say that I've never had to work through a DO/biofouling measurement issue on past GPC projects…usually maintaining at monthly intervals, and yes, whether it's a month or three weeks between, there's uncertainty about biofouling rate as every summer is different. LDO probes and sensor wipers have generally lessened some of those concerns in recent times. Here's some revised language I'm thinking of the moment…please let me know if this provides an appropriate amount of flexibility and assurance to meet EPD's interests.

The DO monitoring probe will include an anti-fouling type luminescent sensor including a sensor wiper designed for deployment in severe fouling environments. Monitoring maintenance trips will be made at intervals of no more than three weeks apart. To maintain ambient measurement precision, field observations will be made of the monitoring probe during each trip to monitor for biofouling condition. Observations of growth that may interfere with sensor performance or otherwise detection of increasing trend of biofouling growth (i.e., algae, periphyton, etc.) will be evaluated at each maintenance interval by an experienced field crew to determine if shorter maintenance intervals are necessary for successive trip to maintain equipment performance. The frequency of maintenance trips will be deployed as conditions warrant in an effort to maintain designed equipment performance through the study period.

If that approach works, we will include it in the study plan. Or please send me your comments to discuss further.

Thank you,

Tony

From: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Sent: Wednesday, April 27, 2022 6:43 PM
To: Dodd, Anthony Ray <ARDODD@southernco.com>
Cc: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Subject: RE: Bartlett's Ferry Modernization DO Monitoring Plan

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Tony,

Thanks for your responses, which take care of most of my concerns. Regarding item 5, I think the frequency of maintenance is going to based on how much biofouling occurs. At this time, I'm not sure you can say that maintenance should be done monthly, every three weeks, or weekly. I think the frequency of Sonde maintenance is going have to be flexible and the schedule will based on how much biofouling occurs.

Thanks Liz

From: Dodd, Anthony Ray <ARDODD@southernco.com>
Sent: Wednesday, April 27, 2022 5:44 PM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Subject: RE: Bartlett's Ferry Modernization DO Monitoring Plan

recognize the sender and know the content is safe.

Hi Liz,

Thanks very much again for your review/comments of the initial study plan for the Bartlett's Ferry modernization tailrace DO monitoring.
Per the information below, please review our responses to your comments. If acceptable, and for the sake of expedience, I propose that we try to resolve the comments in this email chain without a back and forth of the actual revised study plan document at the moment. Our team is scrambling to meet a 1 April submittal to FERC for this project. If you and I can reach agreement in email exchange(s), GPC plans to insert the final revised monitoring plan language into the proposed Bartletts Ferry license amendment that will go out to FERC in the next couple of days. We would then send you a copy of the revised BF tailrace study plan pe se as soon as possible (although the plan will be accessible in the FERC filing).

1. Page 1 paragraph 2 second sentence – replace "DO uptake." with "the DO."
   GPC Response – we will replace "DO uptake." with "the DO."

2. Page 1 paragraph 4 – replace the word "criterion" with "criteria" (daily avg of 5.0 mg/L, not less than 4.0 mg/L)
   GPC Response - we replace the word "criterion" with "criteria" (daily avg of 5.0 mg/L, not less than 4.0 mg/L)

3. Page 1 last paragraph second and third sentences – replace the word "uptake" with "increase"
   GPC Response - we will replace the word "uptake" with "increase"

4. Page 2 paragraph 1 last sentence – how will we know if the water quality criteria are being met during construction if we don't monitor until after construction is complete? If the intent of the monitoring is to show compliance during construction, monitoring should start now and extend for a period after construction to demonstrate DO water quality criteria are being met.
   GPC response – We anticipate that water quality will be maintained throughout construction and a substantial DO uplift is expected with new units. DO output during the test period for the initial start-up of each new unit potentially offers an unknown until underway. While the first unit is under construction and blocked off (or later readied for actual testing), discharge from other units in the Alabama powerhouse would still be released only using their current stoplog arrangements which has been the source of maintained water quality compliance since Bartletts was relicensed. During the remainder of the construction schedule, as a unit undergoes construction, only previously certified new aerated units or stoplogged older units would be used for monitoring location til completion of the construction.

   With intent to demonstrate water quality (DO) compliance during and after construction, we propose to revise the study plan and conduct continuous DO and water temperature

monitoring at the GR01 location annually during May through October in each planned unit-testing year (2024 through 2026) plus the first seasonal critical conditions period in the following year (2027). Monitoring in 2027 will provide a means to demonstrate that water quality criteria are met under the normal full range of operational capability which will include mixed-units use with the refurbished non-aerated turbine Unit No. 3. Following each annual monitoring period, the water quality data will be summarized in a report including a narrative description of the findings and data summary tables combined with plots of corresponding turbine operations by powerhouse and/or unit(s). A report will be sent to EPD for a 30-day review by 1 January of each year that follows a monitoring year.

5. Page 2 paragraph 4 – monthly maintenance may not be frequent enough if there is algae that attaches to the Sonde.

   GPC Response – we understand the concern about biofouling of the monitoring instruments and potential measure-drift, especially during the peak growth period. We propose to revise the study plan to include increased frequency of equipment maintenance trips to once every three weeks during the data collection periods.

Please let me know if you approve of these changes or comment further as needed. As soon as I hear back from you, I'll proceed with the next steps described at the beginning.
Thank you and please let me know if you have questions.

Tony

From: Dodd, Anthony Ray <ARDODD@southernco.com>
Sent: Tuesday, April 26, 2022 9:39 AM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Subject: Re: Bartlett's Ferry Modernization DO Monitoring Plan

Thank you…will circle back ASAP.

From: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Sent: Tuesday, April 26, 2022 9:00:28 AM
To: Dodd, Anthony Ray <ARDODD@southernco.com>
Subject: RE: Bartlett's Ferry Modernization DO Monitoring Plan

---

Tony, here are comments on the Monitoring Plan. Comment 4 is the big one.

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2. Page 1 paragraph 4 – replace the word "criterion" with "criteria" (daily avg of 5.0 mg/L, not less than 4.0 mg/L)
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5. Page 2 paragraph 4 – monthly maintenance may not be frequent enough if there is algae that attaches to the Sonde.

From: Dodd, Anthony Ray <ARDODD@southernco.com>
Sent: Tuesday, April 19, 2022 11:24 AM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Cc: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Subject: FW: Bartlett's Ferry Modernization DO Monitoring Plan

His Liz,

On behalf of our Hydro Modernization Licensing Team, I'm following up on GPC's 14 April 2022 submittal of the Bartlett's Ferry Modernization Tailrace DO Monitoring Plan review that we submitted to EPD in which we inquired about the possibility of a very short (2-day) review turnaround time. I apologize for pressing again here but can you please let us know if EPD has reviewed the proposed monitoring plan and/or has comments or, if not reviewed yet, what your foreseeable timeline is for review?

Thank you and please call if you have questions or wish to discuss.
Tony

Tony Dodd
Natural Resources Specialist
Georgia Power Company
241 Ralph McGill Blvd, NE
Atlanta, GA 30308
Cell: 404-434-9412
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Email: ardodd@southernco.com

From: Dodd, Anthony Ray
Sent: Thursday, April 14, 2022 11:54 AM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Cc: Zeng, Wei <Wei.Zeng@dnr.ga.gov>
Subject: Bartlett's Ferry Modernization DO Monitoring Plan

Liz,
I hope all is well with you.
This message is a follow-up from our recent meeting for the Bartlett's Ferry Hydro Modernization Project. We agreed to an action item for GPC to send you our proposed tailrace DO monitoring plan to demonstrate that the project will maintain the applicable DO criterion following completion of the turbine upgrades. The monitoring plan is attached here (*.pdf). In the plan, you'll find a narrative description of the proposed project, site figures and construction schedule timeline table.

GPC is seeking EPD's approval of this plan. If there's any way possible for you to review and reply to us in the next couple of days, we would be very grateful. Please let us know if you have questions or need to enter discussion about the proposed plan.

Thank you and Best Regards,
Tony

Tony Dodd
Natural Resources Specialist
Georgia Power Company
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Georgia Power Company's Proposed Monitoring of
Dissolved Oxygen (DO) and Water Temperature in the Bartletts Ferry Tailwaters
Following Upgrades of Turbines 1 - 4 in the West Channel Powerhouse

Introduction

Georgia Power plans to upgrade the four generating units in the west powerhouse of Bartletts Ferry Hydroelectric Project (Project). Georgia Power is proposing to monitor tailwaters of Bartletts Ferry Dam for dissolved oxygen (DO) and water temperature following unit upgrades to demonstrate compliance with Georgia water quality standards. The Project was issued a Clean Water Act 401 water quality certificate (WQC) by the Georgia Environmental Protection Division (EPD) for the recent Federal Energy Regulatory Commission (FERC) relicensing, which included implementation of west-channel powerhouse operations and installation of physical stoplogs to increase DO.

The proposed upgrades include installing aerating turbine runners in three of the four turbine units (Unit Nos. 1, 2 and 4). The aerating turbine runners will enhance the Project's ability to continue to achieve Georgia water quality standards by increasing DO uptake. The relicensing 401 WQC contemplates changes in DO treatment methodology such as the proposed aerating turbine runners.

The Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama (Figure 1). The project includes a second powerhouse located on the eastern side of the river (Figure 2). The facility is operated in a modified run-of-river mode, primarily to meet daily peak system electricity demand. During periods of increased flow, Bartletts Ferry operates additional hours during non-peak demand times.

This monitoring plan is specifically designed to validate that the proposed DO improvement method of aerating turbine runners achieves the applicable Georgia DO criterion.

Turbine Upgrade Construction and Schedule

The combination of three aerated units and one non-aerated unit will provide dam operators operational flexibility and redundancy especially during critical conditions periods. The manufacturer's performance modeling indicates an aerated unit will result in an instantaneous DO uptake up to 4.5 mg/L when operated by itself and that only two aerating units will be needed during mixed flow operation (aerating plus non-aerating units) to achieve the Georgia water quality standard. Because the existing physical stoplogs result in a DO uptake of 1 – 1.5 mg/L, it is anticipated that the aerating turbine runners will further improve water quality. The third aerated unit will serve as a redundant measure in case one aerating unit incurs an outage during the critical conditions period.

Scheduled construction sequencing will follow the order of Unit 1 (2023), Unit 3 (2024), Unit 4 (2025) and Unit 2 (2026). Table 1 provides a schedule of the expected unit construction sequence. To ensure compliance with Georgia water quality criteria for DO while construction is ongoing, the new Unit 3 (the non-aerated turbine) will not be operated during the critical conditions period until the 2027 tailrace monitoring program is initiated.

Water Quality Monitoring

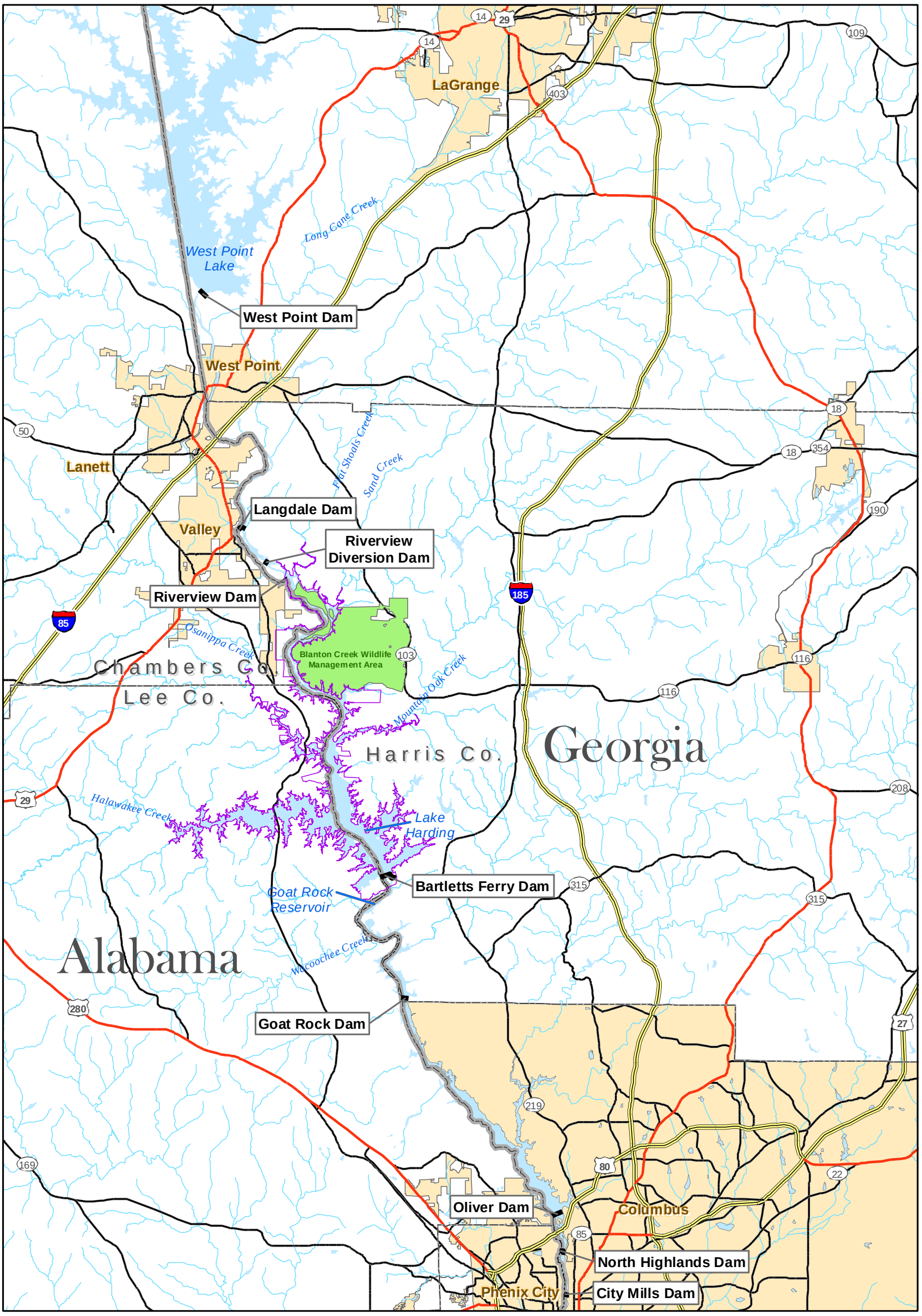
To demonstrate that Georgia water quality standards are met with normal operation of the refurbished units, Georgia Power is proposing to evaluate the performance of the mixed (aerated plus non-aerated conditions) by conducting a water quality monitoring study in Bartletts Ferry tailwaters during the first seasonal critical conditions period during 1 May through 31 October 2027. The critical DO conditions period typically occurs during June into late September. The proposed monitoring period brackets a broader time span to include periods of natural seasonal variation in timing of lake mixing/stratification effects in late spring and early fall.

The monitoring location will be the same as used for the recent FERC relicensing studies for Bartletts Ferry Dam. The monitoring location, referred to in past studies as GR01, is situated in the upper end of the Goat Rock impoundment just downstream of the convergence of Bartletts Ferry's separate west and east powerhouse tailrace channels (Figure 3). Past studies demonstrated water quality conditions measured at the GR01 location as representative of west side powerhouse tailrace releases when only the west side powerhouse is generating.

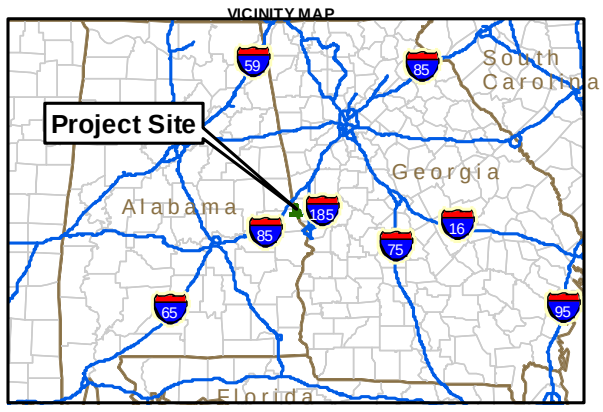
Monitoring data will be collected from a buoy anchored to the lake bottom in a manner to allow for fluctuations in water level due to dam releases and peak storm flows. A water quality monitoring sonde will be secured to/in the buoy in a manner that provides measurements of DO (mg/L) and water temperature (C°) at a depth of 1 meter. Data will be collected continuously at 30-minute intervals. The buoy and anchoring system will be maintained as necessary for designed purposes. The water quality sonde will receive at least monthly maintenance and calibration to operate in range of the manufacturer's specifications for ambient, continuous *in-situ* deployment. Calibration records will be maintained by Georgia Power. Data will be downloaded from the sonde either directly or remotely on a frequent basis and stored in electronic files along with equipment maintenance logs.

Water Quality Monitoring Reporting

Water quality monitoring data will be collected during 1 May through 31 October 2027. Following the monitoring period, the data will be summarized in a report including narrative description of the findings and data summary tables combined with plots of corresponding turbine operations by powerhouse and/or unit(s). The report will be sent to EPD for a 30-day review by 1 January 2028.



Notes:
1. FERC Project Boundary source Georgia Power
2. Basemap data source ESRI 2006



Legend

- FERC Project Boundary
- Dam
- River or Stream Channel
- Lake
- GA/AL State Boundary
- County Boundary
- Interstate Highway
- US Highway
- State Highway
- County Road
- Local Road
- Blanton Creek WMA
- Incorporated Areas

N

0 1 2
Miles

Figure 1
Project Vicinity in the Chattahoochee River Basin
Bartletts Ferry Project (FERC No. 485)

Legend

GA/AL State Boundary

FERC Project Boundary

Notes:
1. Georgia/Alabama State Boundary source USGS
2. FERC Project Boundary source Georgia Power
3. Aerial Imagery source National Agricultural Imagery Program (NAIP) 2006

N

0 0.125 0.25

Miles

Figure 2
Project Facilities
Bartletts Ferry Project (FERC No. 485)

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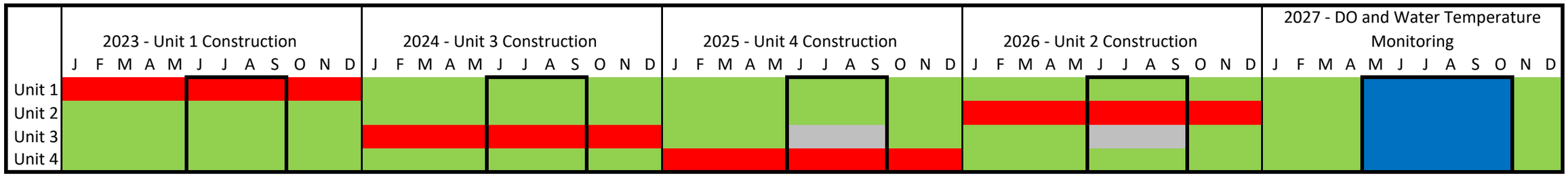
Figure 3.
GR01 water quality monitoring location
downstream of Bartletts Ferry Dam

Table 1: Bartletts Ferry Modernization Project Unit Construction Sequence for Compliance with Georgia's Water Quality Criteria



Legend:

- Unit Not Available Due to Construction
- Unit Available for Operation Because Stoplogged or Aerated
- Unit Not Available During Critical Conditions Period BC Non-aerating
- Critical Conditions Period
- DO and Water Temperature Monitoring

Georgia Department of Natural Resources

Wildlife Resources Division

From: O"Rouke, Patrick Michael
To: Hess, Brent
Cc: Crabbe, Melissa C.
Subject: Bartletts Ferry Modernization Consultation
Date: Friday, February 25, 2022 10:39:51 AM
Attachments: 2022 02 21 WRD Bartletts Ferry Consult Form.pdf
Agency Brief Bartletts Ferry Unit UpgradesFinal.pdf
BF Powerhouse and spillway layout.pdf
Chattahoochee River Map.pdf

Brent, here are the materials we discussed earlier this week, along with a summary of our conversation that we'll file with FERC. Thank you for the time you were able to take to walk through the project. Let me know if you, Jim, or Clint have any additional questions.

Thank you,
Patrick

Patrick O'Rouke
Fisheries Biologist
Georgia Power

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Georgia Power

Bartletts Ferry Project (FERC No. 485) License Amendment
Bartletts Ferry Modernization

- The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The project dam is situated 23.5 river miles downstream of the U.S. Army Corps of Engineers' West Point Dam (river mile 201.4). Bartletts Ferry Dam is operated in a modified run-of-river mode, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of adverse or mean flow, generation is limited to peak demand hours, which generally amounts to several hours per day on weekdays. During times of increased flow, Bartletts Ferry operates additional hours during non-peak demand periods to make the best use of the inflow without spilling water. Georgia Power is proposing to amend the Bartletts Ferry license to upgrade the four generating units in the west powerhouse. This upgrade includes replacing the turbine runners, generators and intake trashracks. Powerhouse work will begin in 2023, with a generator/turbine unit replaced each year beginning in January 2023, 2024, 2025, and 2026.

- The table below compares the rated generating and maximum hydraulic capacities of the existing units with the expected performance of the upgraded units.

UNIT	Existing Rated (Best Gate/Most Efficient) Capacity (MW)	Existing Max Hydraulic Capacity (CFS)	Proposed Rated (Best Gate/Most Efficient) Capacity (MW)	Proposed Rated (Best Gate /Most Efficient) Hydraulic Capacity (CFS)	Proposed Full Gate/Max Capacity after Upgrade (MW)	Proposed Max Hydraulic Capacity (CFS) after Upgrade
1	15	2330	18.4	2080	20.2	2335
2	15	2330	18.4	2080	20.2	2335
3	15	2260	18.45	2090	19.5	2250
4	20	2880	23.4	2660	25	2885

- Following the upgrade, Georgia Power will operate the Bartletts Ferry powerhouse with no change to existing lake levels at Lake Harding.

- Upon issuance of the current FERC license (Issued December 22, 2014), Georgia Power installed stoplogs in front of Bartletts Ferry Units 1-4 to physically raise the depth in the reservoir from which water is taken for generation, resulting in improved dissolved oxygen (DO) in the tailrace. This was proposed by Georgia Power during FERC relicensing and on July 28, 2014 Georgia EPD issued a Water Quality Certificate requiring the proposal. The 3-year monitoring study demonstrated that the stoplog installation resulted in improved DO that meets the 4.0 mg/L instantaneous and the 5.0 mg/L daily state water quality standards. The second powerhouse at Bartletts Ferry located on the eastern side of the river achieved water quality standards without modifications because that intake is set higher in the water column.

- New turbine runners proposed for this modernization are aerating turbines manufactured by Voith. Voith modeling indicates that while operating there is an instantaneous uptake of 4.4-4.5 mg/L resulting in tailrace of 6.9/7.0 when the unit operates by itself and that only two aerating units are needed in mixed flow (aerating + non aerating) to achieve water quality standards. Georgia Power is proposing to aerate Units 1,2, and 4, so that

- operators always have two aerating units to operate with two non-aerating units to achieve water quality standards, and then one additional aerating turbine as a back-up in case of outage.

- It is possible that a lake drawdown may be needed during the construction period of the modernization project. If so, Georgia Power will consult with the Georgia Department of Natural Resources, the Alabama Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service as required by Article 401 of the Bartletts Ferry license.

- Approach velocities expected with new trashracks are estimated to be 2.12 and 2.74 foot per second (ft/s) at best and full gate flows, respectively. Existing approach velocities are 2.64 to 3.5 ft/s. This is a decrease of 0.52 – 0.56 ft/s with the existing trashracks. The existing trashracks will be replaced with a similar configuration. The existing 5/16 inch bars with 4 inch spacing will be replaced with 3/8 inch bars placed 4 inches on center. The depth of the trashracks will remain unchanged.

- By design, the expected temperature change in the tailrace due to the upgraded turbine coolers will range from -0.02 to 0.01° F depending on the time of the year.

- Georgia Power is preparing a non-capacity license amendment application to file with FERC. The application will conform with 18 C.F.R. §4.201 (c). Georgia Power will consult with state and federal agencies prior to filing. Non-capacity amendment applications typically have few, if any, effects on environmental, recreational, and cultural resources; however, any potential issues would be disclosed in the application to FERC and in the pre-filing consultation.

- Georgia Power is consulting with the following agencies on this license amendment application:

    - Georgia Wildlife Resources Division – lake levels, trashrack velocity changes, and species affects

    - US Fish and Wildlife Service – lake levels, trashrack velocity changes, and species affects

    - GA Environmental Protection Division –lake levels and affects to existing 401 water quality certificate

    - Alabama Department of Environmental Management – update to project

    - Alabama Department of Conservation and Natural Resources – lake levels, trashrack velocity changes, and species affects

    - Georgia State Historic Preservation Office – unit replacements

    - Alabama Historical Commission State Historic Preservation Office – unit replacements

- FERC typically issues a notice of the application receipt and may ask Georgia Power for additional information prior to its analysis of the proposed upgrade. Georgia Power may request FERC to conduct an expedited review to facilitate equipment procurement and work at the Bartletts Ferry powerhouse.

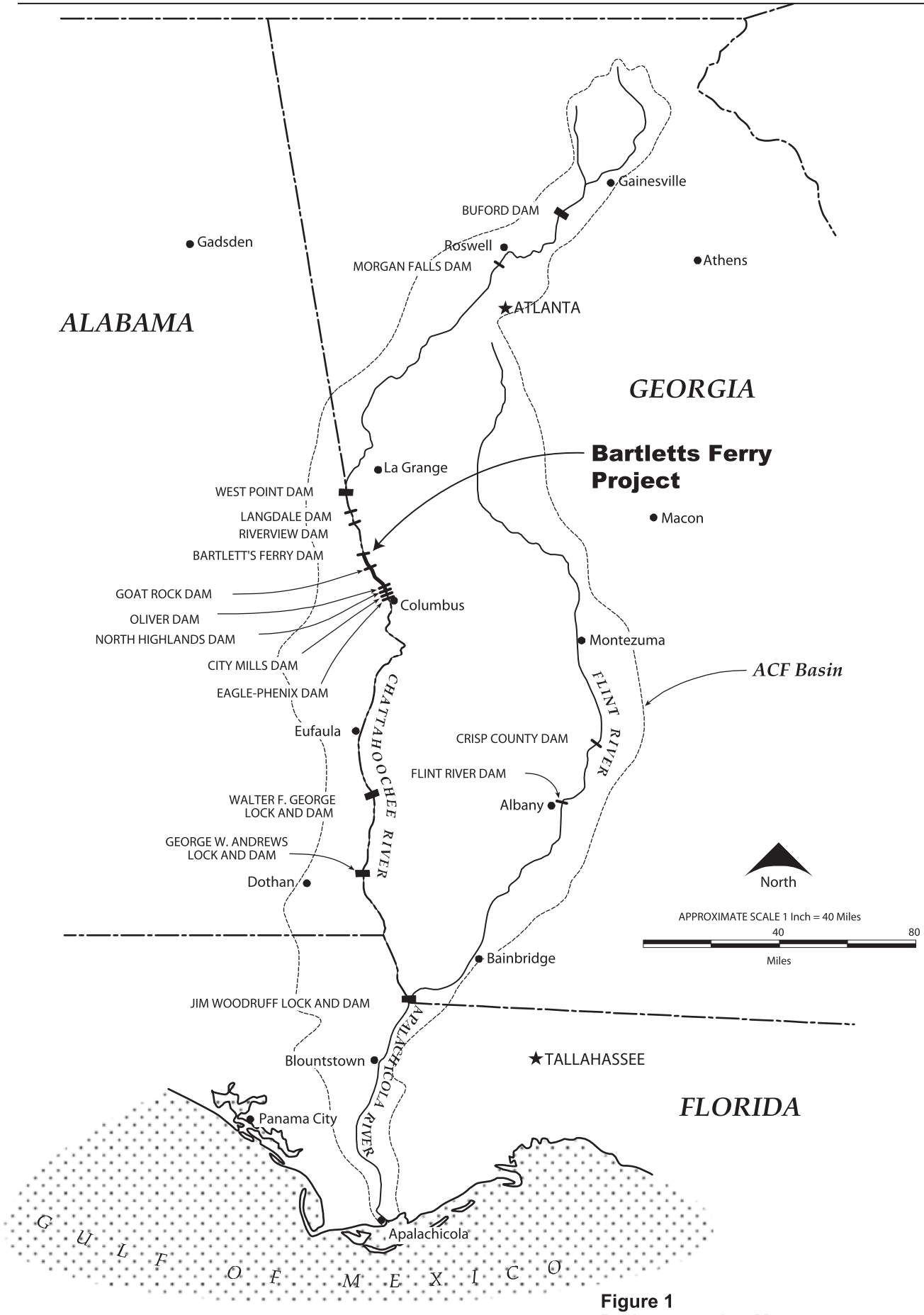

Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

CH2MHILL

Georgia Power

Bartletts Ferry Hydroelectric Project

FERC Project #485

Communication Date: February 21, 2022

Communication Type: Teams Web-Meeting/Phone

List and attach pertinent written correspondence:

Aerial View of Bartletts Ferry Project Operations Area
Agency Briefing Card

List persons attending from Southern Company/Georgia Power:

Southern Company: Melissa Crabbe, P.E. and Courtenay O'Mara, P.E.
Georgia Power Company (Georgia Power): Patrick O'Rouke

List organization name and persons attending from other organization:

Georgia Department of Natural Resources - Wildlife Resources Division, Brent Hess

Subject: Consultation on the Modernization of the Bartletts Ferry Powerhouse

Comments/Discussions/Requests:

Consultation occurred via Teams virtual meeting on February 21, 2022, follow up occurred on February 24, 2022.

February 21, 2022 Consultation

On February 21, 2022, Southern Company/Georgia Power met via Teams and phone with Mr. Brent Hess of the Georgia Department of Natural Resources – Wildlife Resources Division and discussed the upgrades that Georgia Power has planned for the Bartletts Ferry West Powerhouse. The following items were discussed during the meeting:

- Overview of the Bartlett/s Ferry Project facilities
- Overview of the briefing card detailing resource agency points of interest for the proposed modernization of Bartletts Ferry Powerhouse
- We discussed the Voith Hydro aerating turbine modeling study and the expected dissolved oxygen uptake of the new aerating units in comparison to the dissolved oxygen enhancements measures in place on the existing units.
- WRD will have an opportunity to review the Bartletts Ferry license amendment application prior to it being filed with FERC.

Georgia Department of Community Affairs

Historic Preservation Division

Written Correspondence with HPD

Georgia Power

241 Ralph McGill Blvd., NE
BIN 10151
Atlanta, GA 30308
404 506 2337 tel
404 506 4132 fax
404 782 8796 cell
jcharles@southernco.com

March 8, 2022

Mr. Santiago Martinez
DCA Historic Preservation Division
60 Executive Park South, NE
Atlanta, GA 30329-4940

RE: System upgrades at Bartletts Ferry powerhouse – Bartletts Ferry Project (FERC #485), Harris County, GA and Lee County, AL

Dear Mr. Martinez:

Bartletts Ferry dam and powerhouse were completed in 1926 and have been in operation for almost 100 years. Some systems are approaching end of service life or are in need of upgrades to allow them to continue to operate safely and efficiently into the future. Please find attached an overview and assessment of these modernization efforts for your review and comment.

If you have any questions or require any further information, please contact me at 404-506-2337 or jcharles@southernco.com.

Sincerely,

Joseph Charles, Hydro Compliance Coordinator

Bartletts Ferry Modernization, Harris County, GA and Lee County, AL

Background

The Bartletts Ferry Hydroelectric Project (FERC # 485) (Project) is situated on the Chattahoochee River, twelve miles north of Columbus in Harris County, Georgia and Lee County, Alabama (Figures 1-2). It was completed in 1926 and consists of two powerhouses, dam, dikes, spillways, fifteen support buildings, a flood control weir, and a 5,850-acre reservoir (Lake Harding). During the relicensing process for the current license (issued December 22, 2014), the facility was determined eligible for listing on the National Register of Historic Places (NRHP) as a historic district (Figure 3) under Criterion A at the state level for its association with broad patterns of local and state history. It was also determined eligible for the NRHP under Criterion C because of its distinctive construction characteristics. The second powerhouse, new intake, dike, and flood control weir – all constructed after 1980 – were not considered character-defining features, but would require reevaluation once they reach 50 years of age. The dam and original powerhouse were also determined individually eligible under Criteria A and C. The character-defining features of the original powerhouse include the overall form of the powerhouse and specific elements such as window fenestration, as well the generating units.

The current Project license was issued in 2014 for a for a 30-year term. Article 412 of the current license implements the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Georgia Department of Natural Resources – Historic Preservation Division, and the Alabama Historical Commission for Managing Historic Properties that May be Affected by Issuing a New License to Georgia Power Company for the Continued Operation of the Bartletts Ferry Hydroelectric Project in Harris County, Georgia and in Lee and Chambers Counties, Alabama," (PA) executed on January 31, 2013 by the Georgia Department of Natural Resources - Historic Preservation Division and on March 21, 2013 by the Alabama Historical Commission. The PA, in turn, implements the Historic Properties Management Plan (HPMP) for the Project, last updated in 2020. According to the HPMP, Georgia Power is to consult with the State Historic Preservation Officers (SHPO) of Georgia and Alabama on activities that have the potential to adversely affect historic properties. As the proposed changes involve the replacement or modernization of interior features of the historic powerhouse, tribal consultation has not be conducted at this time.

Modernization Program and Assessment of Effects

The Project was determined eligible for the NRHP under Criteria A and C. Georgia Power manages the Project with the goal of retaining historically significant features and protecting integrity of design, materials, workmanship, location, setting, feeling, and association of character-defining features to the extent possible without compromising safety and reliability. As noted, Bartletts Ferry dam and powerhouse were completed in 1926, meaning that many of the main components are almost 100 years old. Certain components are approaching the end of their service life according to industry standards. Others require upgrades to ensure continued safe and reliable operation. These include the replacement of the original turbines, rewind and refurbishment of the original generators, replacement of control panels in a new control room.

The existing turbines (Figures 4-9) are at the end of their service lives and will need to be replaced with modern turbines. Associated air compressors and lubrication systems will also need to be replaced. While the generators will not be replaced, they do need extensive refurbishment including rewinding, replacement of existing electromechanical relays, replacement of brake systems, and the addition of

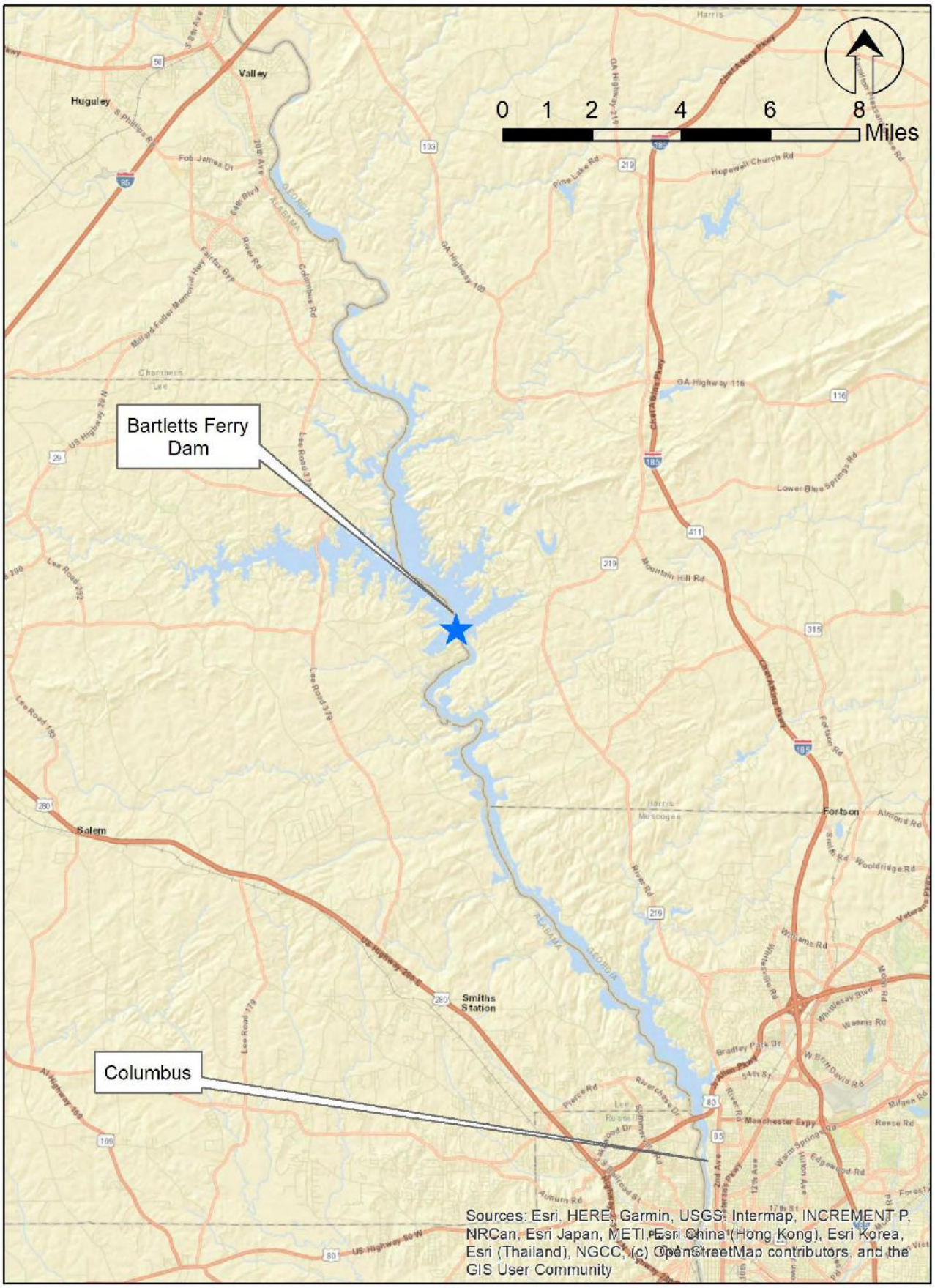

Figure 1. Bartletts Ferry Project and surroundings.

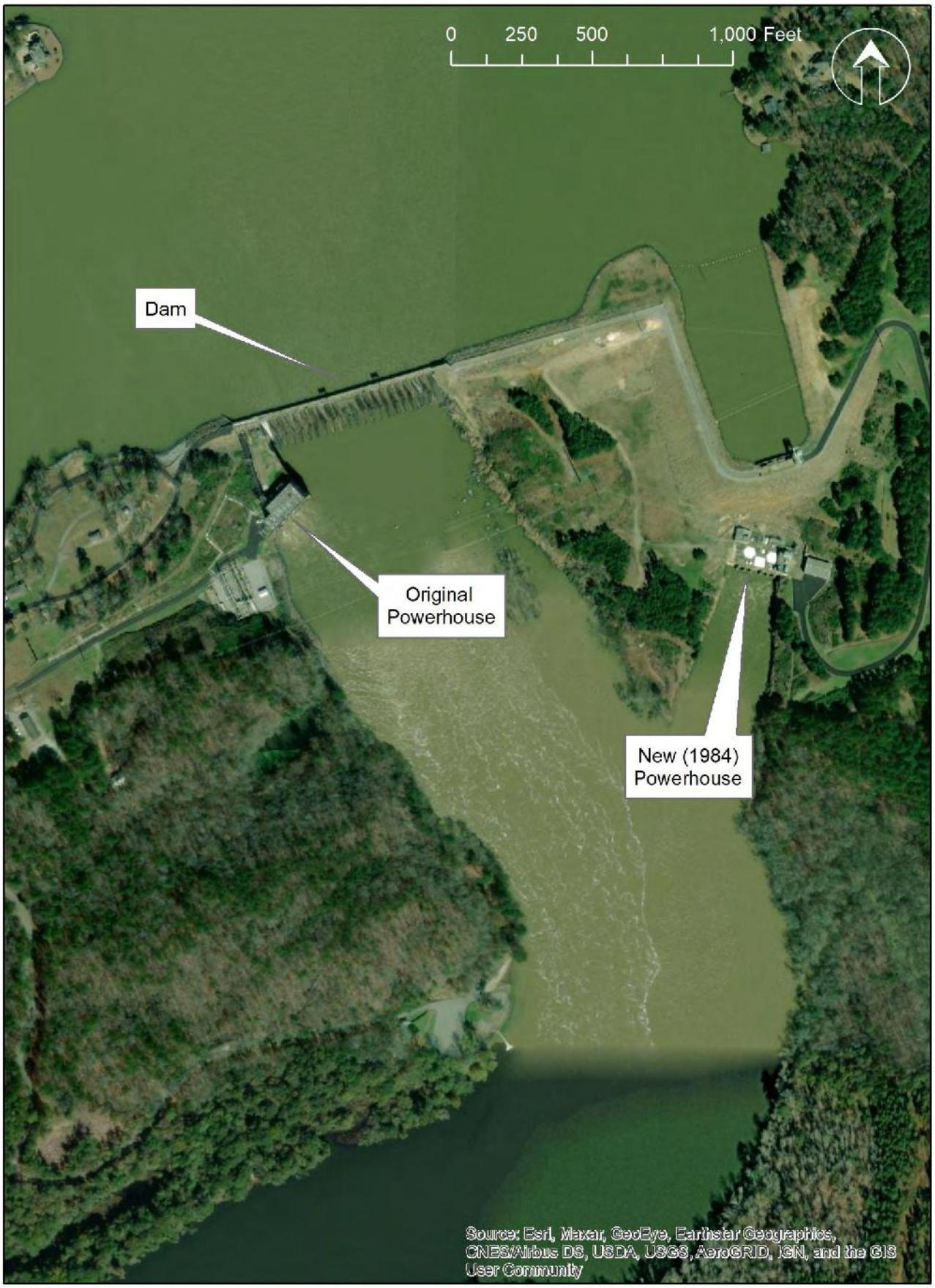

Figure 2. Aerial photograph of Bartletts Ferry project works.

Figure 3. Bartletts Ferry National Register-eligible historic district.

Figure 4. Photograph showing turbine floor.

Figure 5. Photograph showing turbine detail.

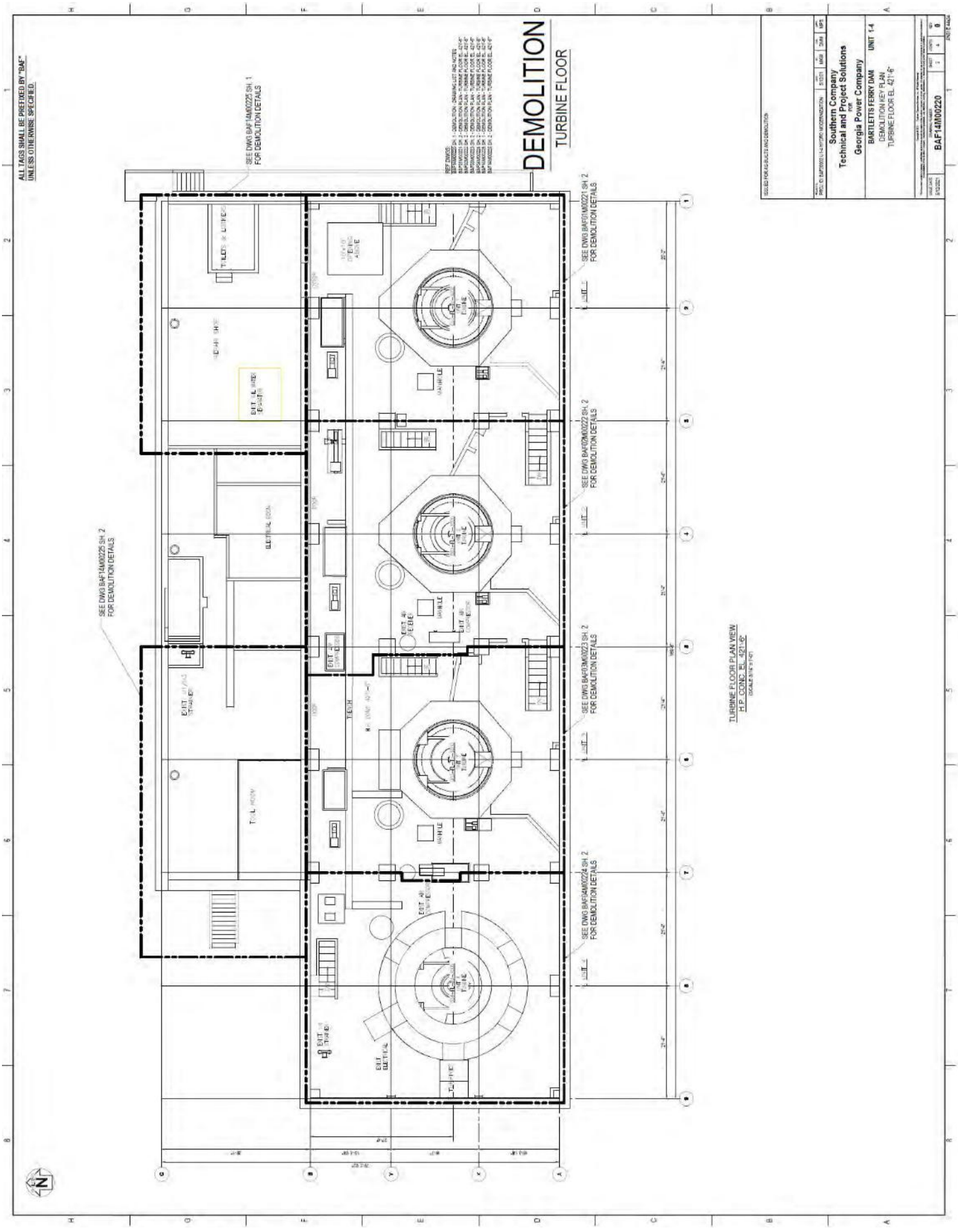

Figure 6. Current plan drawing of turbine floor.

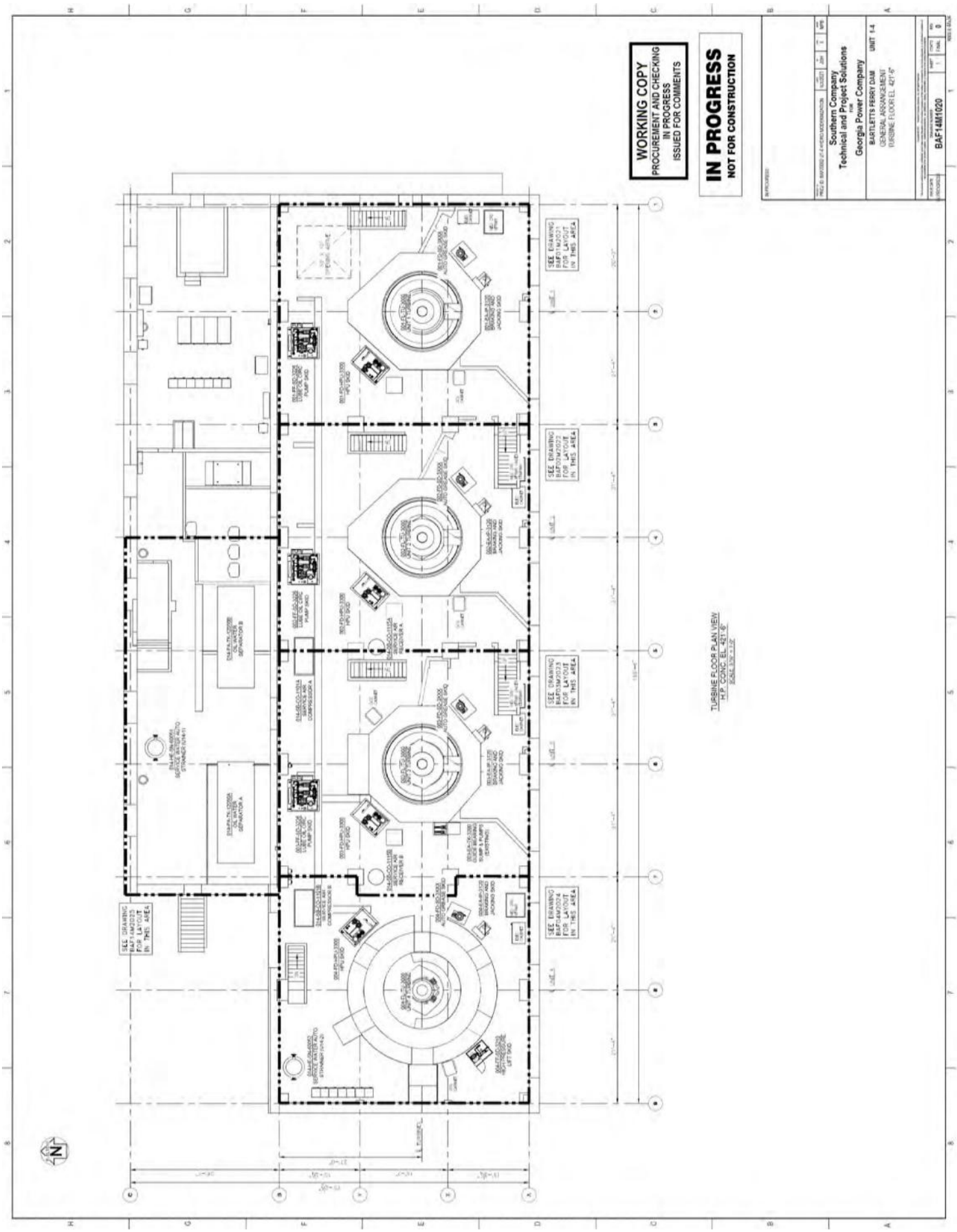

Figure 7. Plan drawing of turbine floor after modernization.

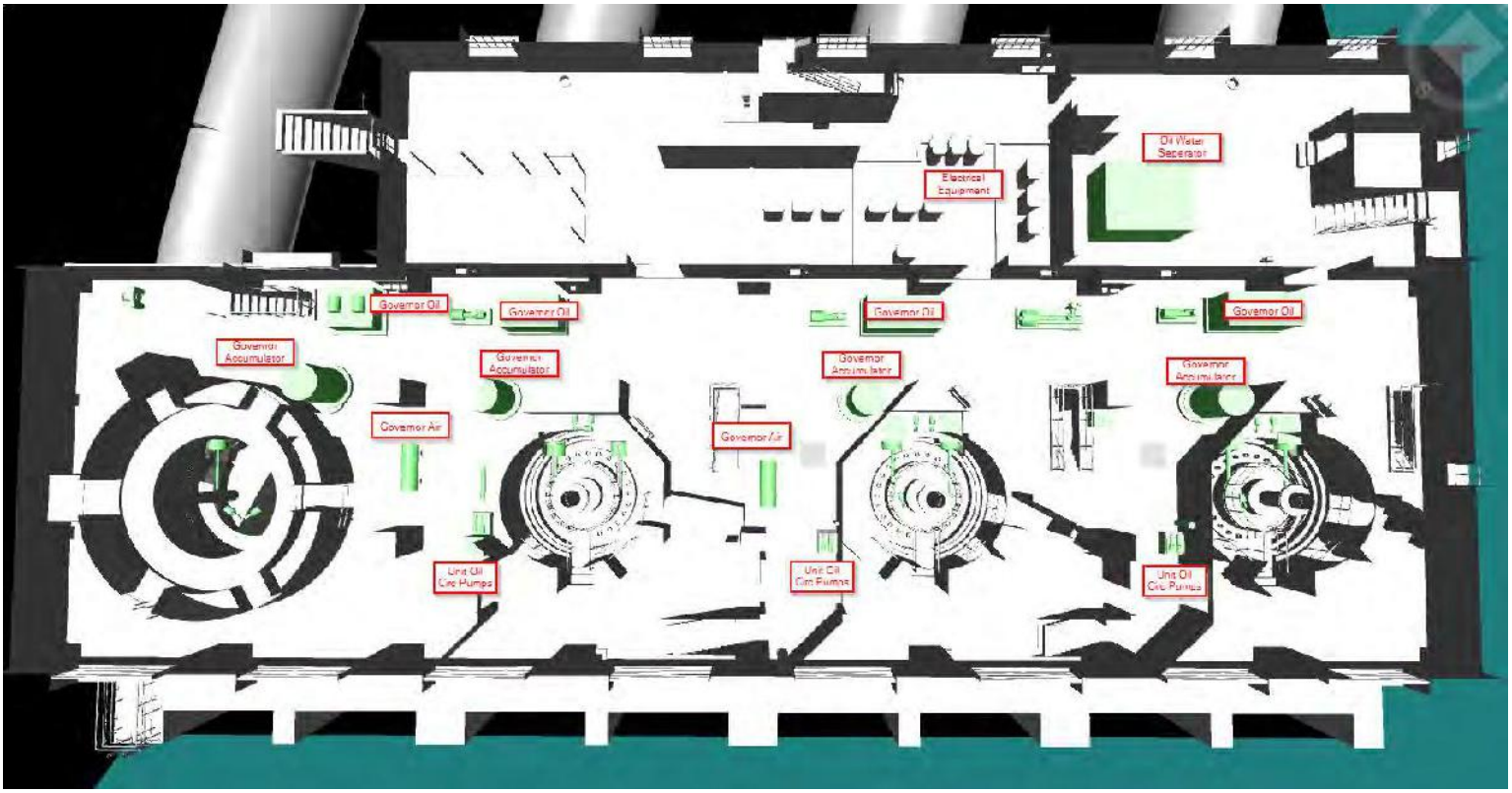

Figure 8. Model of turbine floor before modernization.

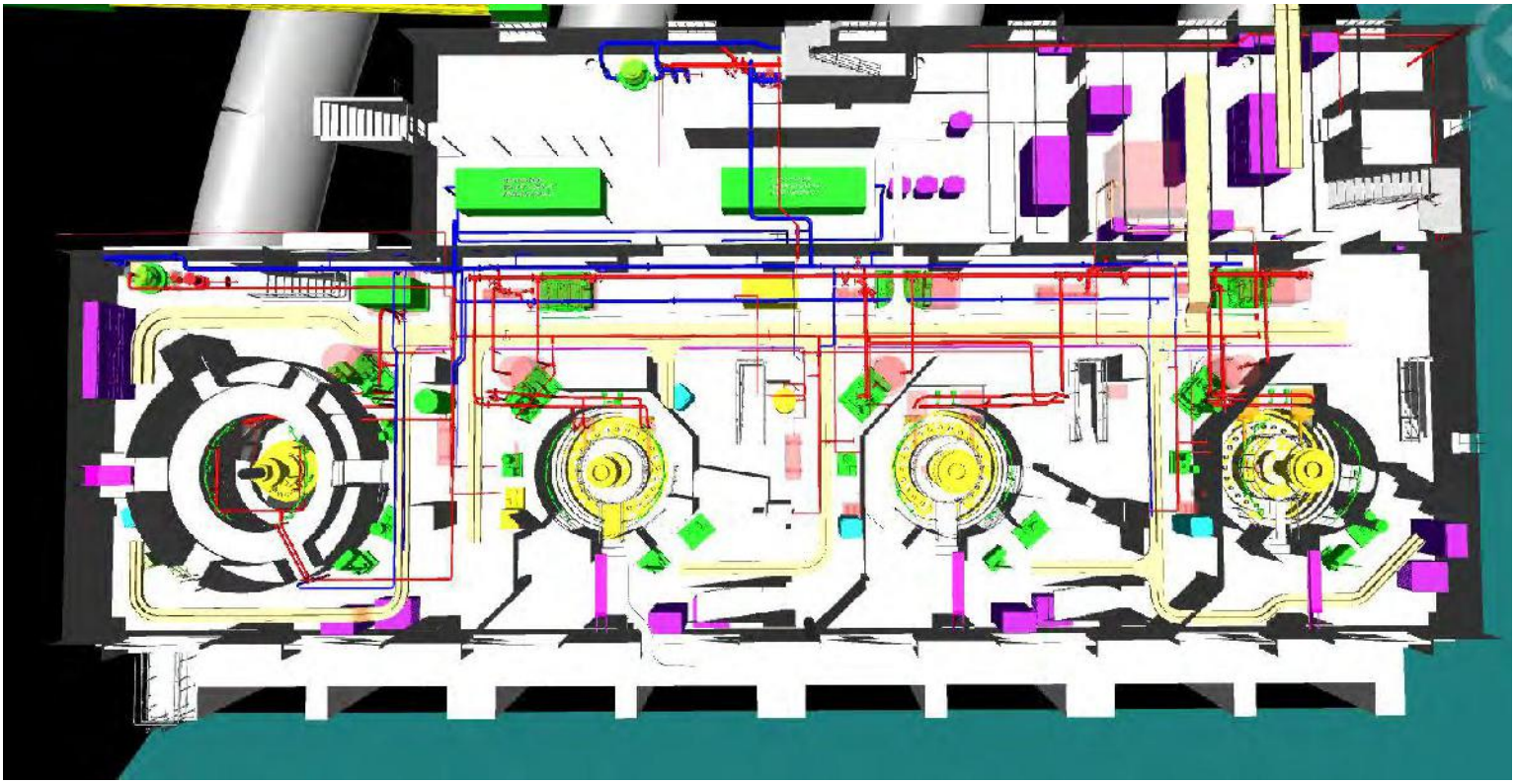

Figure 9. Model of turbine floor after modernization.

new access stairs and safety railing to access the top of generator covers (Figures 10-14). New control panels will be placed in a new control room, built out in a large space above the current control room (Figure 15-17). The existing windows of the new control room will be replaced to aid in climate control and sound protection of the room.

The original turbines are listed as a character-defining feature of the powerhouse, so we believe replacing them will have an adverse effect. As noted, they are at the end of their service life, so there is no alternative to replacement. The generators are also considered character-defining features. While they will not be replaced, we believe that the proposed refurbishment and upgrades will have an adverse effect. The alternative to refurbishment would be replacement, so we believe our plan minimizes adverse effects to this system.

Window fenestration is a character-defining feature, so we believe the replacement of the new control room windows will have an unavoidable adverse effect. As noted, the new windows will provide more climate control and soundproofing of the new control room, which is important for overall workplace safety and protection of instrumentation. The proposed new control room will require the installation of new control panels. The existing control panels are not considered character-defining features in the HPMP, so we believe replacing them will have no adverse effect.

The proposed new control room, currently used as an informal storage space, originally contained an office, restroom, and storage rooms (Figures 18-19). It was expanded in 1928 to make room for Units 3 and 4. The existing interior walls will remain in place, but additional interior walls (studs and drywall) will be added to build out the new control room, a new restroom, a kitchenette/breakroom, electrical room, storage closet, and lock out/tag out (LOTO) room (Figures 20-25). The new control room will reintegrate this space into the operation of the powerhouse and is instrumental in allowing the Bartletts Ferry Project to continue to operate safely and efficiently through the term of the current license and beyond. The current space has no listed character-defining features and the basic elements of the original floor plan will remain, with addition the aforementioned walls. Accordingly, we believe that the new control room build out will have no adverse effect.

Proposed Mitigation

Georgia Power proposes to mitigate these unavoidable adverse effects to historic properties through photographic and archival documentation (Level II) for inclusion in the Historic American Engineering Record (HAER). This proposed mitigation would be captured in a memorandum of agreement (MOA) between FERC, Georgia and Alabama SHPO, and the Advisory Council on Historic Preservation (ACHP) per the terms of the HPMP.

Figure 10. Photograph of generator floor.

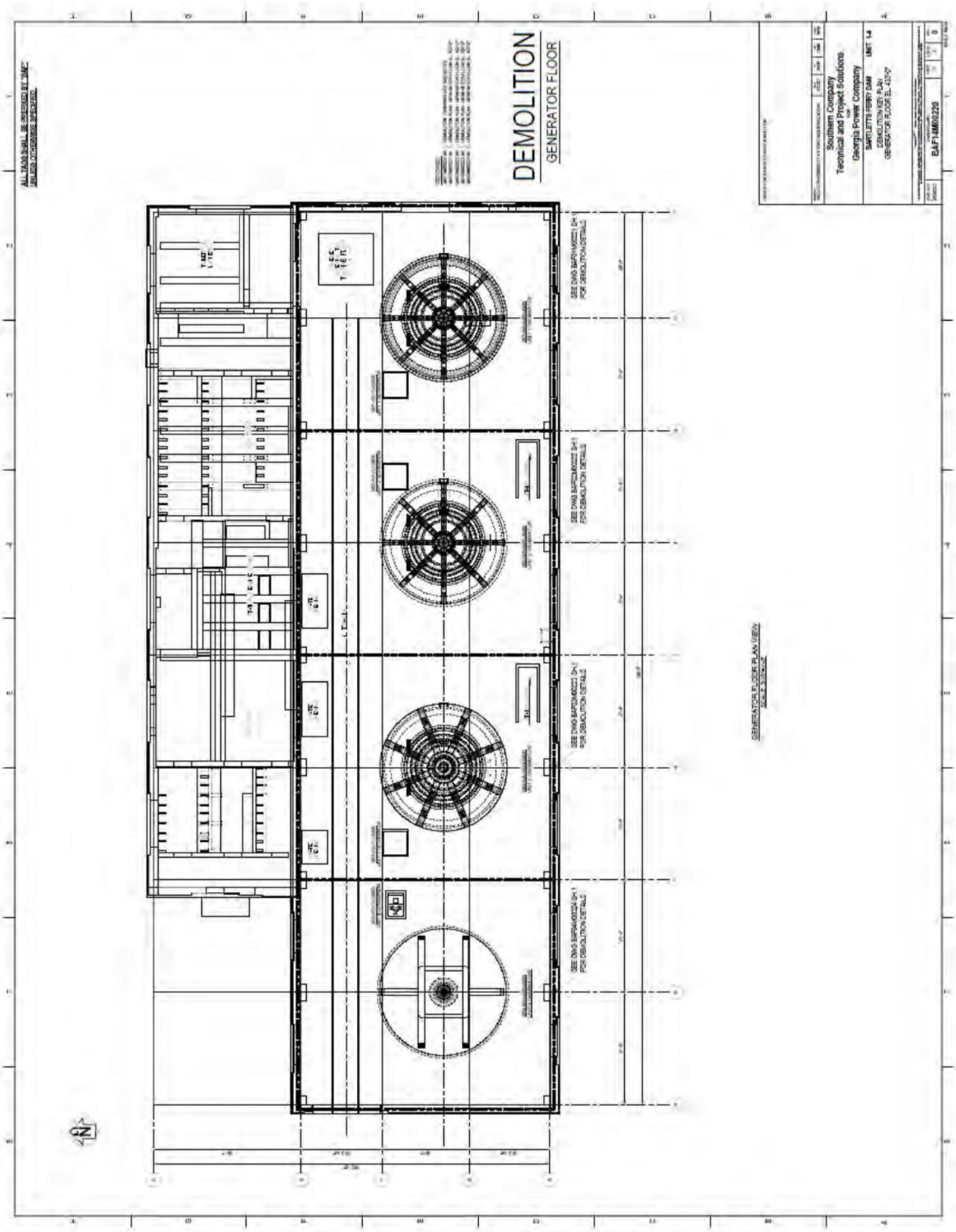

Figure 11. Current plan drawing of generator floor.

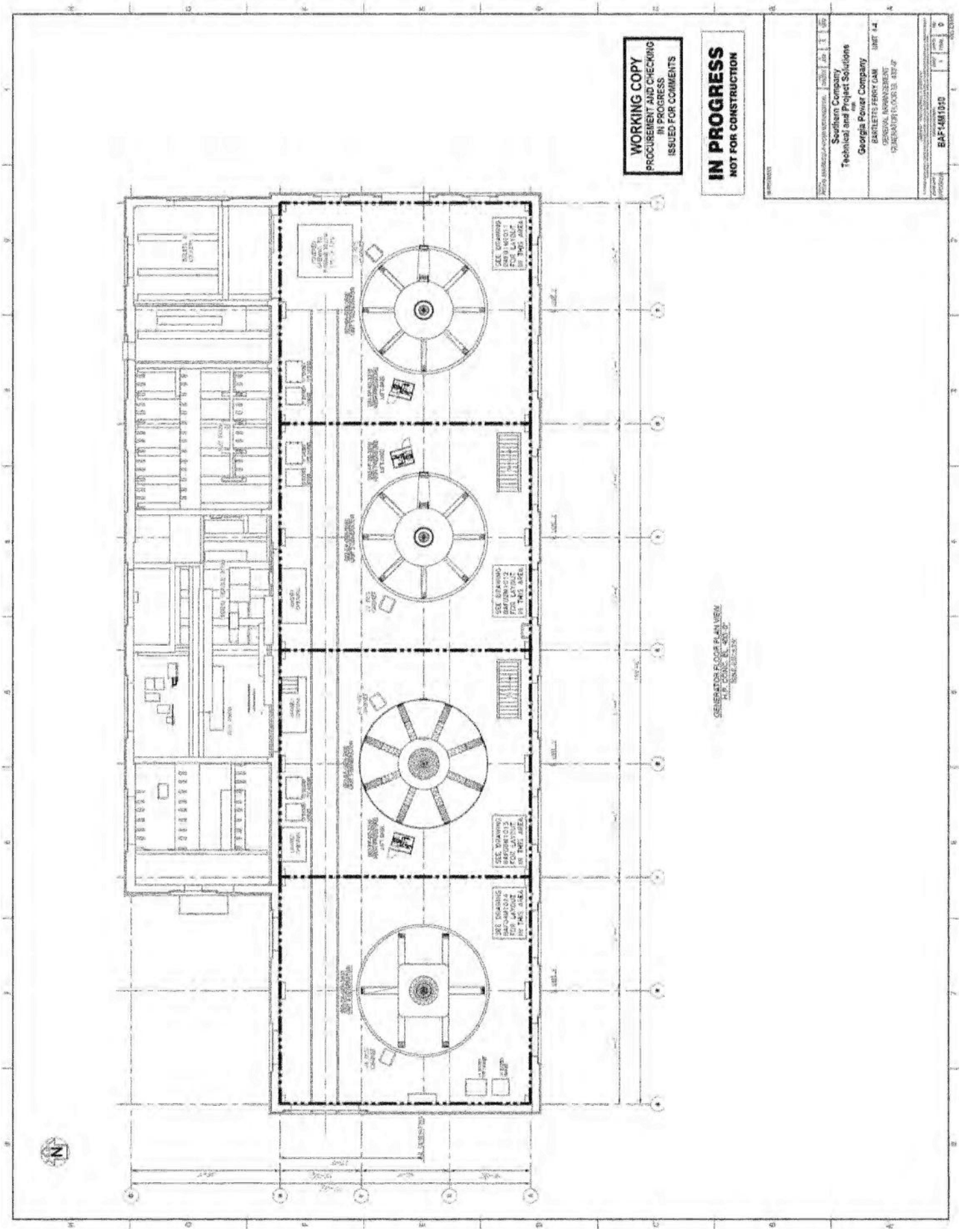

Figure 12. Plan drawing of generator floor after modernization.

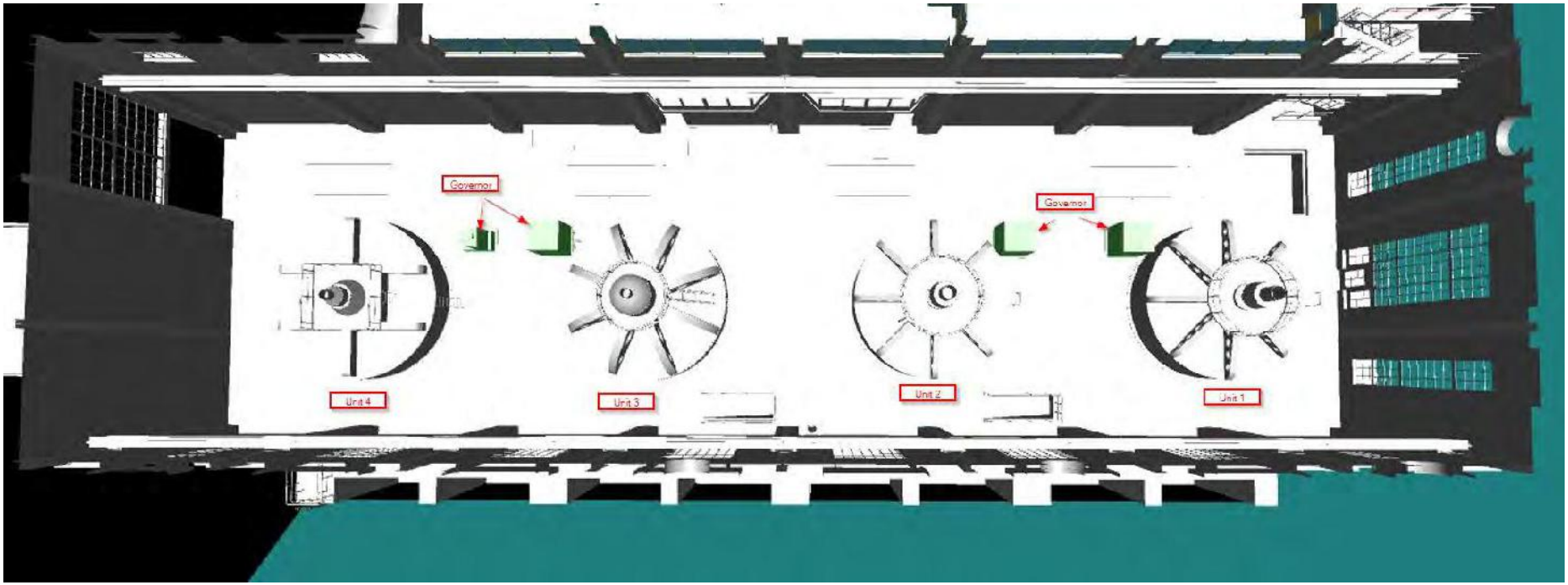

Figure 13. Model of generator floor before modernization.

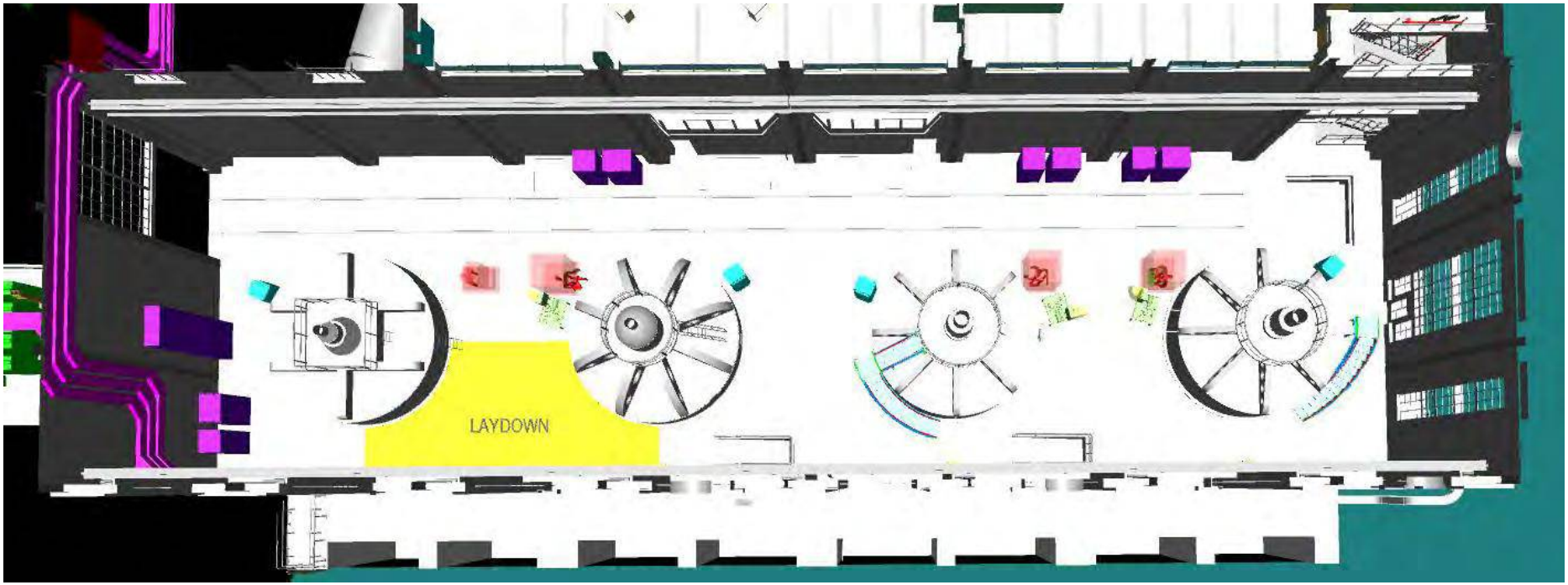

Figure 14. Model of generator floor after modernization.

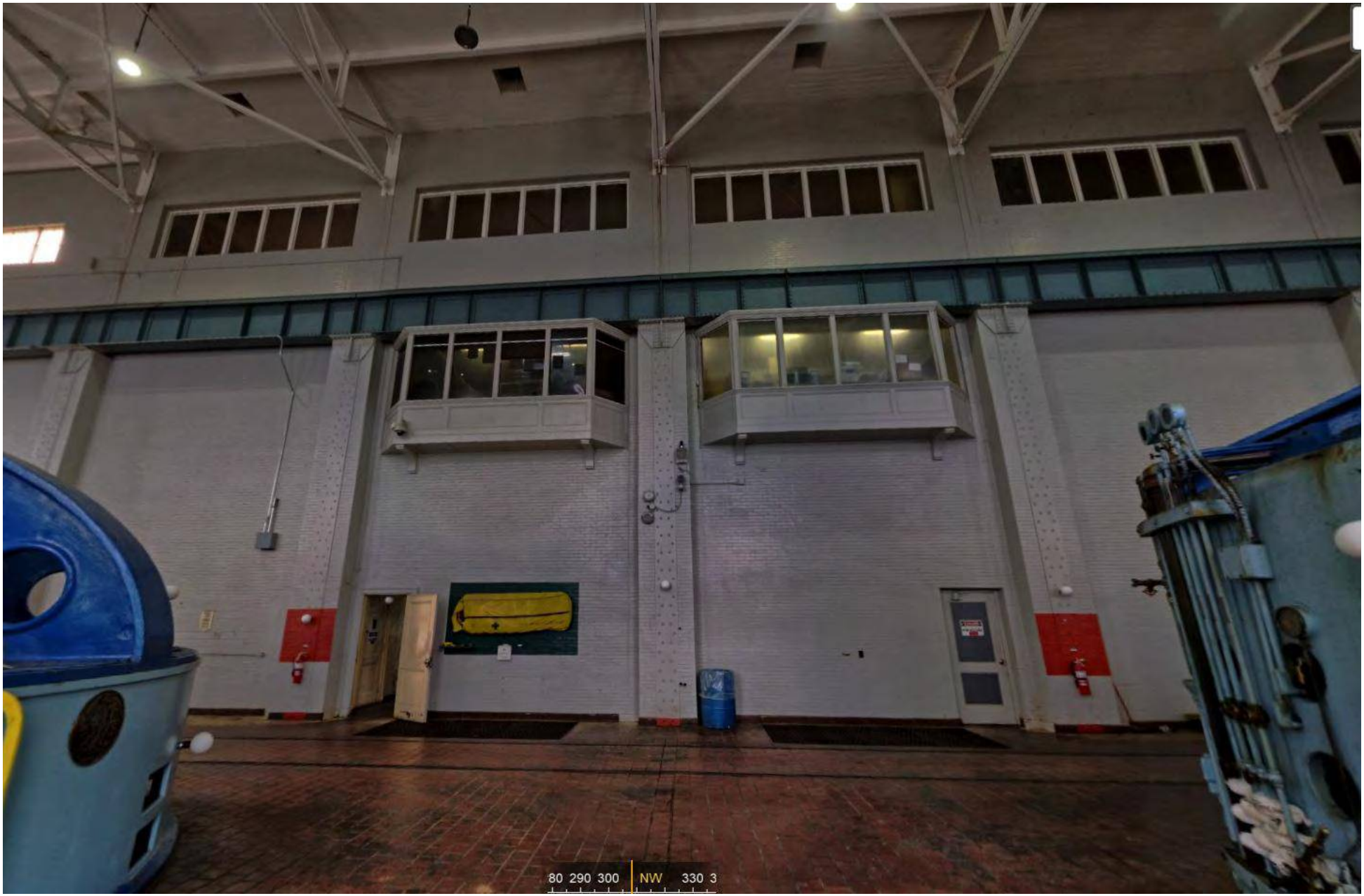

Figure 15. View from generator floor showing the original control room (bay windows) and the proposed new control room above.

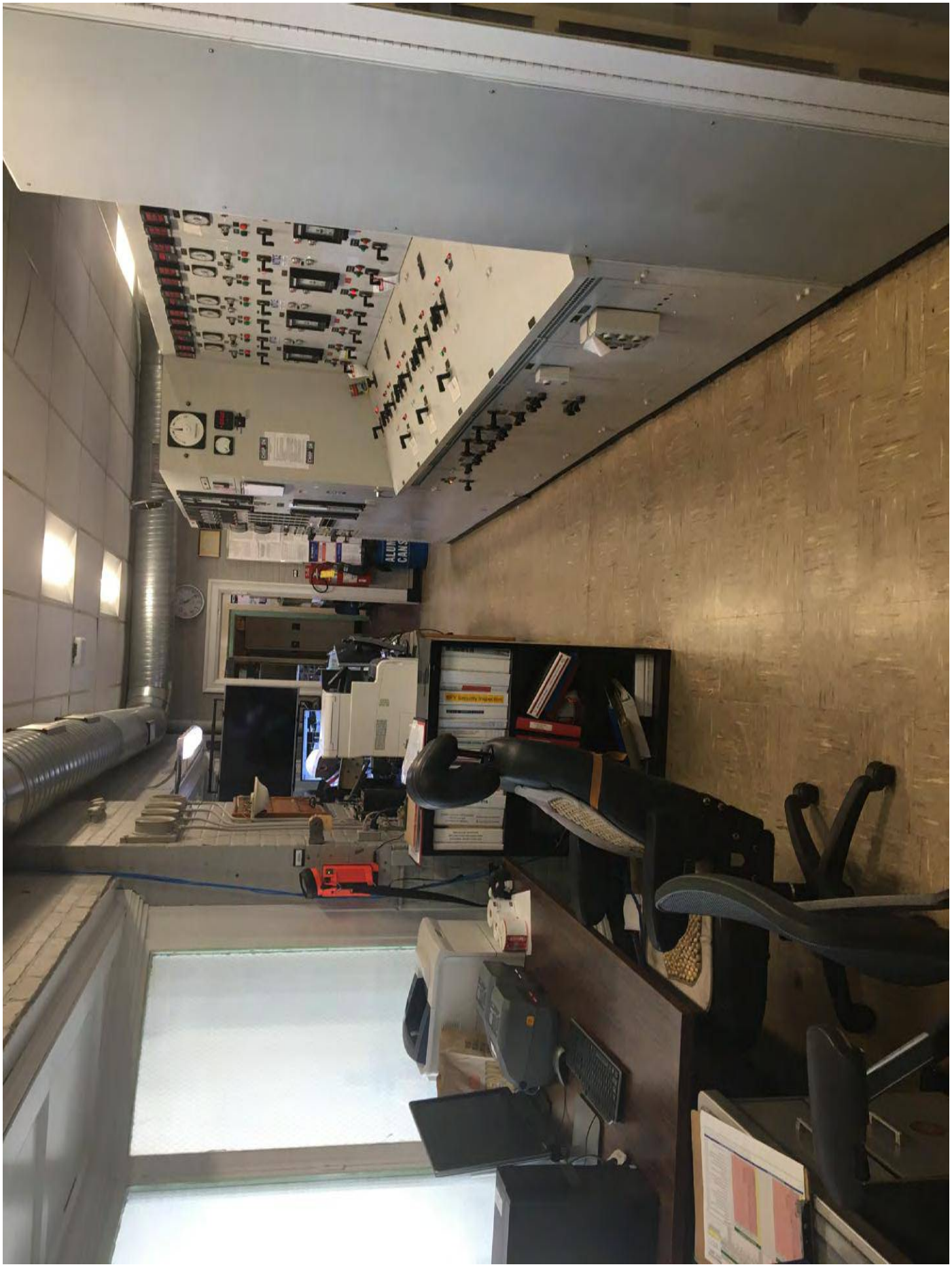

Figure 16. View of current control room.

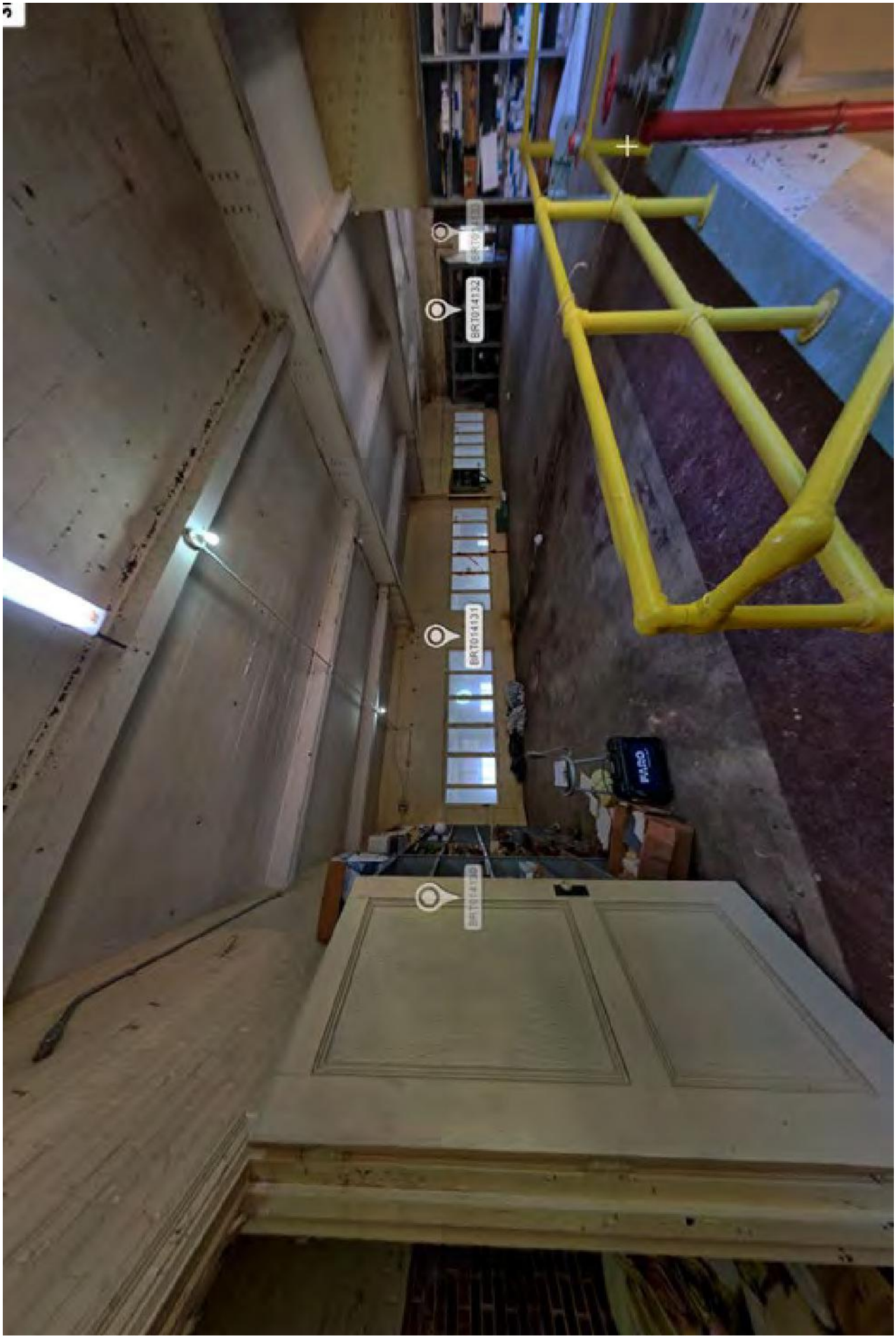

Figure 17. View of proposed new control room taken from a 3D scan.

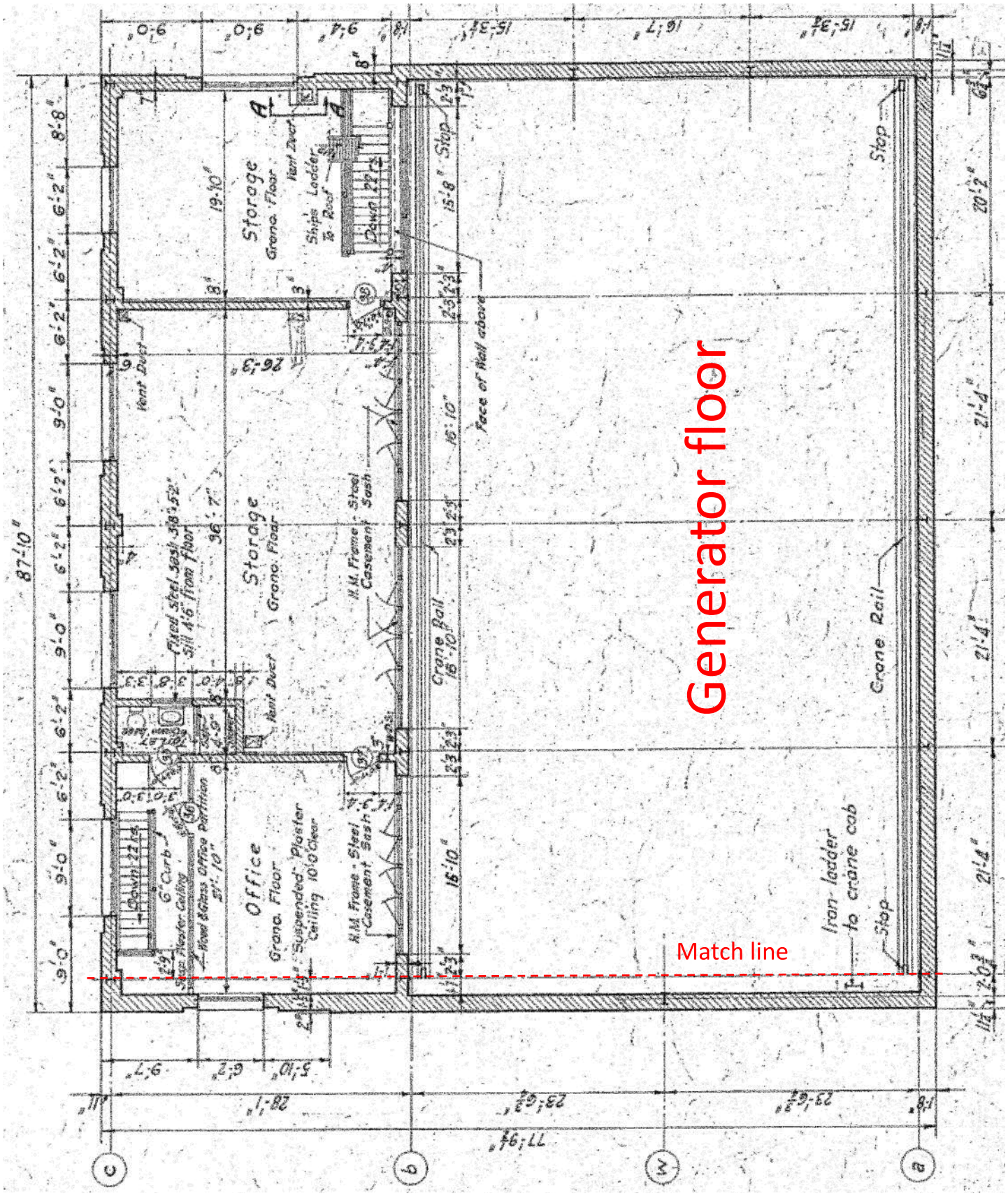

Figure 18. Plan drawing of original 1926 4th floor.

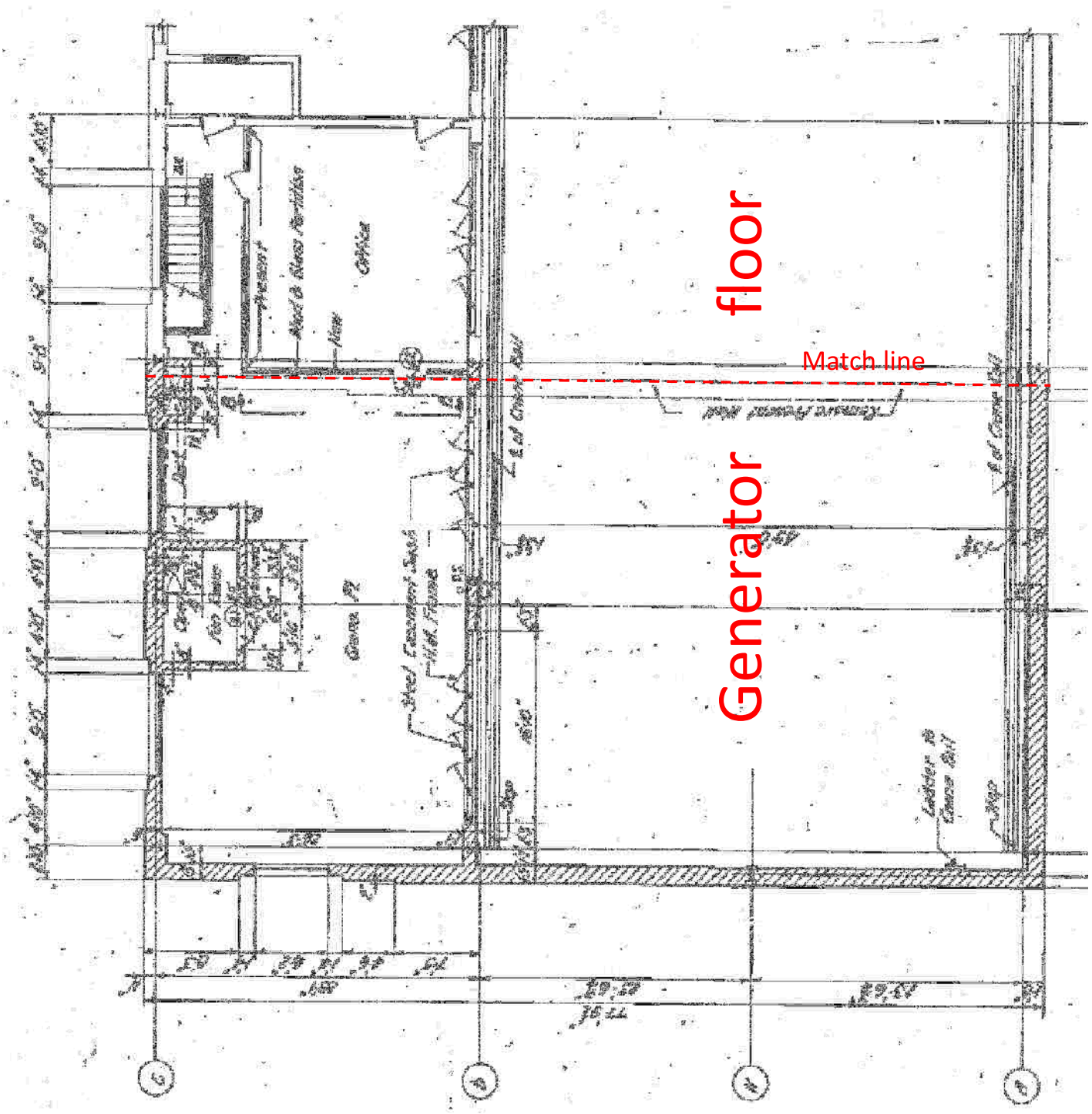

Figure 19. Plan drawing of 4th floor after 1928 expansion for Units 3 and 4.

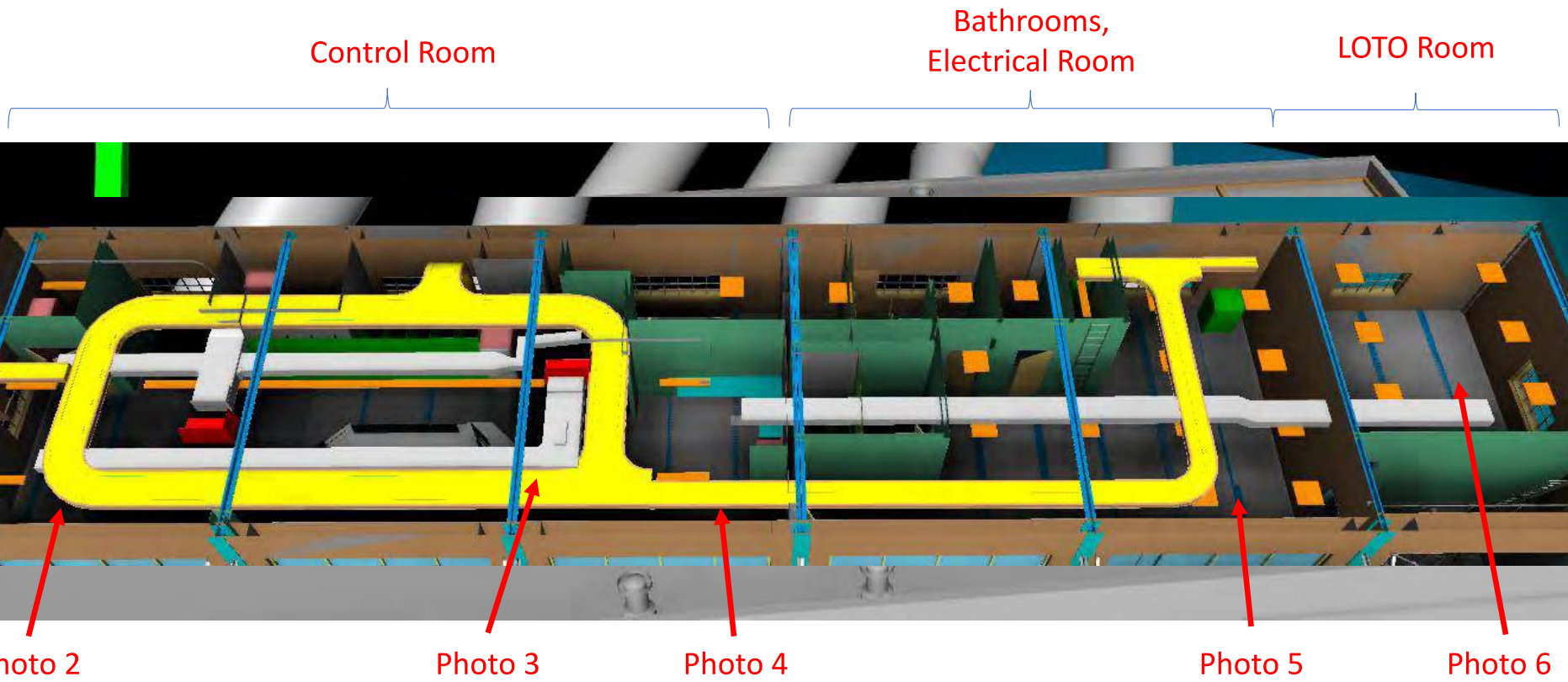

Figure 20. Overview of proposed 4th floor build out.

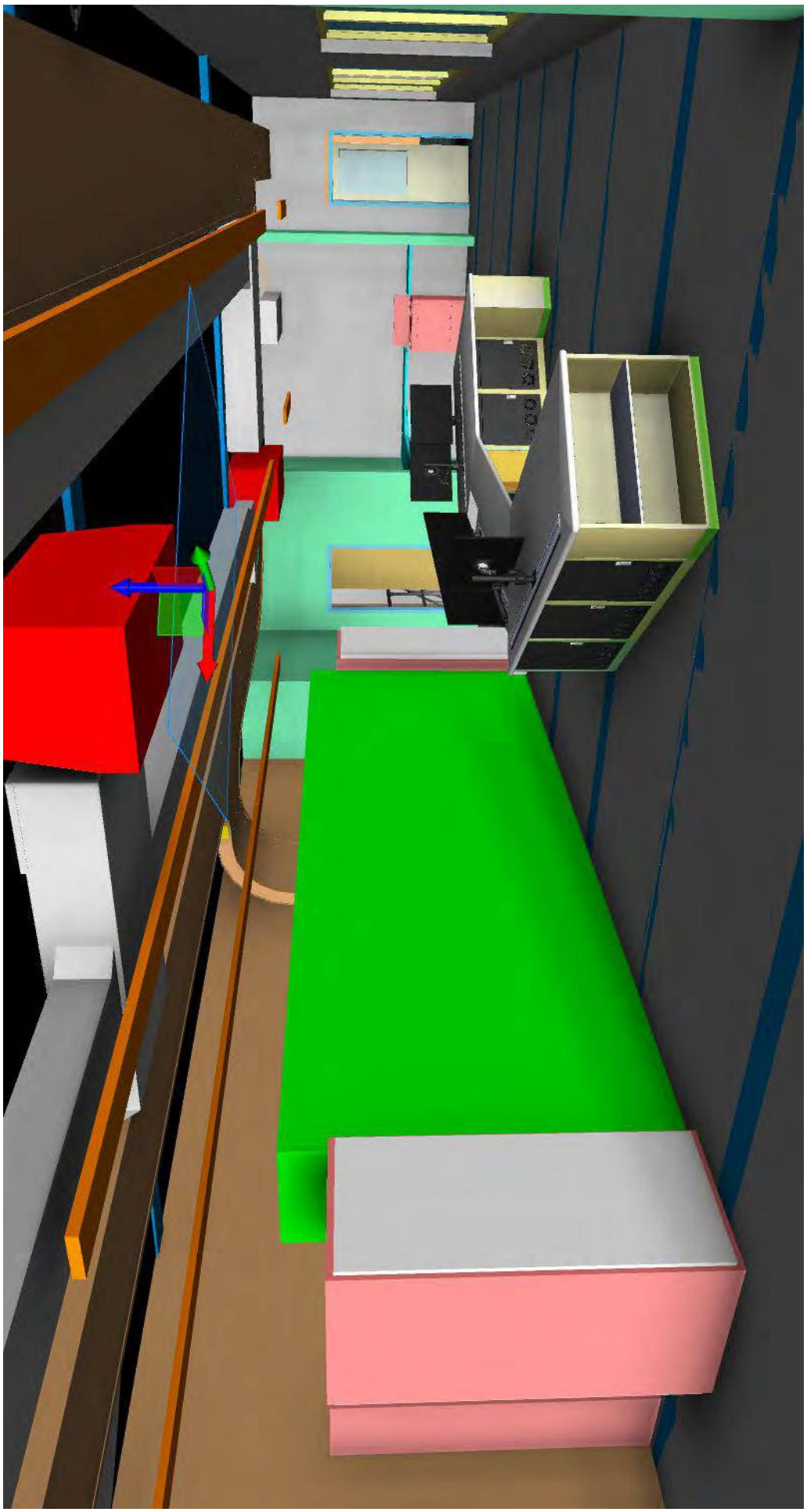

Figure 21. Model of proposed new control room.

Figure 22. Model of proposed new control room.

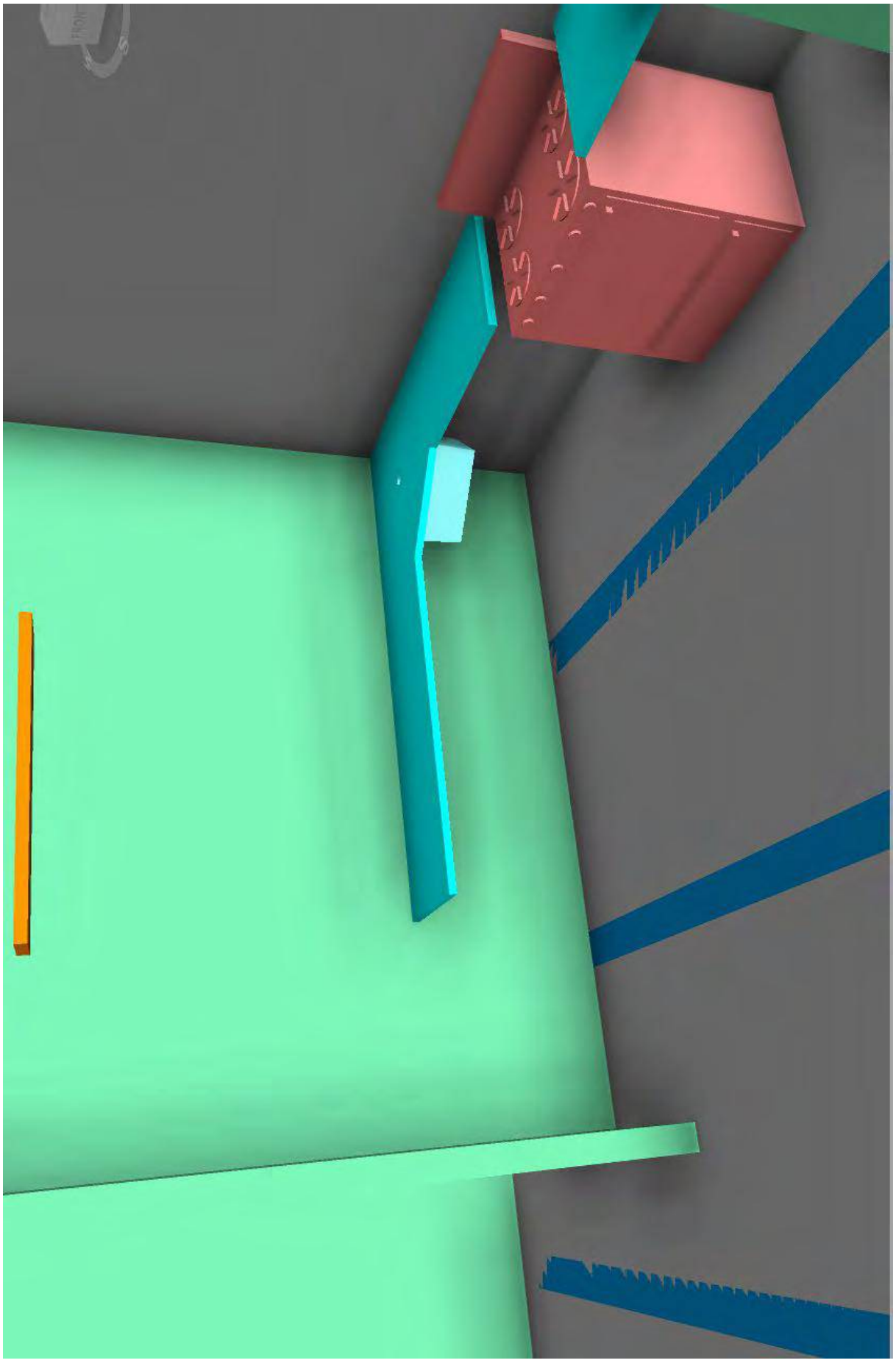

Figure 23. Model of proposed new kitchenette area.

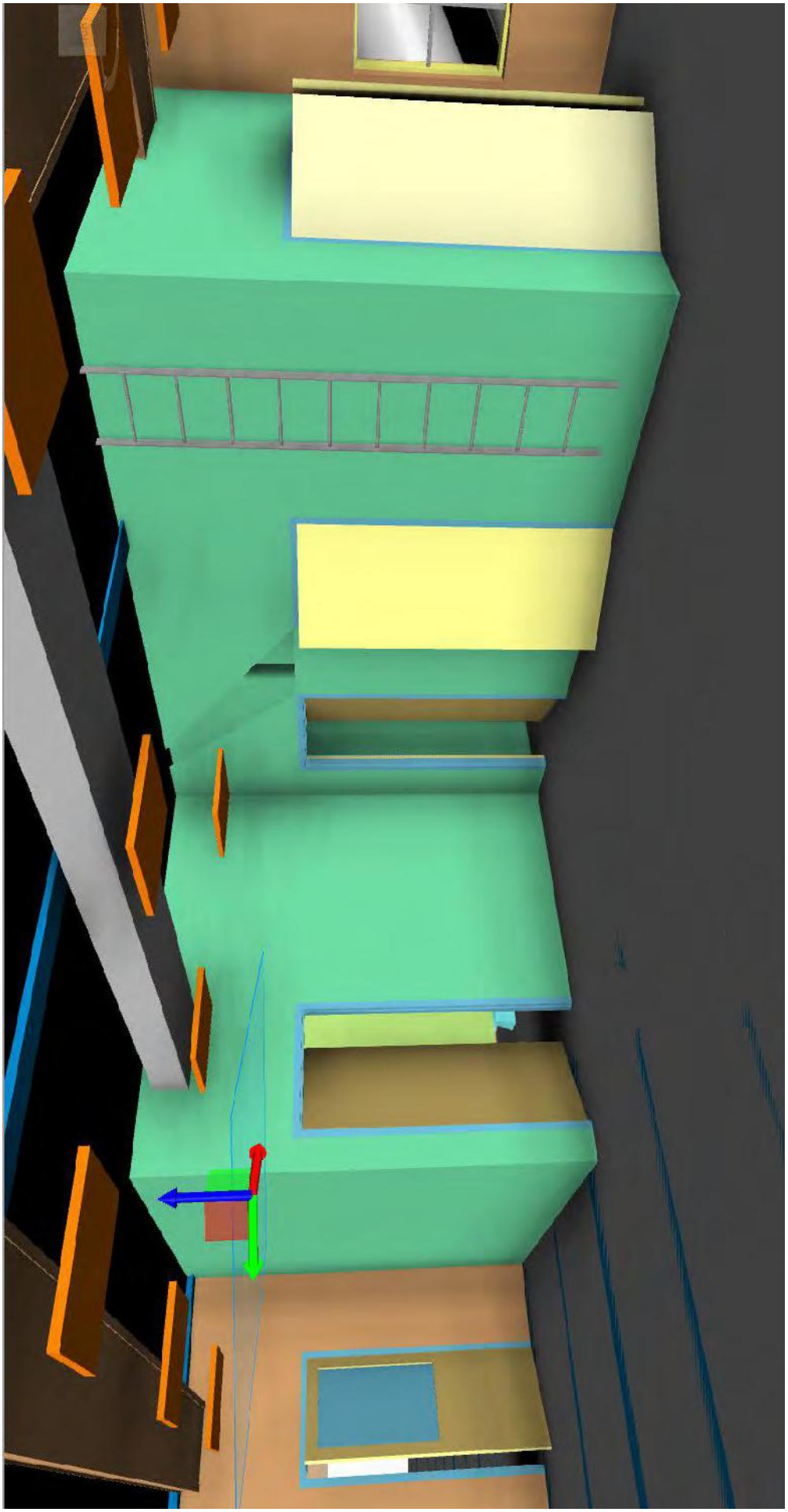

Figure 24. Model of proposed restroom, electrical room, and storage closet.

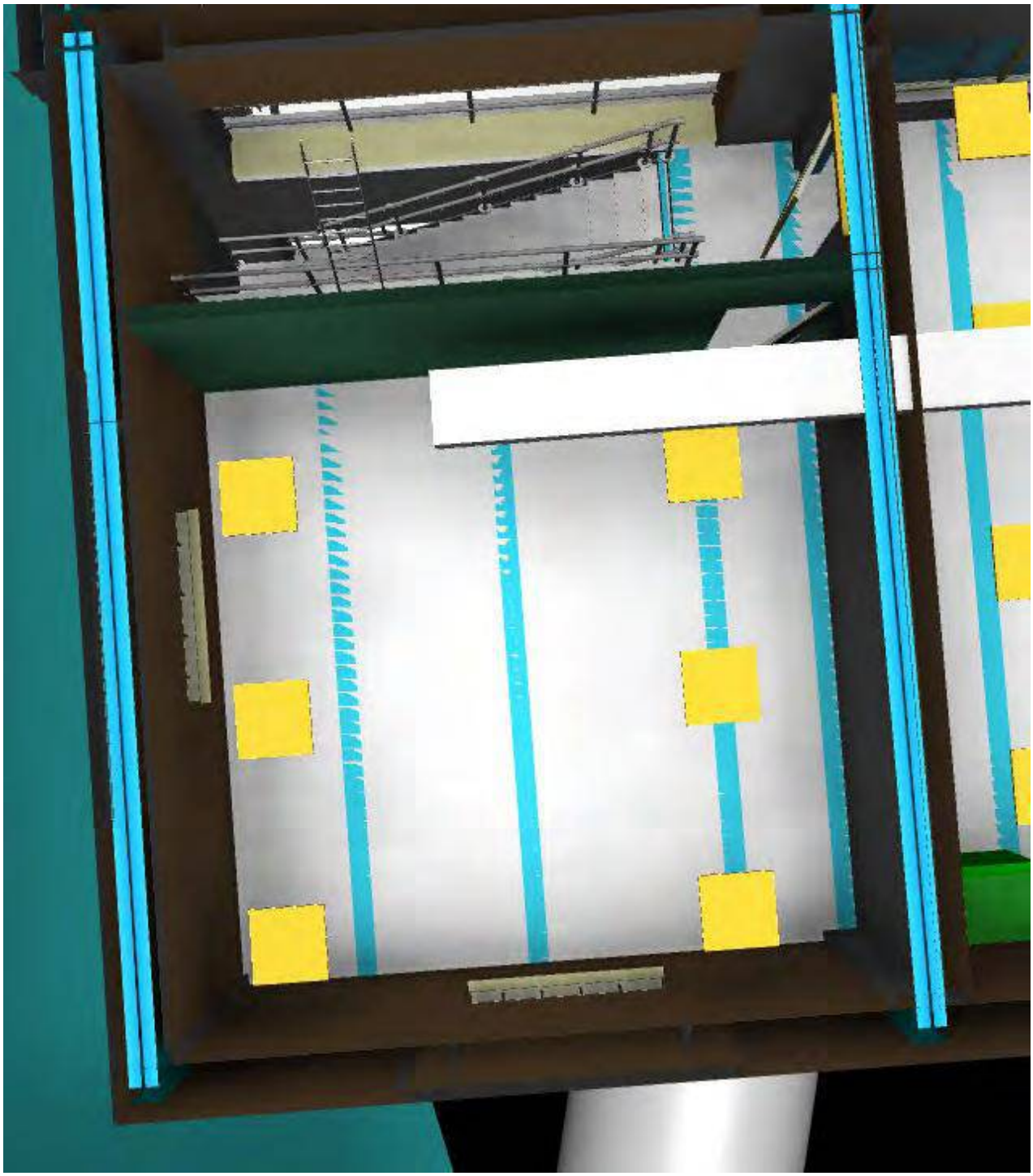

Figure 25. Model of proposed new LOTO room.

From: Santiago D. Martinez
To: Charles, Joseph D.
Subject: Re: recent Bartletts Ferry submittal
Date: Tuesday, April 5, 2022 3:14:49 PM

Joey,

My apologies - apparently I misunderstood the point of our suggestion. The intent was to see if it would be possible to do the public display *in addition to* the HAER documentation, rather than to select one or the other. As noted, it is fine with us if the public display is located at a park away from the dam. I imagine that the HAER documentation will provide a solid basis to draw from for the interpretive text.

Sorry again for the confusion.

Santiago Martinez
Environmental Review Historian
Environmental Review & Preservation Planning
Historic Preservation Division/Georgia DCA
(404) 486-6425 | 60 Executive Park South, NE Atlanta, GA 30329

Santiago D. Martinez
Environmental Review Historian
Georgia Department of Community Affairs
Direct 4044866425
Santiago.Martinez@dca.ga.gov

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Tuesday, April 5, 2022 2:45 PM
To: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Subject: Re: recent Bartletts Ferry submittal

My preference would be the HAER documentation.

Get Outlook for iOS [gcc02.safelinks.protection.outlook.com]

From: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Sent: Tuesday, April 5, 2022 2:33:23 PM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: Re: recent Bartletts Ferry submittal

Joey,

We would still be open to that, provided that the level of interpretation is sufficient. Just to be clear, the HAER documentation is fine too, we just wanted to offer an additional suggestion.

Please let me know which option y'all would prefer and I'll get the response finalized.

Thanks,

Santiago Martinez
Environmental Review Historian
Environmental Review & Preservation Planning
Historic Preservation Division/Georgia DCA
(404) 486-6425 | 60 Executive Park South, NE Atlanta, GA 30329

Santiago D. Martinez
Environmental Review Historian
Georgia Department of Community Affairs
Direct 4044866425
Santiago.Martinez@dca.ga.gov

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Tuesday, April 5, 2022 1:54 PM
To: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Subject: RE: recent Bartletts Ferry submittal

The only drawback I see to that is that the area surrounding the dam, powerhouse, and operators village is fenced off and not open to the public. Any public area we might have to display it would be one of our parks well away from the dam. Not sure how y'all would feel about that.

From: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Sent: Tuesday, April 5, 2022 1:50 PM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: Re: recent Bartletts Ferry submittal

Joey,

Good afternoon, thanks for getting this to me. I just had one last question: the proposed mitigation will remain as is in the original submittal, correct (HAER documentation)?

I am not sure if this would be feasible in this instance, but one possible suggestion our office wanted to run by you would be to display the old equipment with interpretive signage somewhere where it would be accessible to the public.

Please confirm/let me know your thoughts on our potential alternative at your earliest convenience and we will get the response finalized as soon as possible. Thanks in advance for your time and consideration!

Best regards,

Santiago Martinez
Environmental Review Historian
Environmental Review & Preservation Planning
Historic Preservation Division/Georgia DCA
(404) 486-6425 | 60 Executive Park South, NE Atlanta, GA 30329
Santiago D. Martinez
Environmental Review Historian
Georgia Department of Community Affairs
Direct 4044866425
Santiago.Martinez@dca.ga.gov

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Monday, April 4, 2022 4:48 PM
To: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Subject: RE: recent Bartletts Ferry submittal

Here is a floor plan for the control room.

From: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Sent: Monday, April 4, 2022 10:39 AM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: Re: recent Bartletts Ferry submittal

Joey,

Thanks for the confirmation. I think what you have given us so far is enough for us to process our response, although a drawing would definitely be appreciated if you could get it before Thursday. I was also wondering if you might happen to have a floorplan showing the proposed

new control room build out? I know you have included renderings, but an old fashion floorplan would help to see the positions of the new walls a little easier since the rendering of the overall layout also shows duct work above.

Thanks in advance for any additional material you can provide.

Best regards,

Santiago Martinez
Environmental Review Historian
Environmental Review & Preservation Planning
Historic Preservation Division/Georgia DCA
(404) 486-6425 | 60 Executive Park South, NE Atlanta, GA 30329
Santiago D. Martinez
Environmental Review Historian
Georgia Department of Community Affairs
Direct 4044866425
Santiago.Martinez@dca.ga.gov

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Monday, April 4, 2022 8:40 AM
To: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Subject: RE: recent Bartletts Ferry submittal

Yes, I finally wrestled an answer from the hydro folks. Their plan is to go with replacing the steel window frames with matching steel frames fitted with new glass that will meet their climate control and sound proofing needs (the original frames would not hold the new glass needed for sound proofing). I am trying to get a drawing to include, but in the event that I can't get one soon enough, do you think a detailed verbal description would be good enough?

From: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Sent: Monday, April 4, 2022 8:32 AM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: Re: recent Bartletts Ferry submittal

Joey,

Good morning, I just wanted to follow up on this to see if the scope of work has been finalized yet? We are quickly approaching the end of the 30-day review period, so any changes will either need to be finalized soon or reviewed under a follow up submittal.

Thank you in advance for your time and consideration. Please let me know if you have any

questions for HPD.

Best regards,

Santiago Martinez
Environmental Review Historian
Environmental Review & Preservation Planning
Historic Preservation Division/Georgia DCA
(404) 486-6425 | 60 Executive Park South, NE Atlanta, GA 30329

Santiago D. Martinez
Environmental Review Historian
Georgia Department of Community Affairs
60 Executive Park, NE
Atlanta, Georgia 30329

Direct 4044866425
Santiago.Martinez@dca.ga.gov

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Monday, March 28, 2022 9:32 AM
To: Santiago D. Martinez <Santiago.Martinez@dca.ga.gov>
Subject: recent Bartletts Ferry submittal

Santiago,

You may have seen the submittal I filed for some upgrades at the Bartletts Ferry dam and powerhouse, but I wanted to give you an update. AHC is also reviewing because the powerhouse staddles the state line, and they asked a question about the proposed replacement of the interior windows of what would be the new control room. They asked whether we might be able to achieve the soundproofing and climate control we need by placing insert/"storm windows" on the interior side of the windows, rather than replacing them.

After some discussion, our hydro folks said they could make that work, but would need to replace the existing glass in the windows because the panes are translucent, but they need to be able to see out onto the generator floor. They are also considering whether they could replace the existing steel frame windows with new, identical steel frame windows that will hold the kind of glass they need for the soundproofing and climate control. They promised to get back to me with their proposal by the end of this week. Factors they are considering are any possible lead/asbestos abatement needed for replacing the glass in the existing frames and the cost of putting in new steel frames.

At any rate, I will provide you and AHC with a detailed description of what the new window proposal is, but wanted to get that to you now in case you are currently reviewing.

Joey

Joseph Charles
Hydro Compliance Coordinator
Environmental & Natural Resources
Georgia Power
241 Ralph McGill Blvd., NE
BIN 10151
Atlanta, Georgia 30308
404.506.2337 (office)
404.782.8796 (cell)

Brian P. Kemp
Governor

Christopher Nunn
Commissioner

Georgia® Department of Community Affairs

April 7, 2022

Joseph Charles
Hydro Compliance Coordinator
Georgia Power
241 Ralph McGill Boulevard, NE
Atlanta, Georgia 30308

RE: FERC 485: Bartletts Ferry Powerhouse Modernization, Bartletts Ferry Road, Fortson
Harris County, Georgia
HP-220308-001

Dear Mr. Charles:

The Historic Preservation Division (HPD) has received the information submitted concerning the above referenced project. Our comments are offered to assist the Federal Energy Regulatory Commission (FERC) and its applicants in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The subject project consists of modernization activities at the circa 1926 powerhouse of the Bartletts Ferry Hydroelectric Project located at the end of Bartletts Ferry Road in Fortson, including replacing the original turbines and associated air compressor and lubrication systems and the original windows between the proposed new control room and generator floor with matching frames capable of supporting new glass needed to achieve soundproofing and climate control needs, refurbishing the generators through rewinding, replacing the electromechanical relays and brake systems, installing access stairs and safety railing on top of the generator covers, and building out the fourth floor space to create a new control room, restroom, kitchenette/break room, electrical room, storage room, and lock out/tag out room.

Based on the information provided and desktop research, HPD concurs that the Bartletts Ferry Hydroelectric Project is eligible for listing in the National Register of Historic Places (NRHP). Additionally, HPD concurs that the project, as currently proposed, constitutes an **adverse effect** to historic properties that are eligible for or listed in the NRHP, as defined in 36 CFR Part 800.5(a)(2). The replacement of original, character-defining features of an NRHP-eligible property is not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*. Additionally, HPD concurs that adequate measures have been taken to attempt to minimize or avoid the adverse effect. Therefore, it appears that the adverse effect resulting from the proposed project is unavoidable. However, HPD would like to note that the impact to character defining windows between the new control room and generator floor could be minimized by installing interior storm windows and replacing the glass in the original frames as needed, as suggested by the Alabama Historical Commission (AHC). If the scope of work (SOW) for this project changes so that it conforms to the Secretary's *Standards*, prior to drafting a Memorandum of Agreement (MOA), please forward the updated SOW to HPD for review and comment, once available.

HPD would like to note that this determination of an adverse effect is not the end of the Section 106 consultation process. When an adverse effect to a historic property is found, the federal agency must notify the Advisory Council on Historic Preservation (ACHP) of the determination and draft a MOA in order to resolve the adverse effect. If the federal agency delegates ACHP notification responsibility to the applicant, the applicant should utilize the ACHP's e-notification system available here:

https://www.achp.gov/e106-email-form. If the federal agency delegates the drafting of a MOA to the applicant, the applicant should visit the ACHP's *Guidance on Agreement Documents* webpage, found here: https://www.achp.gov/initiatives/guidance-agreement-documents and utilize the MOA template found therein.

Regarding mitigation, HPD concurs with the proposal to develop Level II Historic American Engineering record (HAER) documentation but would also suggest having the original equipment displayed publicly with interpretive text. HPD will review the draft MOA and should be provided the opportunity to review any associated deliverables stipulated therein, within 30 days of receipt. Absent federal agency involvement, HPD is available to provide technical assistance in resolving adverse effects.

We look forward to working with you as this project progresses and to receiving either a revised SOW or a draft MOA. Please refer to project number **HP-220308-001** in any future correspondence regarding this project. If we may be of further assistance, please contact Santiago Martinez, Environmental Review Historian, at (404) 486-6425 or Santiago.Martinez@dca.ga.gov.

V/r,

Dr. David Crass
Division Director
Deputy State Historic Preservation Officer

DCC/sdm

cc: Allison Slocum, River Valley Regional Commission

Alabama Historical Commission

ALABAMA HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
SECTION 106 PROJECT REVIEW CONSULTATION FORM

Federal laws exist to ensure that federal agencies or their designated applicants carefully consider historic preservation in federally funded, licensed, or permitted projects. Section 106 of the National Historic Preservation Act of 1966, as amended directs this review. http://www.achp.gov/106summary.html. At a minimum, submission of this completed form and attachments constitutes a request for review by the Alabama Historical Commission, which is the Alabama State Historic Preservation Office (SHPO). **The responsibility for preparing documentation, including the identification of archaeological and architectural properties and the assessment of potential effects resulting from the project, rests with the federal or state agency, or its designated applicant.** The role of the Alabama SHPO is to review, comment, and consult with federal/state agencies or their designees. The Alabama SHPO's ability to complete a timely project review largely depends on the quality of the material submitted. Some applicants may find it advantageous to hire a professional consultant with expertise in archaeology, history and/or architectural history.

PROJECT NAME
Bartletts Ferry Modernization Program

FEDERAL AGENCY PROVIDING FUNDS, LICENSE, OR PERMIT
FERC

FEDERAL PROJECT NUMBER
485

FEDERAL AGENCY CONTACT NAME AND E-MAIL/PHONE NUMBER
Jennifer Polardino jennifer.polardino@ferc.gov

STATE AGENCY PROVIDING FUNDS, LICENSE, OR PERMIT (IF APPLICABLE)

STATE AGENCY CONTACT NAME AND E-MAIL ADDRESS, PHONE NUMBER, MAILING ADDRESS

AHC NUMBER (If project has been previously submitted)

APPLICANT NAME:
Georgia Power/Joseph Charles

APPLICANT MAILING ADDRESS:
241 Ralph McGill Blvd. NE, BIN 10151 Atlanta, GA 30308

APPLICANT TELEPHONE:
404-782-8796

APPLICANT EMAIL:
jcharles@southernco.com

CONTACT NAME (if different than applicant):

CONTACT MAILING ADDRESS:

CONTACT TELEPHONE:

CONTACT EMAIL (Person to whom AHC should email response letter):

CONTRACTOR TYPE: ☐ ARCHAEOLOGIST; ☐ARCHITECTURAL HISTORIAN; ☑NONE; ☐OTHER:

CONTRACTOR NAME:

CONTRACTOR MAILING ADDRESS:

CONTRACTOR TELEPHONE:

CONTRACTOR EMAIL:

PROJECT LOCATION

STREET ADDRESS	CITY
61 Lee Rd. 335	Salem

COUNTY	ZIP CODE
Lee	36874

LATITUDE / LONGITUDE: USE DECIMAL DEGREES EXAMPLE: 32.3722N, -86.3083W

32.661943N, -85.091629W

PROJECT DESCRIPTION

Will the project involve any of the following? Check all that apply.

- ☐ exterior rehabiliation work;
- ☑ interior rehabilitation work;
- ☐ cellular equipment located on buildings;
- ☐ streetscapes/sidewalks/lighting;
- ☐ new construction; and/or
- ☑ demolition

Describe the overall project in DETAIL. Be sure to describe any items checked above. Use additional pages if necessary.

The Bartletts Ferry Project (FERC #485) was completed in 1926. Some systems are nearing the end of their service life while others need upgrades/modernization for continued safe, efficient use. The turbines will be replaced, while the generators will be reburbished (rewound, replace associated systems like lubrication and brakes), a new control room will be built in a currently unoccupied space above the current control room. Original interior windows of the new control room space will be replaced and walls added to build out control room and associated support rooms.

AREA OF POTENTIAL EFFECT (APE)

The APE varies with project types and can be direct or indirect (physical, visual, auditory, etc.). The APE is defined as "the geographic area or areas within which an undertaking may cause changes in the character of use of historic properties, if any such properties exist." Factors to consider when determining the APE include; topography, vegetation, existing development, orientation of an existing resource to the project, physical siting of a resource, and existing and planned future development. For example:

1) Rehabilitation, renovation, and/or demolition of a historic building or structure, or new construction: the APE might include the building itself and the adjacent setting.
2) Streetscapes: the APE might include the viewshed from the street.
3) Pedestrian/bicycle facilities: the APE might extend the length of the corridor and for some distance on both sides of the corridor.
4) Underground utilities: the APE would usually be limited to the area of ground disturbance.

Attach a map indicating the precise location of the project and the boundaries of the APE, preferably a clear color copy of a USGS topographic quadrangle map (7.5 minute). For projects in urban areas, also include a city map that shows more detail. USGS topographic maps can be printed from this website: https://ngmdb.usgs.gov/topoview/viewer/. City maps can be printed using www.google.com/maps.

Provide current, high resolution color photographs that illustrate the project area and the entire APE as defined above.

ARCHAEOLOGY (Ground Disturbing Activities)

Has the ground in the project area been disturbed other than by agriculture (i.e. grading, grubbing, clear cutting, filling, etc.)?
☑Yes ☐No ☐Don't know ☐N/A

If yes, describe in detail. Use additional pages as necessary. Photographs are helpful.

Project will take place inside existing powerhouse, so the footprint of the powerhouse and surrounding area were impacted by construction back in 1926.

Describe the present use and condition of the property. Use additional pages as necessary.

The original Bartletts Ferry powerhouse, built in 1926, is still in operation and producing hydroelectric power. It is in good condition and was determined eligible under Criteria A and C, both individually and as part of the Bartletts Ferry Historic District.

To your knowledge, has a Cultural Resource Assessment (CRA) been conducted in the proposed project area?
☑Yes ☐No ☐Don't know ☐N/A

If yes, attach a copy of the cultural resources assessment report.

ARCHITECTURAL INFORMATION

Above-ground properties within the Area of Potential Effect (APE) should be evaluated for the eligibility for the National Register of Historic Places. It is the federal agency's (or their designee) responsibility to identify properties in the APE, apply the National Register (NR) criteria, and determine whether a property is eligible or not. Those determinations are sent to our office for review and comment. All properties evaluated should be accompanied by current photographs, and these locations should be keyed to a good quality USGS topographic map. Some applicants may find it advantageous to hire a historic preservation professional with expertise in history and/or architectural history to complete the identification and evaluation of historic properties. The Alabama Historical Commission publishes a GIS map of properties that have been documented by or through our office. The map includes properties listed in the National Register of Historic Places, Alabama Register of Landmarks & Heritage, Alabama Historic Cemetery Register, county architectural surveys, and other files. The GIS map can be accessed here: https://ahc.alabama.gov/historicpreservationmap.aspx The GIS map should function as a research tool, not an up-to-the-minute inventory about every historic and/or architecturally significant property in the state. This tool allows researchers to investigate and review potentially significant properties according to the best data that is available in the Alabama Historical Commission's files. The absence of a property from the map does not imply that an unidentified property lacks historic or architectural importance.

1) Within the APE, are there properties listed in or eligible for the National Register of Historic Places?

☑ YES If yes, identify the properties by name, address, and photo number.

The Bartletts Ferry Historic District, Bartletts Ferry powerhouse, Bartletts Ferry dam (dam and powerhouse are eligible as part of the district and individually).

☐ NO If no, identify the properties by name, address, and photo number. Provide an explanation as to why properties identified are not eligible for the National Register. A discussion of the National Register seven aspects of integrity and the applicable National Register criteria must be included. Refer to the National Park Service's website: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf Use additional pages as necessary.

EFFECTS DETERMINATION

An effect occurs when an action alters the characteristics of a property that may qualify it for the National Register of Historic Places. How will this project affect any of the properties identified in the previous section? Will the project take away or change anything within the boundaries of a historic property? Will the project change the view from or the view to any historic properties? Will the project introduce any audible or atmospheric elements? Will the project result in the transfer, lease, or sale of any of the identified properties? Use additional sheets as necessary.

The proposed project will have an adverse effect on the Bartletts Ferry powerhouse. See attached assessment.

CHECKLIST: Did you provide the following information?	
☑ Completed form.	☑ Photographs* of current site conditions and all identified historic properties keyed to a site map.
☑ Maps with project area, APE, and any historic properties marked and identified.	☑ For new construction, rehabilitations, etc., attach work plans, drawings, etc.
☑ Other supporting documents (if necessary to explain the project).	☑ Description of present use and condition of the project area.

*A note about photographs: Digital photos must be current, high resolution, and adequately show the resource. Take photographs of the overall property and the exterior of each building on the property, including outbuildings. Include views of the overall setting, views of the building in its immediate surrounding showing the relationship of the building to neighboring buildings, and views of significant landscape features (i.e. tree lined approaches, stone walls, formal gardens, etc.). Exterior views of the building should include full views of each side (if possible) and views of important architectural details. Key all photographs to a site map.

If the project involves rehabilitation, include photographs of the building(s) involved and especially the areas of the building slated for rehab work. Label each exterior view to a site map and label all interior views. If the project involves new construction, include photographs of the surrounding area looking out from the project site. Include photographs of any buildings that are located on the project property or on adjoining property.

NOTE: Section 106 regulations provide for a 30-day response time by the Alabama SHPO from the date of receipt. Project activities may not begin until our office has reviewed this information and issued comments.

Upon receipt, applications and attachments become the property of the State of Alabama.

For questions regarding this form or the Section 106 Review Process, contact Amanda McBride, Section 106 Coordinator, at 334.230.2692 or Amanda.McBride@ahc.alabama.gov.

All projects must be submitted digitally

E-mail this form and supporting documents to Section.106@ahc.alabama.gov This is the only approved e-mail address for project submission. Projects sent to any other e-mail address will not be accepted. The attachment size cannot exceed 19 MB. Alternatively, you may submit projects with larger attachments through an online system to be determined by the AHC.
Please limit your submission to cultural resources information only.

Contact Amanda McBride for any questions on digital submissions

Written Correspondence with AHC

Georgia Power

241 Ralph McGill Blvd., NE
BIN 10151
Atlanta, GA 30308
404 506 2337 tel
404 506 4132 fax
404 782 8796 cell
jcharles@southernco.com

March 8, 2022

Lee Anne Wofford
Deputy SHPO
Alabama Historical Commission
468 S. Perry Street
PO Box 300900
Montgomery, AL 36130-0900

RE: System upgrades at Bartletts Ferry powerhouse – Bartletts Ferry Project (FERC #485), Harris County, GA and Lee County, AL

Dear Ms. Wofford:

Bartletts Ferry dam and powerhouse were completed in 1926 and have been in operation for almost 100 years. Some systems are approaching end of service life or are in need of upgrades to allow them to continue to operate safely and efficiently into the future. Please find attached an overview and assessment of these modernization efforts for your review and comment.

If you have any questions or require any further information, please contact me at 404-506-2337 or jcharles@southernco.com.

Sincerely,

Joseph Charles, Hydro Compliance Coordinator

Bartletts Ferry Modernization, Harris County, GA and Lee County, AL

Background

The Bartletts Ferry Hydroelectric Project (FERC # 485) (Project) is situated on the Chattahoochee River, twelve miles north of Columbus in Harris County, Georgia and Lee County, Alabama (Figures 1-2). It was completed in 1926 and consists of two powerhouses, dam, dikes, spillways, fifteen support buildings, a flood control weir, and a 5,850-acre reservoir (Lake Harding). During the relicensing process for the current license (issued December 22, 2014), the facility was determined eligible for listing on the National Register of Historic Places (NRHP) as a historic district (Figure 3) under Criterion A at the state level for its association with broad patterns of local and state history. It was also determined eligible for the NRHP under Criterion C because of its distinctive construction characteristics. The second powerhouse, new intake, dike, and flood control weir – all constructed after 1980 – were not considered character-defining features, but would require reevaluation once they reach 50 years of age. The dam and original powerhouse were also determined individually eligible under Criteria A and C. The character-defining features of the original powerhouse include the overall form of the powerhouse and specific elements such as window fenestration, as well the generating units.

The current Project license was issued in 2014 for a for a 30-year term. Article 412 of the current license implements the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Georgia Department of Natural Resources – Historic Preservation Division, and the Alabama Historical Commission for Managing Historic Properties that May be Affected by Issuing a New License to Georgia Power Company for the Continued Operation of the Bartletts Ferry Hydroelectric Project in Harris County, Georgia and in Lee and Chambers Counties, Alabama," (PA) executed on January 31, 2013 by the Georgia Department of Natural Resources - Historic Preservation Division and on March 21, 2013 by the Alabama Historical Commission. The PA, in turn, implements the Historic Properties Management Plan (HPMP) for the Project, last updated in 2020. According to the HPMP, Georgia Power is to consult with the State Historic Preservation Officers (SHPO) of Georgia and Alabama on activities that have the potential to adversely affect historic properties. As the proposed changes involve the replacement or modernization of interior features of the historic powerhouse, tribal consultation has not be conducted at this time.

Modernization Program and Assessment of Effects

The Project was determined eligible for the NRHP under Criteria A and C. Georgia Power manages the Project with the goal of retaining historically significant features and protecting integrity of design, materials, workmanship, location, setting, feeling, and association of character-defining features to the extent possible without compromising safety and reliability. As noted, Bartletts Ferry dam and powerhouse were completed in 1926, meaning that many of the main components are almost 100 years old. Certain components are approaching the end of their service life according to industry standards. Others require upgrades to ensure continued safe and reliable operation. These include the replacement of the original turbines, rewind and refurbishment of the original generators, replacement of control panels in a new control room.

The existing turbines (Figures 4-9) are at the end of their service lives and will need to be replaced with modern turbines. Associated air compressors and lubrication systems will also need to be replaced. While the generators will not be replaced, they do need extensive refurbishment including rewinding, replacement of existing electromechanical relays, replacement of brake systems, and the addition of

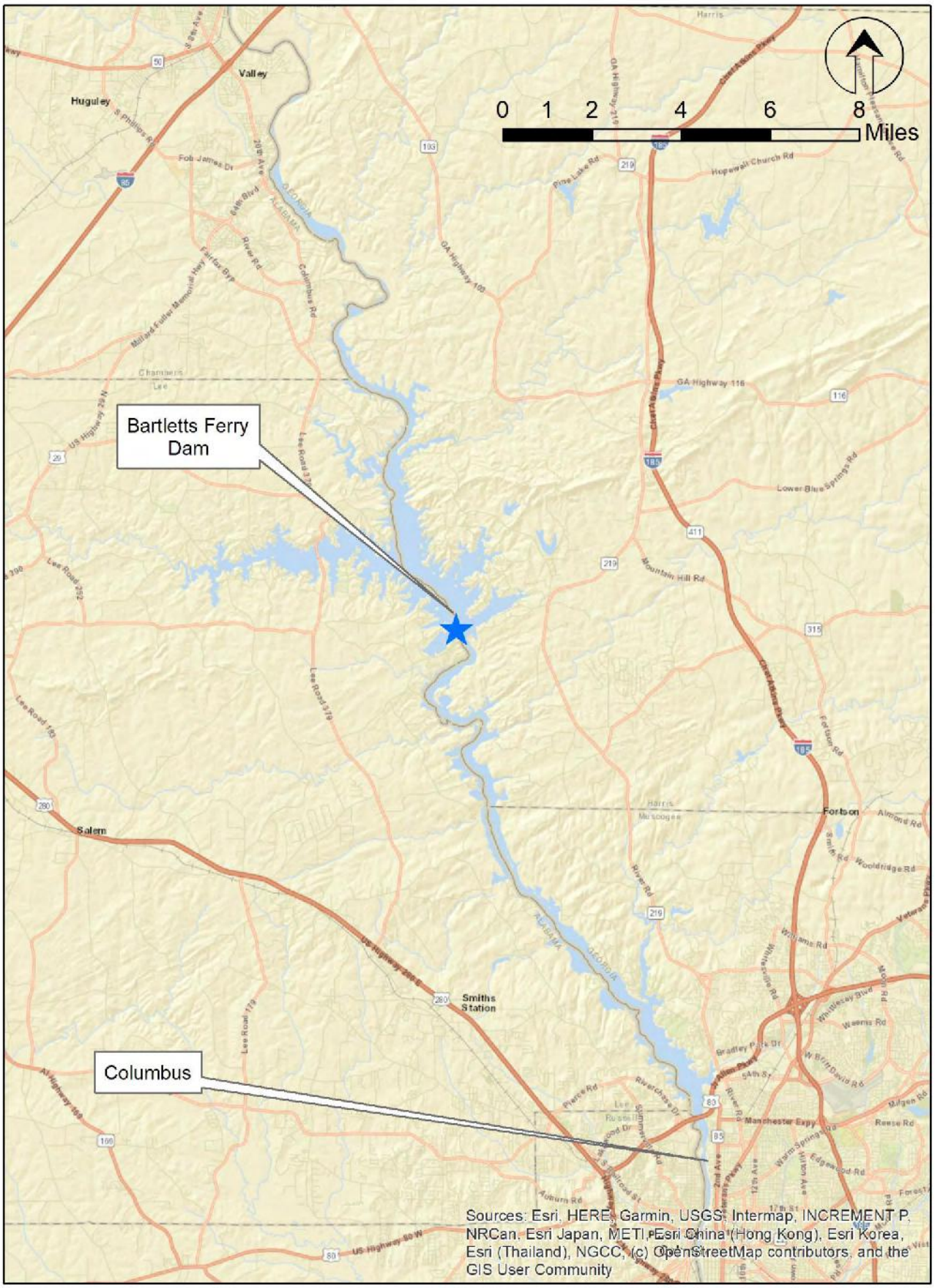

Figure 1. Bartletts Ferry Project and surroundings.

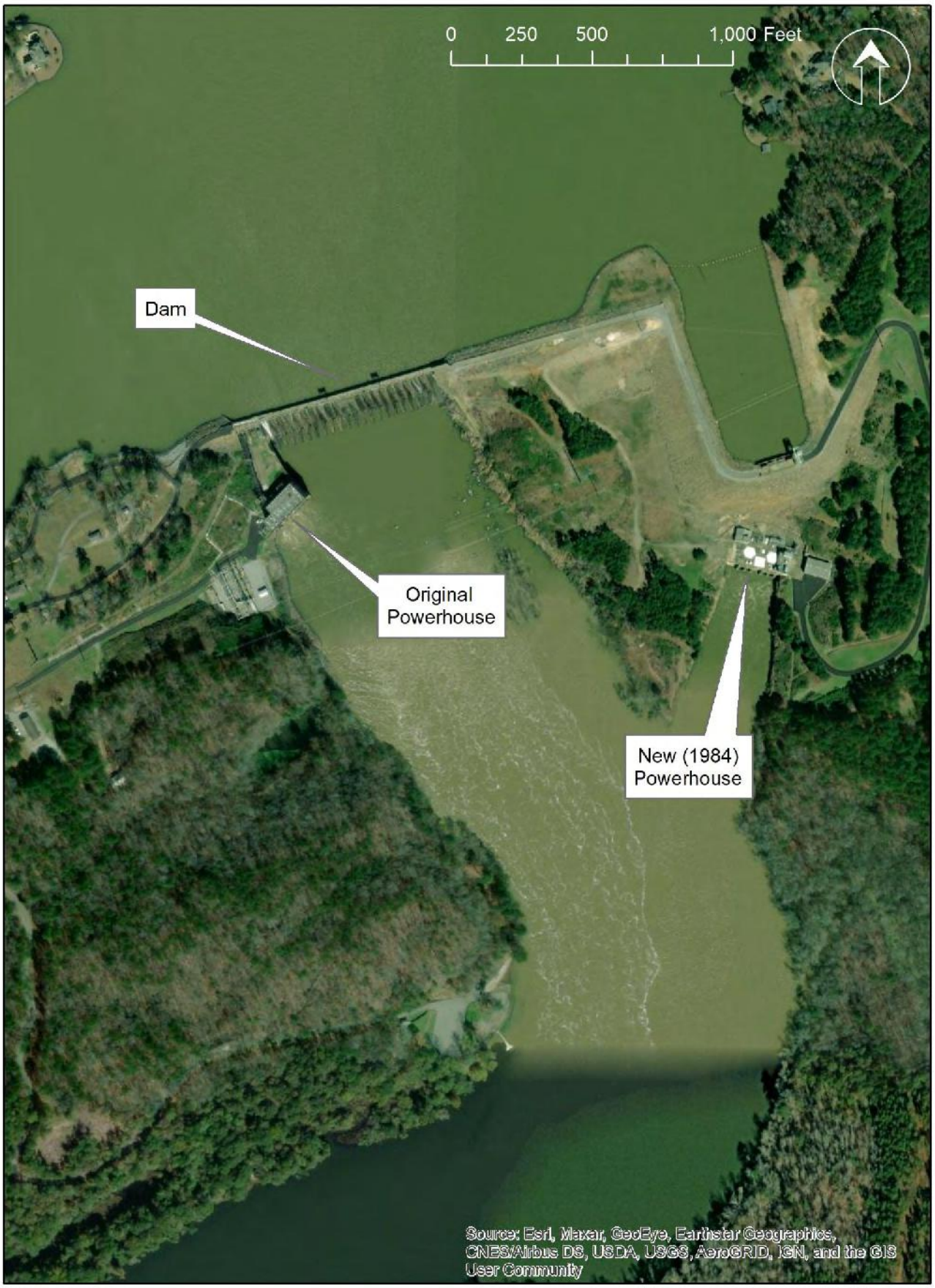

Figure 2. Aerial photograph of Bartletts Ferry project works.

Figure 3. Bartletts Ferry National Register-eligible historic district.

Figure 4. Photograph showing turbine floor.

Figure 5. Photograph showing turbine detail.

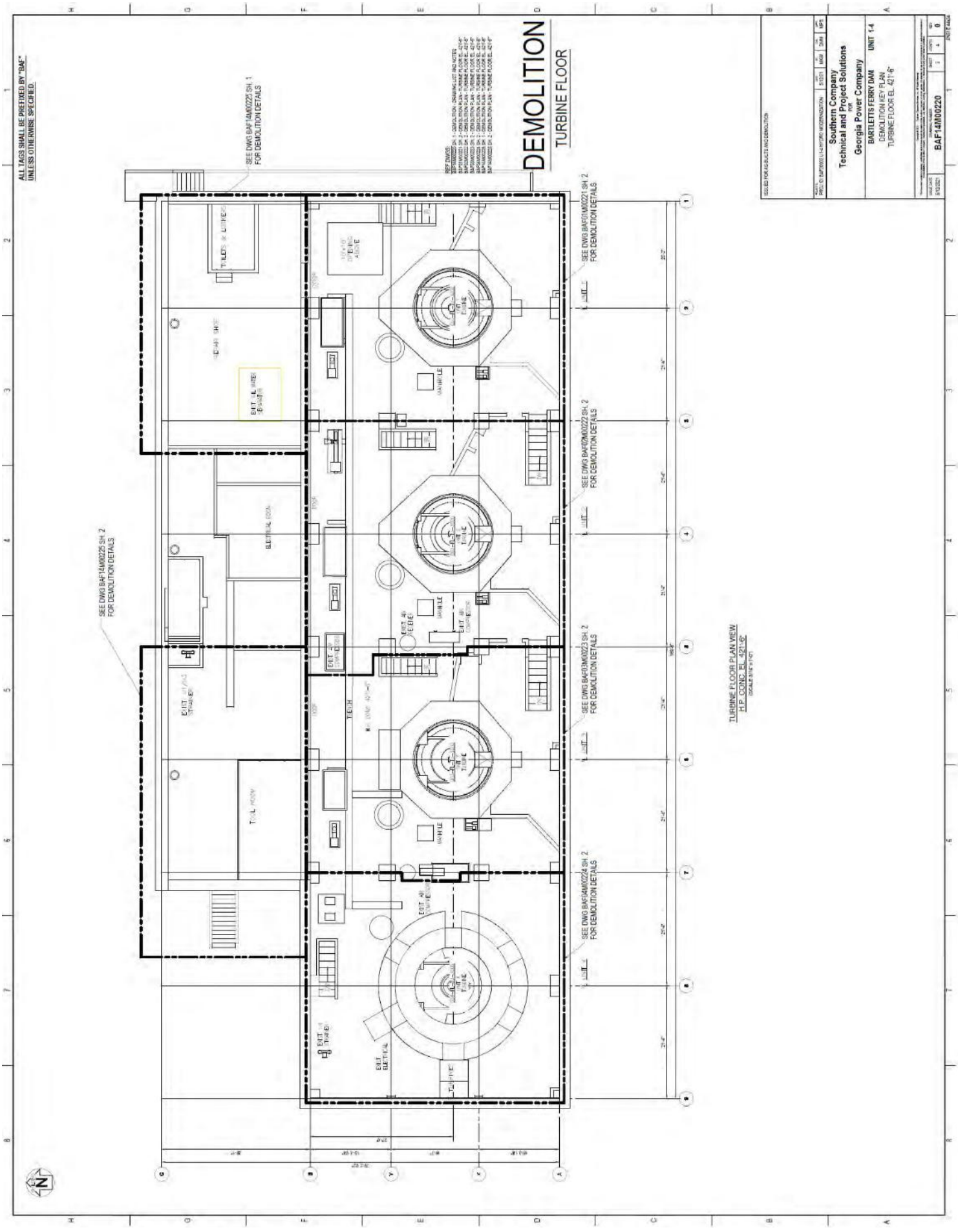

Figure 6. Current plan drawing of turbine floor.

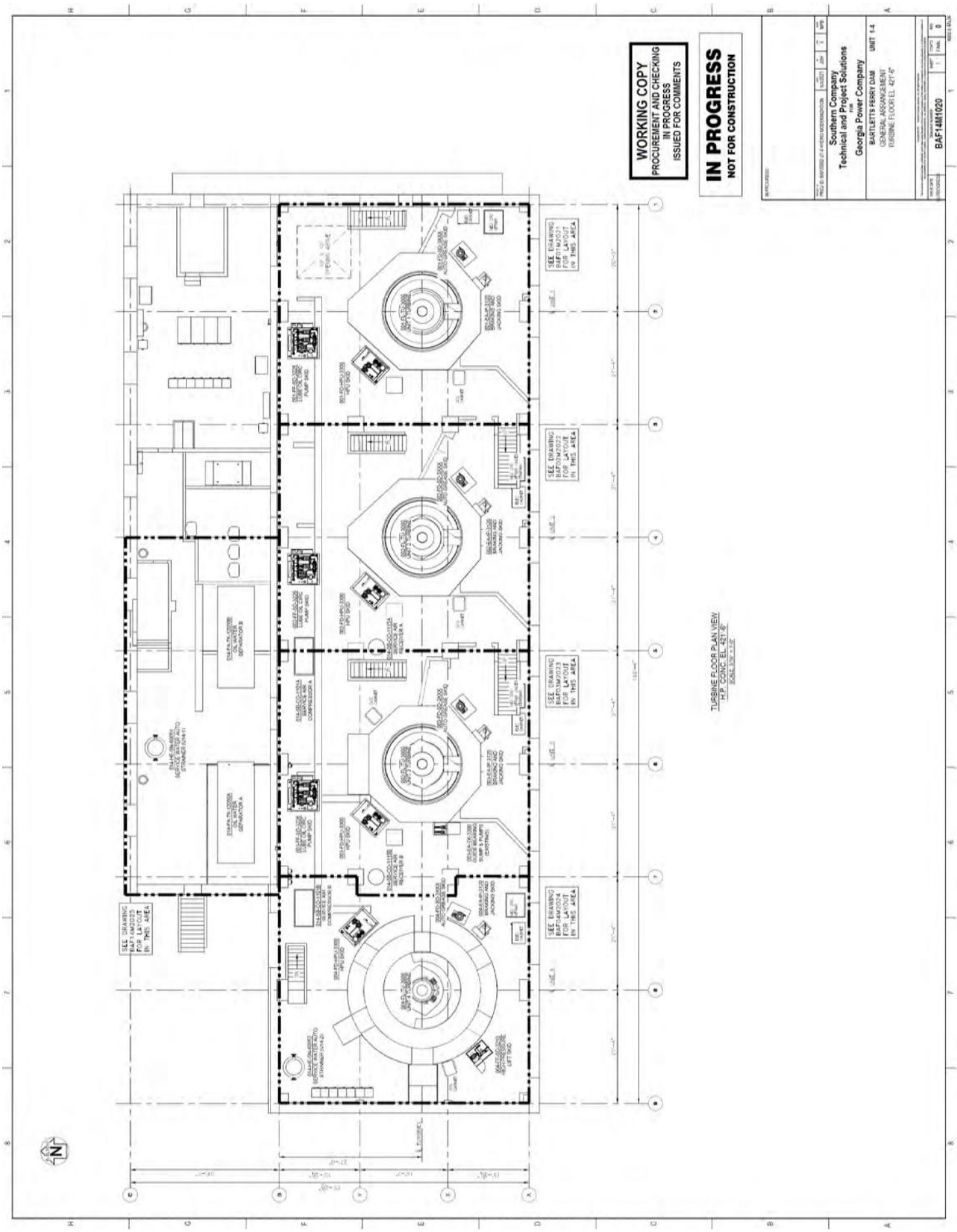

Figure 7. Plan drawing of turbine floor after modernization.

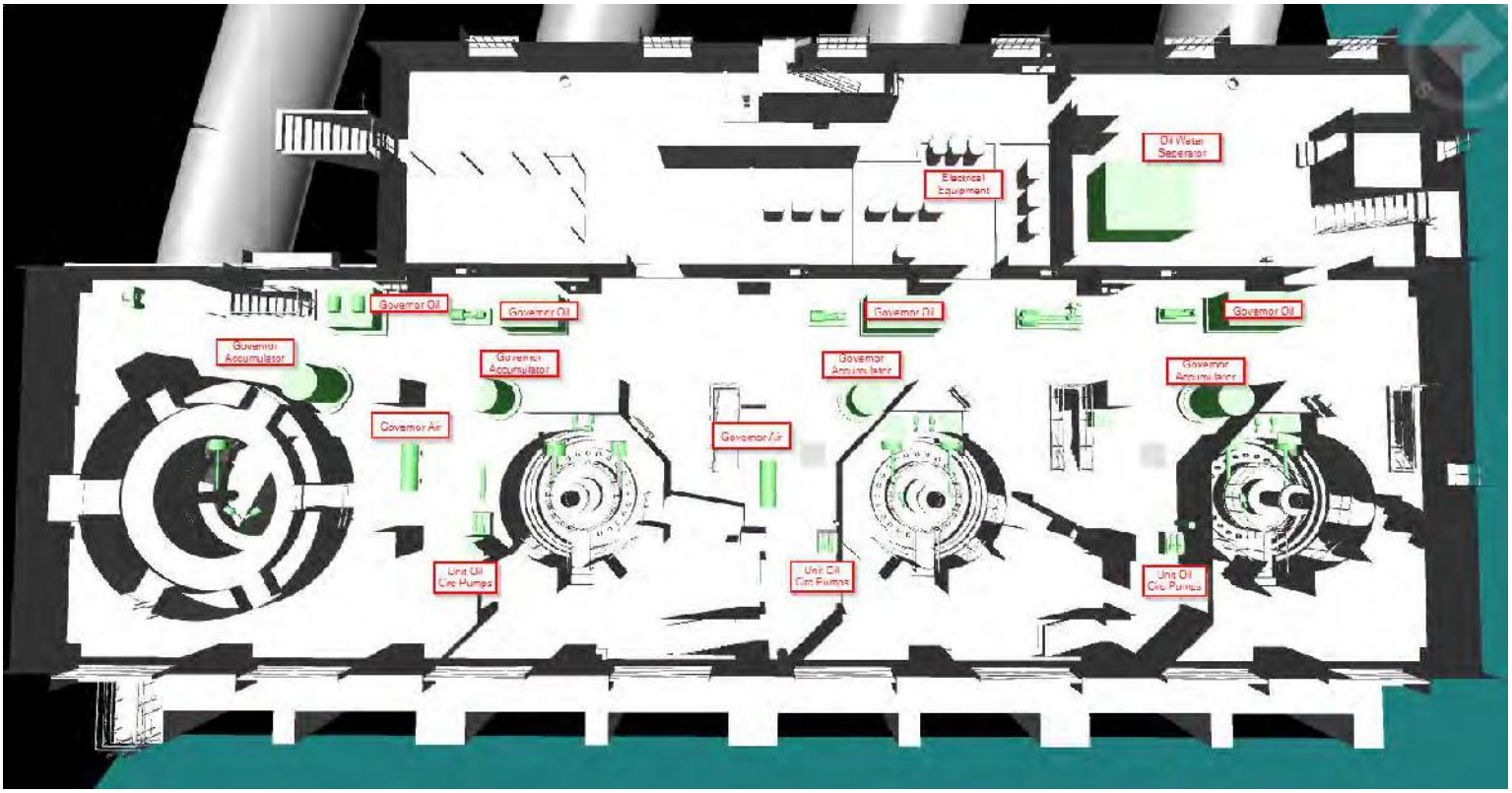

Figure 8. Model of turbine floor before modernization.

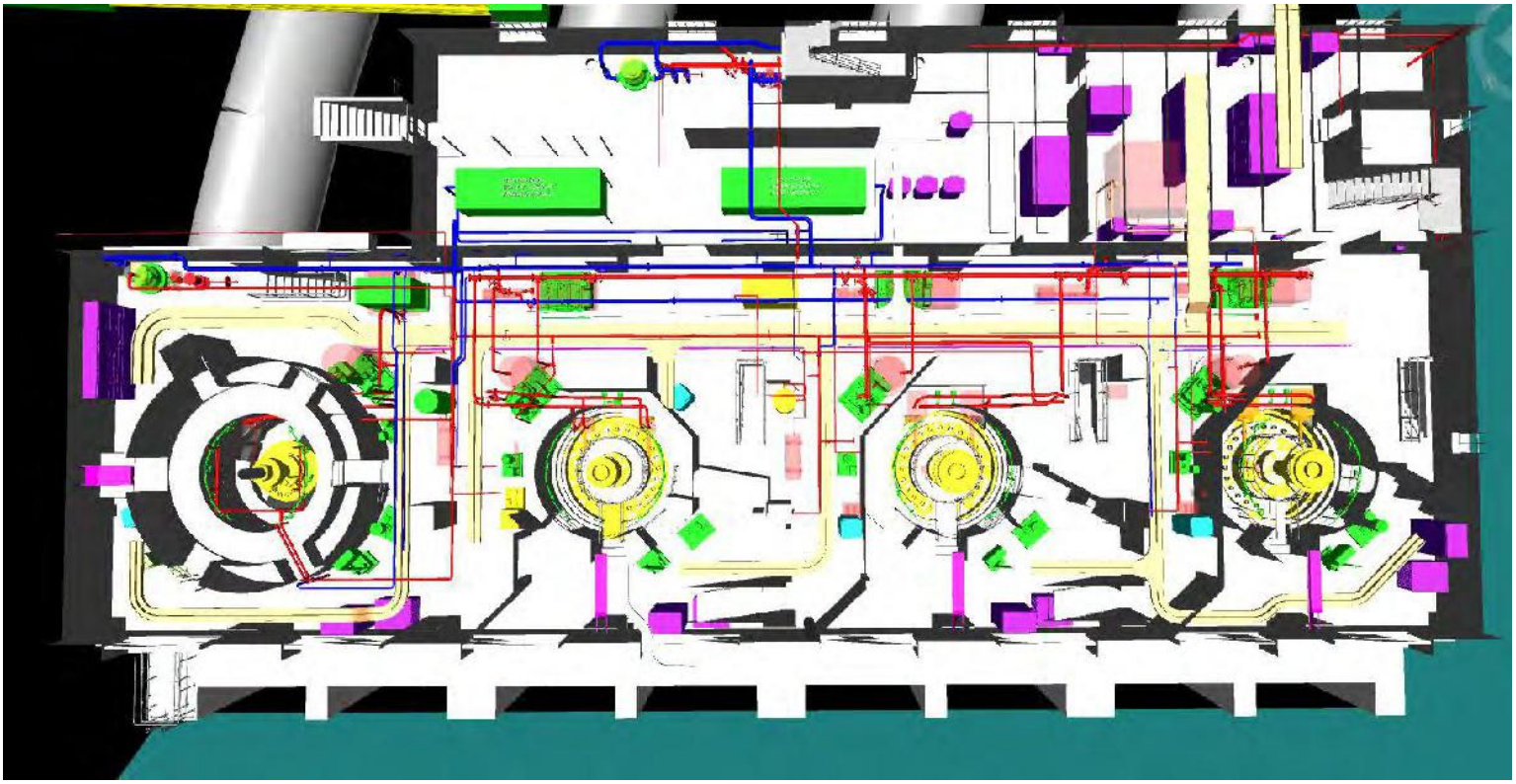

Figure 9. Model of turbine floor after modernization.

new access stairs and safety railing to access the top of generator covers (Figures 10-14). New control panels will be placed in a new control room, built out in a large space above the current control room (Figure 15-17). The existing windows of the new control room will be replaced to aid in climate control and sound protection of the room.

The original turbines are listed as a character-defining feature of the powerhouse, so we believe replacing them will have an adverse effect. As noted, they are at the end of their service life, so there is no alternative to replacement. The generators are also considered character-defining features. While they will not be replaced, we believe that the proposed refurbishment and upgrades will have an adverse effect. The alternative to refurbishment would be replacement, so we believe our plan minimizes adverse effects to this system.

Window fenestration is a character-defining feature, so we believe the replacement of the new control room windows will have an unavoidable adverse effect. As noted, the new windows will provide more climate control and soundproofing of the new control room, which is important for overall workplace safety and protection of instrumentation. The proposed new control room will require the installation of new control panels. The existing control panels are not considered character-defining features in the HPMP, so we believe replacing them will have no adverse effect.

The proposed new control room, currently used as an informal storage space, originally contained an office, restroom, and storage rooms (Figures 18-19). It was expanded in 1928 to make room for Units 3 and 4. The existing interior walls will remain in place, but additional interior walls (studs and drywall) will be added to build out the new control room, a new restroom, a kitchenette/breakroom, electrical room, storage closet, and lock out/tag out (LOTO) room (Figures 20-25). The new control room will reintegrate this space into the operation of the powerhouse and is instrumental in allowing the Bartletts Ferry Project to continue to operate safely and efficiently through the term of the current license and beyond. The current space has no listed character-defining features and the basic elements of the original floor plan will remain, with addition the aforementioned walls. Accordingly, we believe that the new control room build out will have no adverse effect.

Proposed Mitigation

Georgia Power proposes to mitigate these unavoidable adverse effects to historic properties through photographic and archival documentation (Level II) for inclusion in the Historic American Engineering Record (HAER). This proposed mitigation would be captured in a memorandum of agreement (MOA) between FERC, Georgia and Alabama SHPO, and the Advisory Council on Historic Preservation (ACHP) per the terms of the HPMP.

Figure 10. Photograph of generator floor.

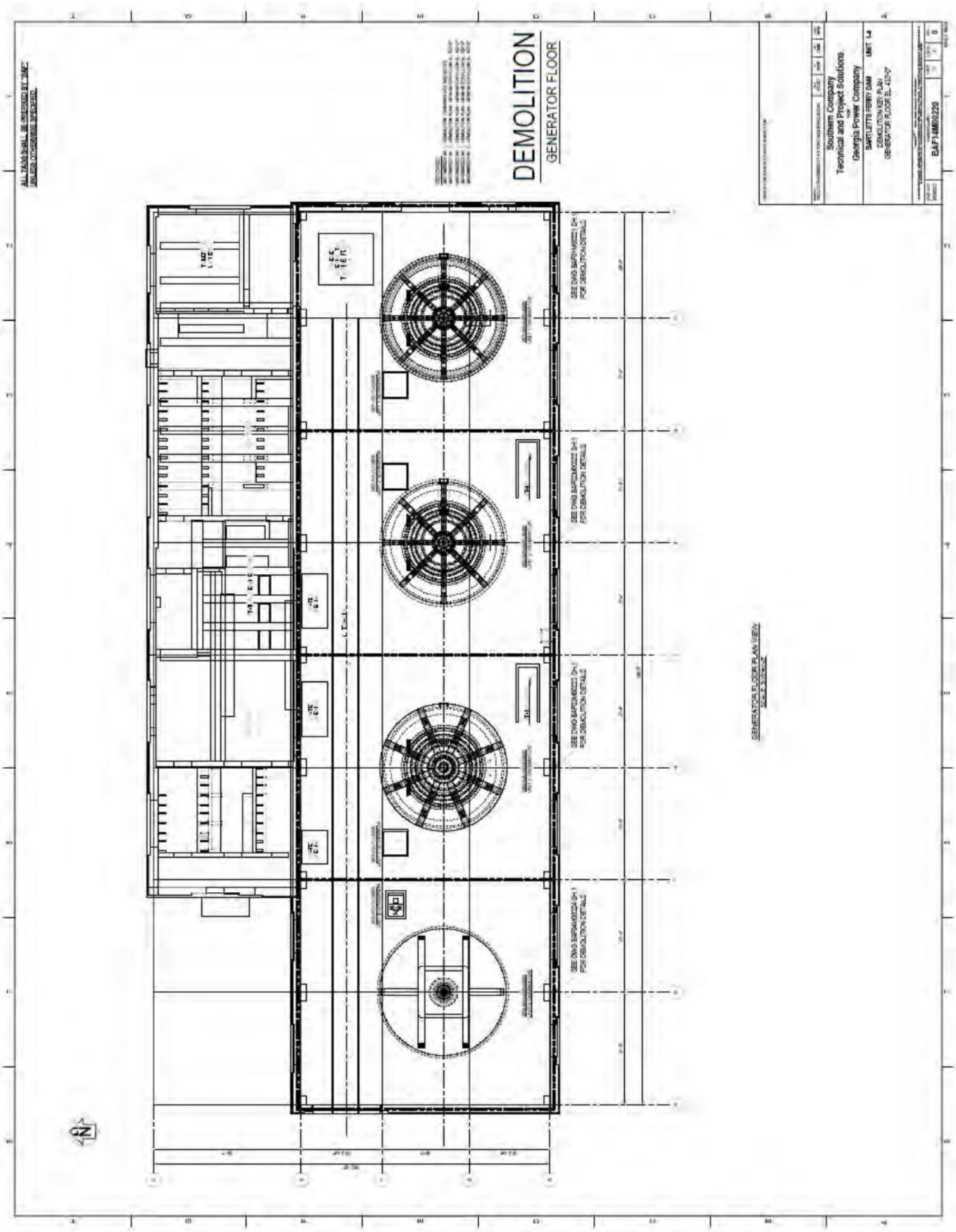

Figure 11. Current plan drawing of generator floor.

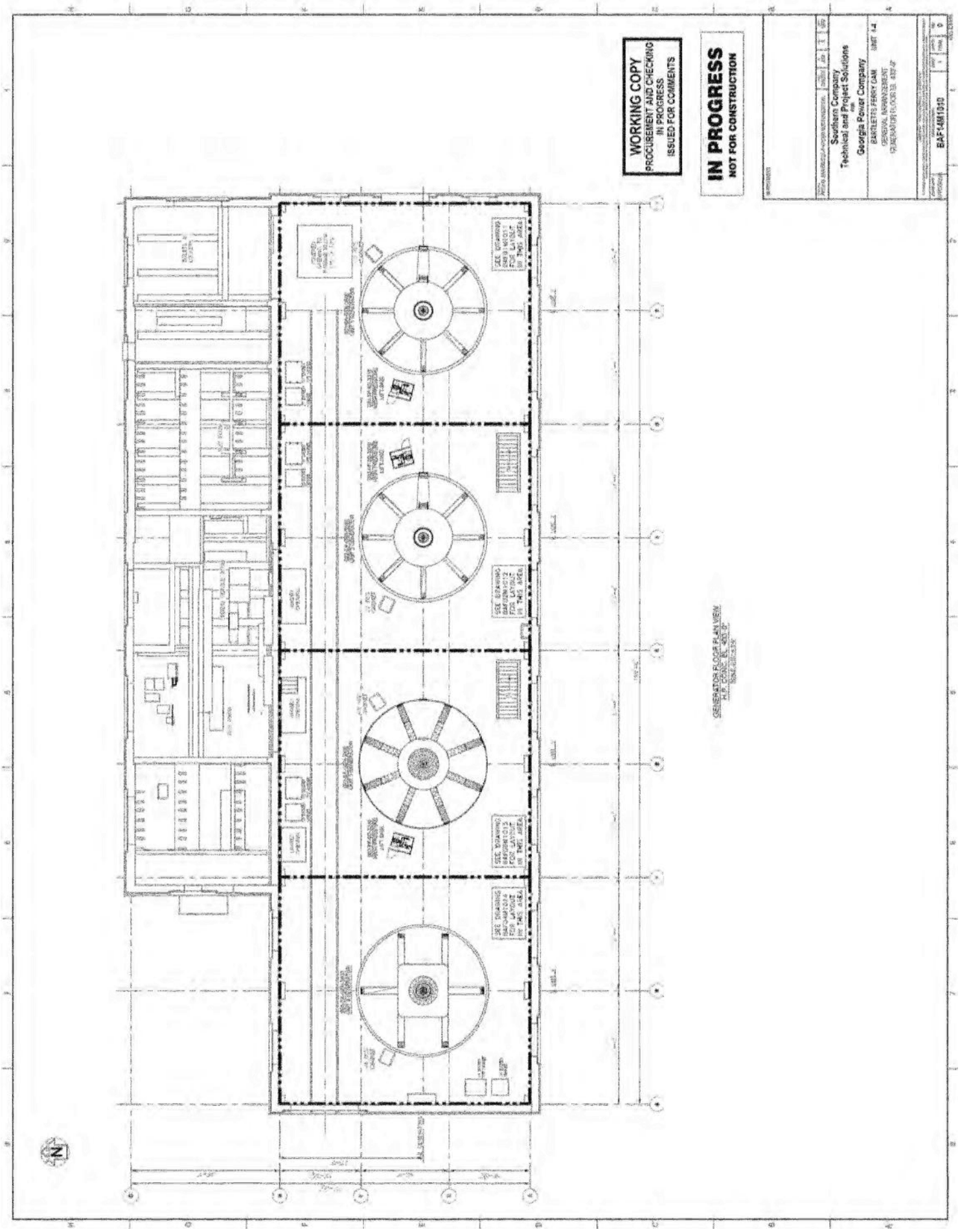

Figure 12. Plan drawing of generator floor after modernization.

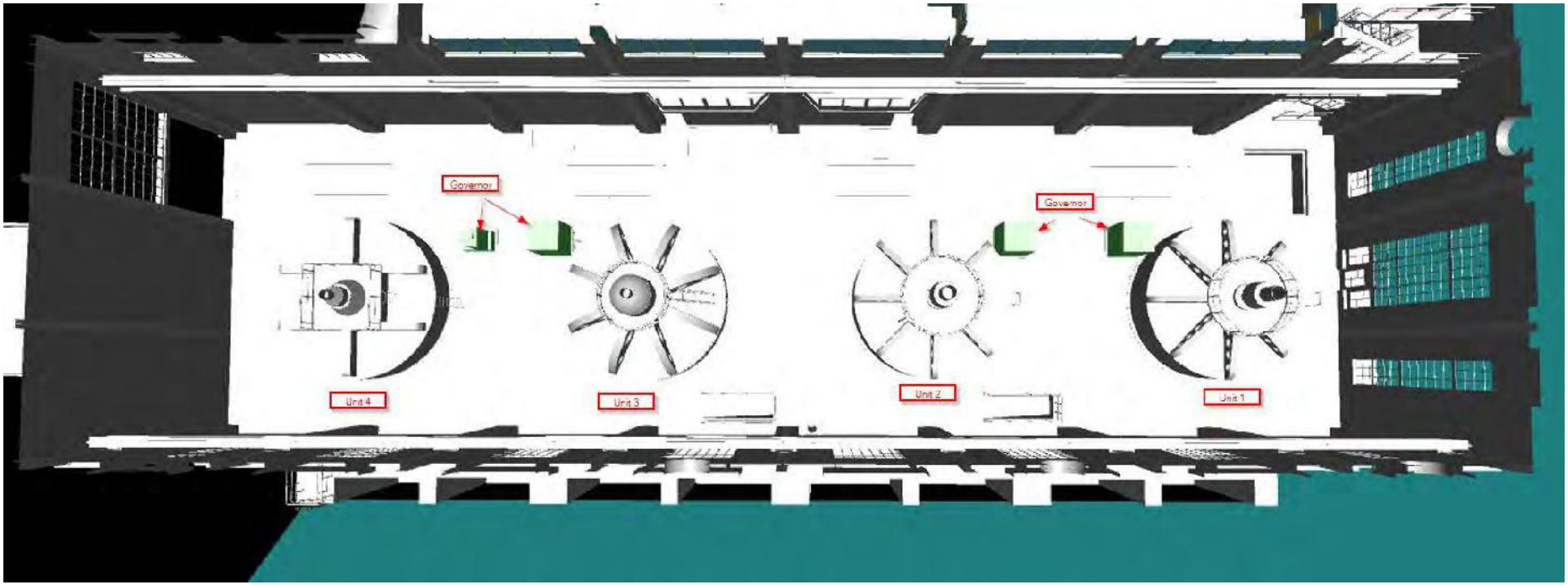

Figure 13. Model of generator floor before modernization.

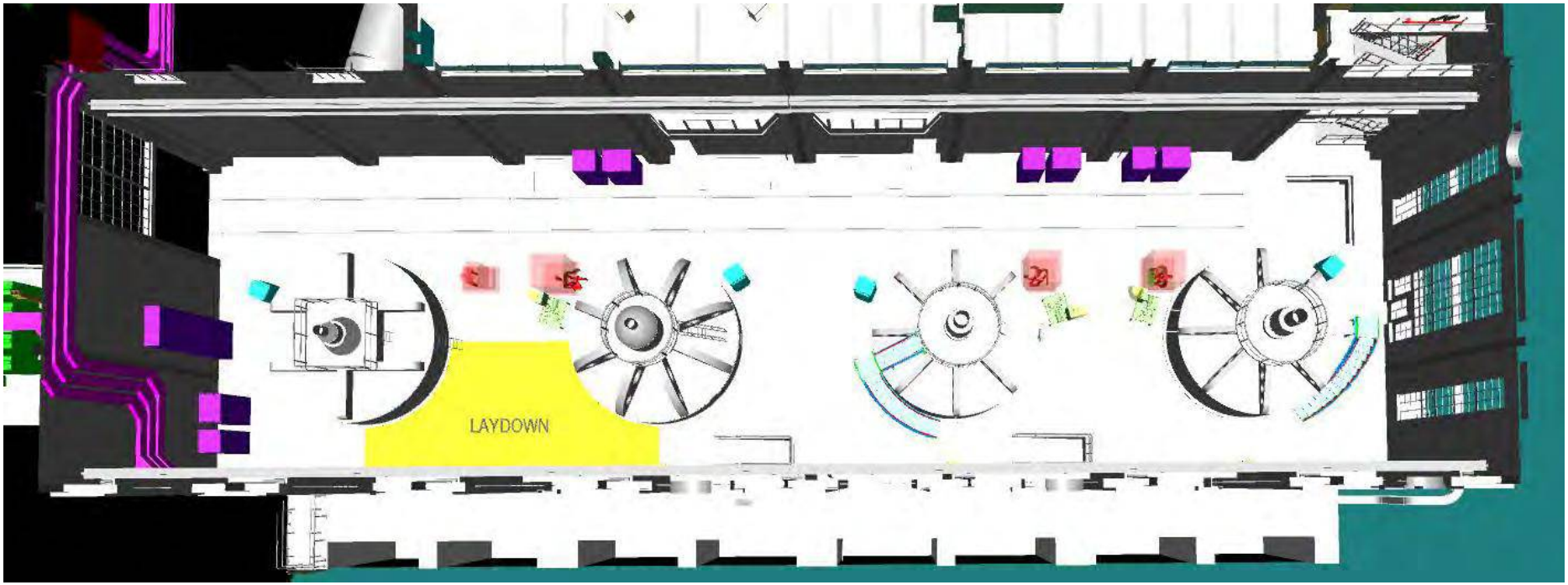

Figure 14. Model of generator floor after modernization.

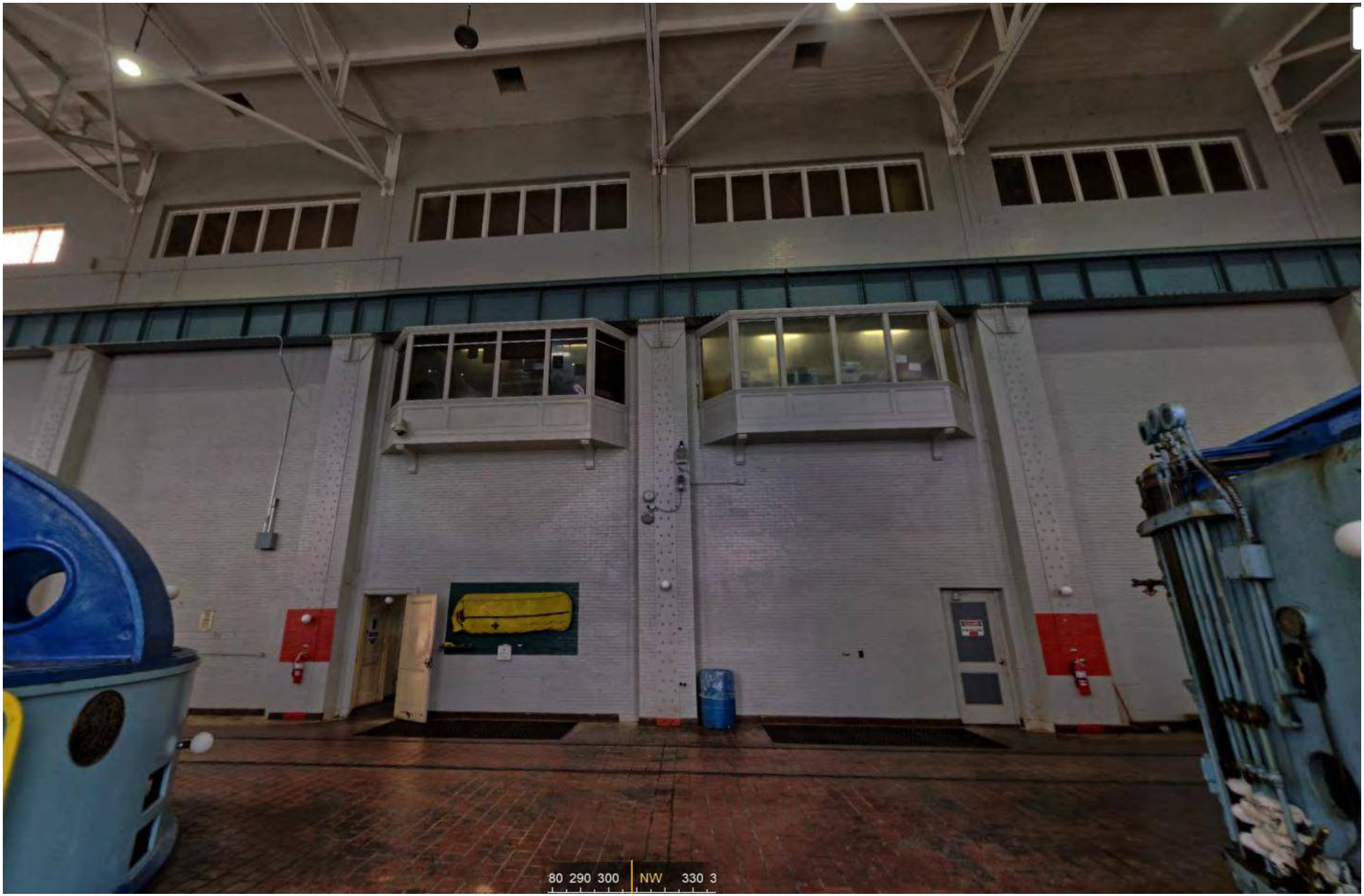

Figure 15. View from generator floor showing the original control room (bay windows) and the proposed new control room above.

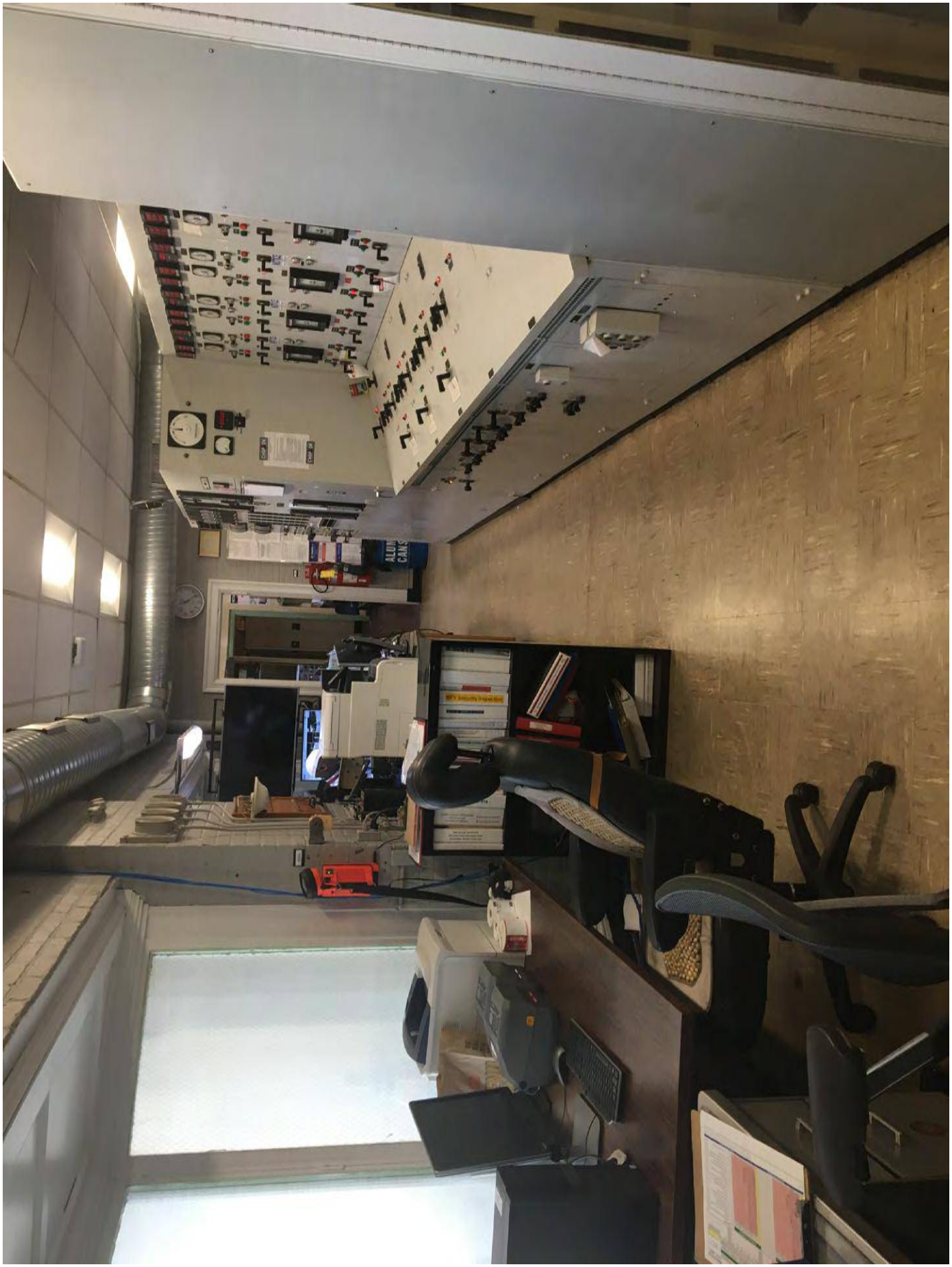

Figure 16. View of current control room.

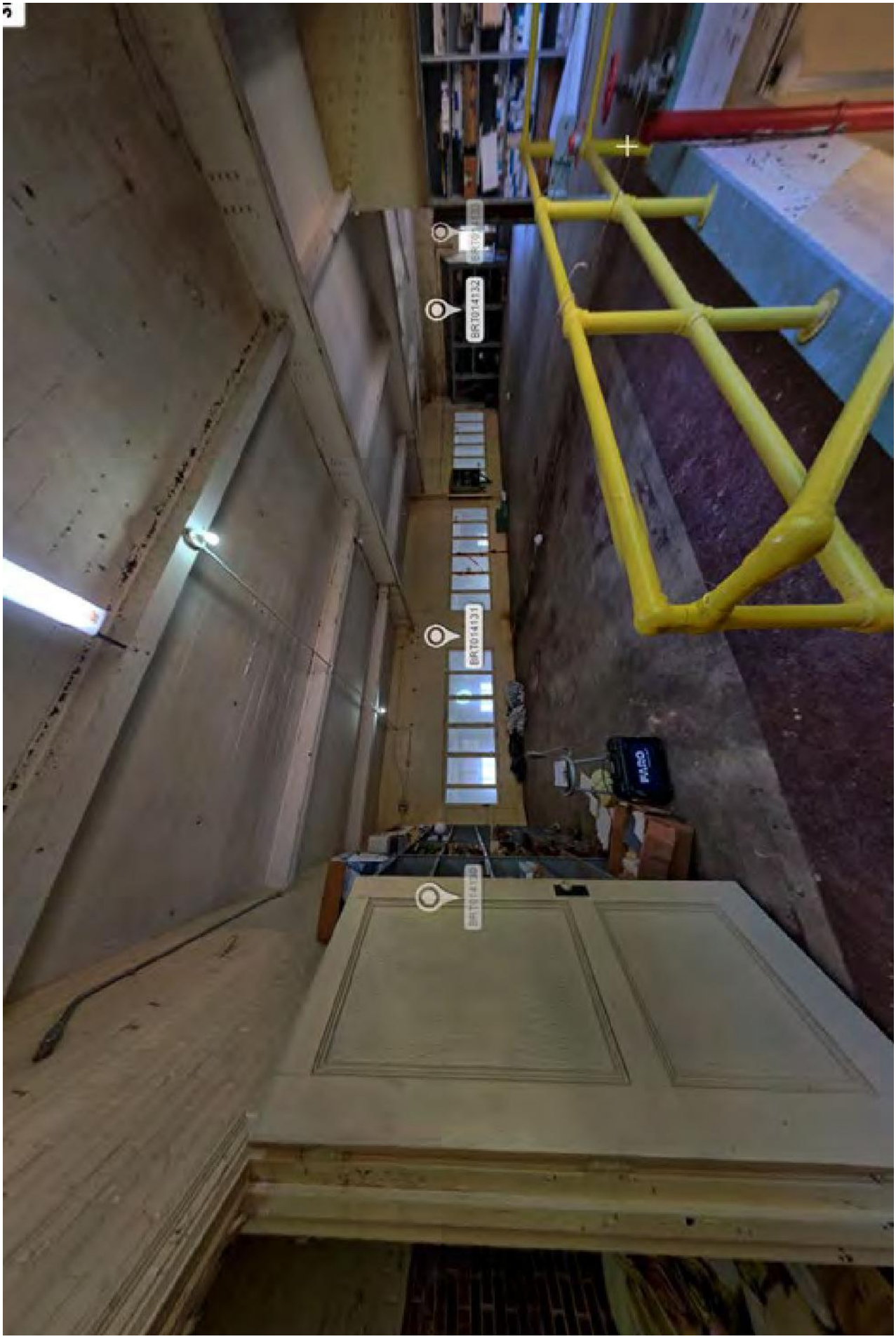

Figure 17. View of proposed new control room taken from a 3D scan.

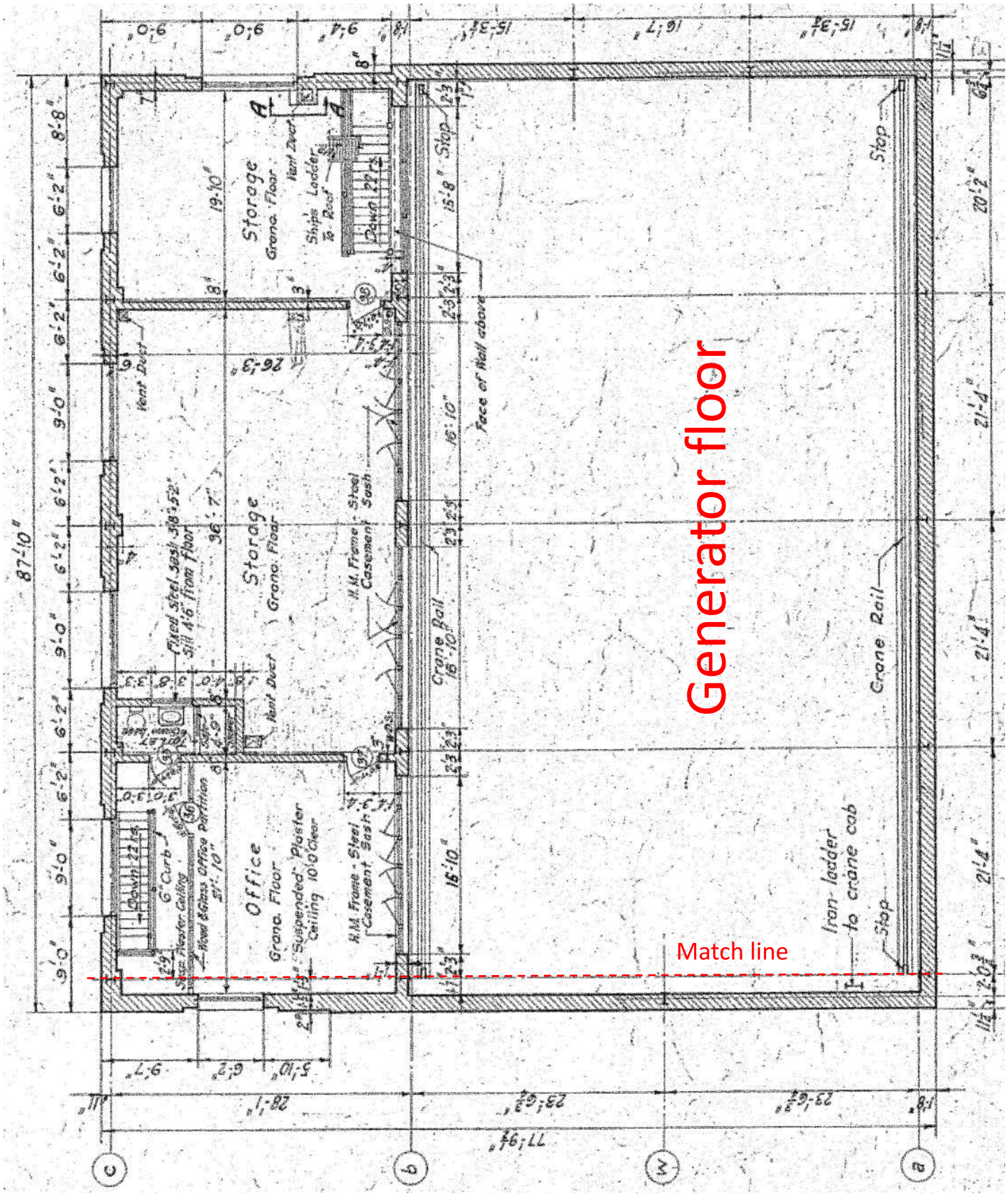

Figure 18. Plan drawing of original 1926 4th floor.

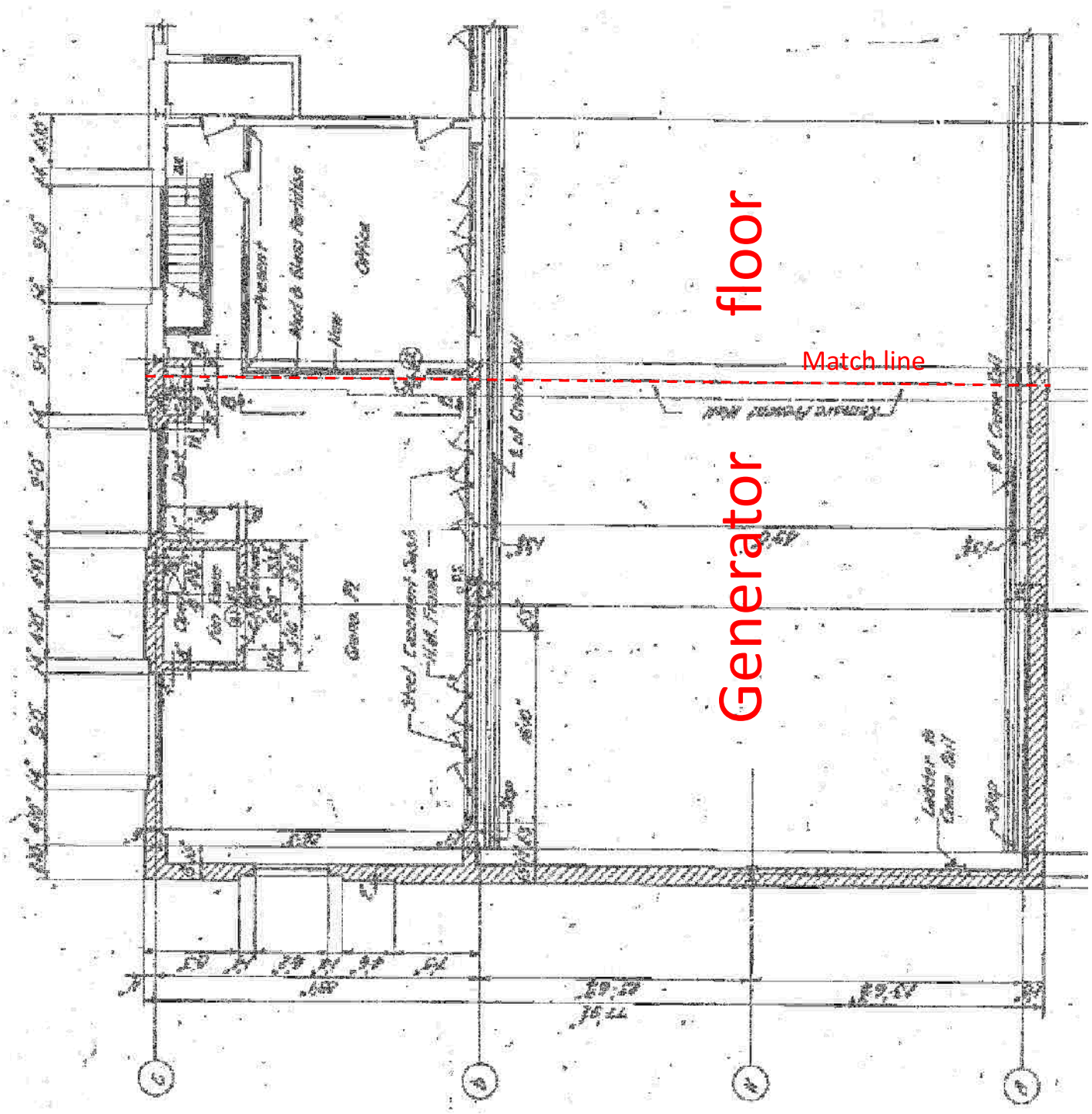

Figure 19. Plan drawing of 4th floor after 1928 expansion for Units 3 and 4.

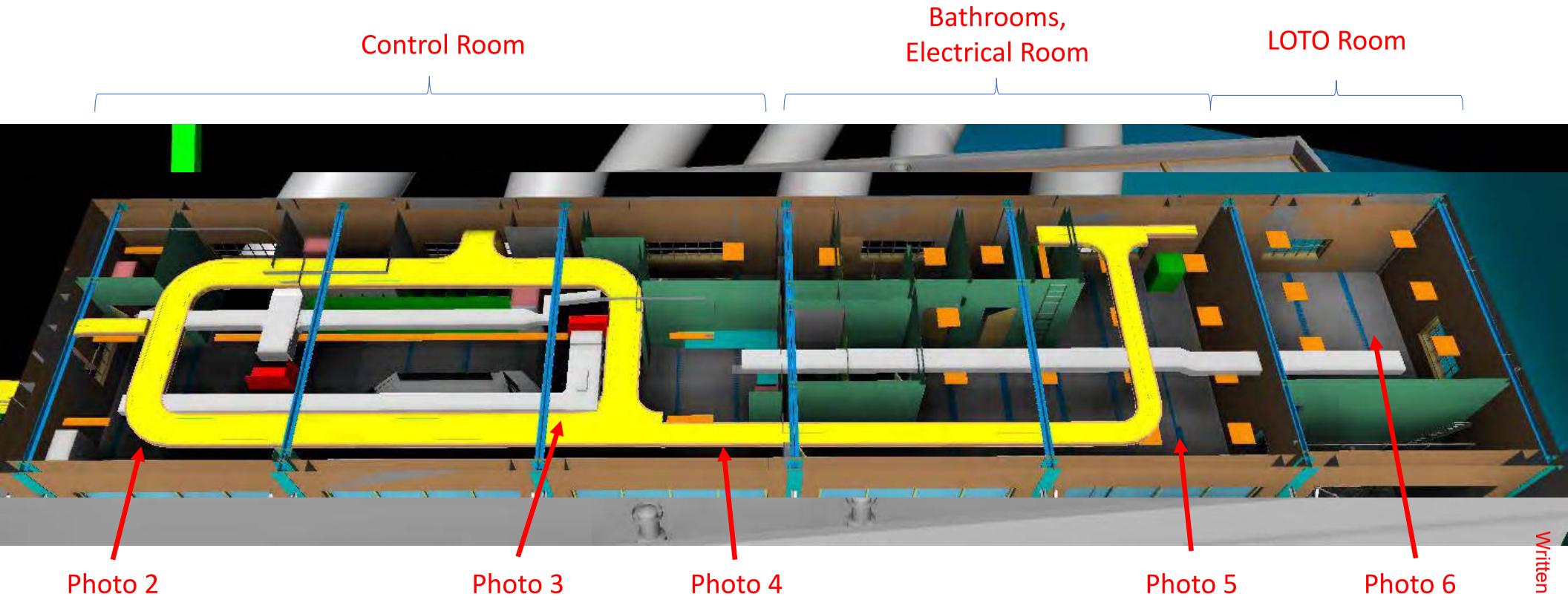

Figure 20. Overview of proposed 4th floor build out.

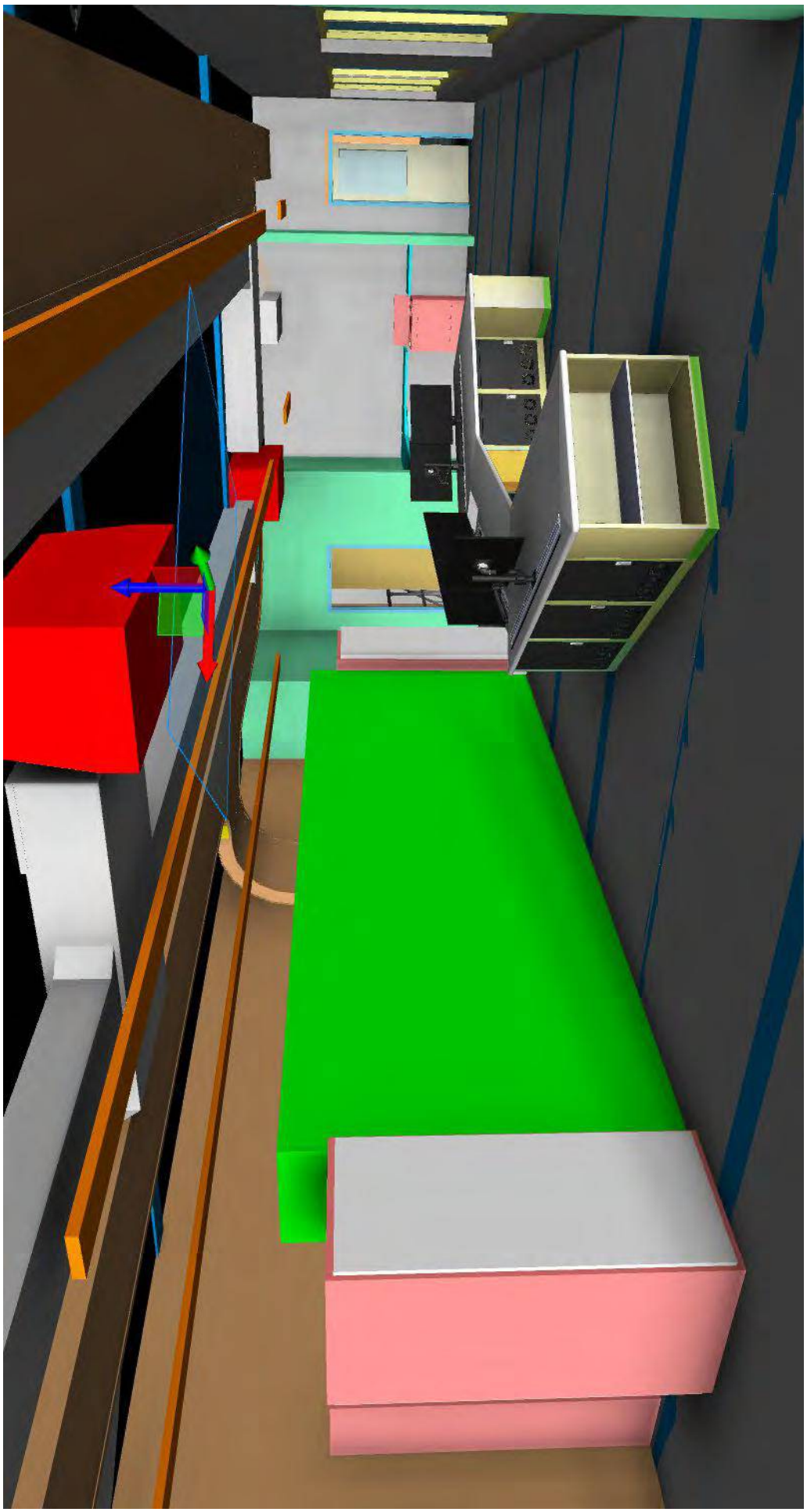

Figure 21. Model of proposed new control room.

Figure 22. Model of proposed new control room.

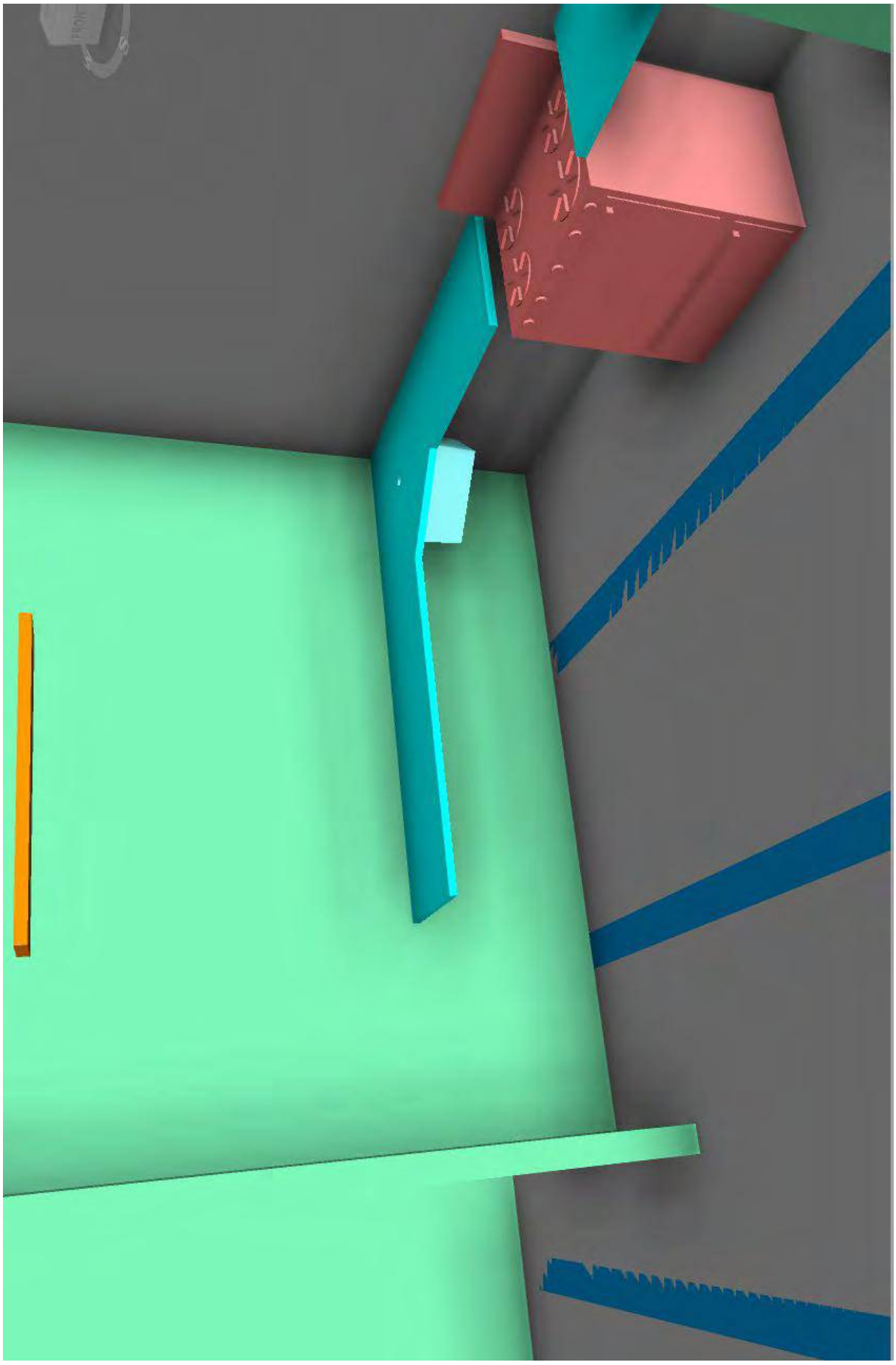

Figure 23. Model of proposed new kitchenette area.

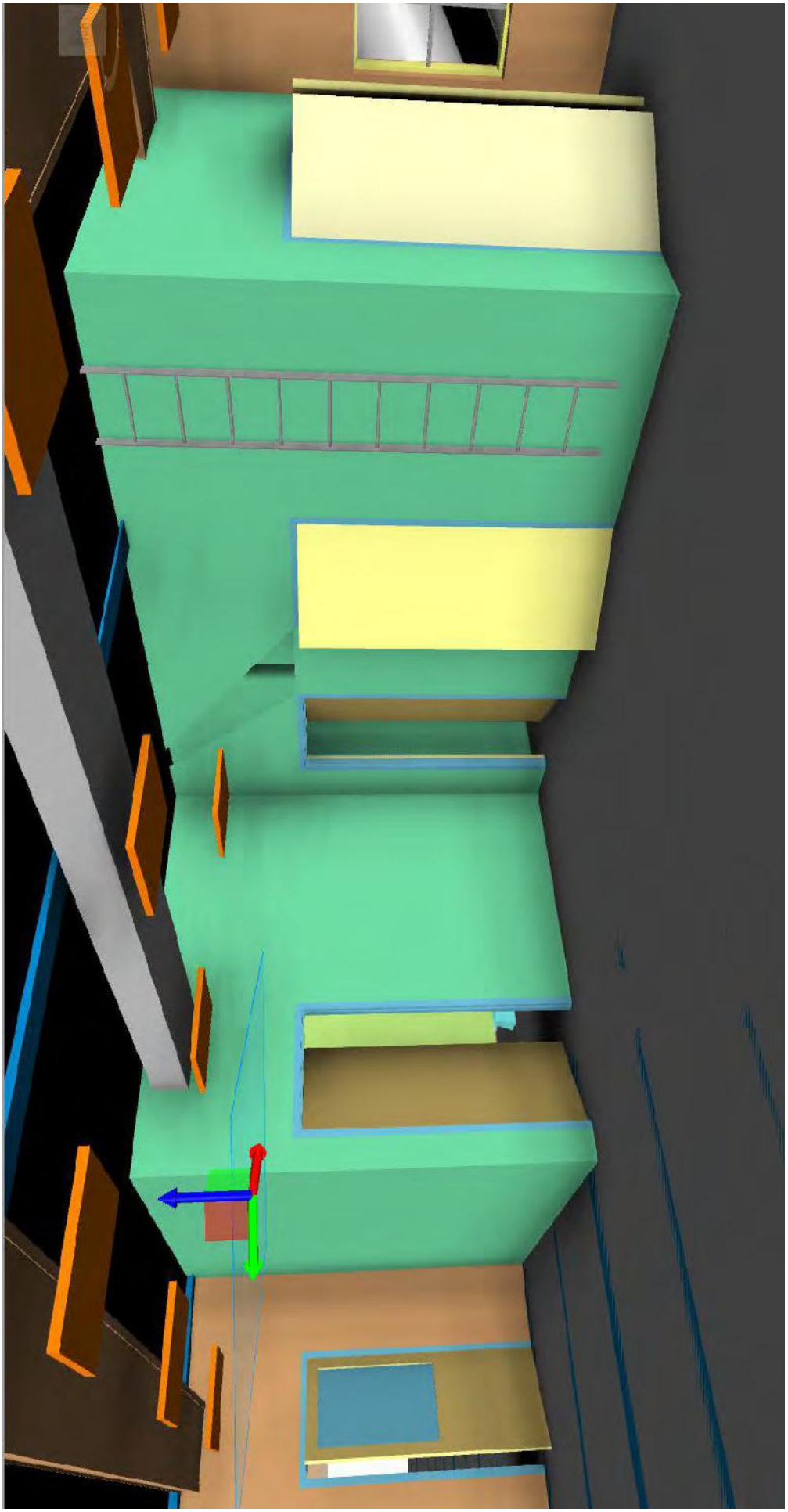

Figure 24. Model of proposed restroom, electrical room, and storage closet.

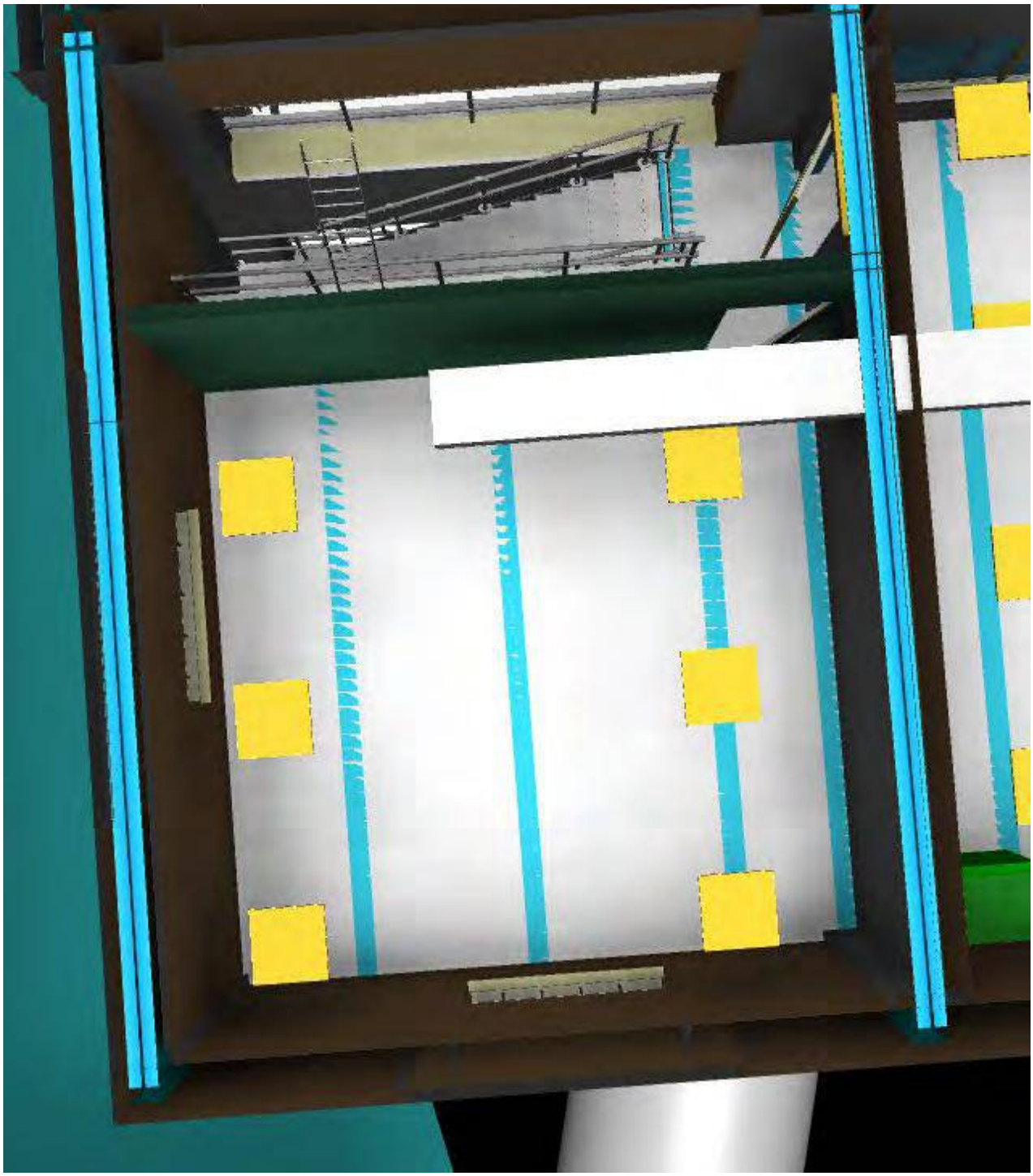

Figure 25. Model of proposed new LOTO room.

From: Mercer, Chloe
To: Charles, Joseph D.
Subject: RE: Bartletts Ferry Project - Alabama Powerhouse
Date: Tuesday, April 5, 2022 9:57:56 AM

Thanks, Joey. I'll continue our review with the additional information you provided.

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Tuesday, April 5, 2022 8:13 AM
To: Mercer, Chloe <Chloe.Mercer@ahc.alabama.gov>
Subject: RE: Bartletts Ferry Project - Alabama Powerhouse

Chloe, sorry it has taken me so long to get an answer, but they have weighed the options and would like to go with the replacement of the steel sash and frames with matching steel sash and frames. Their major concern for the other alternative was that they wouldn't be able to get the same level of noise reduction and climate control and that condensation build up would reduce visibility. They are working on an updated plan drawing for me, but I am worried they might not get it to me in time to get to you. I have, however included a floor plan of the new control room because HPD requested that and I wanted to provide everyone with the same information. They thought it would be easier to see the new build out that way rather than the 3D renderings.

From: Mercer, Chloe <Chloe.Mercer@ahc.alabama.gov>
Sent: Thursday, March 24, 2022 12:56 PM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: RE: Bartletts Ferry Project - Alabama Powerhouse

Thank you for the update.
Replacing the translucent glass with clear glass would be fine, but replacing the steel sash or frames that hold the sash would not meet the Standards for Rehabilitation.
Whatever they decide, please provide a detailed description of what work will occur to the windows and any sort of sketch or visual representation of the proposal that can be provided.

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Thursday, March 24, 2022 10:44 AM
To: Mercer, Chloe <Chloe.Mercer@ahc.alabama.gov>
Subject: RE: Bartletts Ferry Project - Alabama Powerhouse

Sorry it is taking so long to get you an answer, but I do have an update. I just met with the plant engineers and they think they can make the window insert option work with one caveat. The current window glass is translucent and they will need to be able to see out onto the generator floor. Can I

assume there would not be an issue with that? They also would like to look into the option of replacing the original steel window frames with new, identical steel frames. The first option has some considerations like upkeep and lead/asbestos abatement (for replacement of the window glass), while the second might be cost prohibitive. They promised to get it ironed out and give me a final plan by the end of next week.

From: Mercer, Chloe <Chloe.Mercer@ahc.alabama.gov>
Sent: Thursday, March 17, 2022 2:40 PM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: RE: Bartletts Ferry Project - Alabama Powerhouse

Thank you for letting me know, Joey. No problem - I look forward to hearing back from you.

From: Charles, Joseph D. <JCHARLES@southernco.com>
Sent: Thursday, March 17, 2022 1:38 PM
To: Mercer, Chloe <Chloe.Mercer@ahc.alabama.gov>
Subject: RE: Bartletts Ferry Project - Alabama Powerhouse

Chloe,

Sorry I haven't gotten back to you sooner. I am trying to get some clarification from our hydro group so that I can get you an answer.

Joey

From: Mercer, Chloe <Chloe.Mercer@ahc.alabama.gov>
Sent: Monday, March 14, 2022 3:30 PM
To: Charles, Joseph D. <JCHARLES@southernco.com>
Subject: Bartletts Ferry Project - Alabama Powerhouse

Joseph:
I am reviewing the submittal for work on the turbines, generators, and control room at Bartletts Ferry powerhouse. It appears that original steel casement windows remain where the new control room will overlook the generator floor. Is that correct? If so, has there been any consideration of retaining and repairing the historic windows and adapting them or the openings in a way to achieve improved sound and climate control? Would GA Power consider installing storm windows or insulated or tempered glass within the historic sash in order to retain the historic windows?
Thanks,
Chloe

Chloe Mercer

Federal Historic Preservation Tax Incentives Coordinator
Historic Preservation Division
Alabama Historical Commission
468 South Perry Street
Montgomery, AL
36130-0900 (US Mail)
36104 (Courier)
334/230-2669
chloe.mercer@ahc.alabama.gov
www.ahc.alabama.gov [ahc.alabama.gov]

ALABAMA HISTORICAL COMMISSION
THE STATE HISTORIC PRESERVATION OFFICE

Written Correspondence with AHC

ALABAMA HISTORICAL COMMISSION

Lisa D. Jones
Executive Director
State Historic Preservation Officer

468 South Perry Street
Montgomery, Alabama 36130-0900

Tel: 334-242-3184
Fax: 334-242-1083

April 5, 2022

Joseph Charles
Georgia Power
241 Ralph McGill Blvd NE BIN 10151
Atlanta, GA 30308

Re: AHC 22-0458
Bartletts Ferry Modernization Program
Lee County

Dear Mr. Charles:

Thank you for providing information about proposed work at Bartletts Ferry Hydroelectric Project powerhouse in Lee County, Alabama. Work consists of replacing original turbines, refurbishing original generators, replacing historic interior steel casement windows that overlook the generator floor, and constructing a new control room with new control panels. The Alabama Historical Commission agrees with your Adverse Effect determination for work related to the turbines, generators, and historic windows and your No Adverse Effect determination for relocating the control room and replacing control panels.

The Alabama Historical Commission agrees with Georgia Power's proposal to mitigate adverse effects to historic properties through Level II photographic and archival HAER documentation. In addition to this recording, we also suggest developing and installing interpretive panels that educate the public about the history of the Bartletts Ferry Hydroelectric Project, historic powerhouse operations, and current modernization efforts. We look forward to continuing consultation for these mitigation efforts and receiving an outline of information and graphics that will be included on the panels as well as an explanation of suitable location(s) that will have good public exposure.

We appreciate your commitment to helping us preserve Alabama's historic archaeological and architectural resources. Should you have any questions, please contact Chloe Mercer at 334.230.2669 or Chloe.Mercer@ahc.alabama.gov. Have the AHC tracking number referenced above available, and please use the digital submission process to formally respond if necessary.

Sincerely,

Lee Anne Wofford
Deputy State Historic Preservation Officer

LAW/EDS/law

Written Correspondence with AHC

ALABAMA HISTORICAL COMMISSION

Lisa D. Jones
Executive Director
State Historic Preservation Officer

468 South Perry Street
Montgomery, Alabama 36130-0900

Tel: 334-242-3184
Fax: 334-242-1083

Alabama Department of Environmental Management

Georgia Power

Bartletts Ferry Hydroelectric Project
FERC Project #485

Communication Date: December 13, 2021

Communication Type: Teams Web-Meeting/Phone

List and attach pertinent written correspondence:

Map of Dams/River
Agency Briefing Card
Mixing Calculation Summary

List persons attending from Southern Company/Georgia Power:

Southern Company: Courtenay O'Mara, P.E. and Laurie Munn, P.E.
Georgia Power Company (Georgia Power): Tony Dodd

List organization name and persons attending from other organization:

Alabama Department of Environmental Management (ADEM) -
Chris Johnson, Jennifer Haslbauer, David Moore

Subject: Consultation on the Modernization of the Bartletts Ferry Powerhouse

Comments/Discussions/Requests:

Consultation occurred via Teams virtual meeting on December 13, 2021.

December 13,2021 Consultation

On December 13, 2021, Southern Company/Georgia Power met via Teams and phone with Mr. Chris Johnson, Ms. Jennifer Haslbauer, and Mr. David Moore of ADEM and discussed the upgrades that Georgia Power has planned for the Bartletts Ferry Powerhouse. The following items were discussed during the meeting:

- Overview of modernization program at Bartletts Ferry Powerhouse
- The timeframe is 2023 through 2026 and includes turbine runner replacement, generator rewind, cooling system upgrade, and trash gate replacement.
- The location map was reviewed.
- There will be a 5 cfs increase in discharge (9,800 to 9,805 cfs), no lake elevation changes, and a power increase of 13.65 MW (65 MW to 78.65 MW).
- Georgia Power will file a FERC license amendment and will consult with the additional following agencies: U.S. Fish and Wildlife Service, Georgia Department of Natural Resources' Wildlife Resources Division and Environmental Protection Division, Alabama Department of Conservation and Natural Resources, and Georgia State Historic Preservation Office. The existing 401 water quality certificate was discussed. The current 401 certification was issued by Georgia in 2014 by Georgia EPD and is included in the FERC relicensing order. Alabama waived its authority during that process. Courtenay O'Mara explained that Units 1-4 currently have stoplogs which raise the water column intake level to enhance dissolved oxygen at the tailrace. This was installed as a condition in the 2014 FERC licensing order. Three of the four proposed units will be aerating units. The modeling shows that the dissolved oxygen improvements will be greater than with the current stoplogs. Georgia Power is proposing three aerating units, but only two units are required to meet the dissolved oxygen requirements of 4.0 mg/l. ADEM expressed they are appreciative of the efforts to maintain dissolved oxygen concentration of at least 5.0 mg/l. ADEM asked if Georgia Power is planning a monitoring program to ensure that the proposed dissolved oxygen concentration will be met. Georgia Power stated that the current plan involves limited warranty monitoring to prove the efficacy of the aerating units.
- Based on predictive calculations, historical average monthly tailrace water temperatures, following the cooling system upgrade, are expected to range only from -0.02 to 0.01° F depending on the time of the year. This calculation will be included in the information package distributed to ADEM.
- ADEM requested that they be notified of upcoming drawdowns so that they can access the reservoir, if needed. Georgia Power committed to notifying ADEM of upcoming drawdowns and to providing boat ramp elevations and drawdown correspondence. Georgia Power currently provides drawdown information to

Alabama Department of Conservation and Natural Resources in compliance with the current license.

Conclusions:

Georgia Power believes that based on the information summarized above that there will be no material adverse effect on the water quality.

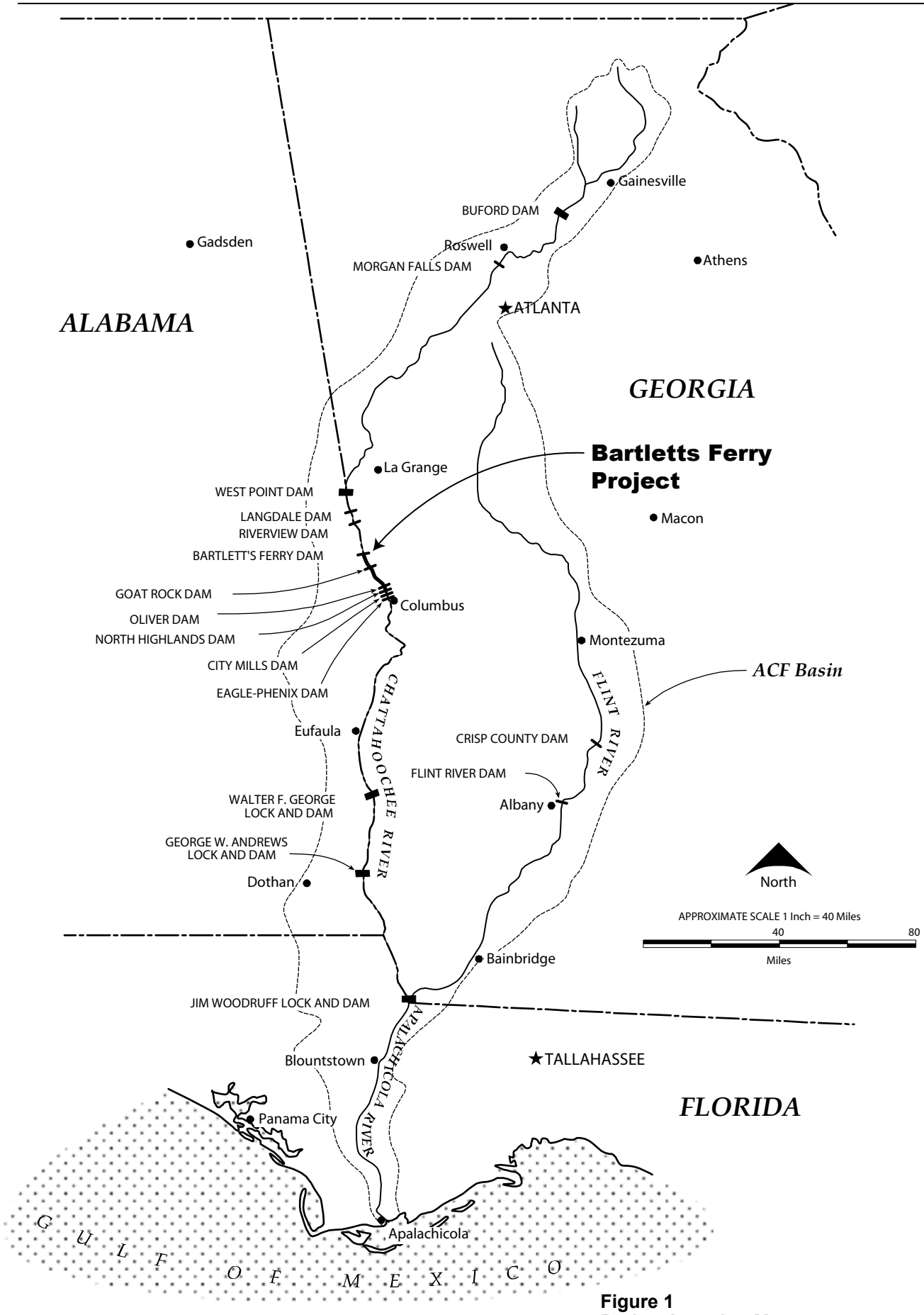

Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

Legend

GARL State Boundary

FERC Project Boundary

Notes:
1. Georgia/Alabama State Boundary source USGS
2. FERC Project Boundary source Georgia Power
3. Aerial Imagery source National Agricultural Imagery Program (NAIP) 2006

0 0.125 0.25
Miles

Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

CH2MHILL

Georgia Power

Bartletts Ferry Project (FERC No. 485) License Amendment
Bartletts Ferry Modernization

- The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The project dam is situated 23.5 river miles downstream of the U.S. Army Corps of Engineers' West Point Dam (river mile 201.4). Bartletts Ferry Dam is operated in a modified run-of-river mode, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of adverse or mean flow, generation is limited to peak demand hours, which generally amounts to several hours per day on weekdays. During times of increased flow, Bartletts Ferry operates additional hours during non-peak demand periods to make the best use of the inflow without spilling water. Georgia Power is proposing to amend the Bartletts Ferry license to upgrade the four generating units in the west powerhouse. This upgrade includes replacing the turbine runners, generators and intake trashracks. Powerhouse work will begin in 2023, with a generator/turbine unit replaced each year beginning in January 2023, 2024, 2025, and 2026.

- The table below compares the rated generating and maximum hydraulic capacities of the existing units with the expected performance of the upgraded units.

UNIT	Existing Rated (Best Gate/Most Efficient) Capacity (MW)	Existing Max Hydraulic Capacity (CFS)	Proposed Rated (Best Gate/Most Efficient) Capacity (MW)	Proposed Rated (Best Gate /Most Efficient) Hydraulic Capacity (CFS)	Proposed Full Gate/Max Capacity after Upgrade (MW)	Proposed Max Hydraulic Capacity (CFS) after Upgrade
1	15	2330	18.4	2080	20.2	2335
2	15	2330	18.4	2080	20.2	2335
3	15	2260	18.45	2090	19.5	2250
4	20	2880	23.4	2660	25	2885

- Following the upgrade, Georgia Power will operate the Bartletts Ferry powerhouse with no change to existing lake levels at Lake Harding.

- Upon issuance of the current FERC license (Issued December 22, 2014), Georgia Power installed stoplogs in front of Bartletts Ferry Units 1-4 to physically raise the depth in the reservoir from which water is taken for generation, resulting in improved dissolved oxygen (DO) in the tailrace. This was proposed by Georgia Power during FERC relicensing and on July 28, 2014 Georgia EPD issued a Water Quality Certificate requiring the proposal. The 3-year monitoring study demonstrated that the stoplog installation resulted in improved DO that meets the 4.0 mg/L instantaneous and the 5.0 mg/L daily state water quality standards. The second powerhouse at Bartletts Ferry located on the eastern side of the river achieved water quality standards without modifications because that intake is set higher in the water column.

- New turbine runners proposed for this modernization are aerating turbines manufactured by Voith. Voith modeling indicates that while operating there is an instantaneous uptake of 4.4-4.5 mg/L resulting in tailrace of 6.9/7.0 when the unit operates by itself and that only two aerating units are needed in mixed flow (aerating + non aerating) to achieve water quality standards. Georgia Power is proposing to aerate Units 1,2, and 4, so that

- operators always have two aerating units to operate with two non-aerating units to achieve water quality standards, and then one additional aerating turbine as a back-up in case of outage.

- It is possible that a lake drawdown may be needed during the construction period of the modernization project. If so, Georgia Power will consult with the Georgia Department of Natural Resources, the Alabama Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service as required by Article 401 of the Bartletts Ferry license.

- Approach velocities expected with new trashracks are estimated to be 2.12 and 2.74 foot per second (ft/s) at best and full gate flows, respectively. Existing approach velocities are 2.64 to 3.5 ft/s. This is a decrease of 0.52 – 0.56 ft/s with the existing trashracks. The existing trashracks will be replaced with a similar configuration. The existing 5/16 inch bars with 4 inch spacing will be replaced with 3/8 inch bars placed 4 inches on center. The depth of the trashracks will remain unchanged.

- By design, the expected temperature change in the tailrace due to the upgraded turbine coolers will range from -0.02 to 0.01° F depending on the time of the year.

- Georgia Power is preparing a non-capacity license amendment application to file with FERC. The application will conform with 18 C.F.R. §4.201 (c). Georgia Power will consult with state and federal agencies prior to filing. Non-capacity amendment applications typically have few, if any, effects on environmental, recreational, and cultural resources; however, any potential issues would be disclosed in the application to FERC and in the pre-filing consultation.

- Georgia Power is consulting with the following agencies on this license amendment application:

    - Georgia Wildlife Resources Division – lake levels, trashrack velocity changes, and species affects

    - US Fish and Wildlife Service – lake levels, trashrack velocity changes, and species affects

    - GA Environmental Protection Division –lake levels and affects to existing 401 water quality certificate

    - Alabama Department of Environmental Management – update to project

    - Alabama Department of Conservation and Natural Resources – lake levels, trashrack velocity changes, and species affects

    - Georgia State Historic Preservation Office – unit replacements

    - Alabama Historical Commission State Historic Preservation Office – unit replacements

- FERC typically issues a notice of the application receipt and may ask Georgia Power for additional information prior to its analysis of the proposed upgrade. Georgia Power may request FERC to conduct an expedited review to facilitate equipment procurement and work at the Bartletts Ferry powerhouse.

Alabama Department of Conservation and Natural Resources

From: O"Rouke, Patrick Michael
To: Fobian, Todd
Cc: Lovell, Graves; Rob.Andress@dcnr.alabama.gov; Crabbe, Melissa C.
Subject: Bartlett"s Ferry Modernization Information
Date: Friday, March 25, 2022 3:32:55 PM
Attachments: Agency Brief Bartletts Ferry Unit UpgradesFinal.pdf
BF Powerhouse and spillway layout.pdf
Chattahoochee River Map.pdf

Todd, thank you again for speaking with us earlier in the week to go over our Bartlett's Ferry modernization project. I'm including the materials we went over during the meeting. Please let me know if you have any questions.

Patrick

Patrick O'Rouke
Fisheries Biologist
Georgia Power

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Atlanta, GA 30308
(404) 506-5025 (Office)
(470) 426-5322 (Cell)

Georgia Power

Bartletts Ferry Project (FERC No. 485) License Amendment
Bartletts Ferry Modernization

- The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The project dam is situated 23.5 river miles downstream of the U.S. Army Corps of Engineers' West Point Dam (river mile 201.4). Bartletts Ferry Dam is operated in a modified run-of-river mode, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of adverse or mean flow, generation is limited to peak demand hours, which generally amounts to several hours per day on weekdays. During times of increased flow, Bartletts Ferry operates additional hours during non-peak demand periods to make the best use of the inflow without spilling water. Georgia Power is proposing to amend the Bartletts Ferry license to upgrade the four generating units in the west powerhouse. This upgrade includes replacing the turbine runners, generators and intake trashracks. Powerhouse work will begin in 2023, with a generator/turbine unit replaced each year beginning in January 2023, 2024, 2025, and 2026.

- The table below compares the rated generating and maximum hydraulic capacities of the existing units with the expected performance of the upgraded units.

UNIT	Existing Rated (Best Gate/Most Efficient) Capacity (MW)	Existing Max Hydraulic Capacity (CFS)	Proposed Rated (Best Gate/Most Efficient) Capacity (MW)	Proposed Rated (Best Gate /Most Efficient) Hydraulic Capacity (CFS)	Proposed Full Gate/Max Capacity after Upgrade (MW)	Proposed Max Hydraulic Capacity (CFS) after Upgrade
1	15	2330	18.4	2080	20.2	2335
2	15	2330	18.4	2080	20.2	2335
3	15	2260	18.45	2090	19.5	2250
4	20	2880	23.4	2660	25	2885

- Following the upgrade, Georgia Power will operate the Bartletts Ferry powerhouse with no change to existing lake levels at Lake Harding.

- Upon issuance of the current FERC license (Issued December 22, 2014), Georgia Power installed stoplogs in front of Bartletts Ferry Units 1-4 to physically raise the depth in the reservoir from which water is taken for generation, resulting in improved dissolved oxygen (DO) in the tailrace. This was proposed by Georgia Power during FERC relicensing and on July 28, 2014 Georgia EPD issued a Water Quality Certificate requiring the proposal. The 3-year monitoring study demonstrated that the stoplog installation resulted in improved DO that meets the 4.0 mg/L instantaneous and the 5.0 mg/L daily state water quality standards. The second powerhouse at Bartletts Ferry located on the eastern side of the river achieved water quality standards without modifications because that intake is set higher in the water column.

- New turbine runners proposed for this modernization are aerating turbines manufactured by Voith. Voith modeling indicates that while operating there is an instantaneous uptake of 4.4-4.5 mg/L resulting in tailrace of 6.9/7.0 when the unit operates by itself and that only two aerating units are needed in mixed flow (aerating + non aerating) to achieve water quality standards. Georgia Power is proposing to aerate Units 1,2, and 4, so that

- operators always have two aerating units to operate with two non-aerating units to achieve water quality standards, and then one additional aerating turbine as a back-up in case of outage.

- It is possible that a lake drawdown may be needed during the construction period of the modernization project. If so, Georgia Power will consult with the Georgia Department of Natural Resources, the Alabama Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service as required by Article 401 of the Bartletts Ferry license.

- Approach velocities expected with new trashracks are estimated to be 2.12 and 2.74 foot per second (ft/s) at best and full gate flows, respectively. Existing approach velocities are 2.64 to 3.5 ft/s. This is a decrease of 0.52 – 0.56 ft/s with the existing trashracks. The existing trashracks will be replaced with a similar configuration. The existing 5/16 inch bars with 4 inch spacing will be replaced with 3/8 inch bars placed 4 inches on center. The depth of the trashracks will remain unchanged.

- By design, the expected temperature change in the tailrace due to the upgraded turbine coolers will range from -0.02 to 0.01° F depending on the time of the year.

- Georgia Power is preparing a non-capacity license amendment application to file with FERC. The application will conform with 18 C.F.R. §4.201 (c). Georgia Power will consult with state and federal agencies prior to filing. Non-capacity amendment applications typically have few, if any, effects on environmental, recreational, and cultural resources; however, any potential issues would be disclosed in the application to FERC and in the pre-filing consultation.

- Georgia Power is consulting with the following agencies on this license amendment application:

    - Georgia Wildlife Resources Division – lake levels, trashrack velocity changes, and species affects

    - US Fish and Wildlife Service – lake levels, trashrack velocity changes, and species affects

    - GA Environmental Protection Division –lake levels and affects to existing 401 water quality certificate

    - Alabama Department of Environmental Management – update to project

    - Alabama Department of Conservation and Natural Resources – lake levels, trashrack velocity changes, and species affects

    - Georgia State Historic Preservation Office – unit replacements

    - Alabama Historical Commission State Historic Preservation Office – unit replacements

- FERC typically issues a notice of the application receipt and may ask Georgia Power for additional information prior to its analysis of the proposed upgrade. Georgia Power may request FERC to conduct an expedited review to facilitate equipment procurement and work at the Bartletts Ferry powerhouse.

Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

CH2MHILL

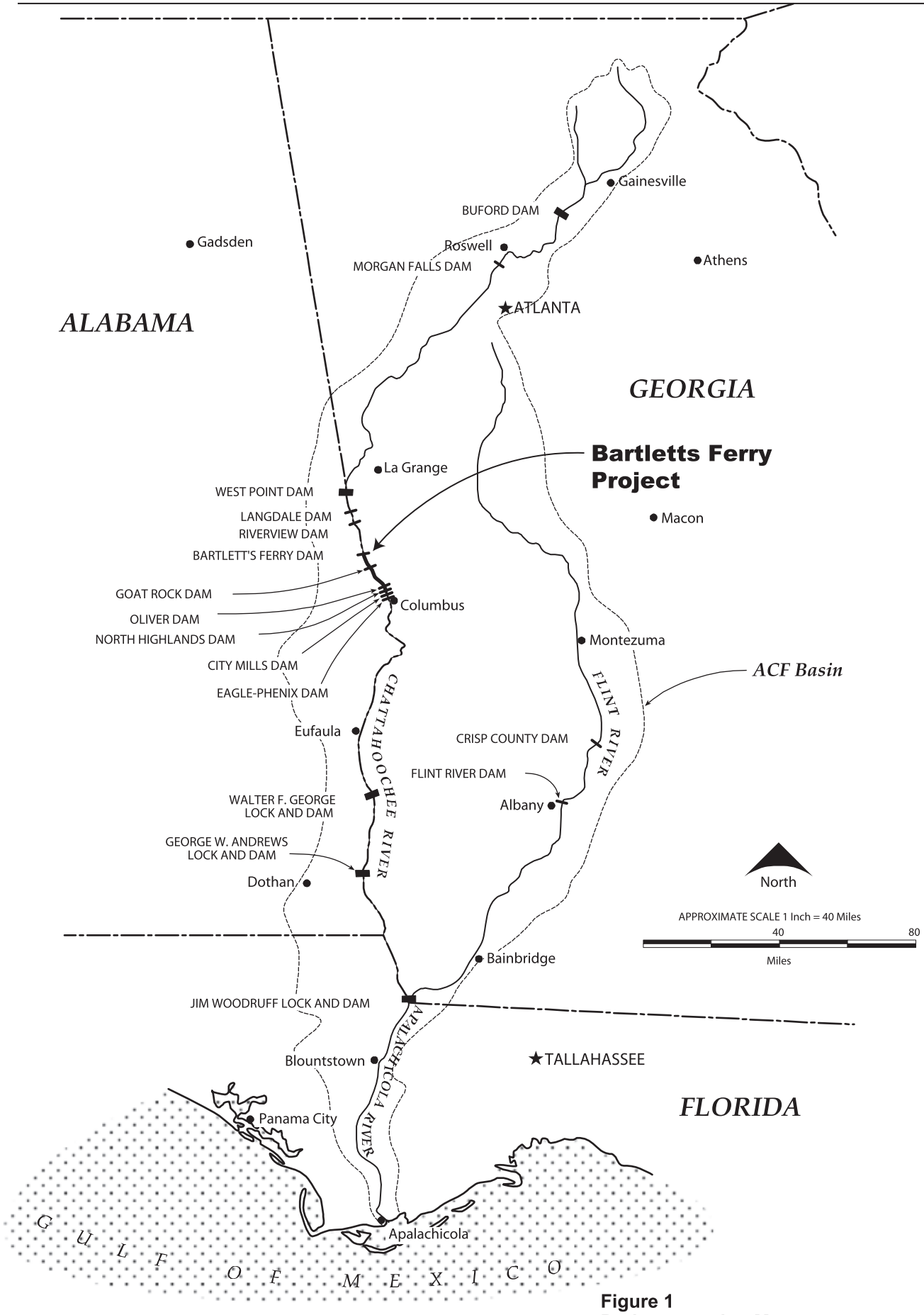

Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

DOCUMENTATION OF AGENCY CONSULTATION ON DRAFT LICENSE AMENDMENT APPLICATION

Crabbe, Melissa C.

From: Crabbe, Melissa C.
Sent: Tuesday, May 3, 2022 5:17 PM
To: Bauer, Eric F; Wei.Zeng@dnr.ga.gov; Stephen.Wiedl@dnr.ga.gov; Elizabeth.Booth@dnr.state.ga.us; Brent.Hess@dnr.ga.gov; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer; Johnson, Chris L; Moore, David; Lovell, Graves; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R.; Kelly Schaeffer; Charles, Joseph D.; Peeples, Alan L.; Dodd, Anthony Ray; O'Rouke, Patrick Michael; Munn, Laura S.
Subject: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades
Attachments: 2022-05-03 Bartletts Ferry Amendment Application - Attachment A C and D.pdf

Part 1 of 2

Good afternoon,

Our team is very close to submitting the license amendment application to Federal Energy Regulatory Commission (FERC) for the modernization of units 1-4 in the west powerhouse of the Bartletts Ferry Project (FERC Project Number 485). We appreciate all of the feedback and consultation that has been ongoing since December 2021. As you may recall, our proposal is to modernize units, including the installation of three new aerating turbines, one new non-aerating turbine, rehabilitation of generators, and replacement of intake trashracks.

Please review our Draft License Amendment application so that you can provide comment, if needed. Comments provided via email are sufficient. We will take your comments and provide them to the FERC when we submit the application. FERC will also provide an additional opportunity for comment after they receive our application, but we thought your early review would help resolve any outstanding issues.

The draft application consists of the Initial Statement and Application (Attachment A), Documentation of Consultation with Agencies (Attachment B), a Dissolved Oxygen and Water Temperature Monitoring Plan (Attachment C), a marked-up version of the existing Exhibit A (Attachment D), showing changes that would be required to this part of our existing FERC license by the proposal. The email contains Attachment A, C and D.

If possible, we would like your review by 12 PM Friday, May 6, 2022.

We appreciate your feedback and enjoy working with you on this project!
Sincerely,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Crabbe, Melissa C.

From: Crabbe, Melissa C.
Sent: Tuesday, May 3, 2022 9:42 PM
To: Bauer, Eric F; Wei.Zeng@dnr.ga.gov; Stephen.Wiedl@dnr.ga.gov; Elizabeth.Booth@dnr.state.ga.us; Brent.Hess@dnr.ga.gov; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer; Johnson, Chris L; Moore, David; Lovell, Graves; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R.; Kelly Schaeffer; Charles, Joseph D.; Peeples, Alan L.; Dodd, Anthony Ray; O'Rouke, Patrick Michael; Munn, Laura S.
Subject: RE: Part 2 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades
Attachments: 2022-05-03 Bartletts Ferry Amendment Application - Attachment B_opt.pdf

Good evening,

I am resending Part 2 of 2 – Bartletts Ferry Amendment Application – Attachment B as my initial attempt was undeliverable to many of you due to the file size. I apologize for any confusion the delay may have caused.

Sincerely,
Melissa Crabbe, PE
404-506-7273

Southern Company

From: Crabbe, Melissa C.
Sent: Tuesday, May 3, 2022 5:15 PM
To: Bauer, Eric F <eric_bauer@fws.gov>; Wei.Zeng@dnr.ga.gov; Stephen.Wiedl@dnr.ga.gov; Elizabeth.Booth@dnr.state.ga.us; Brent.Hess@dnr.ga.gov; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <cljohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: Part 2 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Part 2 of 2

Good afternoon,

Our team is very close to submitting the license amendment application to Federal Energy Regulatory Commission (FERC) for the modernization of units 1-4 in the west powerhouse of the Bartletts Ferry Project (FERC Project Number 485). We appreciate all of the feedback and consultation that has been ongoing since December 2021. As you may recall, our proposal is to modernize units, including the installation of three new aerating turbines, one new non-aerating turbine, rehabilitation of generators, and replacement of intake trashracks.

Please review our Draft License Amendment application so that you can provide comment, if needed. Comments provided via email are sufficient. We will take your comments and provide them to the FERC when we submit the

application. FERC will also provide an additional opportunity for comment after they receive our application, but we thought your early review would help resolve any outstanding issues.

The draft application consists of the Initial Statement and Application (Attachment A), Documentation of Consultation with Agencies (Attachment B), a Dissolved Oxygen and Water Temperature Monitoring Plan (Attachment C), a marked-up version of the existing Exhibit A (Attachment D), showing changes that would be required to this part of our existing FERC license by the proposal. The email contains Attachment B only.

If possible, we would like your review by 12 PM Friday, May 6, 2022.

We appreciate your feedback and enjoy working with you on this project!
Sincerely,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

U.S. Fish and Wildlife Service

Crabbe, Melissa C.

From: O'Mara, Courtenay R.
Sent: Friday, May 6, 2022 2:22 PM
To: Bauer, Eric F
Cc: Dodd, Anthony Ray; Ozier, James Copeland; Crabbe, Melissa C.
Subject: RE: [EXTERNAL] Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Eric- thanks so much for the clarification!

Courtenay

Courtenay O'Mara P.E.
Relicensing and Compliance Supervisor
Southern Company Generation
241 Ralph McGill Blvd. N.E.
Atlanta, GA 30308
cromara@southernco.com
404-797-9432 (cell)

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Friday, May 6, 2022 2:20 PM
To: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Cc: Dodd, Anthony Ray <ARDODD@southernco.com>; Ozier, James Copeland <JCOZIER@southernco.com>; Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Subject: Re: [EXTERNAL] Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

---

That's correct. I don't see the need to coordinate with them unless a drawdown ends up being necessary. Hope you have a good weekend too.

-Eric

Eric F. Bauer, PhD
(he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
US Fish and Wildlife Service
RG Stephens, Jr. Federal Building
355 East Hancock Avenue, Room 320, Box 7

Athens, GA 30601
Office #: 706-613-9493

Direct Line: 706-208-7519

Teams: eric_bauer@fws.gov (preferred)

From: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Sent: Friday, May 6, 2022 12:11 PM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: Dodd, Anthony Ray <ARDODD@southernco.com>; Ozier, James Copeland <JCOZIER@southernco.com>; Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Subject: RE: [EXTERNAL] Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Hey Eric-
I wanted to make sure we understood your comment. You would like us to engage with the Alabama Ecological Office if and when we determine if a drawdown is necessary for this project, correct? At the current time we are not sure we even need a drawdown, so I think that is what you mean. Just want to make sure I understand that correctly. And we are happy to engage with them once we have more information on if one is needed for construction, and the seasonality, duration, depth, of one if needed. We don't know that right now.

Thanks so much and have a nice weekend.

Courtenay O'Mara P.E.
Relicensing and Compliance Supervisor
Southern Company Generation
241 Ralph McGill Blvd. N.E.
Atlanta, GA 30308
cromara@southernco.com
404-797-9432 (cell)

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Thursday, May 5, 2022 4:20 PM
To: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>; Wei.Zeng@dnr.ga.gov; Stephen.Wiedl@dnr.ga.gov; Elizabeth.Booth@dnr.state.ga.us; Brent.Hess@dnr.ga.gov; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <cljohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: Re: [EXTERNAL] Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Melissa et al.,

Based on the updated information provided in attachment A and IPaC species list therein and the suggestion that a drawdown, should it be required to complete the upgrades, could negatively impact Wood Stork foraging areas, please contact the Alabama Ecological Services Field Office of the FWS. The Georgia Ecological Services Field Office does not have any records of Wood Storks, their roosts, or core foraging areas in West Georgia but the AL ESFO may have more pertinent information to coordinate timing of such a drawdown and the location of potentially impacted core foraging areas.

Contact Information for the Alabama Ecological Services Field Office:
Alabama Ecological Services Field Office
(251) 441-5181
1208 B Main StreetDaphne,AL36526-4419

Alabama@fws.gov

-Eric

Eric F. Bauer, PhD
(he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
US Fish and Wildlife Service
RG Stephens, Jr. Federal Building
355 East Hancock Avenue, Room 320, Box 7
Athens, GA 30601
Office #: 706-613-9493

Direct Line: 706-208-7519

Teams: eric_bauer@fws.gov (preferred)

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Tuesday, May 3, 2022 5:17 PM
To: Bauer, Eric F <eric_bauer@fws.gov>; Wei.Zeng@dnr.ga.gov <Wei.Zeng@dnr.ga.gov>; Stephen.Wiedl@dnr.ga.gov <Stephen.Wiedl@dnr.ga.gov>; Elizabeth.Booth@dnr.state.ga.us <Elizabeth.Booth@dnr.state.ga.us>; Brent.Hess@dnr.ga.gov <Brent.Hess@dnr.ga.gov>; Santiago.Martinez@dca.ga.gov <Santiago.Martinez@dca.ga.gov>; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <cljohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov <leeanne.wofford@ahc.alabama.gov>
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S.

<LSMUNN@SOUTHERNCO.COM>
Subject: [EXTERNAL] Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Part 1 of 2

Good afternoon,

Our team is very close to submitting the license amendment application to Federal Energy Regulatory Commission (FERC) for the modernization of units 1-4 in the west powerhouse of the Bartletts Ferry Project (FERC Project Number 485). We appreciate all of the feedback and consultation that has been ongoing since December 2021. As you may recall, our proposal is to modernize units, including the installation of three new aerating turbines, one new non-aerating turbine, rehabilitation of generators, and replacement of intake trashracks.

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If possible, we would like your review by 12 PM Friday, May 6, 2022.

We appreciate your feedback and enjoy working with you on this project!
Sincerely,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Georgia Department of Natural Resources

Environmental Protection Division

Crabbe, Melissa C.

From: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Sent: Tuesday, May 3, 2022 5:51 PM
To: Crabbe, Melissa C.; Bauer, Eric F; Zeng, Wei; Wiedl, Stephen; Hess, Brent; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer; Johnson, Chris L; Moore, David; Lovell, Graves; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R.; Kelly Schaeffer; Charles, Joseph D.; Peeples, Alan L.; Dodd, Anthony Ray; O'Rouke, Patrick Michael; Munn, Laura S.
Subject: RE: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Georgia EPD appreciates the opportunity to review the FERC License Amendment Application for Barletts Ferry Project. The project will upgrade Units 1-4 of the Bartletts Ferry west powerhouse, which should improve the dissolved oxygen below the dam. EPD's Watershed Planning and Monitoring Program has reviewed the dissolved oxygen and temperature monitoring plan and provide comments that have been incorporated into the final version of the plan. We have no further comments on the application. Thank you for your time an consideration.

Liz Booth

Elizabeth A. Booth, Ph.D., P.E.
Georgia Environmental Protection Division
Watershed Protection Branch
Watershed Planning and Monitoring Program
2 Martin Luther King Jr. Drive, Suite 1152
Atlanta, Georgia 30334
470 607-2439
elizabeth.booth@dnr.ga.gov

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Tuesday, May 3, 2022 5:17 PM
To: Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Wiedl, Stephen <Stephen.Wiedl@dnr.ga.gov>; Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>; Hess, Brent <Brent.Hess@dnr.ga.gov>; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <cljohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ardodd@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>

Subject: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Part 1 of 2

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Sincerely,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Georgia Department of Natural Resources

Wildlife Resources Division

Crabbe, Melissa C.

From: Hess, Brent <Brent.Hess@dnr.ga.gov>
Sent: Monday, May 9, 2022 11:40 AM
To: Crabbe, Melissa C.
Cc: Hakala, Jim; Peacock, Clint
Subject: RE: Part 2 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Melissa Crabbe,

Thank you for the opportunity to respond to the most recent draft of the Georgia Power FERC License Amendment Application for Bartlett's Ferry Project Upgrades.
The current draft and the earlier consultation suggest the proposed upgrades to the Bartlett's Ferry Project should have minimal effects on the aquatic and recreational resources at the project. The Georgia Department of Natural Resources, Wildlife Resources Division requests to be consulted of any changes to the current construction plans and scheduling for the Bartlett's Ferry Project Updates.

Thank you.

Brent Hess
Fisheries Biologist, Fisheries Management

Wildlife Resources Division [georgiawildlife.com]
(706) 845-4180

Facebook [facebook.com] • Twitter [twitter.com] • Instagram [instagram.com]
Buy a hunting or fishing license today! [georgiawildlife.com]

A division of the
GEORGIA DEPARTMENT OF NATURAL RESOURCES

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Tuesday, May 3, 2022 9:42 PM
To: Bauer, Eric F <eric_bauer@fws.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Wiedl, Stephen <Stephen.Wiedl@dnr.ga.gov>; Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>; Hess, Brent <Brent.Hess@dnr.ga.gov>; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <cljohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ardodd@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: RE: Part 2 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Good evening,

I am resending Part 2 of 2 – Bartletts Ferry Amendment Application – Attachment B as my initial attempt was undeliverable to many of you due to the file size. I apologize for any confusion the delay may have caused.

Sincerely,
Melissa Crabbe, PE
404-506-7273

From: Crabbe, Melissa C.
Sent: Tuesday, May 3, 2022 5:15 PM
To: Bauer, Eric F <eric_bauer@fws.gov>; Wei.Zeng@dnr.ga.gov; Stephen.Wiedl@dnr.ga.gov; Elizabeth.Booth@dnr.state.ga.us; Brent.Hess@dnr.ga.gov; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <cljohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: Part 2 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Part 2 of 2

Good afternoon,

Our team is very close to submitting the license amendment application to Federal Energy Regulatory Commission (FERC) for the modernization of units 1-4 in the west powerhouse of the Bartletts Ferry Project (FERC Project Number 485). We appreciate all of the feedback and consultation that has been ongoing since December 2021. As you may recall, our proposal is to modernize units, including the installation of three new aerating turbines, one new non-aerating turbine, rehabilitation of generators, and replacement of intake trashracks.

Please review our Draft License Amendment application so that you can provide comment, if needed. Comments provided via email are sufficient. We will take your comments and provide them to the FERC when we submit the application. FERC will also provide an additional opportunity for comment after they receive our application, but we thought your early review would help resolve any outstanding issues.

The draft application consists of the Initial Statement and Application (Attachment A), Documentation of Consultation with Agencies (Attachment B), a Dissolved Oxygen and Water Temperature Monitoring Plan (Attachment C), a marked-up version of the existing Exhibit A (Attachment D), showing changes that would be required to this part of our existing FERC license by the proposal. The email contains Attachment B only.

If possible, we would like your review by 12 PM Friday, May 6, 2022.

We appreciate your feedback and enjoy working with you on this project!
Sincerely,
Melissa Crabbe, PE

Alabama Department of Environmental Management

Crabbe, Melissa C.

From: Crabbe, Melissa C.
Sent: Friday, May 6, 2022 12:49 PM
To: Moore, David
Cc: O'Mara, Courtenay R.; Kelly Schaeffer; Charles, Joseph D.; Peeples, Alan L.; Dodd, Anthony Ray; O'Rouke, Patrick Michael; Munn, Laura S.; Haslbauer, Jennifer; Johnson, Chris L
Subject: RE: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

David,

Thank you for reviewing the Bartletts Ferry license amendment application and for your comment. Georgia Power will be happy to share WQ monitoring reports with ADEM.

Melissa Crabbe, PE
404-506-7273

Southern Company

From: Moore, David <djmoore@adem.alabama.gov>
Sent: Friday, May 6, 2022 12:15 PM
To: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <CLJohnson@adem.alabama.gov>
Subject: RE: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

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Melissa,

The Water Quality Branch of the Alabama Department of Environmental Management (ADEM) has reviewed the Draft License Amendment Application for the modernization of units 1-4 in the west powerhouse of the Bartletts Ferry Project. We request that ADEM also be included in any Water Quality Monitoring Reporting for this project.

We appreciate the opportunity to provide comments on this project. If you have any questions, please do not hesitate to contact us.

Thanks,

David Moore
Environmental Engineer Senior
Water Division; Water Quality Branch

Alabama Department of Environmental Management
Office: (334) 274-4165
adem.alabama.gov

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Tuesday, May 3, 2022 4:17 PM
To: Bauer, Eric F <eric_bauer@fws.gov>; Wei.Zeng@dnr.ga.gov; Stephen.Wiedl@dnr.ga.gov; Elizabeth.Booth@dnr.state.ga.us; Brent.Hess@dnr.ga.gov; Santiago.Martinez@dca.ga.gov; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Johnson, Chris L <CLJohnson@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>; Lovell, Graves <Graves.Lovell@dcnr.alabama.gov>; leeanne.wofford@ahc.alabama.gov
Cc: O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>; Kelly Schaeffer <kelly.schaeffer@kleinschmidtgroup.com>; Charles, Joseph D. <JCHARLES@southernco.com>; Peeples, Alan L. <ALPEEPLE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
Subject: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Part 1 of 2

Good afternoon,

Our team is very close to submitting the license amendment application to Federal Energy Regulatory Commission (FERC) for the modernization of units 1-4 in the west powerhouse of the Bartletts Ferry Project (FERC Project Number 485). We appreciate all of the feedback and consultation that has been ongoing since December 2021. As you may recall, our proposal is to modernize units, including the installation of three new aerating turbines, one new non-aerating turbine, rehabilitation of generators, and replacement of intake trashracks.

Please review our Draft License Amendment application so that you can provide comment, if needed. Comments provided via email are sufficient. We will take your comments and provide them to the FERC when we submit the application. FERC will also provide an additional opportunity for comment after they receive our application, but we thought your early review would help resolve any outstanding issues.

The draft application consists of the Initial Statement and Application (Attachment A), Documentation of Consultation with Agencies (Attachment B), a Dissolved Oxygen and Water Temperature Monitoring Plan (Attachment C), a marked-up version of the existing Exhibit A (Attachment D), showing changes that would be required to this part of our existing FERC license by the proposal. The email contains Attachment A, C and D.

If possible, we would like your review by 12 PM Friday, May 6, 2022.

We appreciate your feedback and enjoy working with you on this project!
Sincerely,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

APPENDIX B

CONSULTATION ON REVISED PROPOSED ACTION ELIMINATING DRAWDOWN (2023)

U.S. Fish and Wildlife Service

Crabbe, Melissa C.

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Thursday, February 16, 2023 11:09 AM
To: Crabbe, Melissa C.
Subject: Re: [EXTERNAL] Bartletts Ferry License Amendment Application Update

Hi Melissa,

I have received your email. If you need anything more from me, let me know but I'll likely be out until the 27th dealing with a family medical situation.

-Eric

Eric F. Bauer, PhD
(he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
US Fish and Wildlife Service
RG Stephens, Jr. Federal Building
355 East Hancock Avenue, Room 320, Box 7
Athens, GA 30601
Office #: 706-613-9493
Georgia Ecological Services Website: https://www.fws.gov/office/georgia-ecological-services [fws.gov]
Project Planning and Review Procedures: https://www.fws.gov/office/georgia-ecological-services/project-planning-review [fws.gov]

Direct Line: 706-208-7519
Teams: eric_bauer@fws.gov (preferred)

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Wednesday, February 15, 2023 10:44 AM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>; O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Subject: [EXTERNAL] Bartletts Ferry License Amendment Application Update

Dr. Bauer,

After consulting with USFWS on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and duration), if necessary. A contractor has been selected and we can confirm that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. The proposed work will be completed one unit at a time, and will be completed behind stoplogs installed the full water column depth and headgates installed to the full height of the unit's intake. These are the mechanisms that are routinely used to isolate one unit at a time from water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations in all other available units at the Project. Note, this will not affect the stoplogs that are currently in place on the Bartletts Ferry's West Powerhouse Units 1-4 for dissolved oxygen enhancement.

Georgia Power's response to the FERC AIR will also include a clarification of the megawatt increase we expect from the modernization of the west powerhouse and an Applicant Prepared Environmental Assessment (APEA). The APEA provides FERC additional resource information they need to analyze the environmental effects of our proposal. This information will be provided to FERC in a response to its January 26, 2023 AIR and FERC may issue the APEA for public comment. We want to emphasize and assure you that there have been no changes to our proposed scope for the Bartletts Ferry modernization and, with the exception of the drawdown clarification above, the information included in the APEA will be consistent with the details provided to you during consultation in Spring 2022.

Although you will be copied on Georgia Power's AIR response to FERC, we wanted to provide you with the updated information directly. Would you please acknowledge that you have received this update if possible **by next Monday, February 20**?

Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Crabbe, Melissa C.

From: Crabbe, Melissa C.
Sent: Tuesday, February 28, 2023 12:11 PM
To: Bauer, Eric F
Cc: Dodd, Anthony Ray; Ozier, James Copeland; O'Mara, Courtenay R.; O'Rouke, Patrick Michael
Subject: Re: [EXTERNAL] Bartletts Ferry License Amendment Application Update
Attachments: iPaC Species List_ Alabama Ecological Services Field Office.pdf

Good afternoon, Dr. Bauer.

This is a follow up to our recent correspondence (below) about a response to a FERC Additional Information Request (AIR) Georgia Power is preparing for the Bartletts Ferry Project license amendment application. My email below, sent two weeks ago, was provided to update you that the project no longer has the potential to require a drawdown and that we would clarify this and also file an Applicant Prepared Environmental Assessment with our response for FERC's AIR. Because the action area for our proposed work no longer has the potential to require a drawdown, we were able to further define the project's action area in the IPaC tool. I am copying the report, which will be included in the APEA in Appendix B. I wanted to bring this to your attention because the species of concern have changed slightly from our IPaC review leading up to the May 2022 amendment application; removing Rellict Trillium and Wood Stork as species of concern for our refined Action Area, and adding Fringed Campion and the Alligator Snapping Turtle to the species of concern list. The Monarch Butterfly, Georgia Rockcress, and Purple Bankclimber remain as species of concern from our previous review to now. These species are discussed in Section 9 of the APEA as well as Birds of Conservation Concern. We plan to file the APEA in our response to FERC's AIR tomorrow. The APEA states the following about our proposed proejct as it relates to the Fringed Campion and Alligator Snapping Turtle:

Alligator Snapping Turtle (G3, S3 Alabama, S3 Georgia) occupies deep, slow-moving reaches of rivers and larger streams of the southeastern U.S.; individuals can live for several decades and commonly weigh in excess of 100 lbs. Populations declined in recent history primarily as a result of overharvest for the commercial soup industry; continuing threats include deliberate and incidental capture and habitat alteration. Recovery is likely hampered by a low reproductive rate. This species was proposed for listing as threatened in 2021; therefore no targeted surveys were conducted during the process leading up to the 2014 license renewal. No specimens of Alligator Snapping Turtle were found during previous field surveys and would not be expected to occur at the action area, therefore the Proposed Action should have no impact on this aquatic species.

Fringed Campion (G2, S2 Georgia) is a highly endangered perennial herb found on stream slopes and terraces in mature hardwood forests on low-acid soils. Declines are attributed to habitat alteration and competition from exotic species. The species is no longer known from Alabama, and the nearest Georgia record is several miles to the east in Crawford County, Georgia (Georgia DNR 2022). The proposed laydown areas have a history of heavy disturbance and consists mostly of frequently mowed grass, improved driving and parking facilities, and roadside embankment. No suitable habitat for Fringed Campion occurs in the IPaC action area, therefore the Proposed Action will have no impact on the species.

This is information is being provided as an update. If you have any comments on the above we will gladly accept them when you have an opportunity to respond, or you may comment in the FERC docket once FERC notices our upcoming filing soliciting comments.

Please feel free to reach out to us individually or reply all to this email if you have any questions.

Thanks much,

Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

From: Bauer, Eric F <eric_bauer@fws.gov>
Sent: Thursday, February 16, 2023 11:09 AM
To: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Subject: Re: [EXTERNAL] Bartletts Ferry License Amendment Application Update

Hi Melissa,

I have received your email. If you need anything more from me, let me know but I'll likely be out until the 27th dealing with a family medical situation.

-Eric

Eric F. Bauer, PhD
(he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
US Fish and Wildlife Service
RG Stephens, Jr. Federal Building
355 East Hancock Avenue, Room 320, Box 7
Athens, GA 30601
Office #: 706-613-9493
Georgia Ecological Services Website: https://www.fws.gov/office/georgia-ecological-services [fws.gov]
Project Planning and Review Procedures: https://www.fws.gov/office/georgia-ecological-services/project-planning-review [fws.gov]

Direct Line: 706-208-7519

Teams: eric_bauer@fws.gov (preferred)

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Wednesday, February 15, 2023 10:44 AM
To: Bauer, Eric F <eric_bauer@fws.gov>
Cc: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; Dodd, Anthony Ray <ARDODD@southernco.com>;

O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Subject: [EXTERNAL] Bartletts Ferry License Amendment Application Update

Dr. Bauer,

After consulting with USFWS on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and duration), if necessary. A contractor has been selected and we can confirm that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. The proposed work will be completed one unit at a time, and will be completed behind stoplogs installed the full water column depth and headgates installed to the full height of the unit's intake. These are the mechanisms that are routinely used to isolate one unit at a time from water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations in all other available units at the Project. Note, this will not affect the stoplogs that are currently in place on the Bartletts Ferry's West Powerhouse Units 1-4 for dissolved oxygen enhancement.

Georgia Power's response to the FERC AIR will also include a clarification of the megawatt increase we expect from the modernization of the west powerhouse and an Applicant Prepared Environmental Assessment (APEA). The APEA provides FERC additional resource information they need to analyze the environmental effects of our proposal. This information will be provided to FERC in a response to its January 26, 2023 AIR and FERC may issue the APEA for public comment. We want to emphasize and assure you that there have been no changes to our proposed scope for the Bartletts Ferry modernization and, with the exception of the drawdown clarification above, the information included in the APEA will be consistent with the details provided to you during consultation in Spring 2022.

Although you will be copied on Georgia Power's AIR response to FERC, we wanted to provide you with the updated information directly. Would you please acknowledge that you have received this update if possible **by next Monday, February 20**?

Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
Phone: (251) 441-5181 Fax: (251) 441-6222
Email Address: alabama@fws.gov

In Reply Refer To: February 20, 2023
Project Code: 2023-0047263
Project Name: Bartletts Ferry Hydroelectric Project West Powerhouse Modernization

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Project consultation requests may be submitted by mail or email (Alabama@fws.gov). **Ensure that the Project Code in the header of this letter is clearly referenced in any request for consultation or correspondence submitted to our office.**

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Ensure that the Project Code in the header of this letter is clearly referenced with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

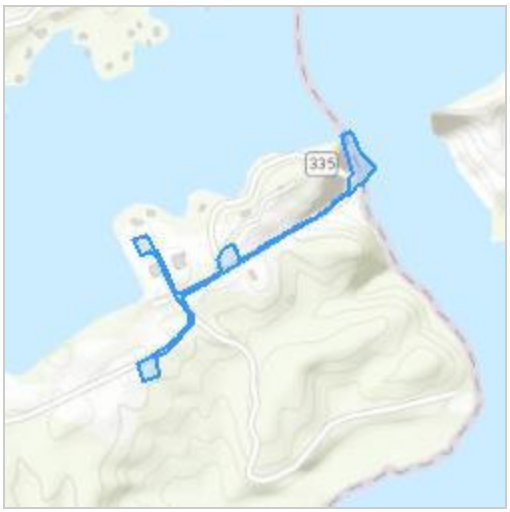
Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
(251) 441-5181

PROJECT SUMMARY

Project Code: 2023-0047263
Project Name: Bartletts Ferry Hydroelectric Project West Powerhouse Modernization
Project Type: Dam - Operations
Project Description: Georgia Power proposes to upgrade the four generating units in the Bartletts Ferry Hydroelectric Project west powerhouse, which includes replacing the turbine runners, generators, and intake trashracks. Upgrading the generating units will allow the Bartletts Ferry Project to continue to meet the operational requirements of its existing Federal Energy Regulatory Commission (FERC) license. This modification requires an Application for Non-Capacity Amendment (Amendment Application) to FERC license No. 485-076. Georgia Power consulted with appropriate agencies and submitted the Amendment Application to FERC on May 6, 2022. On June 10, FERC issued the application for public review and soliciting comments. The deadline for public comment ended on July 11, 2022 with no comments received. Georgia Power filed information pertaining to a material temporary laydown area, a temporary construction trailer area and a temporary construction parking area on October 25, 2022 to supplement the May 6, 2022 amendment application. An additional information request (AIR) from FERC was received on January 23, 2023. The AIR requested for Georgia Power to file an Exhibit E, Applicant Prepared Environmental Assessment for the project, clarify decision factors determining drawdown needs (a drawdown is not needed), and clarifying the megawatt increase expected. Although Georgia Power has already consulted with Dr. Eric Bauer in USFWS's Georgia Ecological Services Field Office in Athens, GA, the areas associated with Georgia Power's proposal are now being defined in the iPaC system as part of the Exhibit E, Applicant Prepared Environmental Assessment.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.66011695,-85.09509961312875,14z



Counties: Lee County, Alabama

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

CLAMS

NAME	STATUS
Purple Bankclimber (mussel) *Elliptoideus sloatianus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7660	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Fringed Campion *Silene polypetala*	Endangered
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/3738	
Georgia Rockcress *Arabis georgiana*	Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.	
Species profile: https://ecos.fws.gov/ecp/species/4535	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPAC USER CONTACT INFORMATION

Agency: Georgia Power
Name: Melissa Crabbe
Address: 241 Ralph McGill Blvd
City: Atlanta
State: GA
Zip: 30308
Email mccrabbe@southernco.com
Phone: 6787965894

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Energy Regulatory Commission

Georgia Department of Natural Resources

Environmental Protection Division

Crabbe, Melissa C.

From: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>
Sent: Wednesday, February 15, 2023 12:22 PM
To: Crabbe, Melissa C.
Cc: Zeng, Wei; Wiedl, Stephen; Dodd, Anthony Ray; O'Mara, Courtenay R.
Subject: RE: Bartletts Ferry License Amendment Application Update

Good morning, Melissa,

Thank you for keeping us informed on the modernization of the Bartletts Ferry west powerhouse. I am glad to hear that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. Therefore, there should not be any water quality issues.

Thanks Liz

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Wednesday, February 15, 2023 10:47 AM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Wiedl, Stephen <Stephen.Wiedl@dnr.ga.gov>
Cc: Dodd, Anthony Ray <ardodd@southernco.com>; O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Subject: Bartletts Ferry License Amendment Application Update

Good morning Dr. Booth, Dr. Zeng, and Mr. Wiedl,

After consulting with Georgia EPD on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and duration), if necessary. A contractor has been selected and we can confirm that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. The proposed work will be completed one unit at a time, and will be completed behind stoplogs installed the full water column depth and headgates installed to the full height of the unit's intake. These are the mechanisms that are routinely used to isolate one unit at a time from water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations in all other available units at the Project. Note, this will not affect the stoplogs that are currently in place on the Bartletts Ferry's West Powerhouse Units 1-4 for dissolved oxygen enhancement.

Georgia Power's response to the FERC AIR will also include a clarification of the megawatt increase we expect from the modernization of the west powerhouse and an Applicant Prepared Environmental Assessment (APEA). The APEA provides FERC additional resource information they need to analyze the environmental effects of our proposal. This

information will be provided to FERC in a response to its January 26, 2023 AIR and FERC may issue the APEA for public comment. We want to emphasize and assure you that there have been no changes to our proposed scope for the Bartletts Ferry modernization and, with the exception of the drawdown clarification above, the information included in the APEA will be consistent with the details provided to you during consultation in Spring 2022.

Although you will be copied on Georgia Power's AIR response to FERC, we wanted to provide you with the updated information directly. Would you please acknowledge that you have received this update if possible **by next Monday, February 20**?

Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Crabbe, Melissa C.

From: Wiedl, Stephen <Stephen.Wiedl@dnr.ga.gov>
Sent: Wednesday, February 15, 2023 11:02 AM
To: Crabbe, Melissa C.; Booth, Elizabeth; Zeng, Wei
Cc: Dodd, Anthony Ray; O'Mara, Courtenay R.
Subject: RE: Bartletts Ferry License Amendment Application Update
Attachments: RE: Part 1 of 2: For Your Review - Georgia Power FERC License Amendment Application for Bartletts Ferry Project Upgrades

Ms. Crabbe,

Thank you for providing the update information for the Bartlett's Ferry modernization project. From your description of the situation and the fact that no out-of-range reservoir drawdown will be necessary, it would seem that there is no effect here to EPD's review process for the project. Dr. Liz Booth had provided feedback to you in 2022 (a copy of one of those messages is attached) and it would seem that there will be no change in EPD's assessment of the project. Dr. Booth can provide additional comment on this update process as appropriate, but I wanted to provide you a prompt response back from the Wetlands Unit, responsible for 401 WQC review at EPD. Best wishes.

Stephen C. Wiedl, PWS
Manager – Wetlands Unit
Georgia Environmental Protection Division
7 Martin Luther King, Jr. Drive, Suite 450
Atlanta, GA 30334

404-452-5060
Stephen.Wiedl@dnr.ga.gov

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Wednesday, February 15, 2023 10:47 AM
To: Booth, Elizabeth <Elizabeth.Booth@dnr.ga.gov>; Zeng, Wei <Wei.Zeng@dnr.ga.gov>; Wiedl, Stephen <Stephen.Wiedl@dnr.ga.gov>
Cc: Dodd, Anthony Ray <ardodd@southernco.com>; O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Subject: Bartletts Ferry License Amendment Application Update

Good morning Dr. Booth, Dr. Zeng, and Mr. Wiedl,

After consulting with Georgia EPD on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to

Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and duration), if necessary. A contractor has been selected and we can confirm that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. The proposed work will be completed one unit at a time, and will be completed behind stoplogs installed the full water column depth and headgates installed to the full height of the unit's intake. These are the mechanisms that are routinely used to isolate one unit at a time from water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations in all other available units at the Project. Note, this will not affect the stoplogs that are currently in place on the Bartletts Ferry's West Powerhouse Units 1-4 for dissolved oxygen enhancement.

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Although you will be copied on Georgia Power's AIR response to FERC, we wanted to provide you with the updated information directly. Would you please acknowledge that you have received this update if possible **by next Monday, February 20**?

Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Georgia Department of Natural Resources

Wildlife Resources Division

Crabbe, Melissa C.

From: Crabbe, Melissa C.
Sent: Wednesday, February 15, 2023 10:50 AM
To: Hess, Brent
Cc: O'Rouke, Patrick Michael; O'Mara, Courtenay R.
Subject: Bartletts Ferry License Amendment Application Update

Good morning Brent,

After consulting with Georgia DNR WRD on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and duration), if necessary. A contractor has been selected and we can confirm that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. The proposed work will be completed one unit at a time, and will be completed behind stoplogs installed the full water column depth and headgates installed to the full height of the unit's intake. These are the mechanisms that are routinely used to isolate one unit at a time from water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations in all other available units at the Project. Note, this will not affect the stoplogs that are currently in place on the Bartletts Ferry's West Powerhouse Units 1-4 for dissolved oxygen enhancement.

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Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

Alabama Department of Environmental Management

Crabbe, Melissa C.

From: Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>
Sent: Tuesday, February 21, 2023 12:01 PM
To: Crabbe, Melissa C.; Johnson, Chris L; Moore, David
Cc: Dodd, Anthony Ray; O'Mara, Courtenay R.
Subject: RE: Bartletts Ferry License Amendment Application Update

Hi Melissa,

We have received and reviewed your update. We appreciate you keeping us updated on the status of this project.

Thanks,

Jennifer Haslbauer, P.E.
Chief, Standards and Planning Section
Water Quality Branch – Water Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463
(334) 274-4250
adem.alabama.gov

Mission: Assure for all citizens of the state a safe, healthful, and productive environment

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Wednesday, February 15, 2023 9:54 AM
To: Johnson, Chris L <CLJohnson@adem.alabama.gov>; Haslbauer, Jennifer <jhaslbauer@adem.alabama.gov>; Moore, David <djmoore@adem.alabama.gov>
Cc: Dodd, Anthony Ray <ARDODD@southernco.com>; O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Subject: Bartletts Ferry License Amendment Application Update

Good morning Mr. Johnson, Ms. Haslbauer, and Mr. Moore,

After consulting with ADEM on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and

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Although you will be copied on Georgia Power's AIR response to FERC, we wanted to provide you with the updated information directly. Would you please acknowledge that you have received this update if possible **by next Monday, February 20**?

Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Alabama Department of Conservation and Natural Resources

Crabbe, Melissa C.

From: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Sent: Friday, February 17, 2023 4:02 PM
To: Crabbe, Melissa C.
Cc: O'Rouke, Patrick Michael; O'Mara, Courtenay R.; Greene, Chris
Subject: RE: Bartletts Ferry License Amendment Application Update

Good afternoon,

We have received the updated information and appreciate the continued consultation regarding this project.

Best regards, Todd

Todd Fobian
Environmental Affairs Supervisor
Alabama Wildlife and Freshwater Fisheries Division
64 N. Union Street, Suite 551
Montgomery, AL 36130
Office: 334-353-7484
Cell: 334-850-3798
Todd.Fobian@dcnr.alabama.gov

From: Crabbe, Melissa C. <MCCRABBE@SOUTHERNCO.COM>
Sent: Wednesday, February 15, 2023 10:00 AM
To: Fobian, Todd <Todd.Fobian@dcnr.alabama.gov>
Cc: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>; O'Mara, Courtenay R. <CROMARA@SOUTHERNCO.COM>
Subject: Bartletts Ferry License Amendment Application Update

Mr. Fobian,

After consulting with ADCNR on our proposal to modernize the Bartletts Ferry Hydroelectric Project west powerhouse, Georgia Power filed, on May 6, 2022, an application with the Federal Energy Regulatory Commission (FERC) for an amendment of the Project's FERC license. Our application stated, should a lake drawdown be needed during the construction period of the modernization project, Georgia Power would consult with the agencies as required by Article 401 of the Bartletts Ferry license. On January 26, 2023, FERC issued an additional information request to Georgia Power regarding its application to amend the Project license. Among other things, FERC's additional information request requires Georgia Power to provide a description of factors involved in deciding whether or not a reservoir drawdown would be required and the details of how Georgia Power would perform any drawdown (i.e., timing, rate, depth, and duration), if necessary. A contractor has been selected and we can confirm that a drawdown outside of the licensed operating range will not be necessary to complete the proposed modernization. The proposed work will be completed one unit at a time, and will be completed behind stoplogs installed the full water column depth and headgates installed to the full height of the unit's intake. These are the mechanisms that are routinely used to isolate one unit at a time from water passage to provide personnel with safe access to the unit's generator and turbine, while maintaining normal operations in all other available units at the Project. Note, this will not affect the stoplogs that are currently in place on the Bartletts Ferry's West Powerhouse Units 1-4 for dissolved oxygen enhancement.

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Although you will be copied on Georgia Power's AIR response to FERC, we wanted to provide you with the updated information directly. Would you please acknowledge that you have received this update if possible **by next Monday, February 20**?

Thanks much,
Melissa Crabbe, PE
SCG Hydro Services
404-506-7273

Southern Company

APPENDIX C

INFORMATION FOR PLANNING AND CONSULTATION (IPAC REPORT)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
Phone: (251) 441-5181 Fax: (251) 441-6222
Email Address: alabama@fws.gov

In Reply Refer To: February 20, 2023
Project Code: 2023-0047263
Project Name: Bartletts Ferry Hydroelectric Project West Powerhouse Modernization

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Project consultation requests may be submitted by mail or email (Alabama@fws.gov). **Ensure that the Project Code in the header of this letter is clearly referenced in any request for consultation or correspondence submitted to our office.**

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Ensure that the Project Code in the header of this letter is clearly referenced with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Alabama Ecological Services Field Office
1208 B Main Street
Daphne, AL 36526-4419
(251) 441-5181

PROJECT SUMMARY

Project Code: 2023-0047263

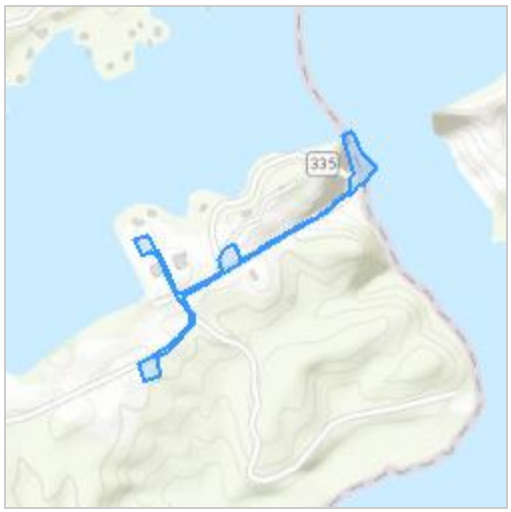
Project Name: Bartletts Ferry Hydroelectric Project West Powerhouse Modernization

Project Type: Dam - Operations

Project Description: Georgia Power proposes to upgrade the four generating units in the Bartletts Ferry Hydroelectric Project west powerhouse, which includes replacing the turbine runners, generators, and intake trashracks. Upgrading the generating units will allow the Bartletts Ferry Project to continue to meet the operational requirements of its existing Federal Energy Regulatory Commission (FERC) license. This modification requires an Application for Non-Capacity Amendment (Amendment Application) to FERC license No. 485-076. Georgia Power consulted with appropriate agencies and submitted the Amendment Application to FERC on May 6, 2022. On June 10, FERC issued the application for public review and soliciting comments. The deadline for public comment ended on July 11, 2022 with no comments received. Georgia Power filed information pertaining to a material temporary laydown area, a temporary construction trailer area and a temporary construction parking area on October 25, 2022 to supplement the May 6, 2022 amendment application. An additional information request (AIR) from FERC was received on January 23, 2023. The AIR requested for Georgia Power to file an Exhibit E, Applicant Prepared Environmental Assessment for the project, clarify decision factors determining drawdown needs (a drawdown is not needed), and clarifying the megawatt increase expected. Although Georgia Power has already consulted with Dr. Eric Bauer in USFWS's Georgia Ecological Services Field Office in Athens, GA, the areas associated with Georgia Power's proposal are now being defined in the iPaC system as part of the Exhibit E, Applicant Prepared Environmental Assessment.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.66011695,-85.09509961312875,14z



Counties: Lee County, Alabama

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

CLAMS

NAME	STATUS
Purple Bankclimber (mussel) *Elliptoideus sloatianus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7660	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Fringed Campion *Silene polypetala*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3738	
Georgia Rockcress *Arabis georgiana*	Threatened
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4535	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPAC USER CONTACT INFORMATION

Agency: Georgia Power
Name: Melissa Crabbe
Address: 241 Ralph McGill Blvd
City: Atlanta
State: GA
Zip: 30308
Email mccrabbe@southernco.com
Phone: 6787965894

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Energy Regulatory Commission

APPENDIX D

DISSOLVED OXYGEN AND WATER TEMPERATURE MONITORING PLAN

Georgia Power Company
Dissolved Oxygen (DO) and Water Temperature Monitoring Plan
for the Bartletts Ferry Tailwaters
Following Upgrades of Turbines 1 - 4 in the West Channel Powerhouse

Introduction

Georgia Power plans to upgrade the four generating units in the west powerhouse of Bartletts Ferry Hydroelectric Project (Project). Georgia Power is proposing to monitor tailwaters of Bartletts Ferry Dam for dissolved oxygen (DO) and water temperature following unit upgrades to demonstrate compliance with Georgia water quality standards. The Project was issued a Clean Water Act 401 water quality certificate (WQC) by the Georgia Environmental Protection Division (EPD) for the recent Federal Energy Regulatory Commission (FERC) relicensing, which included implementation of west-channel powerhouse operations and installation of physical stoplogs to increase DO.

The proposed upgrades include installing aerating turbine runners in three of the four turbine units (Unit Nos. 1, 2 and 4). The aerating turbine runners will enhance the Project's ability to continue to achieve Georgia water quality standards by increasing the DO (daily avg of 5.0 mg/L, not less than 4.0 mg/L). The relicensing 401 WQC contemplates changes in DO treatment methodology such as the proposed aerating turbine runners.

The Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama (Figure 1). The project includes a second powerhouse located on the eastern side of the river (Figure 2). The facility is operated in a modified run-of-river mode, primarily to meet daily peak system electricity demand. During periods of increased flow, Bartletts Ferry operates additional hours during non-peak demand times.

This monitoring plan is specifically designed to validate that the proposed DO improvement method of aerating turbine runners achieves the applicable Georgia DO criteria (daily avg of 5.0 mg/L, not less than 4.0 mg/L).

Turbine Upgrade Construction and Schedule

The combination of three aerated units and one non-aerated unit will provide dam operators operational flexibility and redundancy especially during critical conditions periods. The manufacturer's performance modeling indicates an aerated unit will result in an instantaneous DO increase up to 4.5 mg/L when operated by itself and that only two aerating units will be needed during mixed flow operation (aerating plus non-aerating units) to achieve the Georgia water quality standard. Because the existing physical stoplogs result in a DO uptake of 1 – 1.5 mg/L, it is anticipated that the aerating turbine runners will further improve water quality. The third aerated unit will serve as a redundant measure in case one aerating unit incurs an outage during the critical conditions period.

Scheduled construction sequencing will follow the order of Unit 1 (2023), Unit 3 (2024), Unit 4 (2025) and Unit 2 (2026). Table 1 provides a schedule of the expected unit construction sequence. To ensure compliance with Georgia water quality criteria for DO while construction is ongoing, the new Unit 3 (the non-aerated turbine) will not be operated during the critical conditions period until the 2027 tailrace monitoring program is initiated.

Water Quality Monitoring

To demonstrate compliance with Georgia water quality standards during this modernization project, Georgia Power proposes to conduct continuous DO and water temperature monitoring in the tailwaters annually during 1 May through 31 October in each planned unit-testing year (2024 through 2026) plus in the same season of the first year following completion of construction (2027). The critical DO conditions period typically occurs during June into late September. The proposed monitoring period brackets a broader time span to include periods of natural seasonal variation in timing of lake mixing/stratification effects in late spring and early fall. Monitoring in 2027 will provide a means to demonstrate that water quality criteria are met under the normal full range of operational capability which will include mixed-units use with the refurbished non-aerated turbine Unit No. 3.

The tailwaters monitoring location will be the same as used for the recent FERC relicensing studies for Bartletts Ferry Dam. The monitoring location, GR01, is situated in the upper end of the Goat Rock impoundment just downstream of the convergence of Bartletts Ferry's separate west and east powerhouse tailrace channels (Figure 3). Past studies demonstrated water quality conditions measured at the GR01 location as representative of west side powerhouse tailrace releases when only the west side powerhouse is generating.

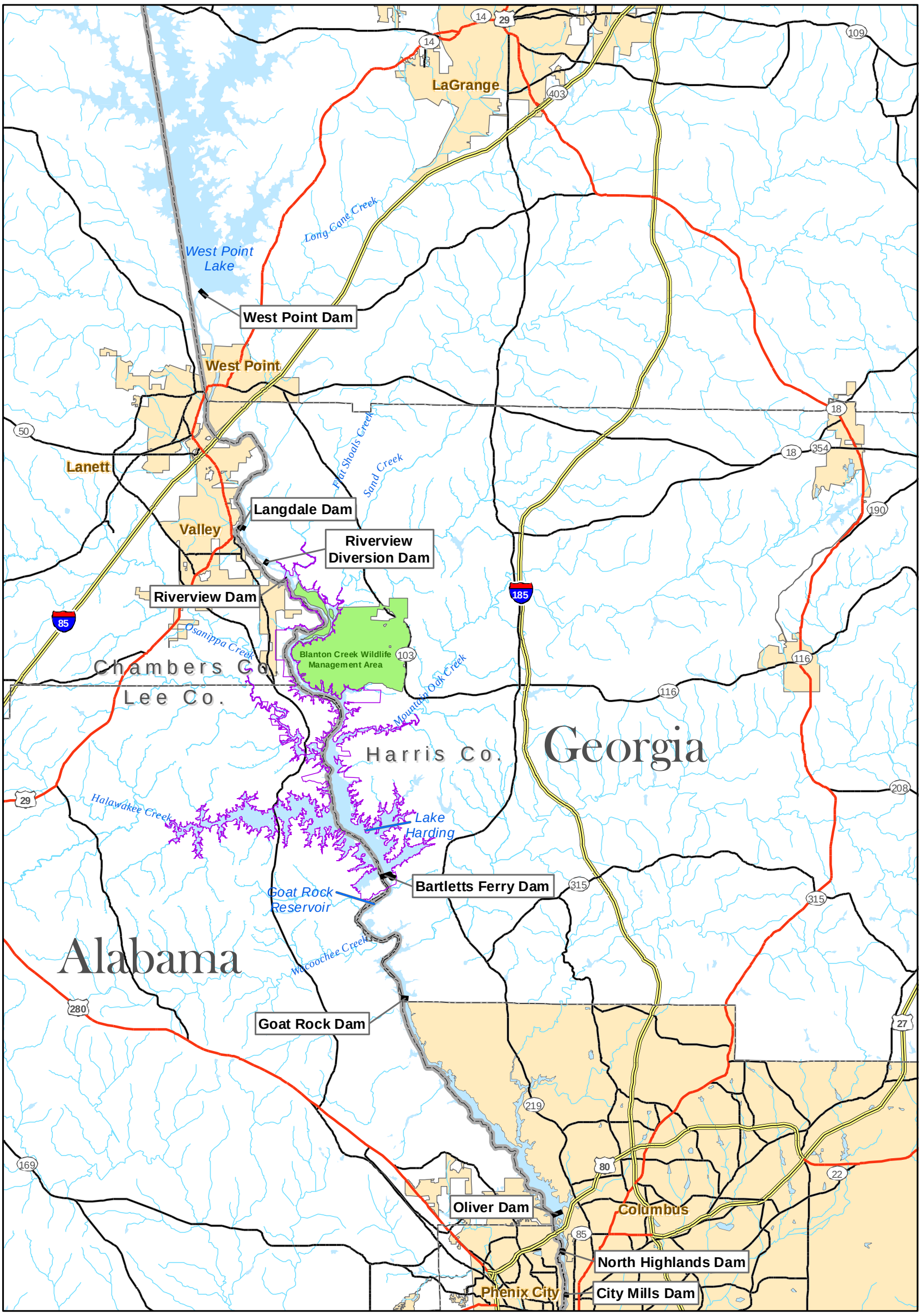
Monitoring data will be collected from a buoy anchored to the lake bottom in a manner to allow for fluctuations in water level due to dam releases and peak storm flows. A water quality monitoring sonde will be secured to/in the buoy in a manner that provides measurements of DO (mg/L) and water temperature (C°) at a depth of 1 meter. Data will be collected continuously at 30-minute intervals. The buoy and anchoring system will be maintained as necessary for designed purposes. The water quality sonde will receive at least monthly maintenance and calibration to operate in range of the manufacturer's specifications for ambient, continuous *in-situ* deployment. The DO monitoring probe will include an anti-fouling type luminescent sensor including a sensor wiper designed for deployment in severe fouling environments. To maintain ambient measurement precision, field observations will be made of the monitoring probe during each trip to monitor for biofouling condition. Observations of growth that may interfere with sensor performance or otherwise detection of increasing trend of biofouling growth (i.e., algae, periphyton, etc.) will be evaluated at each maintenance interval by an experienced field crew to determine if shorter maintenance intervals are necessary to maintain equipment performance. The frequency of maintenance trips will be

deployed as conditions warrant in an effort to maintain designed equipment performance through the study period.

Equipment calibration records will be maintained by Georgia Power. Data will be downloaded from the sonde either directly or remotely on a frequent basis and stored in electronic files along with equipment maintenance logs.

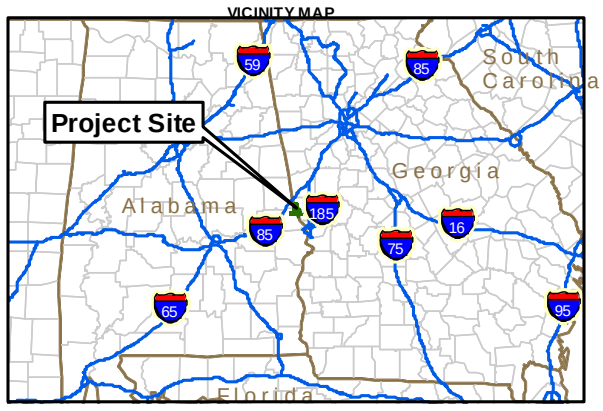
Water Quality Monitoring Reporting

Water quality monitoring data will be collected during 1 May through 31 October 2027. Following each annual monitoring period, the water quality data will be summarized in a report including a narrative description of the findings and data summary tables combined with plots of corresponding turbine operations by powerhouse and/or unit(s). A report will be sent to EPD for a 30-day review by 1 January of each year that follows a monitoring year.



Notes:
1. FERC Project Boundary source Georgia Power
2. Basemap data source ESRI 2006

VICINITY MAP



Legend

- FERC Project Boundary
- Dam
- River or Stream Channel
- Lake
- GA/AL State Boundary
- County Boundary
- Interstate Highway
- US Highway
- State Highway
- County Road
- Local Road
- Blanton Creek WMA
- Incorporated Areas

N

0 1 2
Miles

Figure 1
Project Vicinity in the Chattahoochee River Basin
Bartletts Ferry Project (FERC No. 485)

Legend

GA/AL State Boundary

FERC Project Boundary

Notes:
1. Georgia/Alabama State Boundary source USGS
2. FERC Project Boundary source Georgia Power
3. Aerial Imagery source National Agricultural Imagery Program (NAIP) 2006

N

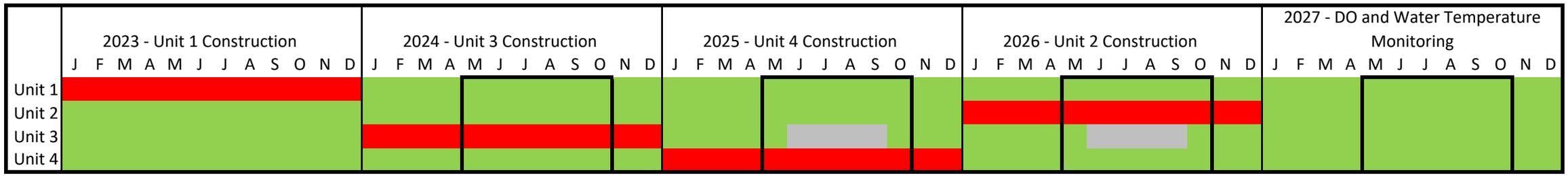
0 0.125 0.25

Miles

Figure 2
Project Facilities
Bartletts Ferry Project (FERC No. 485)

Figure 3.
GR01 water quality monitoring location
downstream of Bartletts Ferry Dam

Table 1: Bartletts Ferry Modernization Project Unit Construction Sequence for Compliance with Georgia's Water Quality Criteria



Legend:

- Unit Not Available Due to Construction
- Unit Available for Operation Because Stoplogged or Aerated
- Unit Not Available During Critical Conditions Period BC Non-aerating
- DO and Water Temperature Monitoring

Attachment B
Existing and Proposed Generator and Turbine Nameplate Capacities

Table 1: Bartletts Ferry West Powerhouse Units 1-4 Existing and Proposed Turbine Nameplate Capacity

Unit	Existing Turbine Nameplate Capacity / Maximum Capacity[1] (hp)	Existing Turbine Nameplate Capacity / Maximum Capacity Converted to MW	Existing Turbine Rated Capacity / Best Gate / Efficient Gate[2] (MW)	Proposed Turbine Nameplate Capacity / Best Gate / Efficient Gate [3] (hp)	Proposed Turbine Nameplate Capacity / Best Gate / Efficient Gate [4] (MW)
1	22,000	16.4	15.0	24,675	18.4
2	22,000	16.4	15.0	24,675	18.4
3	22,000	16.4	15.0	24,740	18.5
4	28,500	21.3	20.0	31,400	23.4

Table 2 Bartletts Ferry West Powerhouse Units 1-4 Existing and Proposed Generator Nameplate Capacity

Unit	Existing Generator Nameplate Capacity[5] (kva)	Existing Generator Nameplate Power Factor[6]	Existing Generator Nameplate Capacity Converted to MW	Proposed Generator Nameplate Capacity[7] (kva)	Proposed Generator Nameplate Power Factor[8]	Proposed Generator Nameplates Capacity Converted to MW
1	21,000	0.8	16.8	24,110	0.9	21.7
2	21,000	0.8	16.8	24,110	0.9	21.7
3	22,500	0.8	18.0	23,330	0.9	21.0
4	25,000	0.8	20.0	29,900	0.9	26.9

[1] Represents maximum power output of turbines at full wicket gate opening at a rated head of 112 ft. As specified on turbine nameplates physically mounted on existing units.
[2] The existing best gate / most efficient power output of the existing turbines as described in consultation materials with agencies and the license amendment application.
[3] The designed best gate/most efficient power output of the proposed turbines.
[4] The designed best gate/most efficient power output of the proposed turbines.
[5] The power capability of the existing generators as specified on the nameplates physically mounted on the existing units.
[6] The power factor of the generators as specified on the nameplates physically mounted on the existing units.
[7] The designed power capability of the refurbished generators.
[8] The designed power factor of the refurbished generators.

Attachment C
Corrected Revised Exhibit A (Marked Up)

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

18 CFR§ 4.51(b) Exhibit A is a description of the project. This exhibit need not include information on project works maintained and operated by the U. S. Army Corps of Engineers, the Bureau of Reclamation, or any other department or agency of the United States, except for any project works that are proposed to be altered or modified. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain:
This section has sub-sections which follow this introduction. Each of these subsections is keyed to the appropriate corresponding requirements of 18 CFR§ 4.51(b).

The Bartletts Ferry Project consists of one development. The following table provides an overview of the station and some of its salient features.

Bartletts Ferry Project Features
Auxiliary Labyrinth Spillway
Original West Dike Embankment
West Retaining Wall Complex
Intake for Units 1-4
Penstocks for Units 1-4
Powerhouse for Units 1-4
Concrete Gravity Spillway with 19 Radial Gates
East Retaining Wall Complex
Original East Embankment
West Dike for Intake Channel for Units 5 and 6
Intake for Units 5 and 6
Penstocks for Units 5 and 6
Powerhouse for Units 5 and 6
East Dike for Intake Channel for Units 5 and 6

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

18 CFR§ 4.51 (b)(1) The physical composition, dimensions, and general configurations of any dams, spillways, penstocks, powerhouses, tailraces, or other structures, whether existing or proposed, to be included as part of the project;

Exhibit A itself has a section that contains written documentation and tabular data. The Exhibit A also has an appendix titled Exhibit A Appendix A. Exhibit A Appendix A contains additional written documentation. This material is considered Critical Energy Infrastructure Information (CEII), and it must be withheld from public disclosure pursuant to the requirements of 18 CFR§ 388.112.

The above mentioned information is referenced in the write up of Exhibit A as either Exhibit A or Exhibit A Appendix A.

General Description Bartletts Ferry Project:
Bartletts Ferry Dam (FERC Project 485) is owned and operated by Georgia Power Company (GPC) as part of the Chattahoochee Hydro Group. The current Federal Energy Regulatory Commission (FERC) license was issued December 22, 2014 ~~October 1, 1977,~~ and expires ~~December 14, 2014~~November 30, 2044. Total nameplate capacity of the development ~~is~~will be 1~~73~~86.65 megawatts (MW).

The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The project consists of a dam, two powerhouses, and an impoundment (Bartletts Ferry Reservoir, also known as Lake Harding). Bartletts Ferry Dam is located at river mile 177.9, about 14 air miles north-northwest of the cities of Columbus, Georgia, and Phenix City, Alabama; 11.5 air miles south-southeast of the city of Valley, Alabama; 15.8 air miles south-southeast of the city of West Point, Georgia; and 16.7 air miles east of the city of Opelika, Alabama. The project dam is situated 23.5 river miles downstream of the U.S. Army Corps of Engineers' West Point Dam (river mile 201.4).

Bartletts Ferry Dam is operated in a modified run-of-river mode, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of adverse or mean flow, generation is limited to peak demand hours, which generally amounts to several hours per day on weekdays. During times of increased flow, Bartletts Ferry operates additional hours during non-peak demand periods to make the best use of the inflow without spilling water.

The Bartletts Ferry Project was initially constructed in the 1920s, with additional generating capacity added in 1951 and 1985. There are two powerhouses. The original powerhouse on the west side of the river contains four vertical Francis turbines (Units 1 through 4). The newer powerhouse on the east side of the river contains two vertical Francis turbines (Units 5 and 6). For both powerhouses, the units are numbered beginning from the middle point of the river outward toward each bank. Georgia Power is

planning to install new runners on Units 1 through 4 and refurbish generators Units 1 through 4 from 2023 through 2026.

The project works consist of the following components from west to east:

1. Auxiliary (Labyrinth) Spillway
2. Original West Dike Embankment
3. West Retaining Wall Complex
4. Intake for Units 1-4
5. Penstocks for Units 1-4
6. Powerhouse for Units 1-4
7. Main Spillway
8. East Retaining Wall Complex
9. Original East Embankment
10. West Dike for Intake Channel for Units 5 and 6
11. Intake for Units 5 and 6
12. Penstocks for Units 5 and 6
13. Powerhouse for Units 5 and 6
14. East Dike for Intake Channel for Units 5 and 6

Detailed descriptions of the various structures at the station are presented in Exhibit A Appendix A in the section titled Written Documentation, subsection titled Detailed Description of Plant Structures.

18 CFR§ 4.51(b)(2) The normal maximum surface area and normal maximum surface elevation (mean sea level), gross storage capacity, and useable storage capacity of any impoundments to be included as part of the project;

Metric	Value
Conversion mean sea level (MSL) to plant datum (PD)	PD = MSL+ 0.84 feet
Normal Maximum Surface Elevation (MSL)	520.16
Normal Maximum Surface Elevation (ft PD)	521
Normal Maximum Surface Area (Ac)	5,900
Normal Maximum Volume (AcFt)	181,000
Elevation Range for Useable Storage (ft PD)	510-521
Useable Storage (AcFt)	57,000

18 CFR§ 4.51(b)(3) The number, type, and rated capacity of any turbines or generators, whether existing or proposed, to be included as part of the project;
The installed capacity of all the six units at the station as of ~~2012~~ 2027~~is 173~~will be 186.65 MW. There are six, vertical shaft, Francis style, turbine generators at the Bartletts Ferry station. Of these six units, two generators are Westinghouse generators, two generators are General Electric generators, and two are Hitachi generators. Of the six turbines, ~~three are S. Morgan Smith turbines, one is an Allis Chalmers~~four will be Voith Hydro turbines by 2027, and two are Hitachi turbines.

The details of the Bartletts Ferry turbines are presented in Table A1, titled Bartletts Ferry Turbine Information.

The details of the Bartletts Ferry generators are presented in Table A2, titled Bartletts Ferry Generator Information.

18 CFR§ 4.51(b)(4) The number, length, voltage, and interconnections of any primary transmission lines, whether existing or proposed, to be included as part of the project (see 16 U.S.C. 796(11));
There are no~~GPC's proposal does not include any~~ transmission lines included in~~as part of~~ the P~~p~~roject.

18 CFR§ 4.51(b)(5) The specifications of any additional mechanical, electrical, and transmission equipment appurtenant to the project; and

The following table presents the major equipment at the station. The equipment is grouped by the general area of the project (dam, intake, etc.) where it is located.

Structure	General Item	Specific Description
Intake Units 1-4	Intake Gates	4 – Steel vertical lift intake gates, 16.5 feet wide by 20.77 feet high.
	Intake Gate Hoist Motors	4 – General Electric, 50 hp hoist motors.
Main Spillway	Trash Gates	2 – Steel trash gates, 11 feet wide by 9 feet high.
	Trash Gate Motors	2 – General Electric 5.3 hp, 550 volt hoist motors.
	Tainter Gates	19 – Steel spillway tainter gates, 25 feet wide by 21 feet high.
	Tainter Gate Hoists	2 – Traveling car hoists, each housing 2 General Electric, 20 hp motors for driving the hoists and moving the car.
	Tainter Gate Hoist Motors	Believed to be original equipment. Nameplate is illegible. Hoist capacity is 10 tons for 1 rope or 16 tons for 2 ropes; Hoisting speed is 10 feet per minute; Operating current is 3 phase, 60 cycle, 550 volts.
Unit 1-4 Powerhouse	Turbines Units 1-3	3 – Vertical shaft, Francis type water wheels, each rated at ~~22,000~~24,675 hp (U1 & U2) and 24,740 hp (U3) at 112 feet of head and 150 rpm. Turbines for Units 1 ~~and 2~~through 3 ~~were manufactured by S. Morgan Smith and the turbine for Unit 3 was~~will be manufactured by ~~Allis Chalmers~~Voith Hydro.
	Turbines Units 1-3 Auxiliary Equipment	Cabinet type governors, oil pumps, accumulator tanks, piping, and other auxiliary equipment.
	Turbine Unit 4	1 – Vertical shaft, Francis type water wheel, rated at ~~28,500~~31,400 hp at 112 feet of head and 150 rpm. The turbine for Unit 4 ~~was~~ will be manufactured by ~~S. Morgan Smith~~Voith Hydro.

Structure	General Item	Specific Description
	Turbine Unit 4 Auxiliary Equipment	Actuator type oil pressure governor, oil pumps, accumulator tank, and other auxiliary equipment.
	Miscellaneous Mechanical	Station compressed air systems, water supply, sanitary equipment, oil pumps, oil separator tank, sump pumps, piping.
	Bridge Crane	1 – Whiting traveling bridge type powerhouse crane, with one 20 ton hoist and two 55 ton hoists.
	Generators Units 1-2	2 – Westinghouse vertical shaft type generators, each designed for 24,110 KVA~~rated 15,000 KW~~ at 0.98 p.f., 12,000 volts, 3 phase, 60 cycles.
	Exciters Units 1-2	2 – direct connected exciters, rated at 125 KW and 250 volts.
	Generator Unit 3	1 – General Electric, vertical shaft type generator, ~~rated at~~designed for ~~15,000 KW~~ 23,330 KVA at 0.980 p.f., 12,000 volts, 3 phase, 60 cycles.
	Exciter Unit 3	1 – direct connected exciter, rated at 150 KW and 250 volts.
	Generator Unit 4	1 – General Electric vertical shaft type generator, ~~rated 20,000 KW~~design for 29,900 KVA at 0.980 p.f., 6,900 volts, 3 phase, 60 cycles.
	Exciter Unit 4	1 – direct connected exciter, rated at 140 KW and 250 volts.
	Circuit Breakers	Unit 1 generator breaker 001716 is a McGraw-Edison, type ahj-54-115-10000, serial number 19221, volt-115kv, amps 1600, date of manufacture is 1969. Unit 2 generator breaker 001726 is a McGraw-Edison, serial number 19219, type AHJ-54-115-10000, volt-115kv, amps 1600, manufactured in1969. Unit 3 generator breaker 001736 is a McGraw Edison, serial number 19220, manufactured in 1969, same type and ratings as Unit 1 & 2. Unit 4 is manufactured by General Electric, serial number. 0139A5712-202, Type FK-

Structure	General Item	Specific Description
		121-43000-3, rating 121,000 kv, manufactured in 1969.
	Line Circuit Breakers	Line breaker 001828 is manufactured by General Electric, serial number 0139A5712-203, type FK-121-4300-3, rating 121,000volts, manufactured in 1969. Line breaker 001858 is manufactured by Siemens, type BZO-121-G3-6, serial number. 41283-1, manufactured in 1984. Line breaker 001838 is manufactured by General Electric, serial number 0202A9498-202, type FK-121-20000-2, manufactured in 1975. Line breaker 1848 is manufactured by General Electric, serial number 0139A5850-201, type FK-121-20000-2, manufactured in 1971. Line breaker 001818 is manufactured by General Electric, serial number 0202A9498-203, type FK-121-20000-2, manufactured in 1975.
	Switch Board	1 – complete, 27 panel switchboard for control, protection, and metering of generators, exciters, voltage regulators, station service, power transformers, and all necessary instruments, controls, indicating devices, and protective relays.
	Miscellaneous Electrical	Miscellaneous electrical equipment, including station service transformers, current and potential transformers, lighting and telephone system, and a 60 cell battery bank with 2 solid state battery chargers manufactured by LaMarche, model A12B-60-130 v-E3, 575 vac, 16 amp, dc amps 60-dcv-130, serial numbers F-877-4 and F-876-4 respectively, for DC control systems.
	Transformers	1 – Pennsylvania transformer, 3 phase, voltage rating 115000-6600 v, kva 18000-

Structure	General Item	Specific Description
Exterior to Unit 1-4 Powerhouse		24000-30000, serial number C-00752-5-1, class OA/FA/FA.
		1 – General Electric, serial number L 252083, class OA-FA-FAO, 115000-12300.
		1 – Maloney, 3 phase 115,000/11,500 volts, 60 cycle, 12,000/16,000/20,000 KVA, forced air cooled, outdoor type.
		1 – General Electric, serial number G-860673, class OA-FA-FAO.
Intake Units 5 &6	Intake Gates	4 – Wheeled, steel, 33 feet high by 22 feet wide (2 gates per unit).
	Gantry Crane	1 – Kranco gantry crane, 40 ton main hook capacity, with a 5 ton auxiliary hook.
Unit 5 & 6 Powerhouse	Turbines Units 5 and 6	2 – Vertical shaft, Francis type water wheels, each rated at 79,400 hp at 115 feet of head and 112.5 rpm. The turbines for Units 5 and 6 were manufactured by Hitachi.
	Turbine Auxiliary Equipment	2 (one for each unit) – Woodward electro-mechanical governors, oil pumps, accumulator tank and other auxiliary equipment.
	Miscellaneous Mechanical Equipment	Station systems such as: compressed air, fire protection, water supply, sanitary equipment, piping.
	Powerhouse crane	1 – Kranco gantry crane, 200 ton main hook capacity, with a 25 ton auxiliary hook.
	Generators	2 – Hitachi, vertical shaft type generators, each rated 54,000 KW at 0.90 p.f., 13,800 volts, 3 phase, 60 cycles.
	Exciters	2 (one for each unit) – General Electric solid state static exciters, rated at 349 KW and 245 volts.
	Circuit Breakers	Generator breakers 001950 and 001960 are identical. They are manufactured by Siemens-Allis, type BZO-121-63-6, rated current 3000 amps, manufactured in 1984, serial number 41283-2 and 41283-3, respectively.
	Switch Board	1 -- complete set of 17 cabinets and control boards in the control room for controls,

Structure	General Item	Specific Description
		metering, station service, remote control, and fire detection.
	Miscellaneous Electrical	Miscellaneous electrical equipment, including station service transformers, current and potential transformers, lighting and telephone system, and a 58 cell battery bank with solid state chargers manufactured by LaMarche, model a12b-60-130V-13, input volts 480, input amps 21, dc amps 60, dc volts 130. There are 2 identical chargers serial number D 370-4 and D 371-4, respectively.
	Transformers	1 – main power transformer, 13.8-115-kv, manufactured by McGraw-Edison, serial number CO66995, 13.8-115kv, FOA rating.
	Emergency Diesel Generator	1 – United States Motors Corp., serial number 340200, model S150D18, kw-125-150, KVA156/187, volts 480, cycle 60, rpm 1800.

18 CFR§ 4.51(b)(6) All lands of the United States that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by the best available legal description. The tabulation must show the total acreage of the lands of the United States within the project boundary.

There are no federal lands in or adjacent to the project boundary.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Summary Table
Location of Tables and Additional Written Documentation

Table Locations

Table Number	**Title**	**Location**
A1	Bartletts Ferry Turbine Information	Exhibit A
A2	Bartletts Ferry Generator Information	Exhibit A

Written Documentation

	Description	**Location**
18 CFR 4.51(b)(1)	The physical composition, dimensions and general configurations of any dams, spillways, penstocks, powerhouses, tailraces or other structures whether existing or proposed to be included as part of the project	Exhibit A Appendix A

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Table A1 Bartletts Ferry Turbine Information

Metric	Unit 1[1]	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Turbine Manufacturer	Voith~~S. Morgan Smith~~	Voith~~S. Morgan Smith~~	Voith~~Allis Chalmers~~	Voith~~S. Morgan Smith~~	Hitachi	Hitachi
Rated Capacity of Turbine (hp)	24,675~~22,000~~	24,675~~22,000~~	24,740~~22,000~~	31,400~~28,500~~	79,400	79,400
Shaft Orientation	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Runner Diameter (in)	127.7	127.7	121 - 27/32	133 – 1/2	202.559	202.559
Shaft RPM	150	150	150	150	112.5	112.5
Number of Buckets	DNF	DNF	DNF	15	13	13
Material	DNF	DNF	DNF	Steel	High Nickel Cast Stainless Steel	High Nickel Cast Stainless Steel
Initial Start Up Date	~~1926~~2024	~~1926~~2027	~~1928~~2025	~~12/15/1951~~2026	8/9/1985	8/30/1985
Date of Commercial Operations	~~1926~~2024	~~1926~~2027	~~1928~~2025	~~12/15/1951~~2026	10/1/1985	11/1/1985
Runner Type	Francis	Francis	Francis	Francis	Francis	Francis

Note: DNF = Data Not Found or Unavailable

[1] Turbine capacities listed for Units 1-4 are the expected turbine output at a best gate setting at a rated head of 112 feet.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Table A2 Bartletts Ferry Generator Information

Metric	**Unit 1**	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Generator Manufacturer	Westinghouse	Westinghouse	General Electric	General Electric	Hitachi	Hitachi
KVA Rating	24,110~~21,000~~	24,110~~21,000~~	23,330~~22,500~~	29,900~~25,000~~	60,000	60,000
Voltage (volts)	12,000	12,000	12,000	~~6,900~~12,000	13,800	13,800
Amperage (amps)	1,208~~1,010~~	1,208~~1,010~~	~~1,085~~1,174	~~2,090~~1,506	2,510	2,510
Power Factor	0.9~~8~~	0.9~~8~~	0.9~~8~~	0.9~~8~~	0.9	0.9
Number of Phases	3	3	3	3	3	3
Cycles Per Second	60	60	60	60	60	60
Shaft RPM	150	150	150	150	112.5	112.5
Excitation Amperage (amps)	441	441	500	560	1,425	1,425
Excitation Volts (volts)	250	250	250	250	245	245
Capacity (M~~K~~W)	21.7~~15,000~~	21.7~~15,000~~	21.0~~15,000~~	26.9~~20,000~~	54.0~~,000~~	54.0~~,000~~

Attachment D
Corrected Revised Exhibit A (Clean)

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

18 CFR§ 4.51(b) Exhibit A is a description of the project. This exhibit need not include information on project works maintained and operated by the U. S. Army Corps of Engineers, the Bureau of Reclamation, or any other department or agency of the United States, except for any project works that are proposed to be altered or modified. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain:
This section has sub-sections which follow this introduction. Each of these subsections is keyed to the appropriate corresponding requirements of 18 CFR§ 4.51(b).

The Bartletts Ferry Project consists of one development. The following table provides an overview of the station and some of its salient features.

Bartletts Ferry Project Features
Auxiliary Labyrinth Spillway
Original West Dike Embankment
West Retaining Wall Complex
Intake for Units 1-4
Penstocks for Units 1-4
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West Dike for Intake Channel for Units 5 and 6
Intake for Units 5 and 6
Penstocks for Units 5 and 6
Powerhouse for Units 5 and 6
East Dike for Intake Channel for Units 5 and 6

18 CFR§ 4.51 (b)(1) The physical composition, dimensions, and general configurations of any dams, spillways, penstocks, powerhouses, tailraces, or other structures, whether existing or proposed, to be included as part of the project;

Exhibit A itself has a section that contains written documentation and tabular data. The Exhibit A also has an appendix titled Exhibit A Appendix A. Exhibit A Appendix A contains additional written documentation. This material is considered Critical Energy Infrastructure Information (CEII), and it must be withheld from public disclosure pursuant to the requirements of 18 CFR§ 388.112.

The above mentioned information is referenced in the write up of Exhibit A as either Exhibit A or Exhibit A Appendix A.

General Description Bartletts Ferry Project:
Bartletts Ferry Dam (FERC Project 485) is owned and operated by Georgia Power Company (GPC) as part of the Chattahoochee Hydro Group. The current Federal Energy Regulatory Commission (FERC) license was issued December 22, 2014 and expires November 30, 2044. Total nameplate capacity of the development will be 186.65 megawatts (MW).

The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the border of Georgia and Alabama in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The project consists of a dam, two powerhouses, and an impoundment (Bartletts Ferry Reservoir, also known as Lake Harding). Bartletts Ferry Dam is located at river mile 177.9, about 14 air miles north-northwest of the cities of Columbus, Georgia, and Phenix City, Alabama; 11.5 air miles south-southeast of the city of Valley, Alabama; 15.8 air miles south-southeast of the city of West Point, Georgia; and 16.7 air miles east of the city of Opelika, Alabama. The project dam is situated 23.5 river miles downstream of the U.S. Army Corps of Engineers' West Point Dam (river mile 201.4).

Bartletts Ferry Dam is operated in a modified run-of-river mode, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of adverse or mean flow, generation is limited to peak demand hours, which generally amounts to several hours per day on weekdays. During times of increased flow, Bartletts Ferry operates additional hours during non-peak demand periods to make the best use of the inflow without spilling water.

The Bartletts Ferry Project was initially constructed in the 1920s, with additional generating capacity added in 1951 and 1985. There are two powerhouses. The original powerhouse on the west side of the river contains four vertical Francis turbines (Units 1 through 4). The newer powerhouse on the east side of the river contains two vertical Francis turbines (Units 5 and 6). For both powerhouses, the units are numbered beginning from the middle point of the river outward toward each bank. Georgia Power is

planning to install new runners on Units 1 through 4 and refurbish generators Units 1 through 4 from 2023 through 2026.

The project works consist of the following components from west to east:

1. Auxiliary (Labyrinth) Spillway
2. Original West Dike Embankment
3. West Retaining Wall Complex
4. Intake for Units 1-4
5. Penstocks for Units 1-4
6. Powerhouse for Units 1-4
7. Main Spillway
8. East Retaining Wall Complex
9. Original East Embankment
10. West Dike for Intake Channel for Units 5 and 6
11. Intake for Units 5 and 6
12. Penstocks for Units 5 and 6
13. Powerhouse for Units 5 and 6
14. East Dike for Intake Channel for Units 5 and 6

Detailed descriptions of the various structures at the station are presented in Exhibit A Appendix A in the section titled Written Documentation, subsection titled Detailed Description of Plant Structures.

18 CFR§ 4.51(b)(2) The normal maximum surface area and normal maximum surface elevation (mean sea level), gross storage capacity, and useable storage capacity of any impoundments to be included as part of the project;

Metric	Value
Conversion mean sea level (MSL) to plant datum (PD)	PD = MSL+ 0.84 feet
Normal Maximum Surface Elevation (MSL)	520.16
Normal Maximum Surface Elevation (ft PD)	521
Normal Maximum Surface Area (Ac)	5,900
Normal Maximum Volume (AcFt)	181,000
Elevation Range for Useable Storage (ft PD)	510-521
Useable Storage (AcFt)	57,000

18 CFR§ 4.51(b)(3) The number, type, and rated capacity of any turbines or generators, whether existing or proposed, to be included as part of the project;
The installed capacity of all the six units at the station as of 2027will be 186.65 MW. There are six, vertical shaft, Francis style, turbine generators at the Bartletts Ferry station. Of these six units, two generators are Westinghouse generators, two generators are General Electric generators, and two are Hitachi generators. Of the six turbines, four will be Voith Hydro turbines by 2027, and two are Hitachi turbines.

The details of the Bartletts Ferry turbines are presented in Table A1, titled Bartletts Ferry Turbine Information.

The details of the Bartletts Ferry generators are presented in Table A2, titled Bartletts Ferry Generator Information.

18 CFR§ 4.51(b)(4) The number, length, voltage, and interconnections of any primary transmission lines, whether existing or proposed, to be included as part of the project (see 16 U.S.C. 796(11));
There are no transmission lines included in the Project.

18 CFR§ 4.51(b)(5) The specifications of any additional mechanical, electrical, and transmission equipment appurtenant to the project; and

The following table presents the major equipment at the station. The equipment is grouped by the general area of the project (dam, intake, etc.) where it is located.

Structure	General Item	Specific Description
Intake Units 1-4	Intake Gates	4 – Steel vertical lift intake gates, 16.5 feet wide by 20.77 feet high.
	Intake Gate Hoist Motors	4 – General Electric, 50 hp hoist motors.
Main Spillway	Trash Gates	2 – Steel trash gates, 11 feet wide by 9 feet high.
	Trash Gate Motors	2 – General Electric 5.3 hp, 550 volt hoist motors.
	Tainter Gates	19 – Steel spillway tainter gates, 25 feet wide by 21 feet high.
	Tainter Gate Hoists	2 – Traveling car hoists, each housing 2 General Electric, 20 hp motors for driving the hoists and moving the car.
	Tainter Gate Hoist Motors	Believed to be original equipment. Nameplate is illegible. Hoist capacity is 10 tons for 1 rope or 16 tons for 2 ropes; Hoisting speed is 10 feet per minute; Operating current is 3 phase, 60 cycle, 550 volts.
Unit 1-4 Powerhouse	Turbines Units 1-3	3 – Vertical shaft, Francis type water wheels, each rated at 24,675 hp (U1 & U2) and 24,740 hp (U3) at 112 feet of head and 150 rpm. Turbines for Units 1 through 3 will be manufactured by Voith Hydro.
	Turbines Units 1-3 Auxiliary Equipment	Cabinet type governors, oil pumps, accumulator tanks, piping, and other auxiliary equipment.
	Turbine Unit 4	1 – Vertical shaft, Francis type water wheel, rated at 31,400hp at 112 feet of head and 150 rpm. The turbine for Unit 4 will be manufactured by Voith Hydro.
	Turbine Unit 4 Auxiliary Equipment	Actuator type oil pressure governor, oil pumps, accumulator tank, and other auxiliary equipment.

Structure	General Item	Specific Description
	Miscellaneous Mechanical	Station compressed air systems, water supply, sanitary equipment, oil pumps, oil separator tank, sump pumps, piping.
	Bridge Crane	1 – Whiting traveling bridge type powerhouse crane, with one 20 ton hoist and two 55 ton hoists.
	Generators Units 1-2	2 – Westinghouse vertical shaft type generators, each designed for 24,110 KVA at 0.9 p.f., 12,000 volts, 3 phase, 60 cycles.
	Exciters Units 1-2	2 – direct connected exciters, rated at 125 KW and 250 volts.
	Generator Unit 3	1 – General Electric, vertical shaft type generator, designed for 23,330 KVA at 0.90 p.f., 12,000 volts, 3 phase, 60 cycles.
	Exciter Unit 3	1 – direct connected exciter, rated at 150 KW and 250 volts.
	Generator Unit 4	1 – General Electric vertical shaft type generator, design for 29,900 KVA at 0.90 p.f., 6,900 volts, 3 phase, 60 cycles.
	Exciter Unit 4	1 – direct connected exciter, rated at 140 KW and 250 volts.
	Circuit Breakers	Unit 1 generator breaker 001716 is a McGraw-Edison, type ahj-54-115-10000, serial number 19221, volt-115kv, amps 1600, date of manufacture is 1969. Unit 2 generator breaker 001726 is a McGraw-Edison, serial number 19219, type AHJ-54-115-10000, volt-115kv, amps 1600, manufactured in1969. Unit 3 generator breaker 001736 is a McGraw Edison, serial number 19220, manufactured in 1969, same type and ratings as Unit 1 & 2. Unit 4 is manufactured by General Electric, serial number. 0139A5712-202, Type FK-121-43000-3, rating 121,000 kv, manufactured in 1969.
	Line Circuit Breakers	Line breaker 001828 is manufactured by General Electric, serial number 0139A5712-203, type FK-121-4300-3, rating 121,000volts, manufactured in 1969.

Structure	General Item	Specific Description
		Line breaker 001858 is manufactured by Siemens, type BZO-121-G3-6, serial number. 41283-1, manufactured in 1984. Line breaker 001838 is manufactured by General Electric, serial number 0202A9498-202, type FK-121-20000-2, manufactured in 1975. Line breaker 1848 is manufactured by General Electric, serial number 0139A5850-201, type FK-121-20000-2, manufactured in 1971. Line breaker 001818 is manufactured by General Electric, serial number 0202A9498-203, type FK-121-20000-2, manufactured in 1975.
	Switch Board	1 – complete, 27 panel switchboard for control, protection, and metering of generators, exciters, voltage regulators, station service, power transformers, and all necessary instruments, controls, indicating devices, and protective relays.
	Miscellaneous Electrical	Miscellaneous electrical equipment, including station service transformers, current and potential transformers, lighting and telephone system, and a 60 cell battery bank with 2 solid state battery chargers manufactured by LaMarche, model A12B-60-130 v-E3, 575 vac, 16 amp, dc amps 60-dcv-130, serial numbers F-877-4 and F-876-4 respectively, for DC control systems.
Exterior to Unit 1-4 Powerhouse	Transformers	1 – Pennsylvania transformer, 3 phase, voltage rating 115000-6600 v, kva 18000-24000-30000, serial number C-00752-5-1, class OA/FA/FA.
		1 – General Electric, serial number L 252083, class OA-FA-FAO, 115000-12300.
		1 – Maloney, 3 phase 115,000/11,500 volts, 60 cycle, 12,000/16,000/20,000 KVA, forced air cooled, outdoor type.

Structure	General Item	Specific Description
		1 – General Electric, serial number G-860673, class OA-FA-FAO.
Intake Units 5 &6	Intake Gates	4 – Wheeled, steel, 33 feet high by 22 feet wide (2 gates per unit).
	Gantry Crane	1 – Kranco gantry crane, 40 ton main hook capacity, with a 5 ton auxiliary hook.
Unit 5 & 6 Powerhouse	Turbines Units 5 and 6	2 – Vertical shaft, Francis type water wheels, each rated at 79,400 hp at 115 feet of head and 112.5 rpm. The turbines for Units 5 and 6 were manufactured by Hitachi.
	Turbine Auxiliary Equipment	2 (one for each unit) – Woodward electro-mechanical governors, oil pumps, accumulator tank and other auxiliary equipment.
	Miscellaneous Mechanical Equipment	Station systems such as: compressed air, fire protection, water supply, sanitary equipment, piping.
	Powerhouse crane	1 – Kranco gantry crane, 200 ton main hook capacity, with a 25 ton auxiliary hook.
	Generators	2 – Hitachi, vertical shaft type generators, each rated 54,000 KW at 0.90 p.f., 13,800 volts, 3 phase, 60 cycles.
	Exciters	2 (one for each unit) – General Electric solid state static exciters, rated at 349 KW and 245 volts.
	Circuit Breakers	Generator breakers 001950 and 001960 are identical. They are manufactured by Siemens-Allis, type BZO-121-63-6, rated current 3000 amps, manufactured in 1984, serial number 41283-2 and 41283-3, respectively.
	Switch Board	1 -- complete set of 17 cabinets and control boards in the control room for controls, metering, station service, remote control, and fire detection.
	Miscellaneous Electrical	Miscellaneous electrical equipment, including station service transformers, current and potential transformers, lighting and telephone system, and a 58 cell battery bank with solid state chargers manufactured by LaMarche, model a12b-60-130V-13,

Structure	General Item	Specific Description
		input volts 480, input amps 21, dc amps 60, dc volts 130. There are 2 identical chargers serial number D 370-4 and D 371-4, respectively.
	Transformers	1 – main power transformer, 13.8-115-kv, manufactured by McGraw-Edison, serial number CO66995, 13.8-115kv, FOA rating.
	Emergency Diesel Generator	1 – United States Motors Corp., serial number 340200, model S150D18, kw-125-150, KVA156/187, volts 480, cycle 60, rpm 1800.

18 CFR§ 4.51(b)(6) All lands of the United States that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by the best available legal description. The tabulation must show the total acreage of the lands of the United States within the project boundary.

There are no federal lands in or adjacent to the project boundary.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Summary Table
Location of Tables and Additional Written Documentation

Table Locations

Table Number	**Title**	**Location**
A1	Bartletts Ferry Turbine Information	Exhibit A
A2	Bartletts Ferry Generator Information	Exhibit A

Written Documentation

	Description	**Location**
18 CFR 4.51(b)(1)	The physical composition, dimensions and general configurations of any dams, spillways, penstocks, powerhouses, tailraces or other structures whether existing or proposed to be included as part of the project	Exhibit A Appendix A

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Table A1 Bartletts Ferry Turbine Information

Metric	**Unit 1**[1]	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Turbine Manufacturer	Voith	Voith	Voith	Voith	Hitachi	Hitachi
Rated Capacity of Turbine (hp)	24,675	24,675	24,740	31,400	79,400	79,400
Shaft Orientation	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical
Runner Diameter (in)	127.7	127.7	121 - 27/32	133 – 1/2	202.559	202.559
Shaft RPM	150	150	150	150	112.5	112.5
Number of Buckets	DNF	DNF	DNF	15	13	13
Material	DNF	DNF	DNF	Steel	High Nickel Cast Stainless Steel	High Nickel Cast Stainless Steel
Initial Start Up Date	2024	2027	2025	2026	8/9/1985	8/30/1985
Date of Commercial Operations	2024	2027	2025	2026	10/1/1985	11/1/1985
Runner Type	Francis	Francis	Francis	Francis	Francis	Francis

Note: DNF = Data Not Found or Unavailable

[1] Turbine capacities listed for Units 1-4 are the expected turbine output at a best gate setting at a rated head of 112 feet.

Table A2 Bartletts Ferry Generator Information

Metric	**Unit 1**	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Generator Manufacturer	Westinghouse	Westinghouse	General Electric	General Electric	Hitachi	Hitachi
KVA Rating	24,110	24,110	23,330	29,900	60,000	60,000
Voltage (volts)	12,000	12,000	12,000	12,000	13,800	13,800
Amperage (amps)	1,208	1,208	1,174	1,506	2,510	2,510
Power Factor	0.9	0.9	0.9	0.9	0.9	0.9
Number of Phases	3	3	3	3	3	3
Cycles Per Second	60	60	60	60	60	60
Shaft RPM	150	150	150	150	112.5	112.5
Excitation Amperage (amps)	441	441	500	560	1,425	1,425
Excitation Volts (volts)	250	250	250	250	245	245
Capacity (MW)	21.7	21.7	21.0	26.9	54.0	54.0