ATTACHMENT A

INITIAL STATEMENT AND APPLICATION FOR NON-CAPACITY RELATED LICENSE AMENDMENT

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Georgia Power Company **FERC Project No. 485**

APPLICATION FOR NON-CAPACITY RELATED AMENDMENT OF LICENSE

Pursuant to Section 4.200 of the Federal Energy Regulatory Commission's (Commission or FERC) regulations,[1] Georgia Power Company (Georgia Power), hereby submits this Application for Non-Capacity Related Amendment of License (Application) for the Bartletts Ferry Project, FERC Project No. 485 (Project). In filing this Application, Georgia Power seeks to amend the license[2] by upgrading the four generating units in the west Bartletts Ferry powerhouse.

INITIAL STATEMENT

1. Georgia Power applies to FERC under 18 CFR § 4.201 for a non-capacity amendment of the license for the Bartletts Ferry Project, a major existing waterpower project with capacity of over 5 megawatts (MW), as generally described in the attached Exhibit A. This Application is for a non-capacity amendment to upgrade the four generating units in the west Bartletts Ferry powerhouse, which includes replacing the turbine runners, generators, and intake trashracks. The nameplate rated capacity[3] is 15 MW each for units 1 through 3 and 20 MW for unit 4. Following the upgrade, units 1 through 3 will be approximately 18 MW and unit 4 will be approximately 23 MW. Existing maximum hydraulic capacity is approximately 2,330 cubic feet per second (cfs) for units 1 and 2, approximately 2,260 cfs for unit 3, and 2,880 cfs for unit 4.

2. The exact name and business address and telephone number of the applicant are:

   Georgia Power Company
   241 Ralph McGill Boulevard, NE
   BIN 10193
   Atlanta, Georgia 30308-3374

   Communication and correspondence pertaining to this Application should be addressed to:

   Courtenay O'Mara
   241 Ralph McGill Boulevard, NE
   BIN 10193
   Atlanta, Georgia 30308-3374
   404-506-7219

---

[1] 18 C.F.R. § 4.200.
[2] *Georgia Power Company*, 149 FERC ¶ 62,210 (2014).
[3] Nameplate rated capacity is "best gate".

3. Georgia Power is a domestic corporation and is licensee for the waterpower project, designated as Project No. 485 in the records of FERC, issued on December 22, 2014.

4. The amendments of license proposed and the reason(s) why the proposed changes are necessary, are:

    a. CURRENT CONDITIONS

    The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the Georgia-Alabama border in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The Project consists of a dam, two powerhouses (west and east), and a reservoir, known as Lake Harding. The Project dam is located at river mile (RM) 177.9, approximately 23.5 miles downstream of the U.S. Army Corps of Engineers' West Point Dam (RM 201.4).

    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 and two trash gates. 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, then to the east powerhouse. 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 that flows into the backwaters of the Goat Rock Reservoir, part of the separately licensed Middle Chattahoochee Project.[4] The west powerhouse discharges to an approximately 1,700-foot-long backwater section of Goat Rock Reservoir. Power from the four west units is passed to a substation located adjacent to the powerhouse. 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, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of low 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 efficiently use the inflow without spilling water.

    In accordance with the FERC license issued December 22, 2014, 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 taken for generation, resulting in improved dissolved oxygen (DO) in the tailrace. A 3-year monitoring study conducted from 2015 through 2017 demonstrated that the stoplog installation resulted in improved DO that meets the 4.0 milligram per liter (mg/L) instantaneous and the 5.0 mg/L daily Georgia water quality standards for DO. The Project's east powerhouse located on the eastern side of the river achieved the Georgia DO water quality standards without modifications.

    b. PROPOSAL

[4] *Georgia Power Company*, 109 FERC ¶ 62,246 (2004).

The proposed scope of work for the Bartletts Ferry Project includes the following:

- Replace existing turbine runners
- Rehabilitate generators
- Install new trashracks

1) Georgia Power proposes to upgrade the four generating units in the west powerhouse. West powerhouse work is scheduled to begin in 2023, with a unit upgrade each year beginning in January 2023, 2024, 2025, and 2026.

   Table 1 shows 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.

TABLE 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

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). Following the upgrade and with only a 5 cfs change in maximum hydraulic capacity, Georgia Power's operations at the Bartletts Ferry Project will remain unchanged.

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 operating, 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 and as such, only two aerating units are needed in mixed flow (aerating plus non aerating) to achieve Georgia's water quality standards for DO. 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.

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 (ft/s) 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. 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 ft/s 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.

To facilitate the generating unit upgrade, Georgia Power may need to implement a reservoir drawdown. If a drawdown is needed, Article 401 requires consultation with the Georgia Department of Natural Resources (Georgia DNR), the Alabama Department of Conservation and Natural Resources (ADCNR) and U.S. Fish and Wildlife Service (USFWS) and notification to FERC at least 10 days in advance of implementing the drawdown. During consultation on this Application, the Alabama Department of Environmental Management (ADEM) requested that Georgia Power notify ADEM of scheduled drawdowns associated with upgrading the generating units; additionally, USFWS requested specifically that their Alabama Ecological Office be consulted for a drawdown, if a drawdown is implemented for the proposed work; therefore, Georgia Power will also notify ADEM should a drawdown be necessary (and provide boat ramp elevations) to complete the upgrade and include USFWS and it's Alabama Ecological Office. Documentation of consultation conducted on the Application is included in Attachment B and Attachment F.

2) Section 7(a)(2) of the Endangered Species Act of 1973 requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of their designated critical habitat. 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 ADCNR is authorized by Alabama Code section 9-2-2 to "protect, conserve, and increase the wildlife of the state" and by Alabama Administrative Code section 220-2-.92 to protect nongame species.

   In preparing the Application, Georgia Power reviewed the USFWS Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) tool and consulted with USFWS, Georgia DNR, and ADCNR. The federally endangered plant, Relict Trillium (*Trillium reliquum*), the threatened Wood Stork (*Mycteria americana*), Purple Bankclimber (*Elliptoideus sloatianus*), Georgia Rockcress (*Arabis georgiana*), and the candidate species Monarch Butterfly (*Danaus plexippus*) are known to occur in the project vicinity, but outside the Bartletts Ferry Project boundary. Should a drawdown be required to complete the proposed work described in this 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.

3) Section 106 of the National Historic Preservation Act (NHPA) requires FERC to consider any adverse effects to historic properties before issuing an order approving a license amendment. FERC executed a Programmatic Agreement (PA) (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 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 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 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 will file the draft MOA with FERC once the 30-day agency comment period has concluded.

4) (i) The statutory or regulatory requirements of the state(s) in which the project would be located that affect the project as proposed with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes are as follows:

   1) Section 401(a) of the Clean Water Act (CWA) of 1977 requires that an applicant for a federal license to construct or operate facilities, which may result in any discharge into navigable waters, must provide the federal agency with a certificate from the state in which the discharge originates or from the appropriate interstate water pollution control agency. In Georgia, Water Quality Certifications (WQC) are issued by the Georgia Environmental Protection Division (Georgia EPD) under O.C.G.A. Title 12 Chapter 5-21.

   (ii)The steps which the Applicant has taken, or plans to take to comply with each of the laws cited above, are:

   The work proposed in this 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 this license amendment. Georgia EPD will require 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 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. Documentation of consultation specific to the plan is provided in Attachment B.

   The Application proposes a change to the existing dissolved oxygen enhancement

measures at the Project. The draft Dissolved Oxygen and Water Temperature Monitoring Plan (Attachment C) will demonstrate Georgia Power's ability to continue to comply with Georgia DO and temperature water quality standards following the unit upgrades. Georgia Power provided a copy of the draft Application and draft Dissolved Oxygen and Water Temperature Monitoring Plan to EPD and ADEM on May 3, 2022. On May 3, 2022, EPD concurred with Georgia Power's draft Application and draft Dissolved Oxygen and Water Temperature Monitoring Plan and 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. Documentation of consultation specific to the review of the draft license amendment is provided in Attachment F.

REQUIRED EXHIBITS

In accordance with 18 CFR §4.201(c), only the following applicable exhibit(s) that require revision are made part of this Application:

a) Exhibit A – Project Description

Georgia Power is attaching a revised Exhibit A in track change (Attachment D) and a clean version of Exhibit A (Attachment E). Georgia Power will file any updates to Exhibit F after the as-built drawings are complete if necessary.

Georgia Power also requests amendment of Article 403 Tailrace Water Quality Enhancement and Article 404 Tailrace Water Quality Monitoring of the project license to implement the proposed Dissolved Oxygen and Water Temperature Monitoring Plan following the unit upgrades at the Bartletts Ferry west powerhouse.

CONSULTATION

In accordance with Commission regulations under 18 CFR §4.38(a)(7), Georgia Power contacted the following agencies to consult on the Application:

a. U.S. Fish and Wildlife Service
b. Georgia Department of Natural Resources - Environmental Protection Division
c. Georgia Department of Natural Resources -Wildlife Resources Division
d. Georgia Department of Community Affairs - Historic Preservation Division
e. Alabama Department of Environmental Management
f. Alabama Department of Conservation and Natural Resources
g. Alabama Historical Commission

Georgia Power submitted a summary of the proposed upgrade to the agencies listed above and provided an opportunity to meet and discuss it between December 2021 - April 2022. Documentation of initial consultation is provided in Attachment B. Georgia Power also provided the agencies with the draft Application, including the initial statement, revised Exhibit A, and the draft Dissolved Oxygen and Water Temperature Monitoring Plan for review and comment on May 3, 2022. Documentation of consultation on the draft license amendment application is provided in Attachment F.

LITERATURE CITED

Ingram, K., K. Dow, L. Carter, J. Anderson, eds. 2013. Climate of the Southeast United States: Variability, change, impacts, and vulnerability. Washington DC: Island Press.

U.S. Fish and Wildlife Service (USFWS). 2007. Wood Stork (*Mycteria americana*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Southeast Region Jacksonville Ecological Services Field Office, Jacksonville, Florida.

U.S. Fish and Wildlife Service (USFWS). 2020. Purple Bankclimber (*Elliptoides sloatianus*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service South Atlantic-Gulf Region Panama City Ecological Services Field Office, Panama City, Florida.

ATTACHMENT B

CONSULTATION SUMMARY

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

EXTERNAL MAIL: Caution Opening Links or Files

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

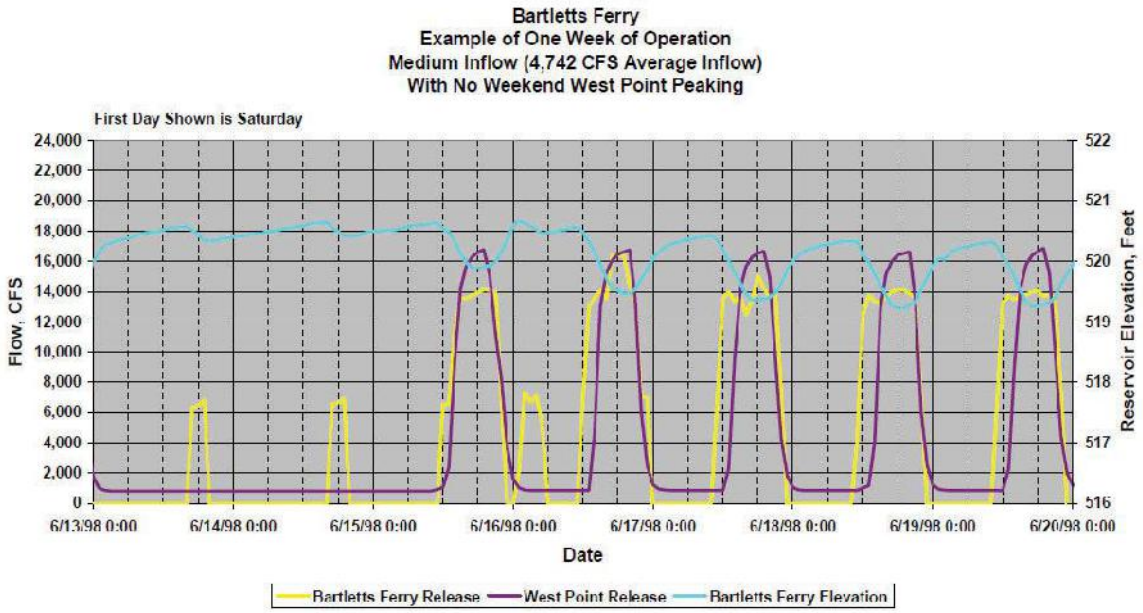


FIGURE 3

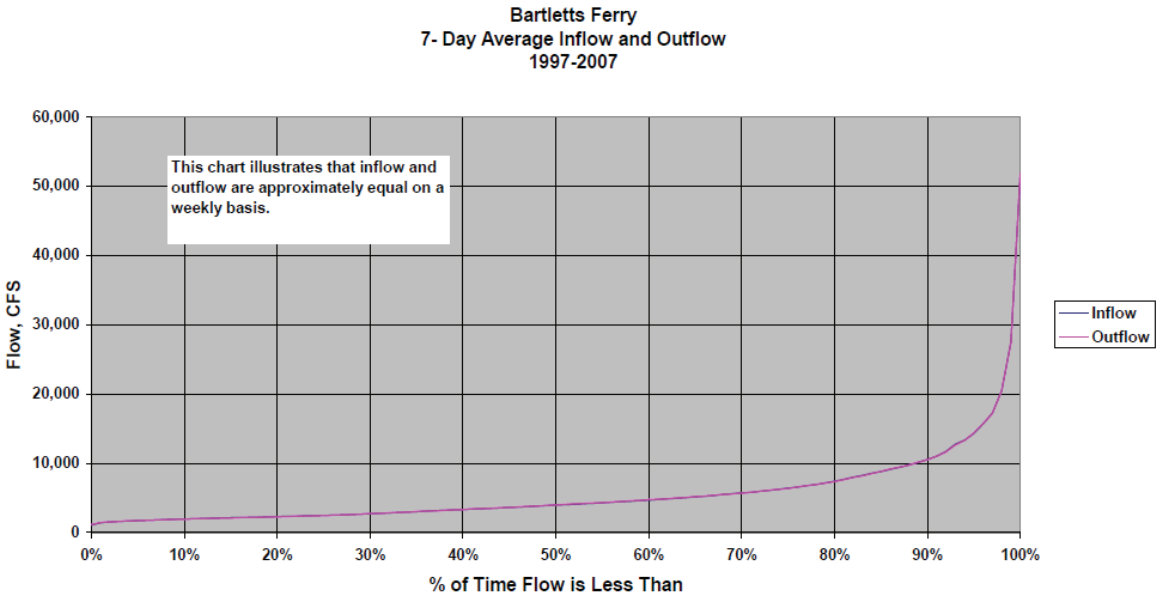


FIGURE 21

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

EXTERNAL MAIL: Caution Opening Links or Files

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
(he/him)
Fish and Wildlife Biologist
Georgia Ecological Services
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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 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

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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
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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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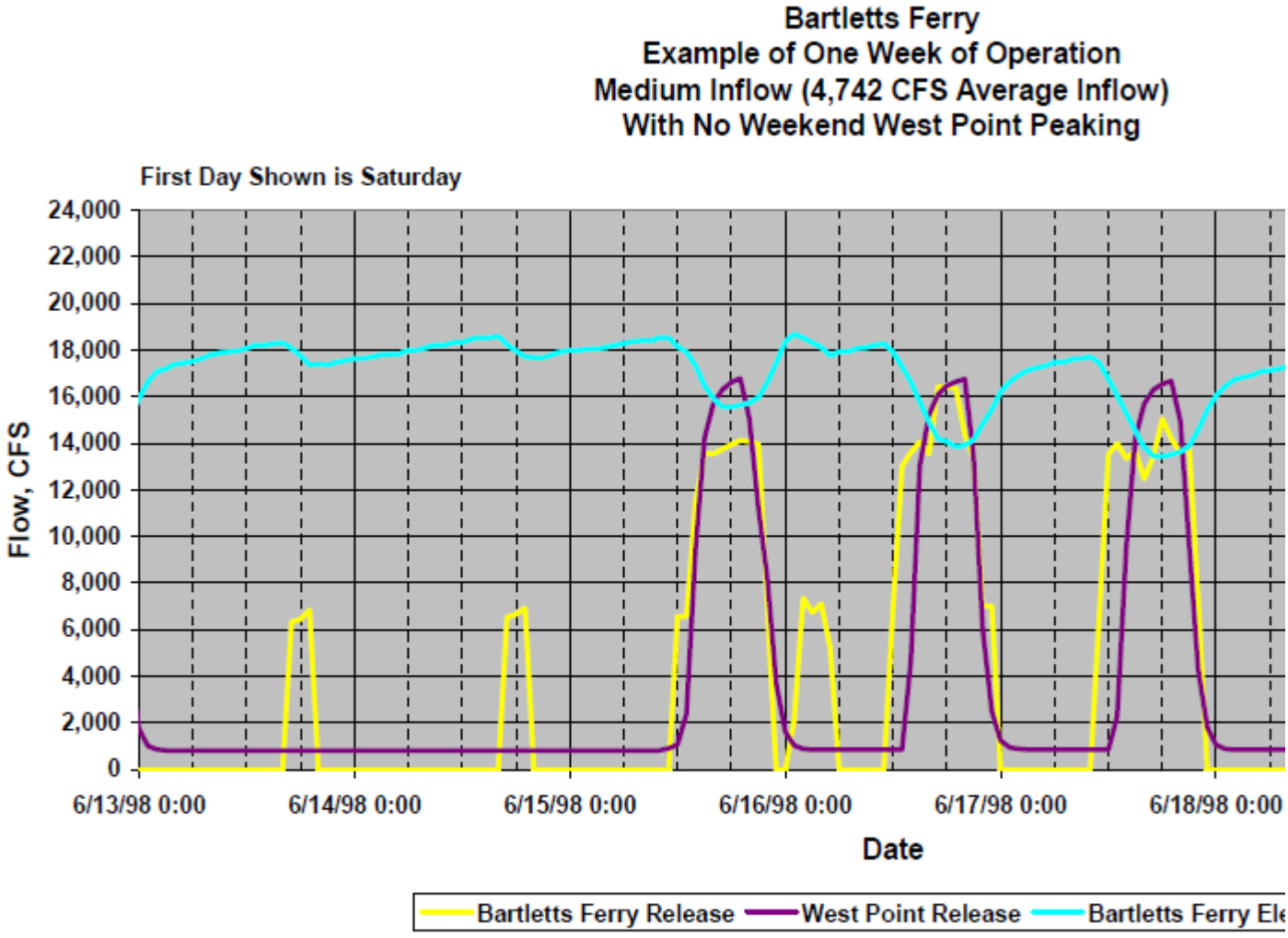


FIGURE 3

Written Correspondence with USFWS

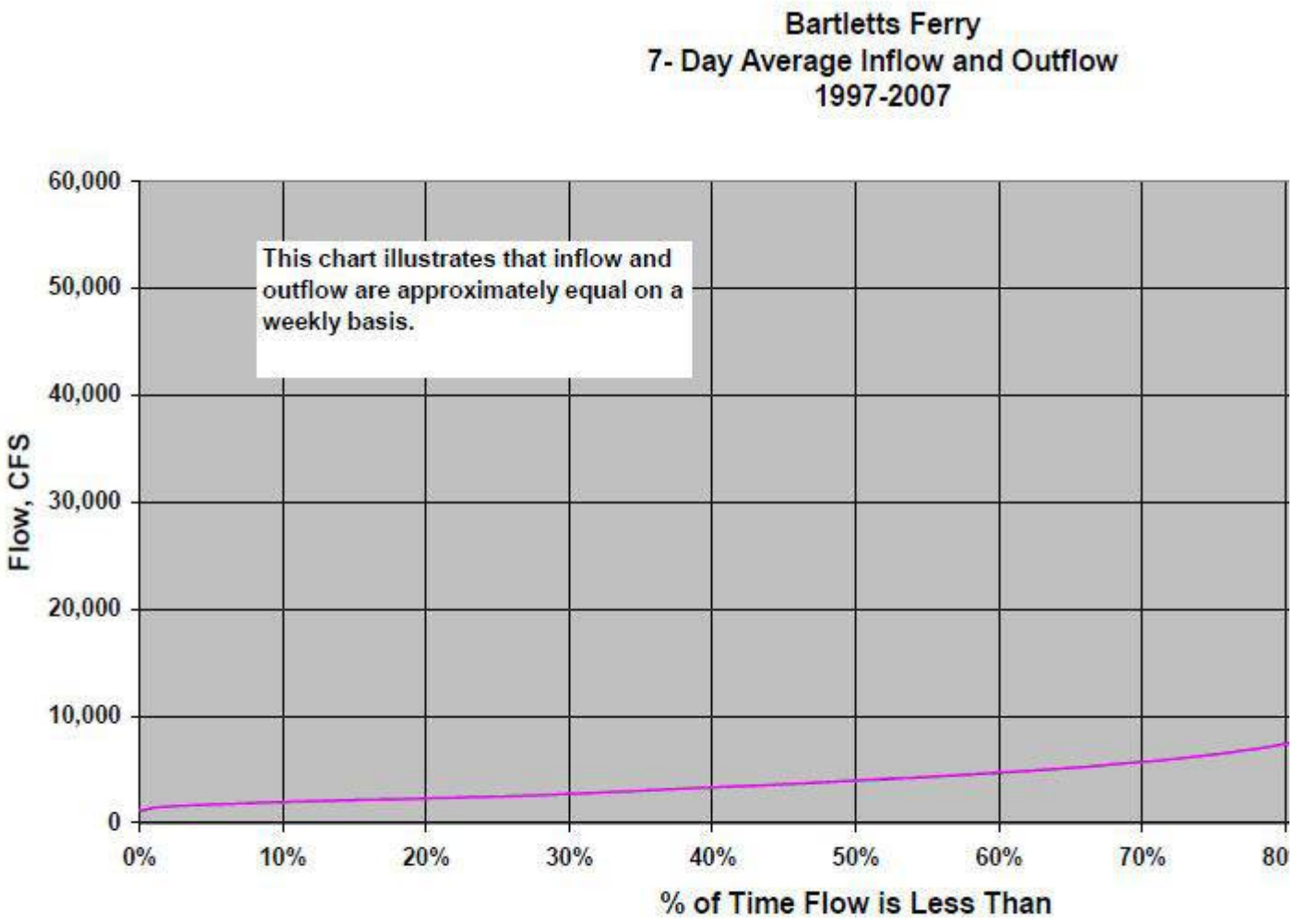


FIGURE 21

From: Bauer, Eric F <eric_bauer@fws.gov>
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To: O'Rouke, Patrick Michael <PMOROUKE@southernco.com>
Cc: Munn, Laura S. <LSMUNN@SOUTHERNCO.COM>
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(404) 506-5025 (Office)
(470) 426-5322 (Cell)

Attachment to Georgia Power's 2/18/2022 Email to USFWS

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.

Attachment to Georgia Power's 2/18/2022 Email to USFWS

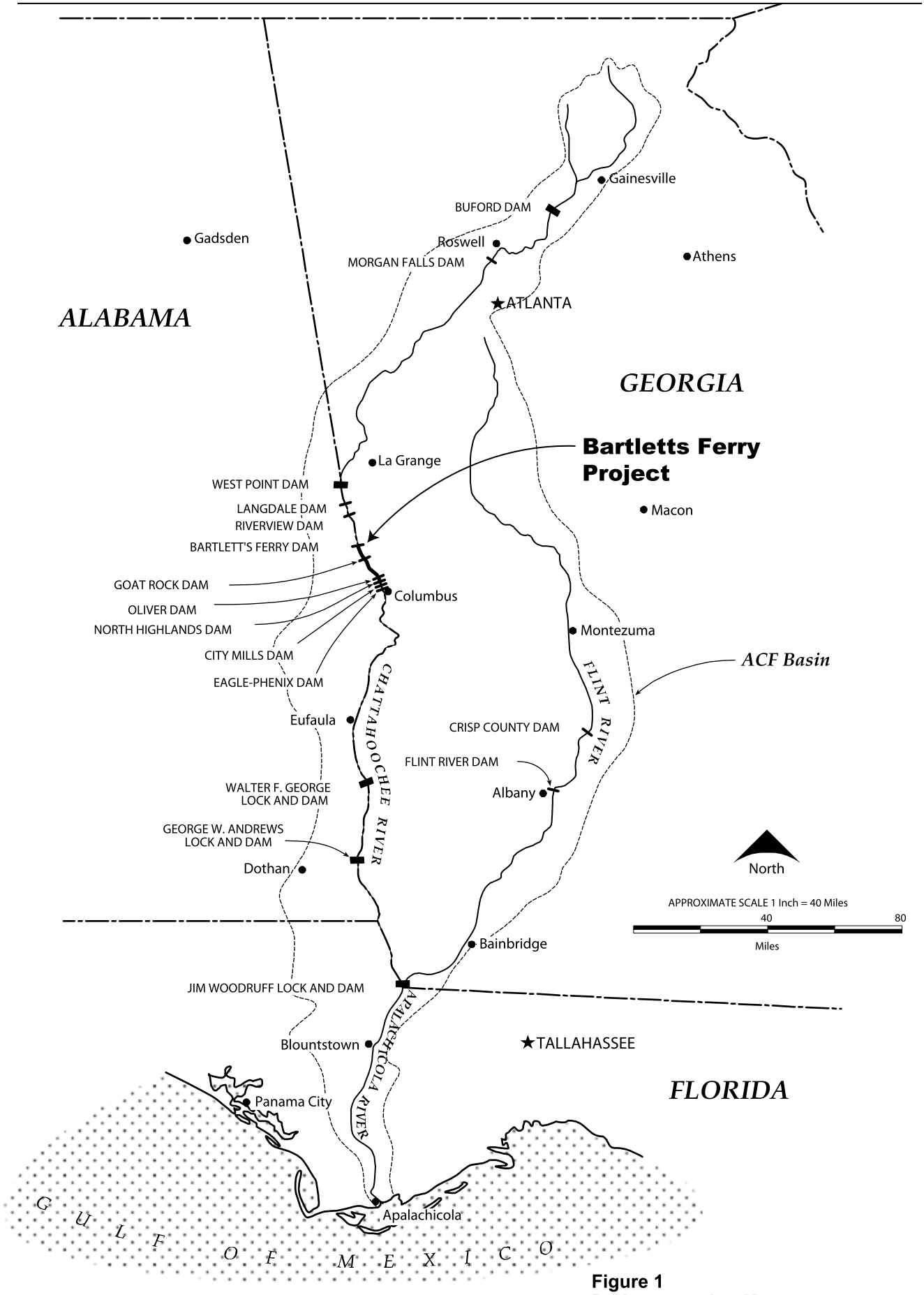


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company



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

CH2MHILL

Attachment to Georgia Power's 2/18/2022 Email to USFWS

Attachment to Georgia Power's 2/18/2022 Email to USFWS

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
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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.

- 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.

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- 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.

Georgia Department of Natural Resources

Environmental Protection Division

Written Correspondence with EPD

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



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Written Correspondence with EPD

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.

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- 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

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

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Written Correspondence with EPD

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.

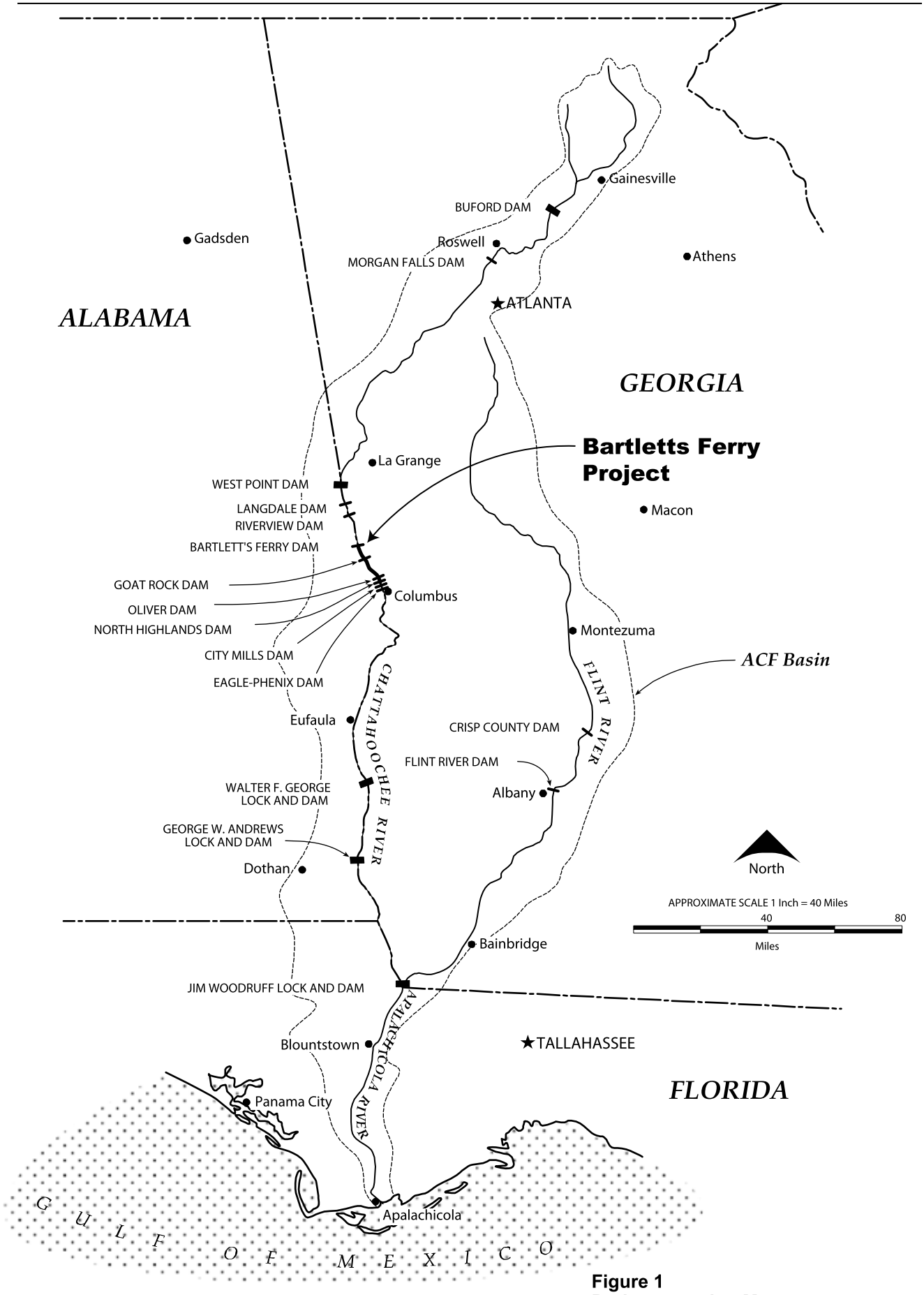
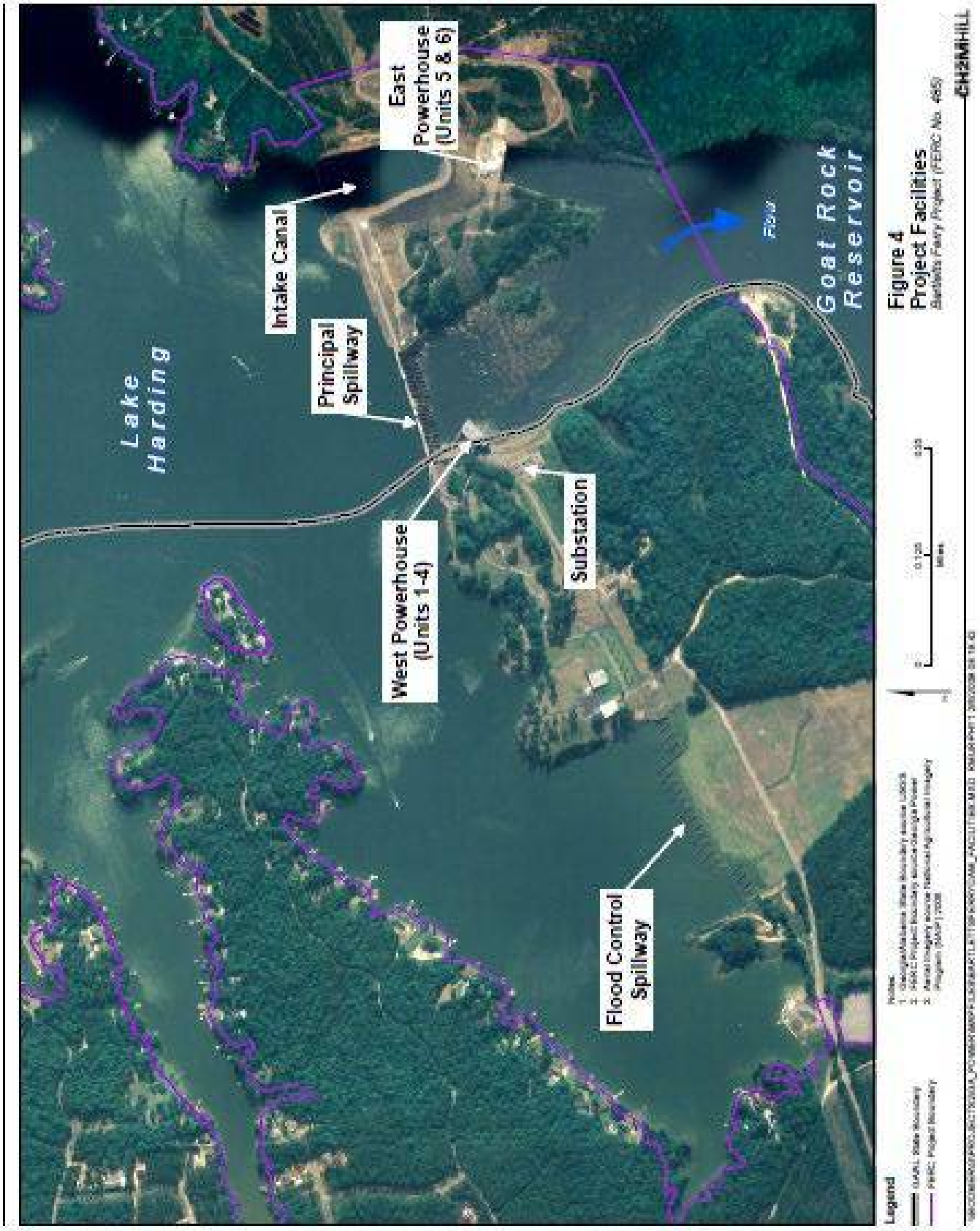


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company


Lake Harding
Intake Canal
East Powerhouse (Units 5 & 6)
Principal Spillway
West Powerhouse (Units 1-4)
Substation
Flood Control Spillway
Flow
Goat Rock Reservoir
Legend
Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)
CH2MHILL

Written Correspondence with EPD

Georgia Power

Bartletts Ferry Project (FERC No. 485) License Amendment
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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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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

EXTERNAL MAIL: Caution Opening Links or Files

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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you

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.

Get Outlook for iOS

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

EXTERNAL MAIL: Caution Opening Links or Files

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

1. Page 1 paragraph 2 second sentence – 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)
3. Page 1 last paragraph second and third sentences – replace the word "uptake" with "increase"
4. Page 2 paragraph 1 last sentence – how will we now 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.
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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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
Desk: 404-506-5026
Email: ardodd@southernco.com

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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
241 Ralph McGill Blvd, NE
Atlanta, GA 30308
Cell: 404-434-9412
Desk: 404-506-5026
Email: ardodd@southernco.com



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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

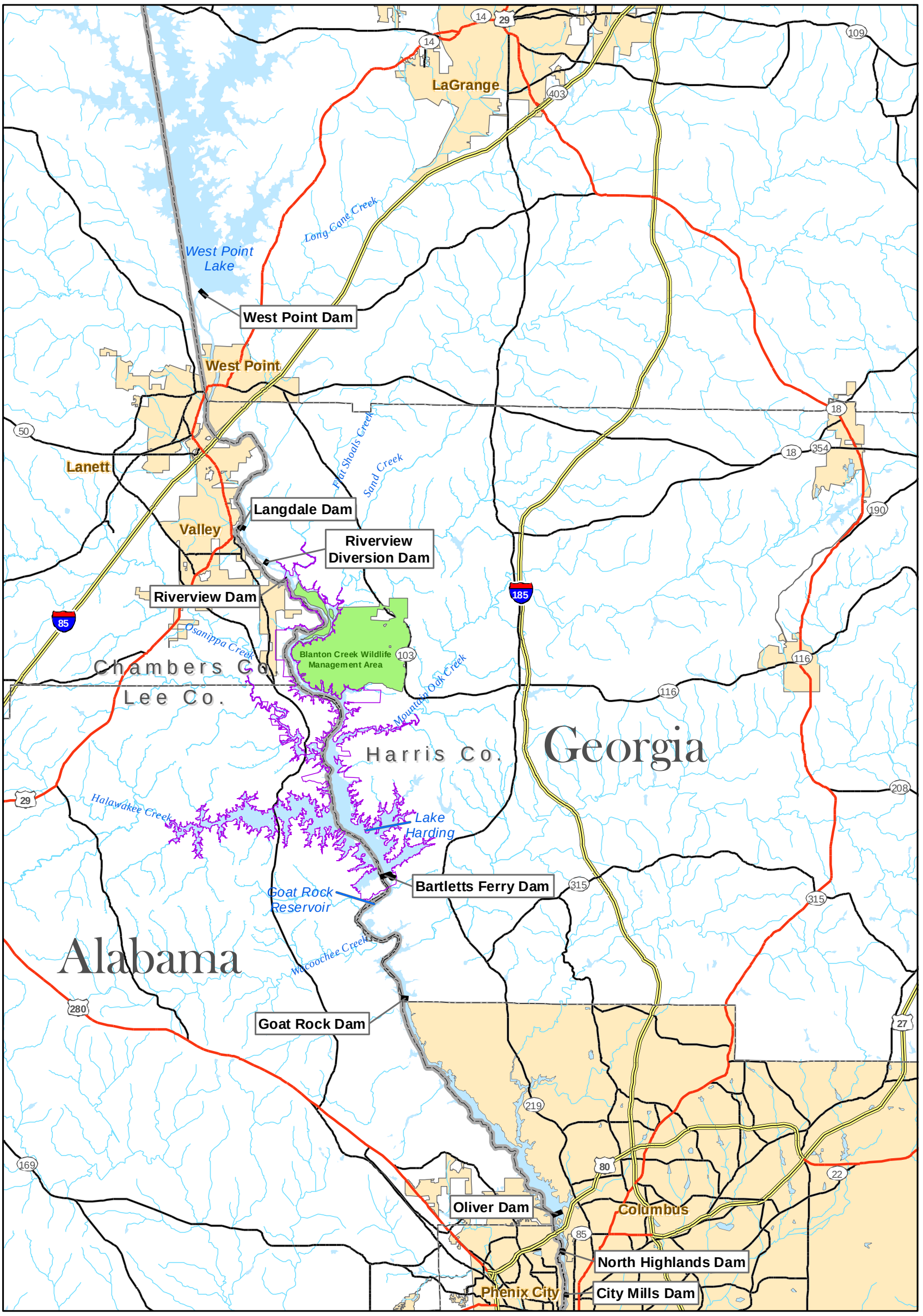
To demonstrate that Georgia water quality standards are met with normal operation of the refurbished units, Georgia Power is proposing to evaluate the performance of the mixed (aerated plus non-aerated conditions) by conducting a water quality monitoring study in Bartletts Ferry tailwaters during the 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.

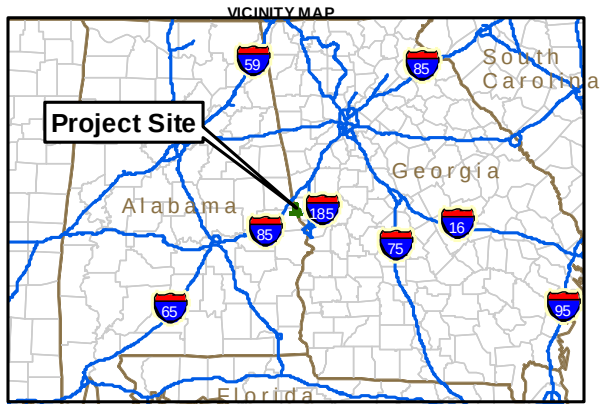
Monitoring data will be collected from a buoy anchored to the lake bottom in a manner to allow for fluctuations in water level due to dam releases and peak storm flows. A water quality monitoring sonde will be secured to/in the buoy in a manner that provides measurements of DO (mg/L) and water temperature (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)

\\BOOMER\G\PROJECTS2\GA_POWER\MAPFILES\BARTLETTSFERRYOVERVIEWMAP.MXD RMURPHY1 2/5/2009 10:37:08



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

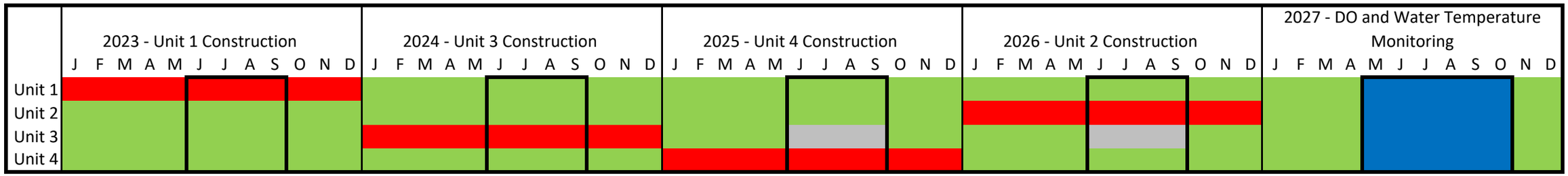
Figure 2
Project Facilities
Bartletts Ferry Project (FERC No. 485)

\\BOOMER\G\PROJECTS2\GA_POWER\MAPFILES\BARTLETTSFERRYDAM_FACILITIES.MXD RMURPHY1 2/6/2009 08:19:42

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

Written Correspondence with WRD

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

pmorouke@southernco.com
241 Ralph McGill Blvd.
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.

Attachment to Georgia Power's 2/25/2022 Email to WRD

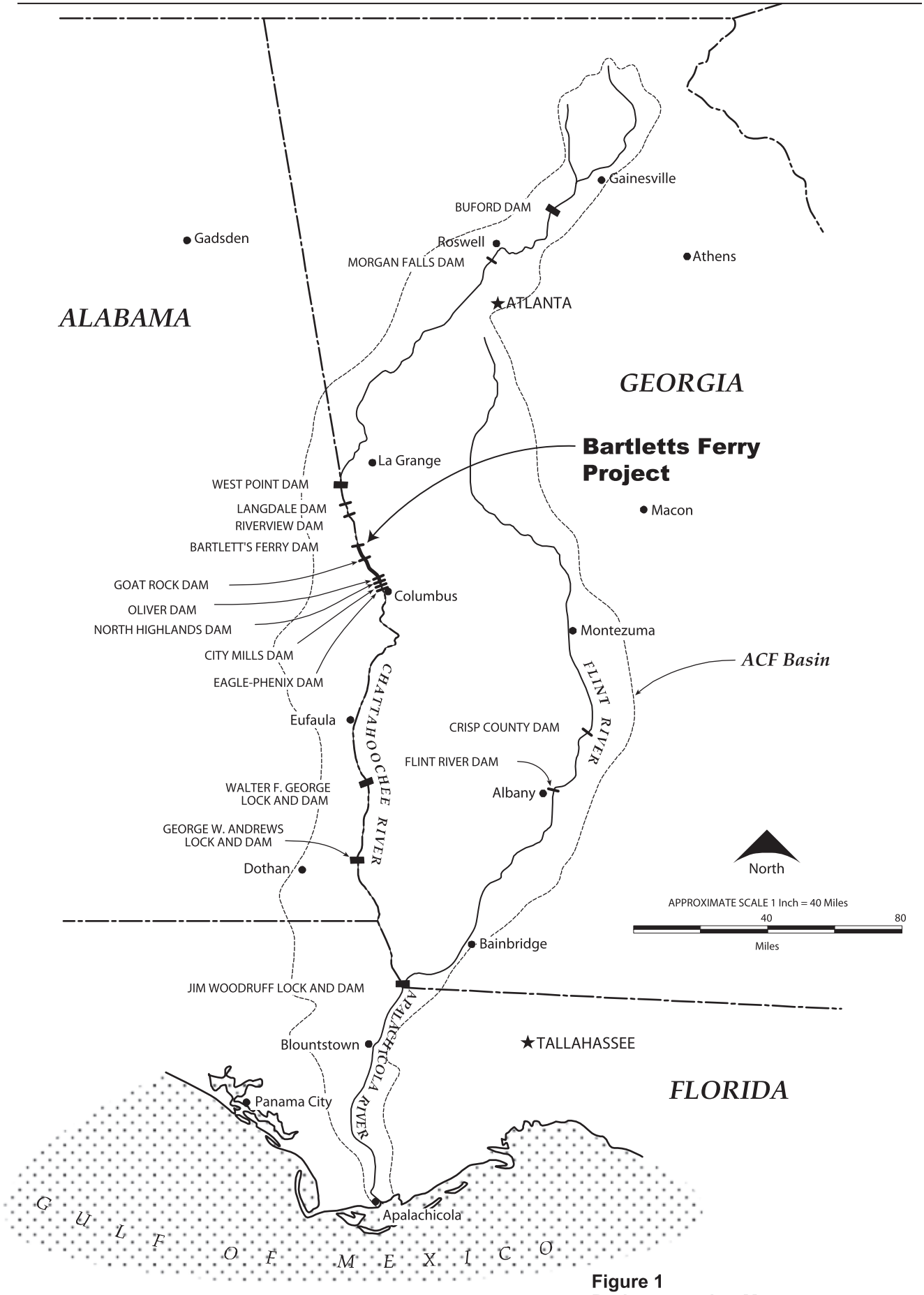


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

Attachment to Georgia Power's 2/25/2022 Email to WRD



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

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

Written Correspondence with HPD

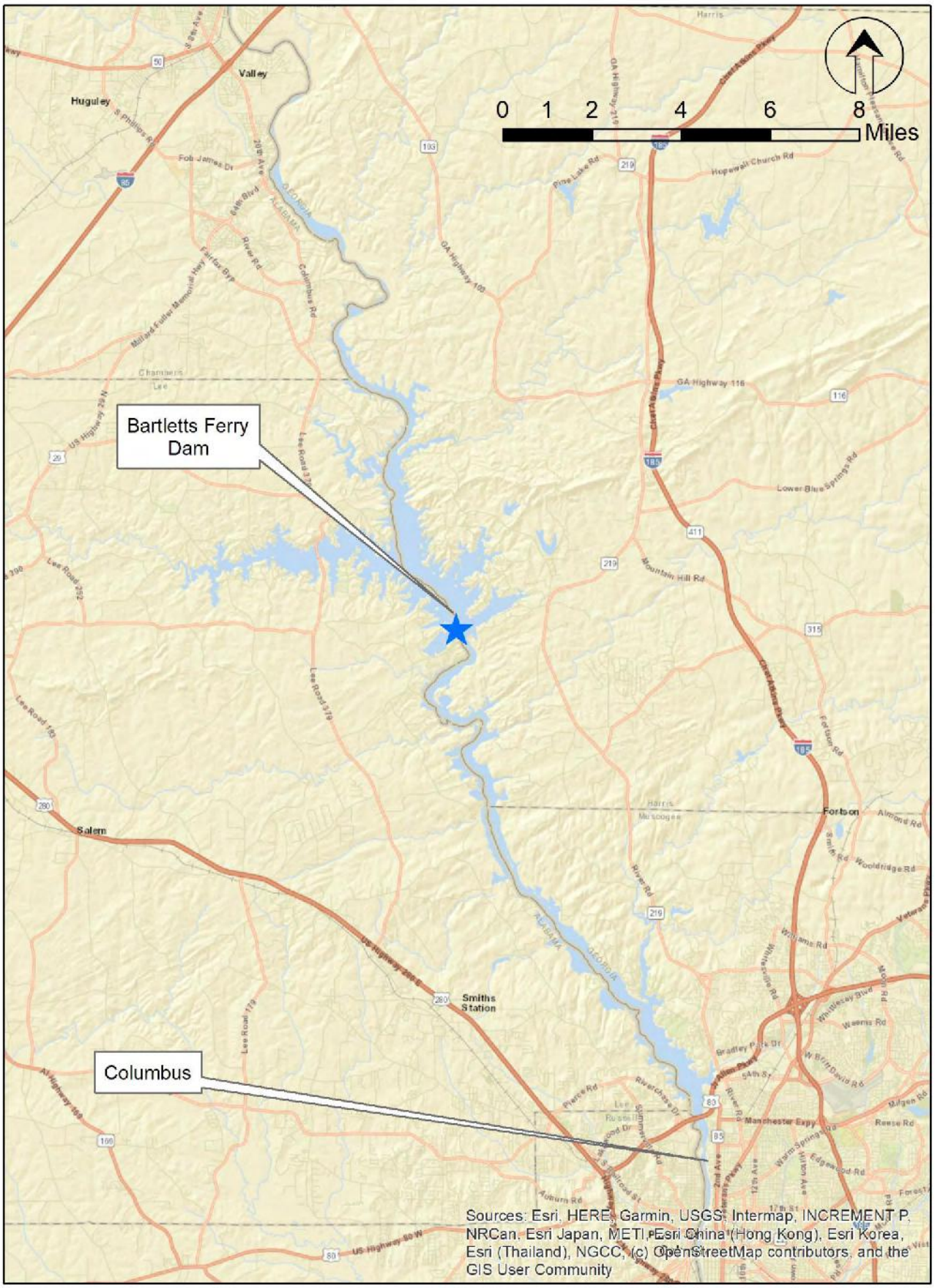


Figure 1. Bartletts Ferry Project and surroundings.

Written Correspondence with HPD

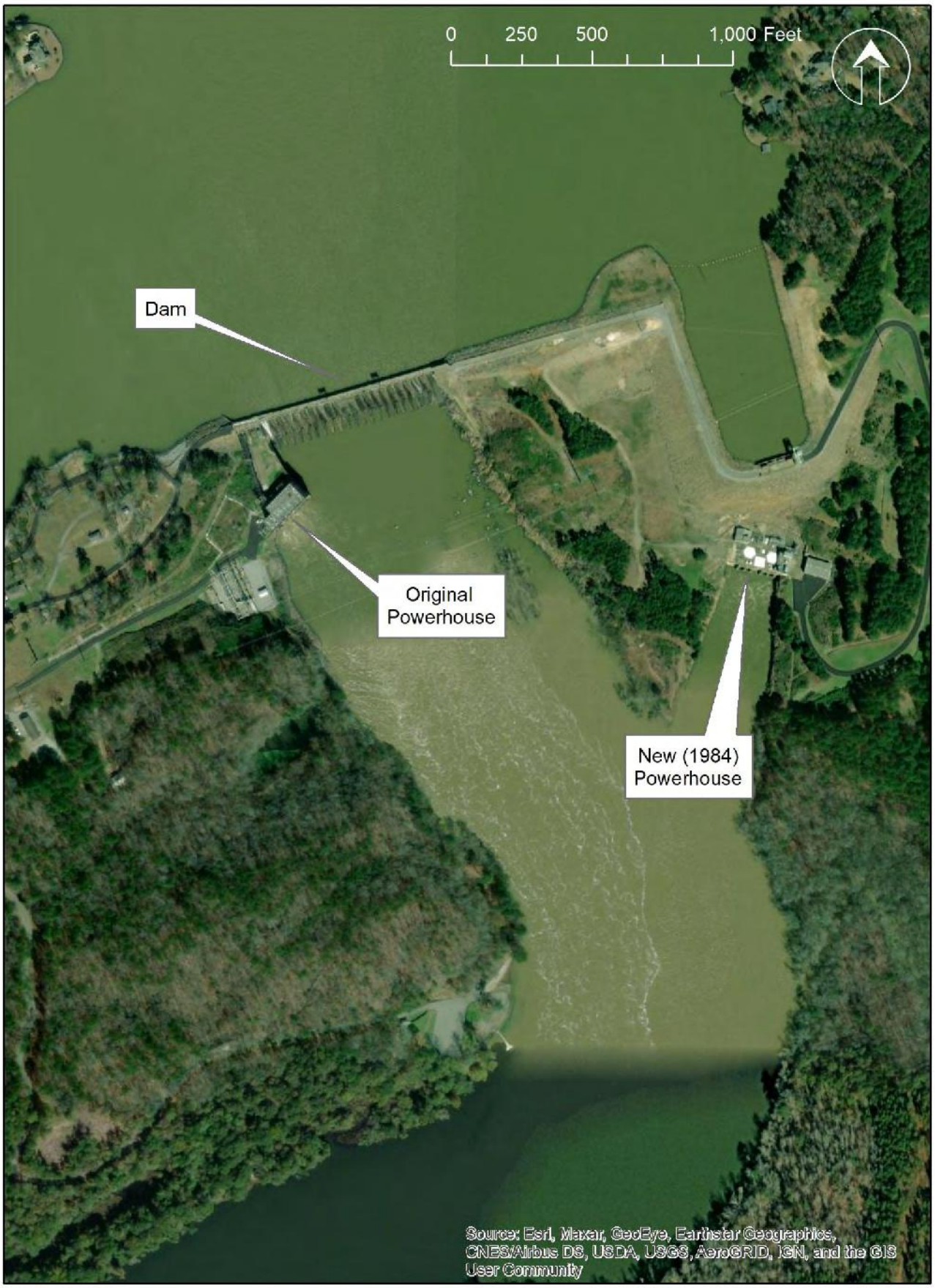


Figure 2. Aerial photograph of Bartletts Ferry project works.



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



Figure 4. Photograph showing turbine floor.



Figure 5. Photograph showing turbine detail.

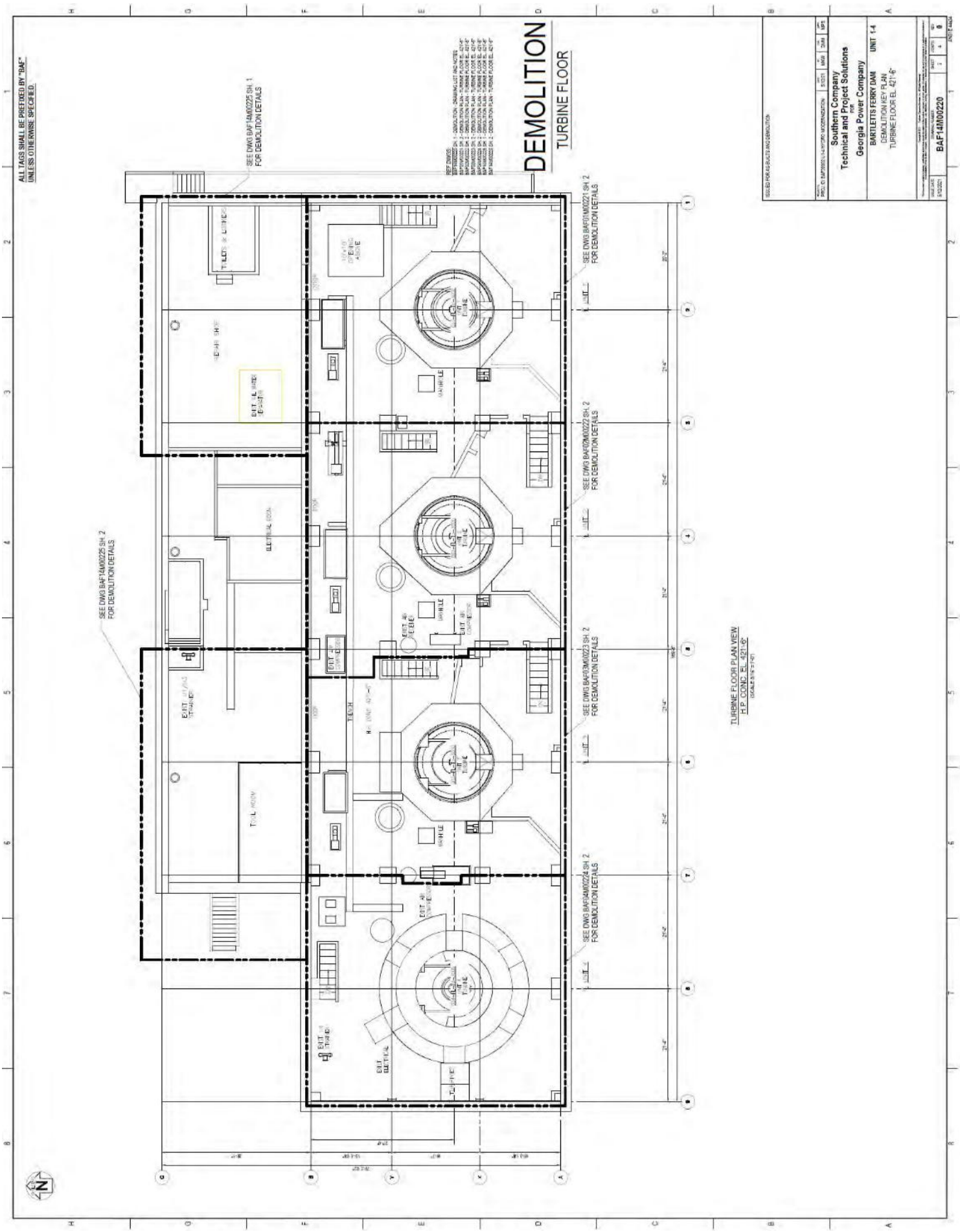


Figure 6. Current plan drawing of turbine floor.

Written Correspondence with HPD

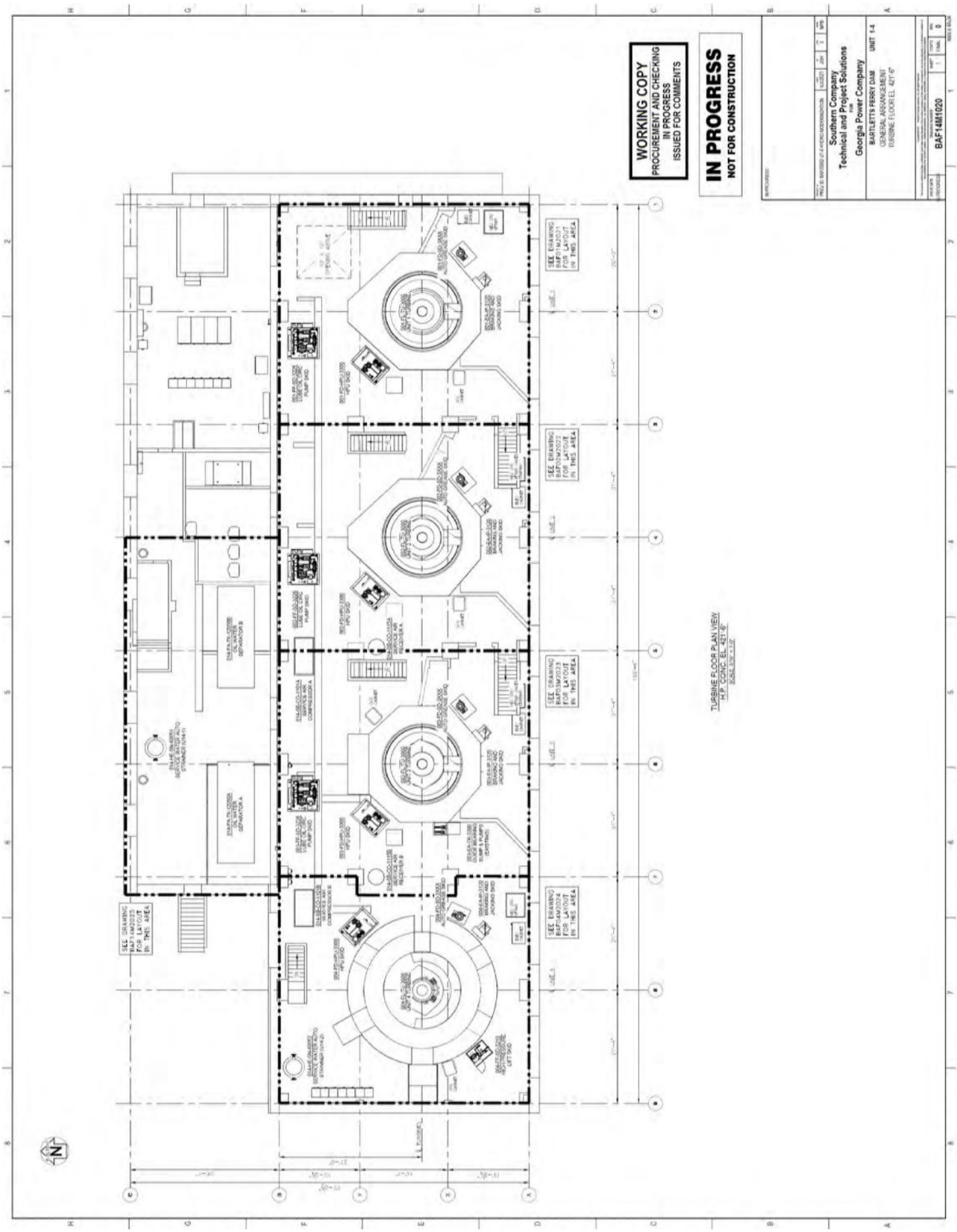


Figure 7. Plan drawing of turbine floor after modernization.

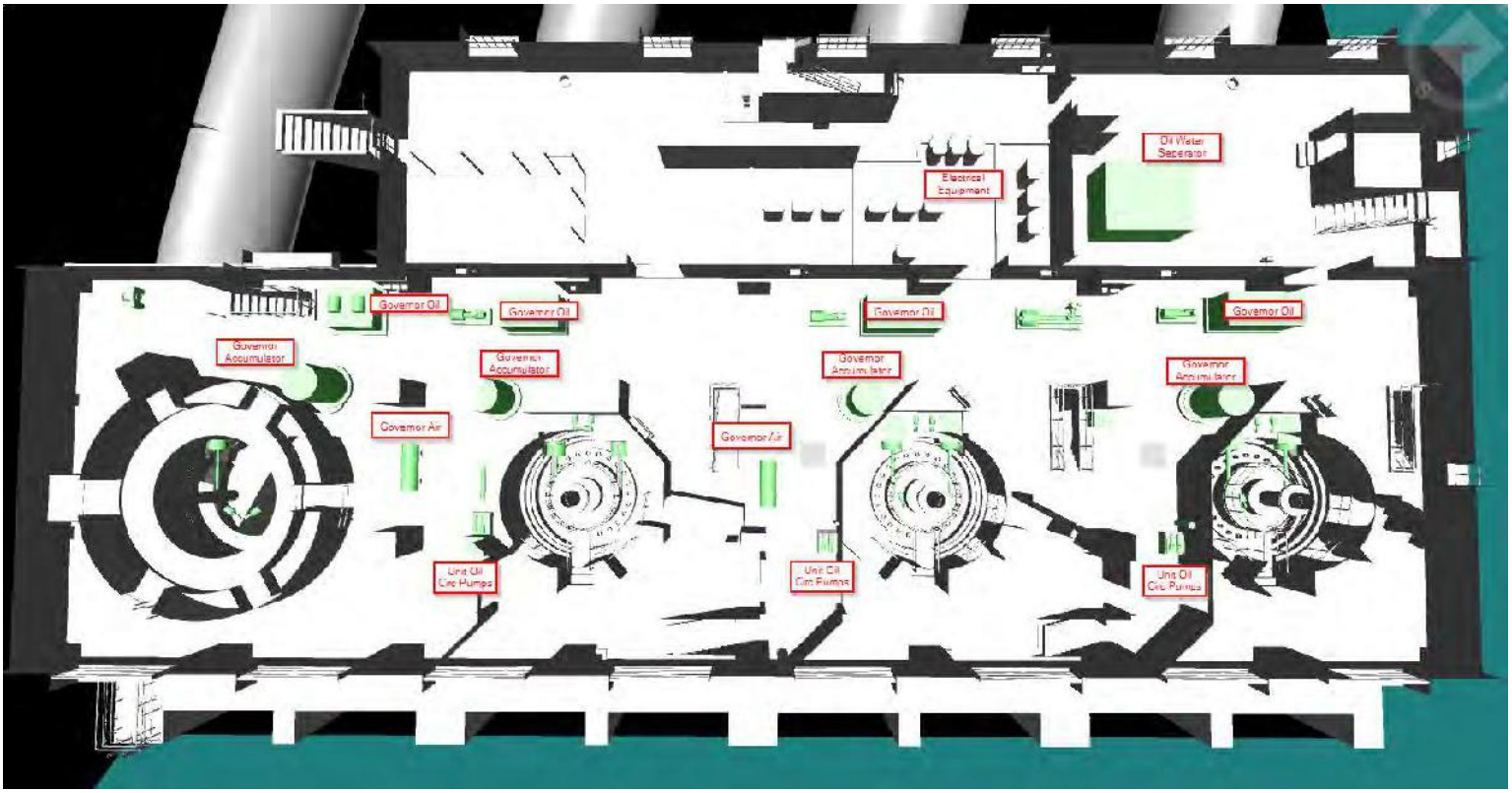


Figure 8. Model of turbine floor before modernization.

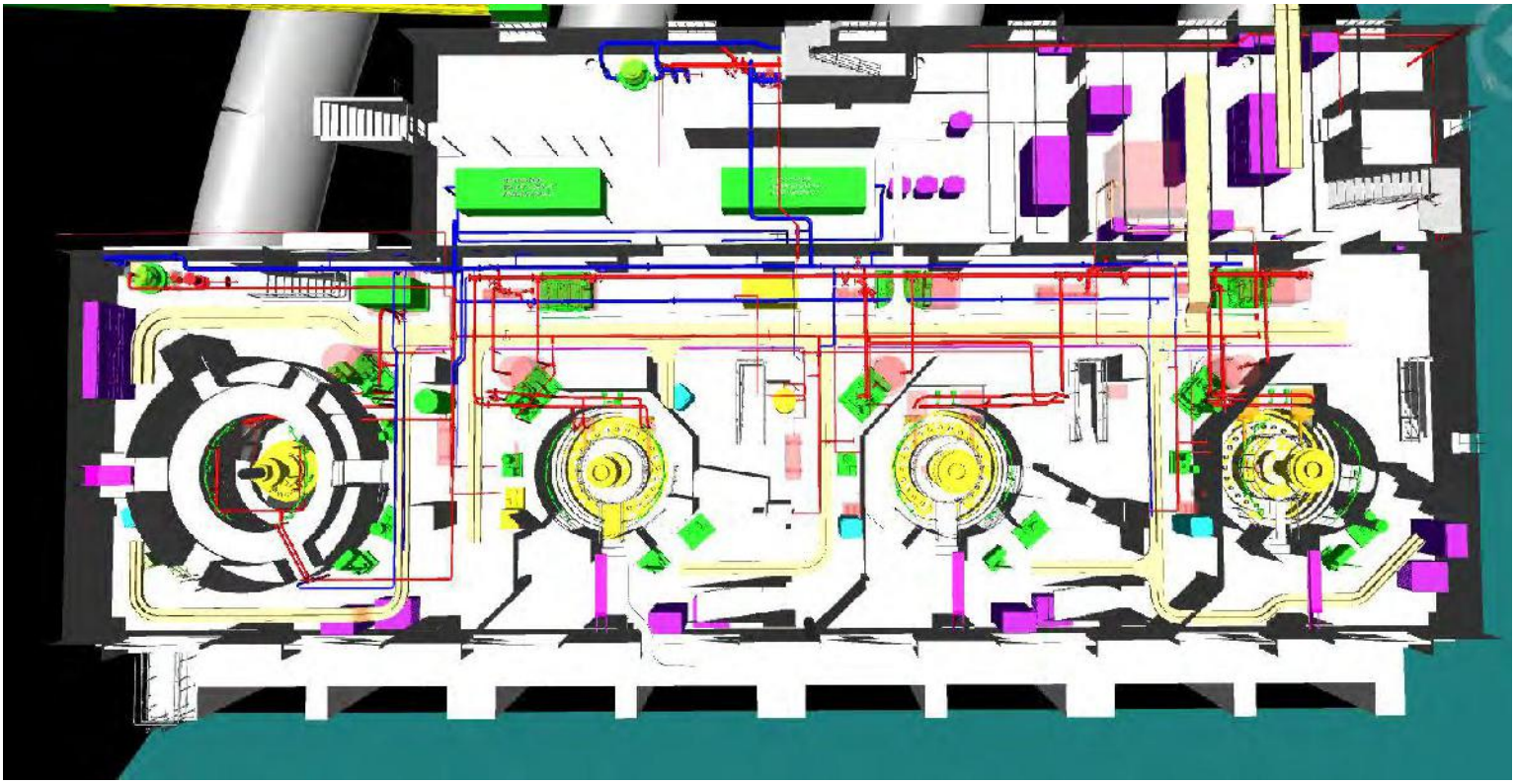


Figure 9. Model of turbine floor after modernization.

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.

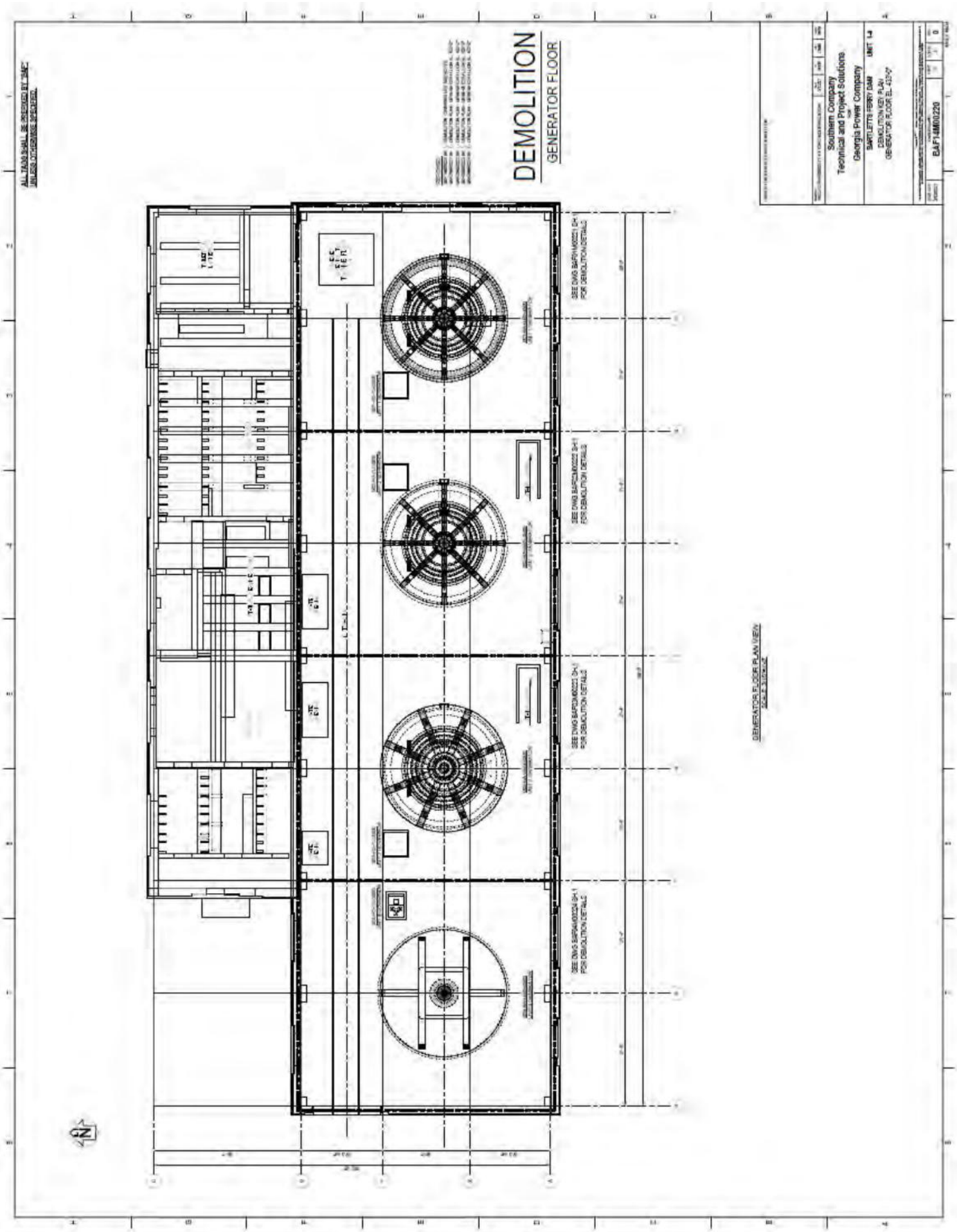


Figure 11. Current plan drawing of generator floor.

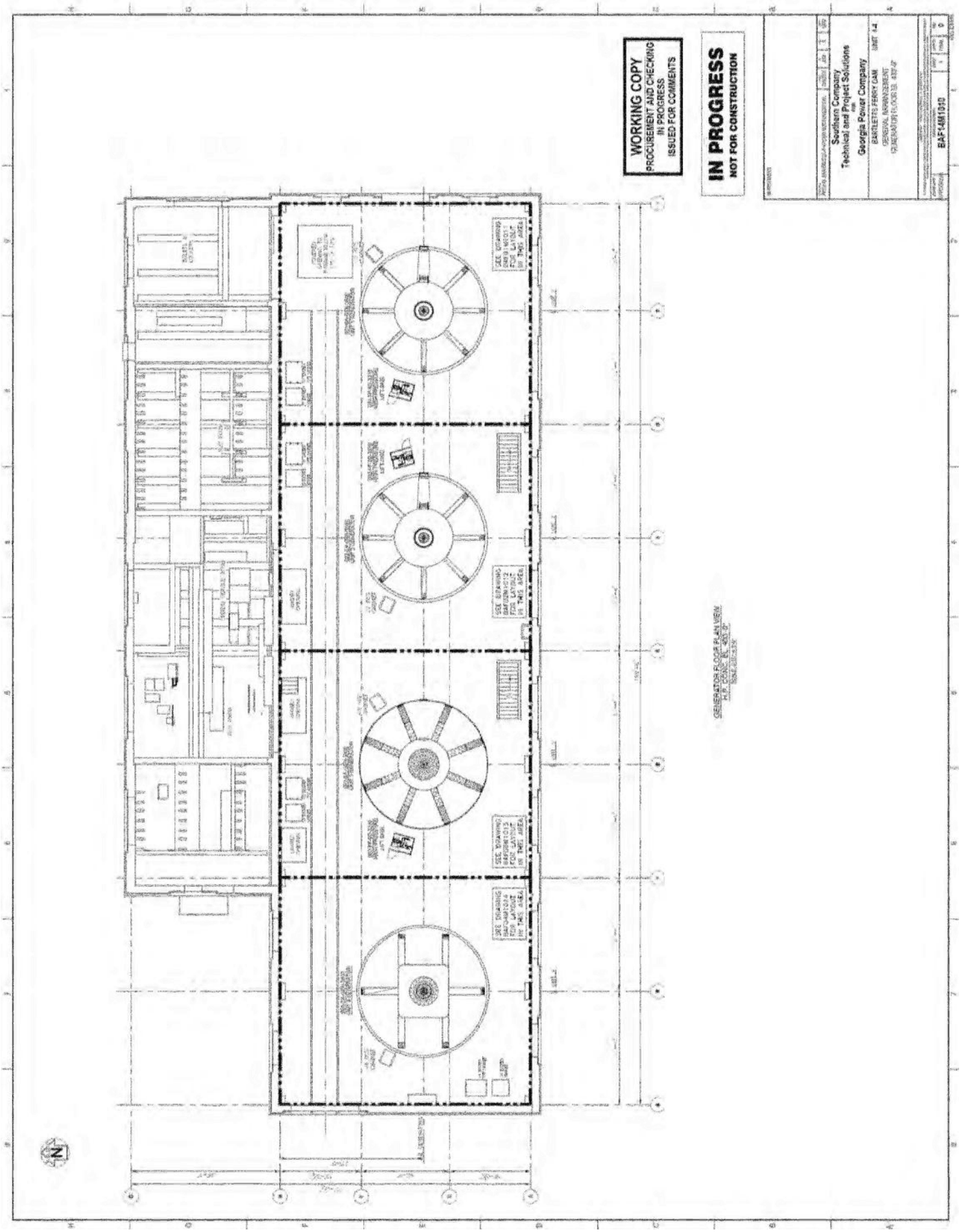


Figure 12. Plan drawing of generator floor after modernization.

Written Correspondence with HPD

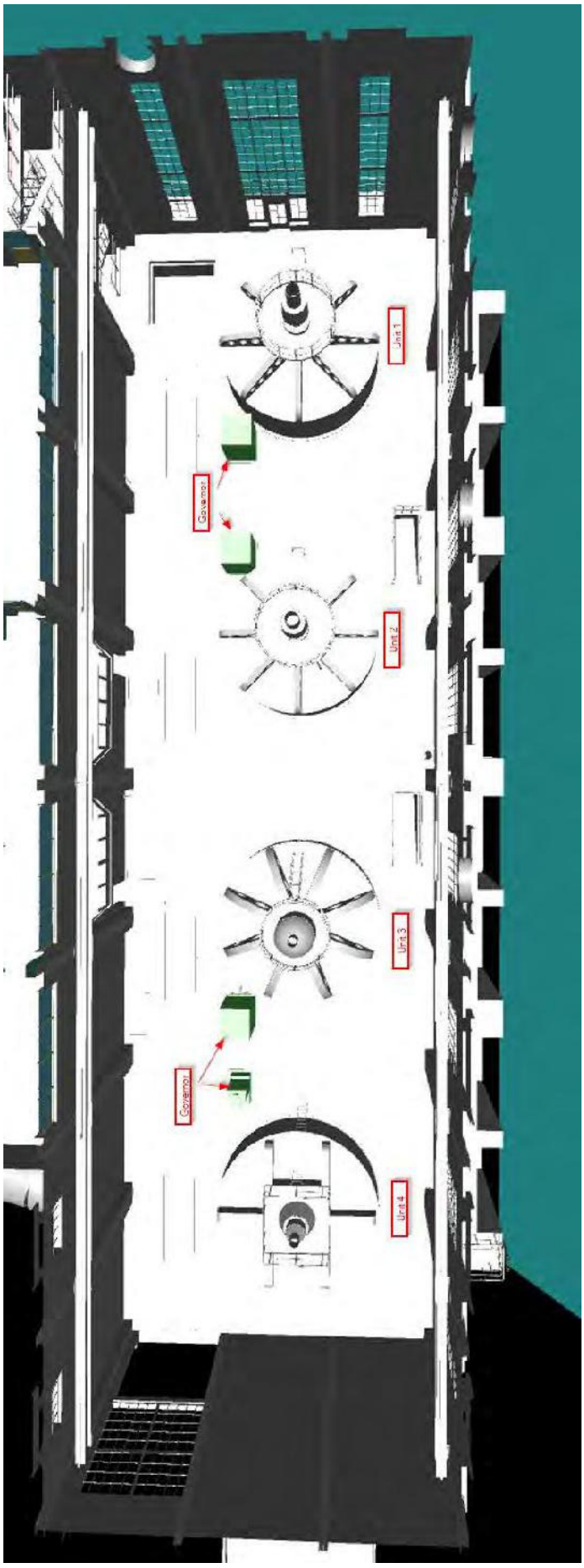


Figure 13. Model of generator floor before modernization.



Figure 14. Model of generator floor after modernization.

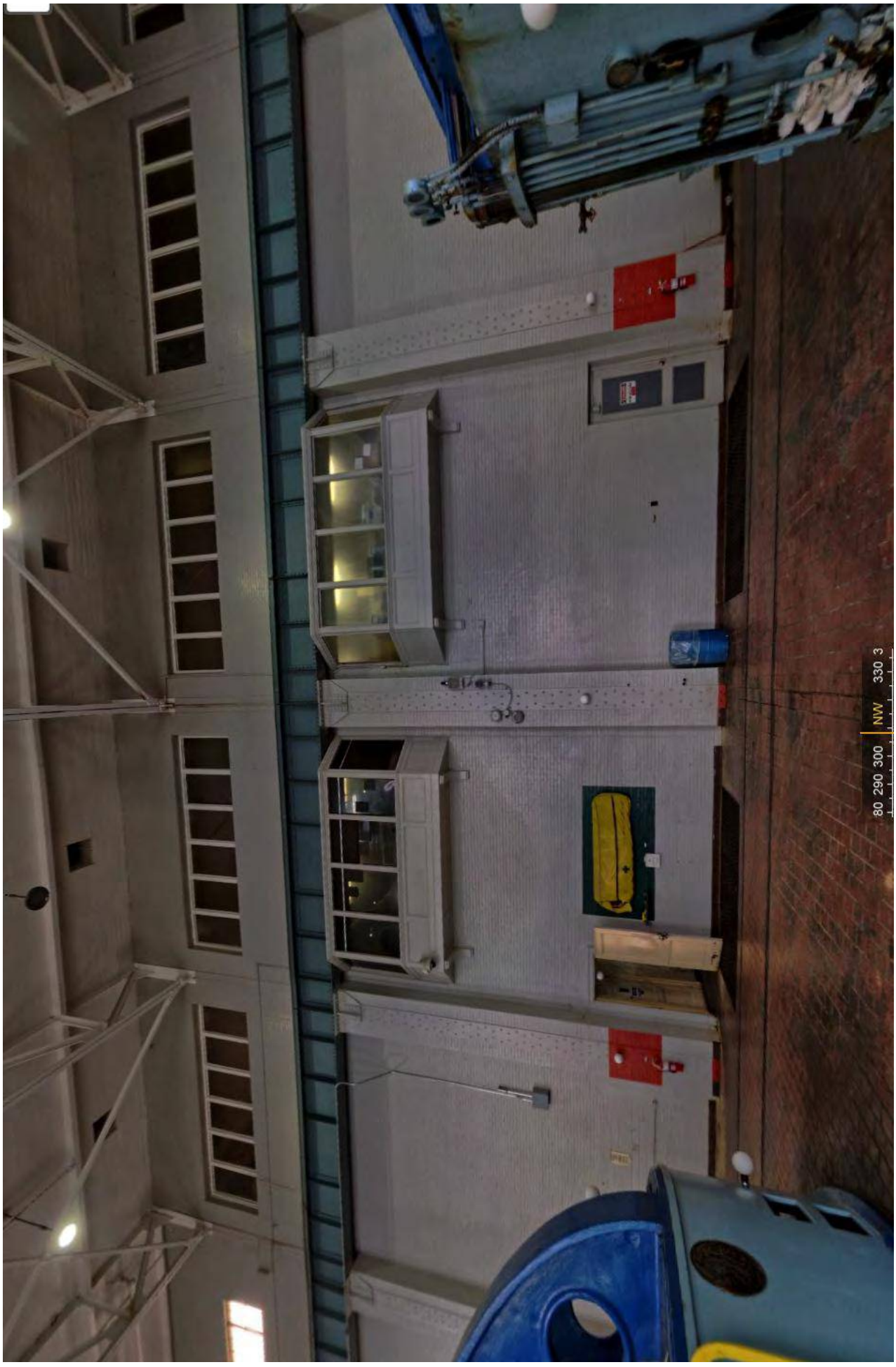


Figure 15. View from generator floor showing the original control room (bay windows) and the proposed new control room above.

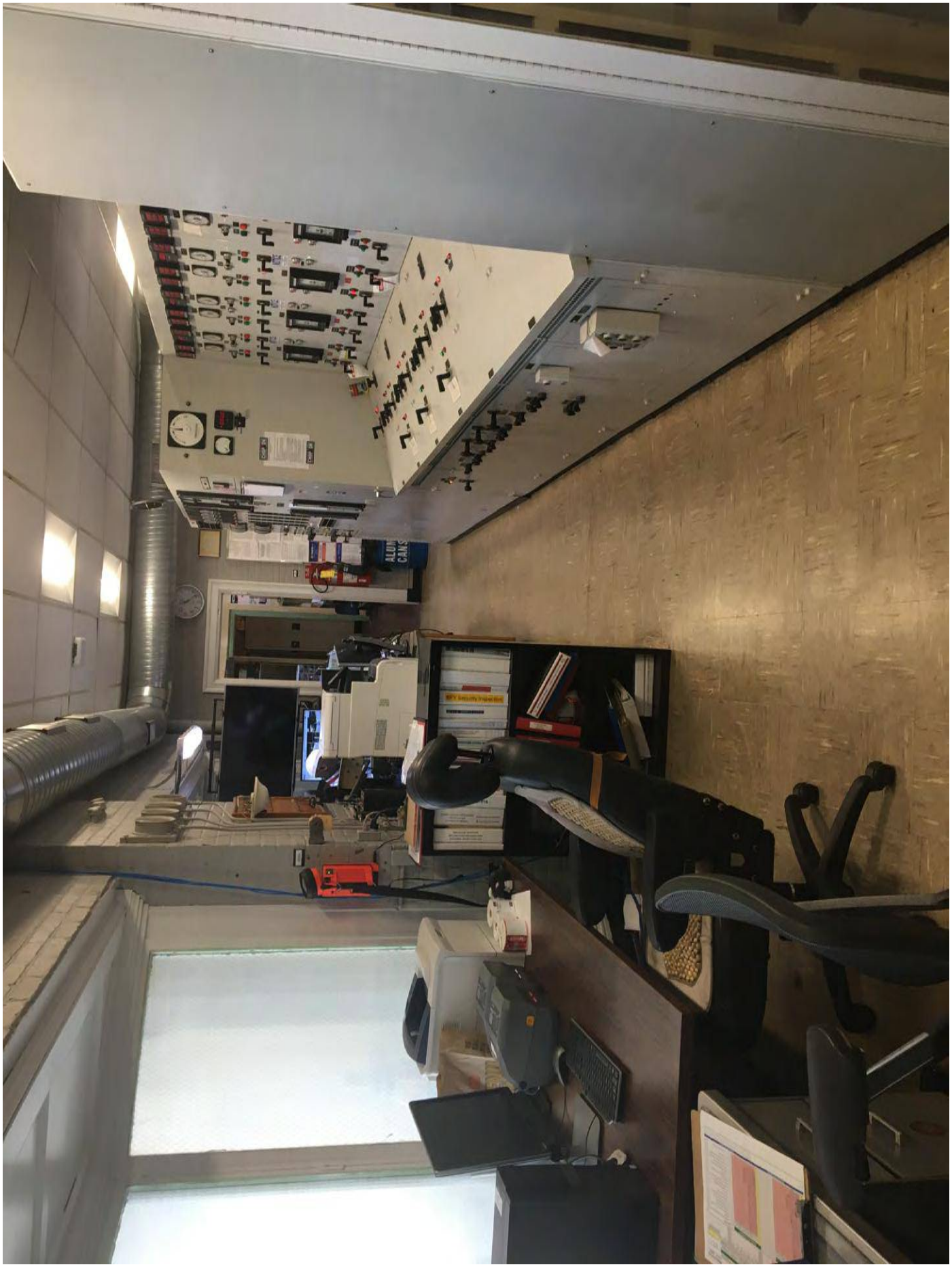


Figure 16. View of current control room.

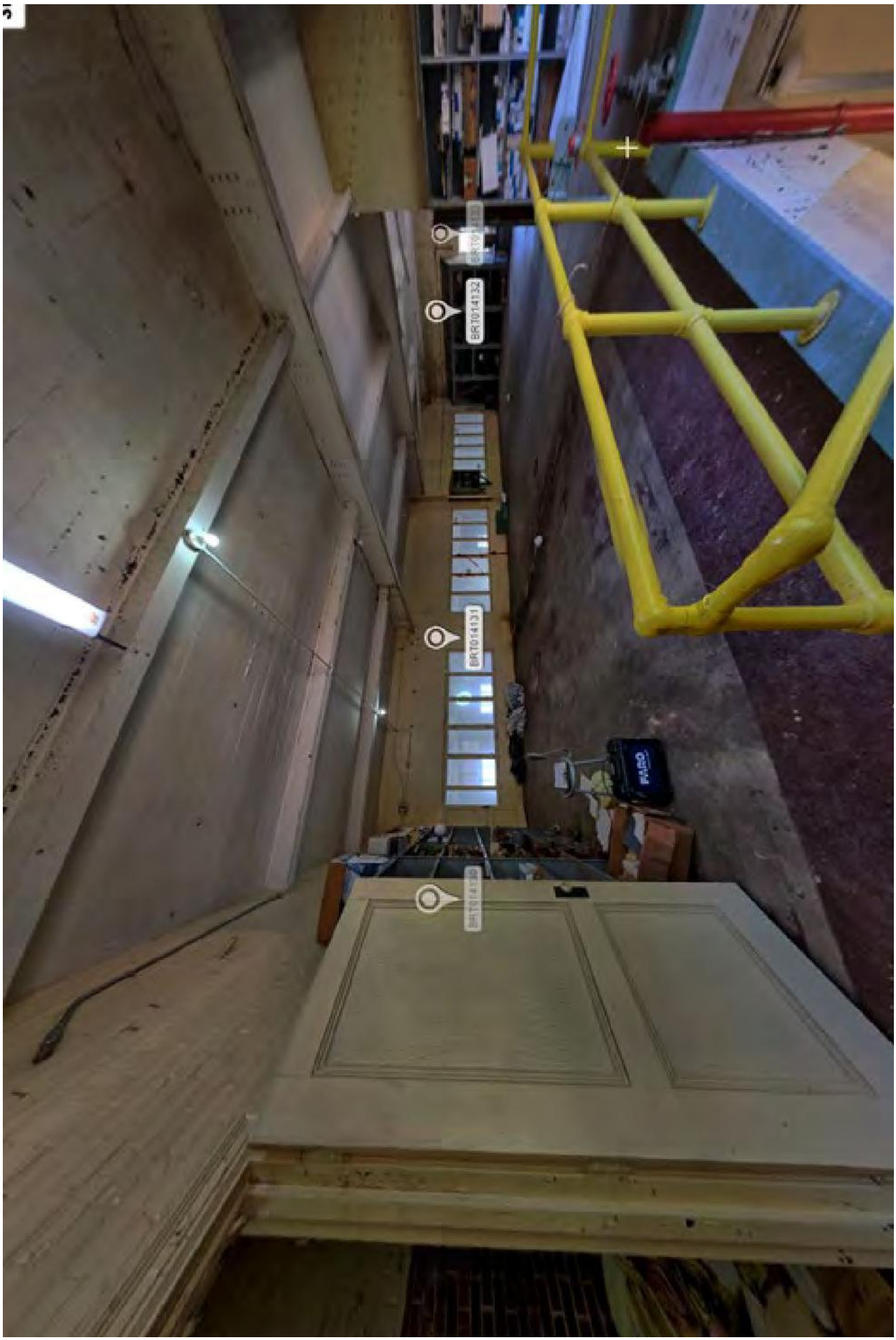


Figure 17. View of proposed new control room taken from a 3D scan.

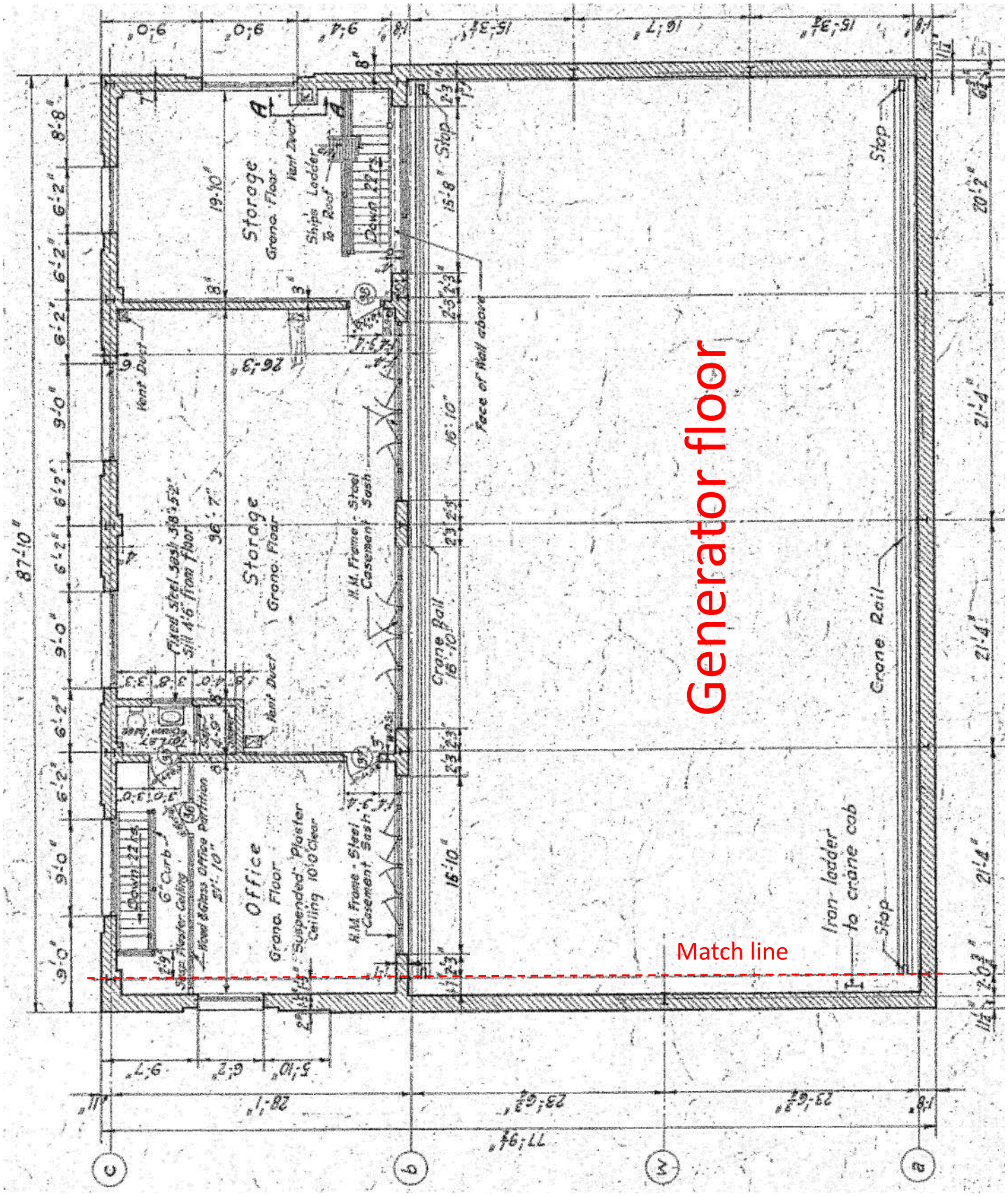


Figure 18. Plan drawing of original 1926 4th floor.

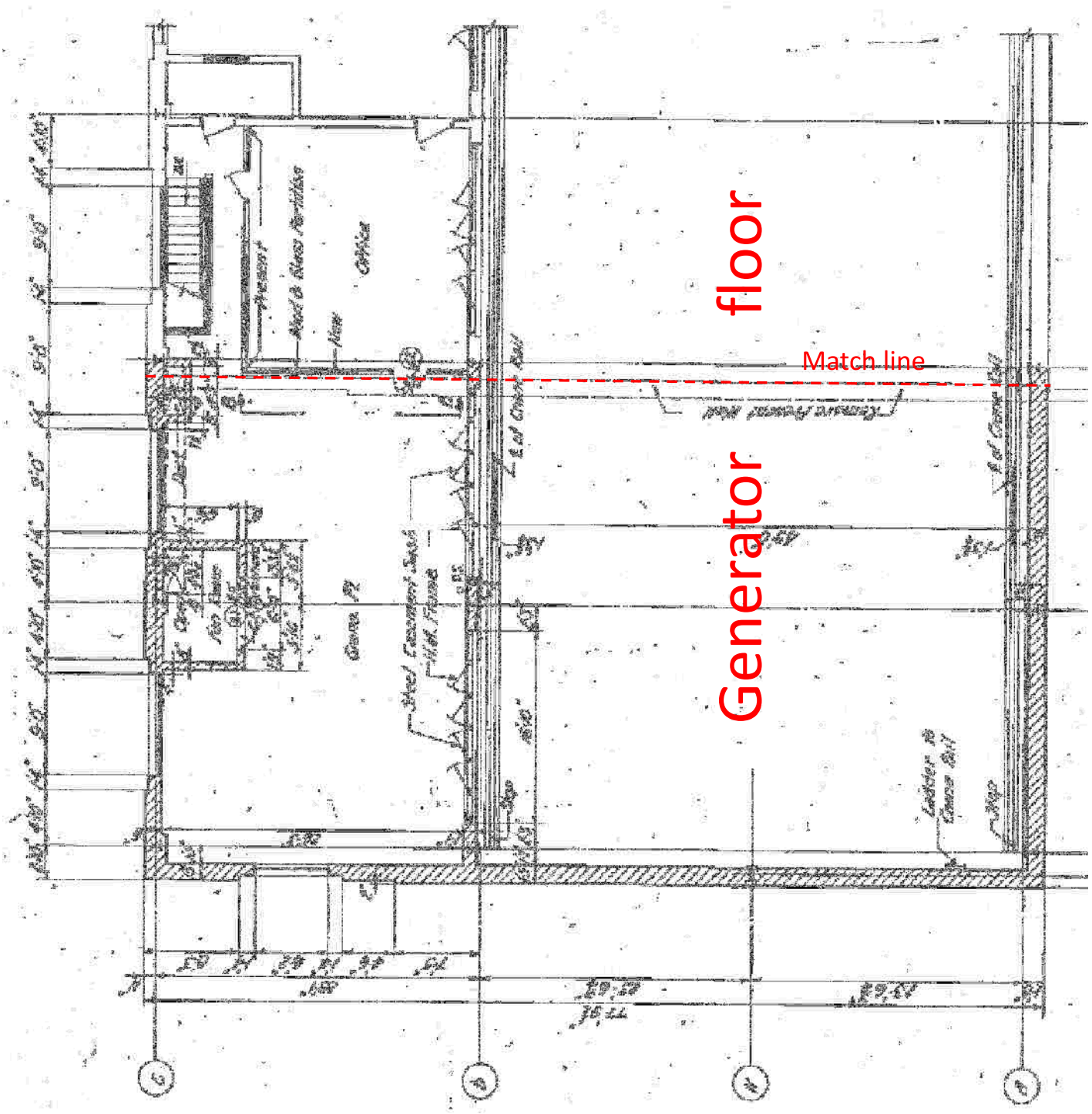


Figure 19. Plan drawing of 4th floor after 1928 expansion for Units 3 and 4.

Written Correspondence with HPD

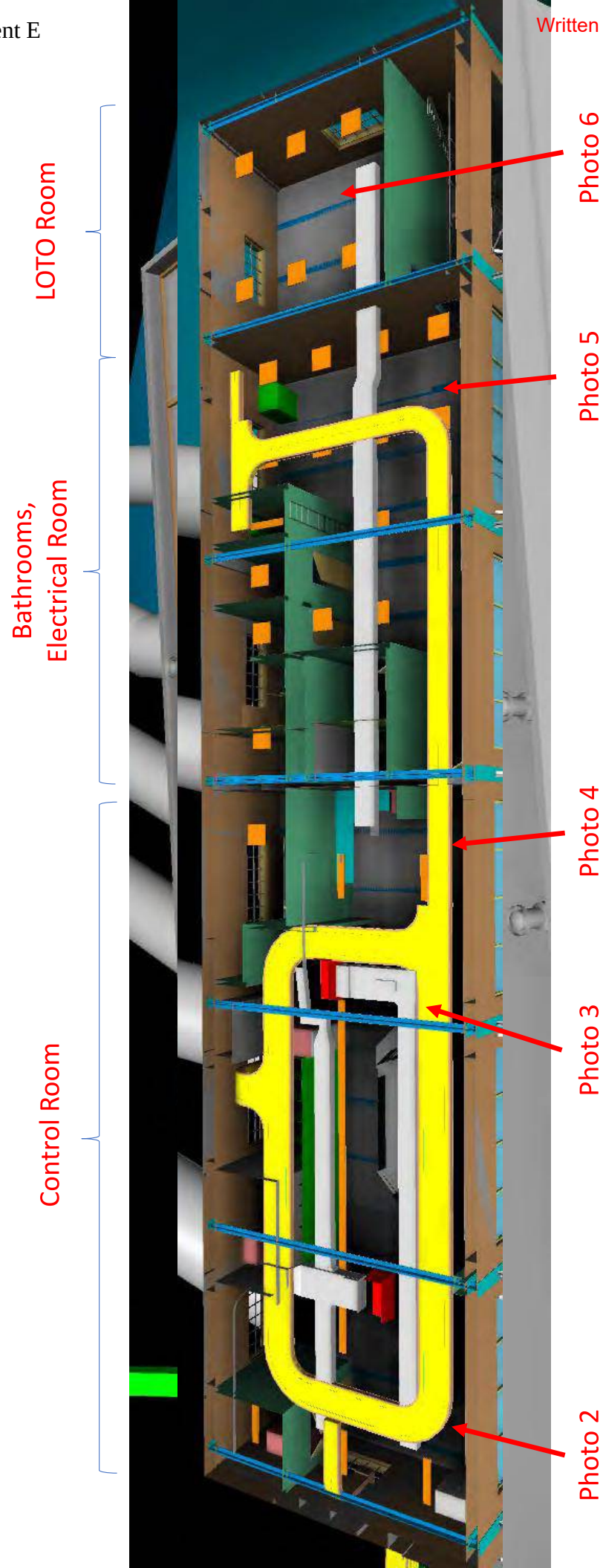


Figure 20. Overview of proposed 4th floor build out.



Figure 21. Model of proposed new control room.



Figure 22. Model of proposed new control room.

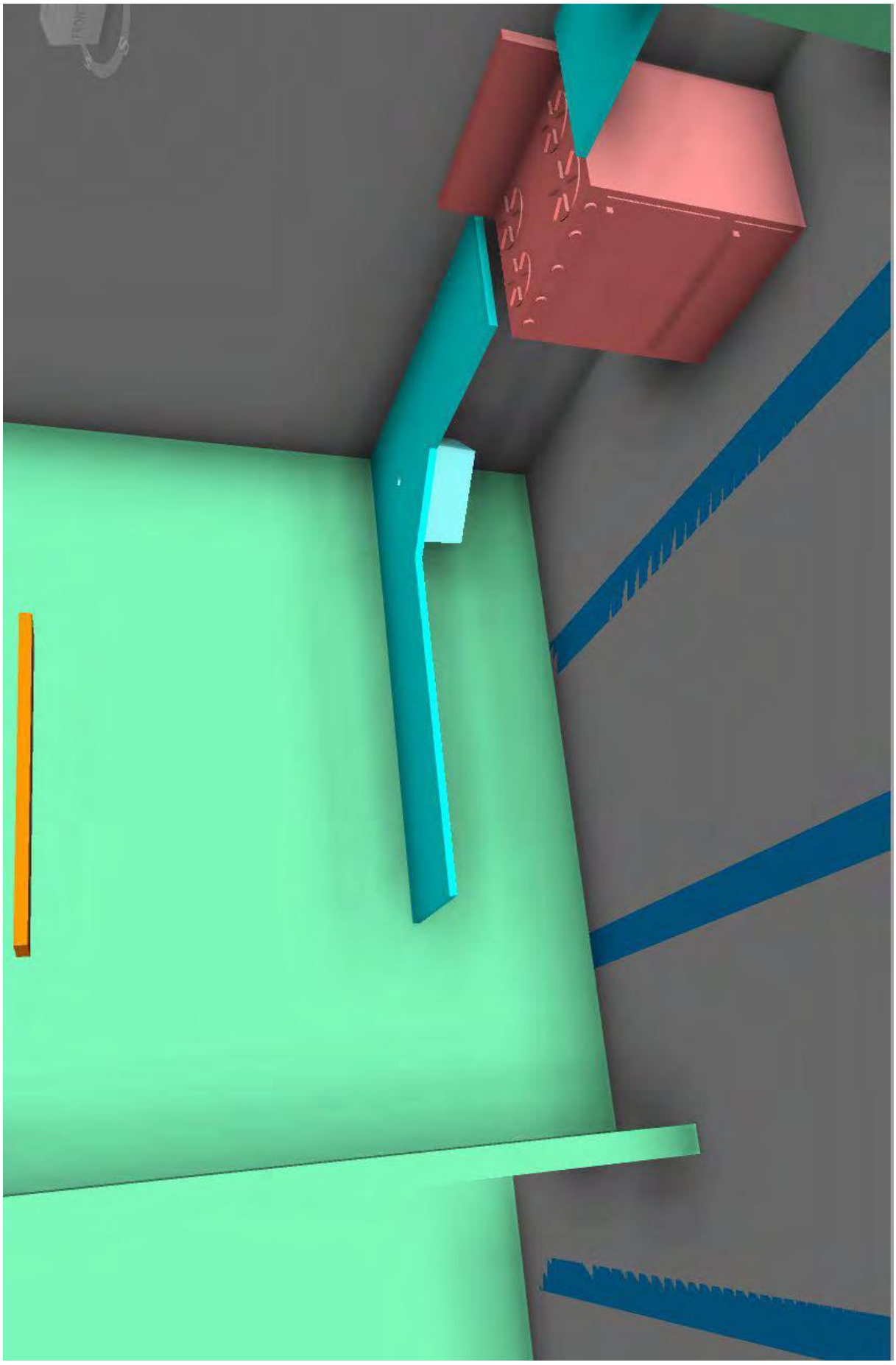


Figure 23. Model of proposed new kitchenette area.

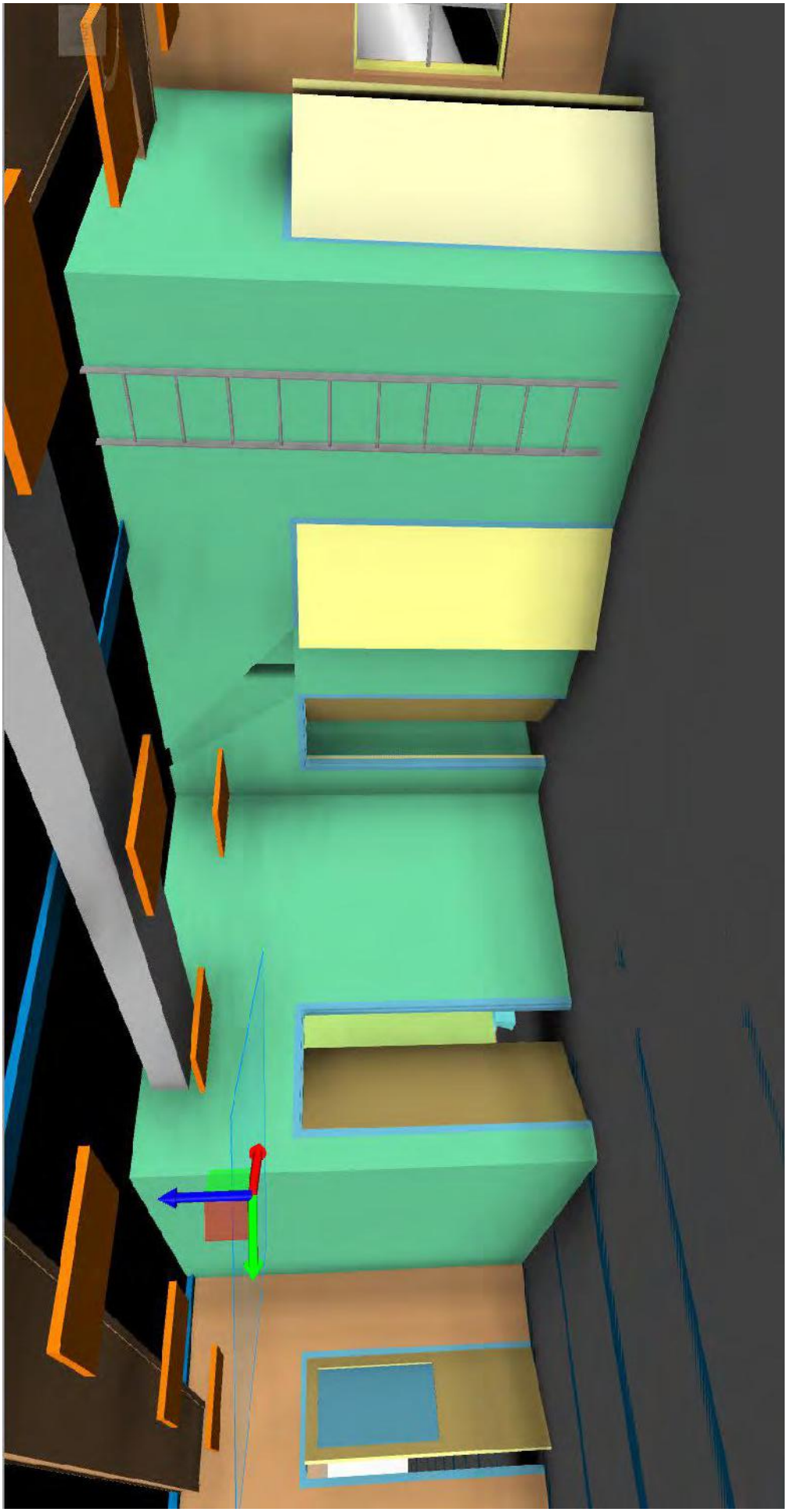


Figure 24. Model of proposed restroom, electrical room, and storage closet.

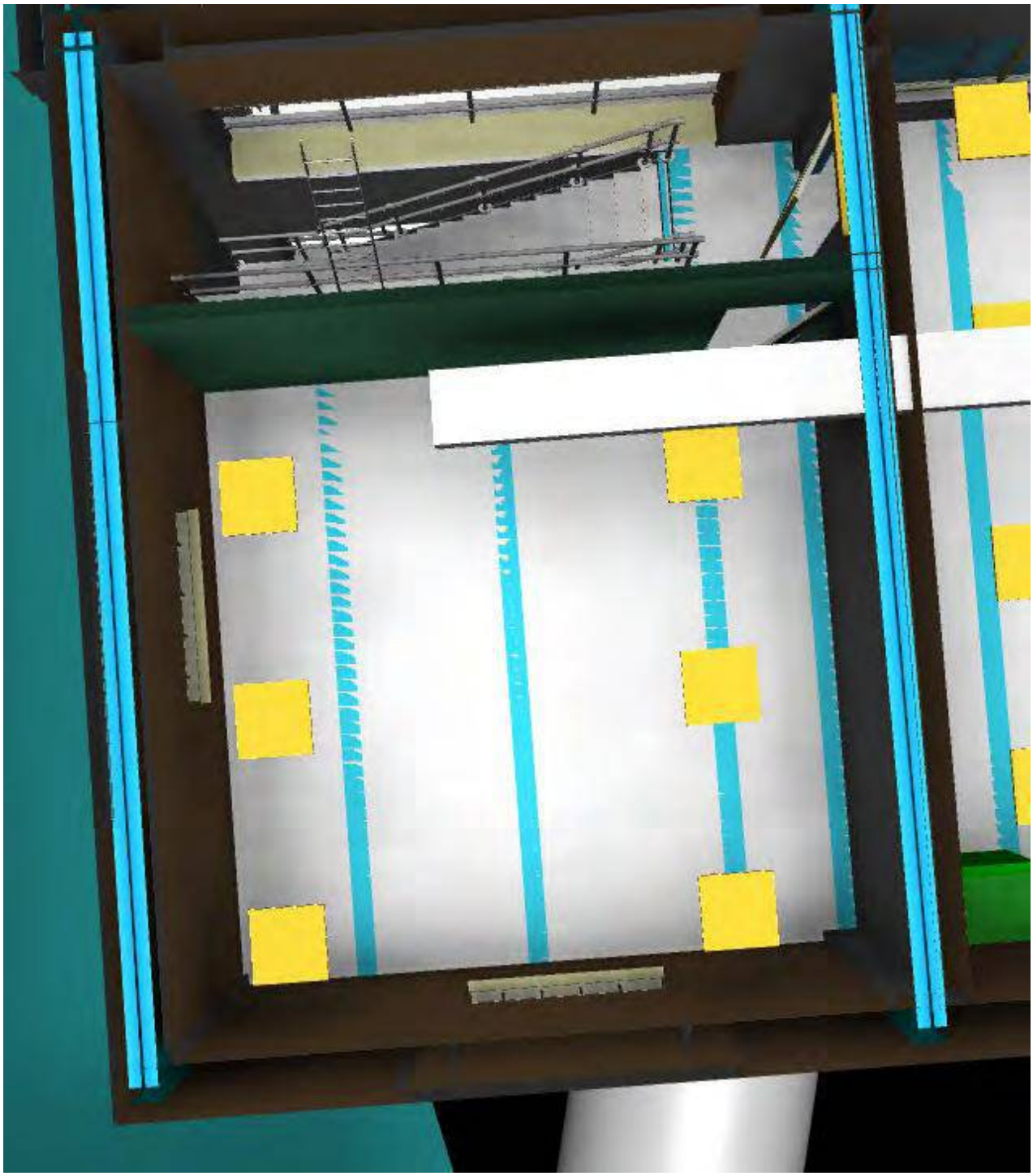


Figure 25. Model of proposed new LOTO room.

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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



Learn more about our commitment to fair housing [dca.ga.gov] [gcc02.safelinks.protection.outlook.com] [gcc02.safelinks.protection.outlook.com] [gcc02.safelinks.protection.outlook.com] [gcc02.safelinks.protection.outlook.com].



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)

Written Correspondence with HPD

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

Project Review Submittal to AHC

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 Review Submittal to AHC

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.

Project Review Submittal to AHC

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.

Project Review Submittal to AHC

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.

Project Review Submittal to AHC

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.

Project Review Submittal to AHC

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

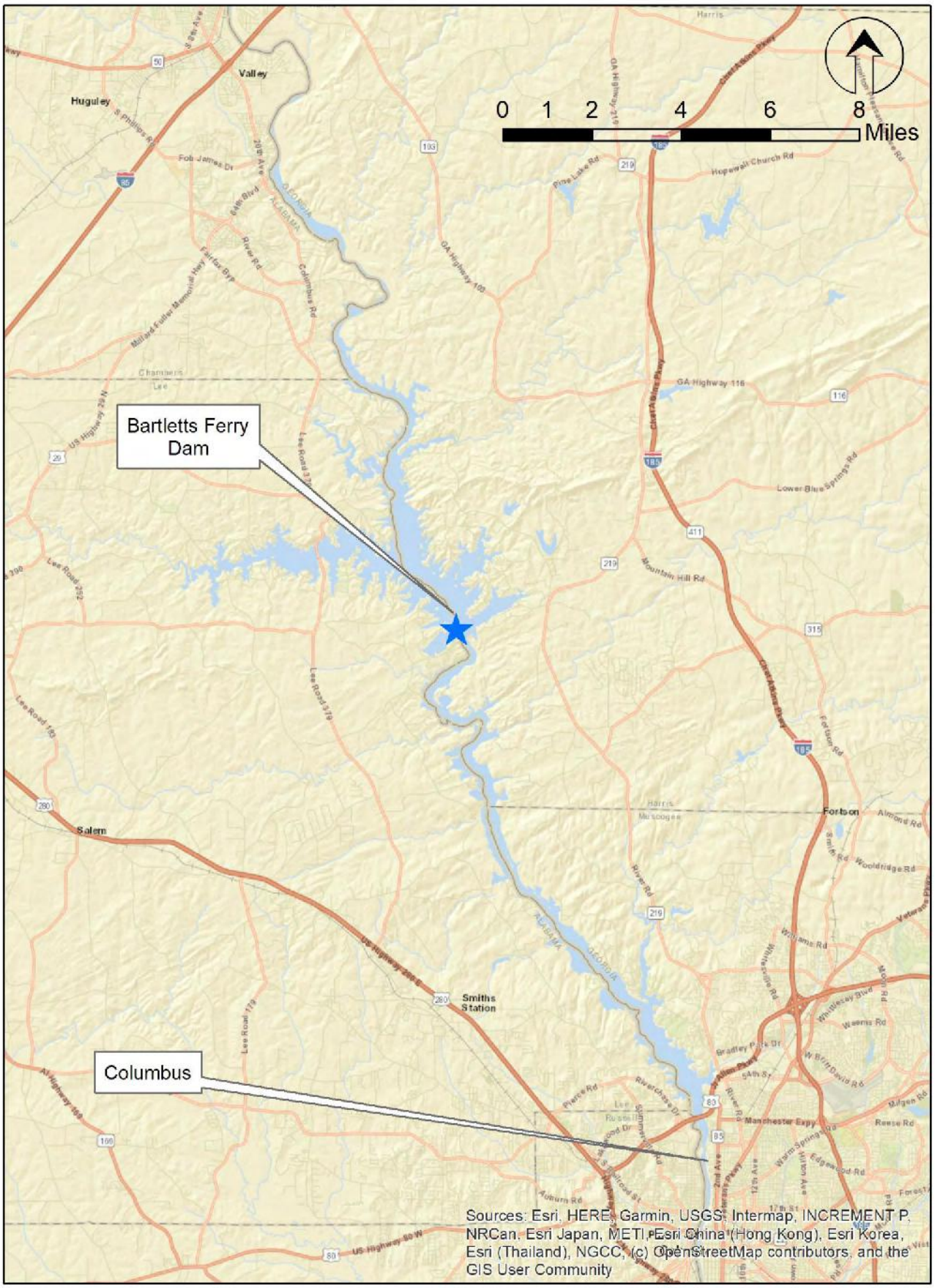


Figure 1. Bartletts Ferry Project and surroundings.

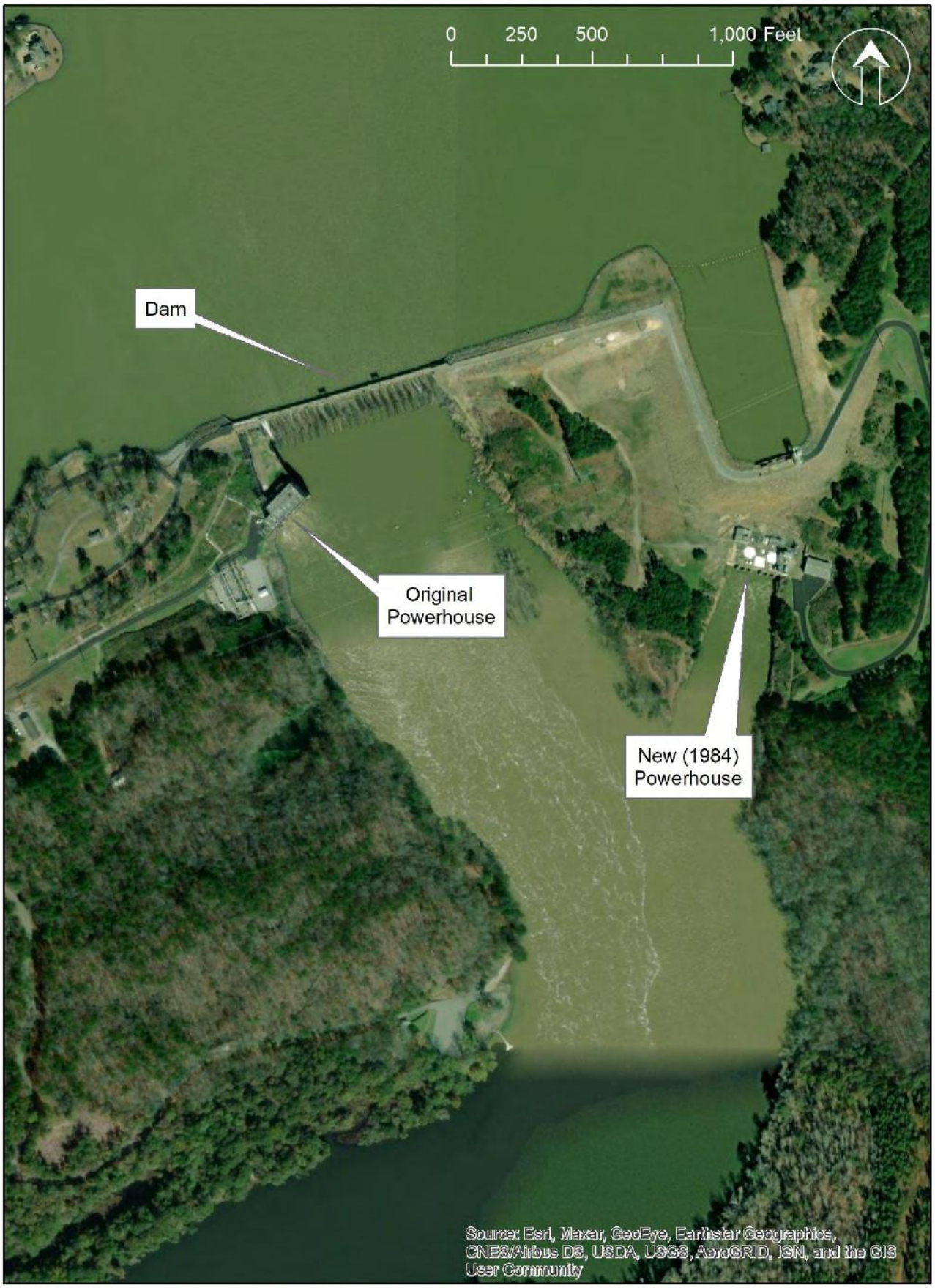


Figure 2. Aerial photograph of Bartletts Ferry project works.



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

Written Correspondence with AHC



Figure 4. Photograph showing turbine floor.



Figure 5. Photograph showing turbine detail.

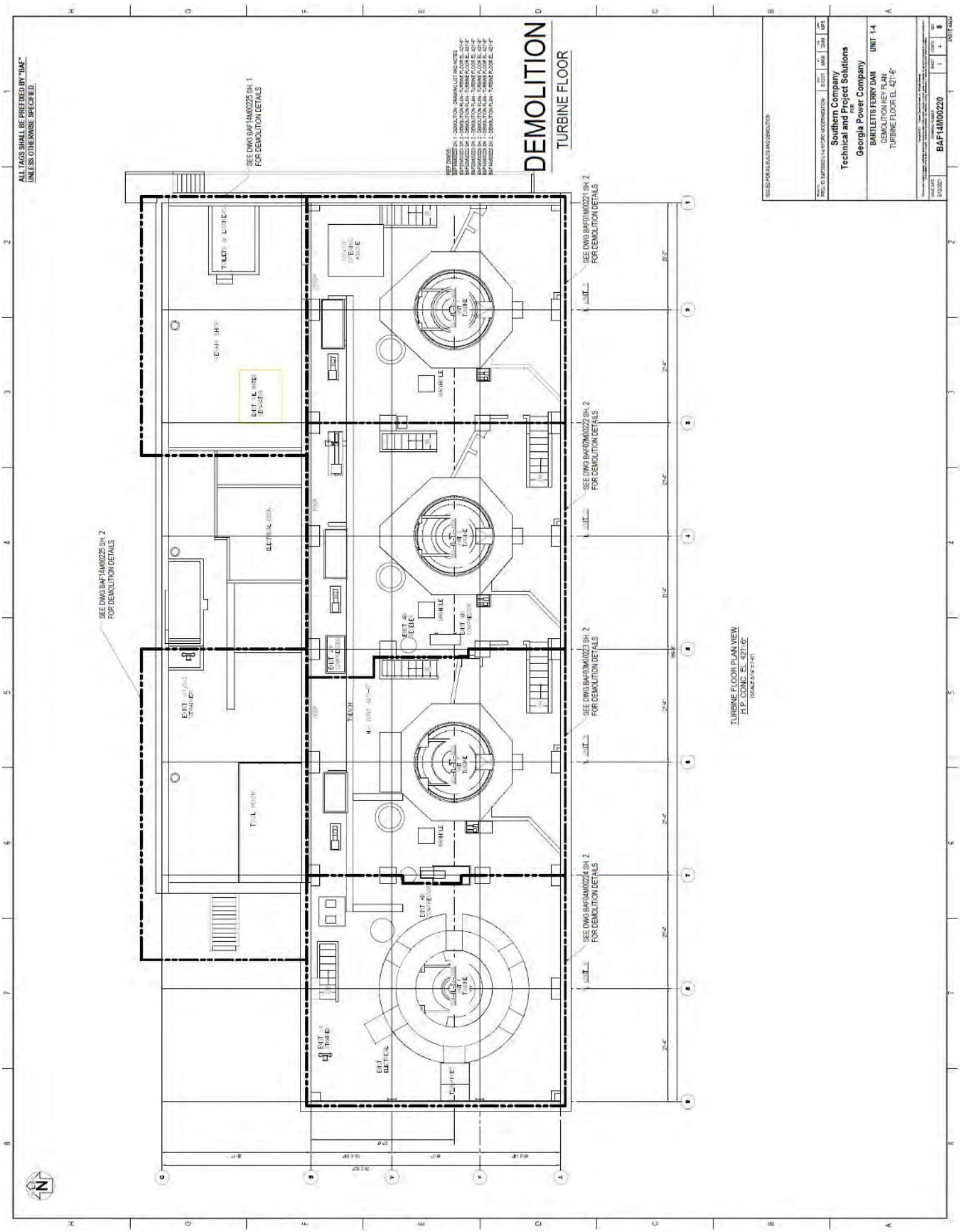


Figure 6. Current plan drawing of turbine floor.

Written Correspondence with AHC

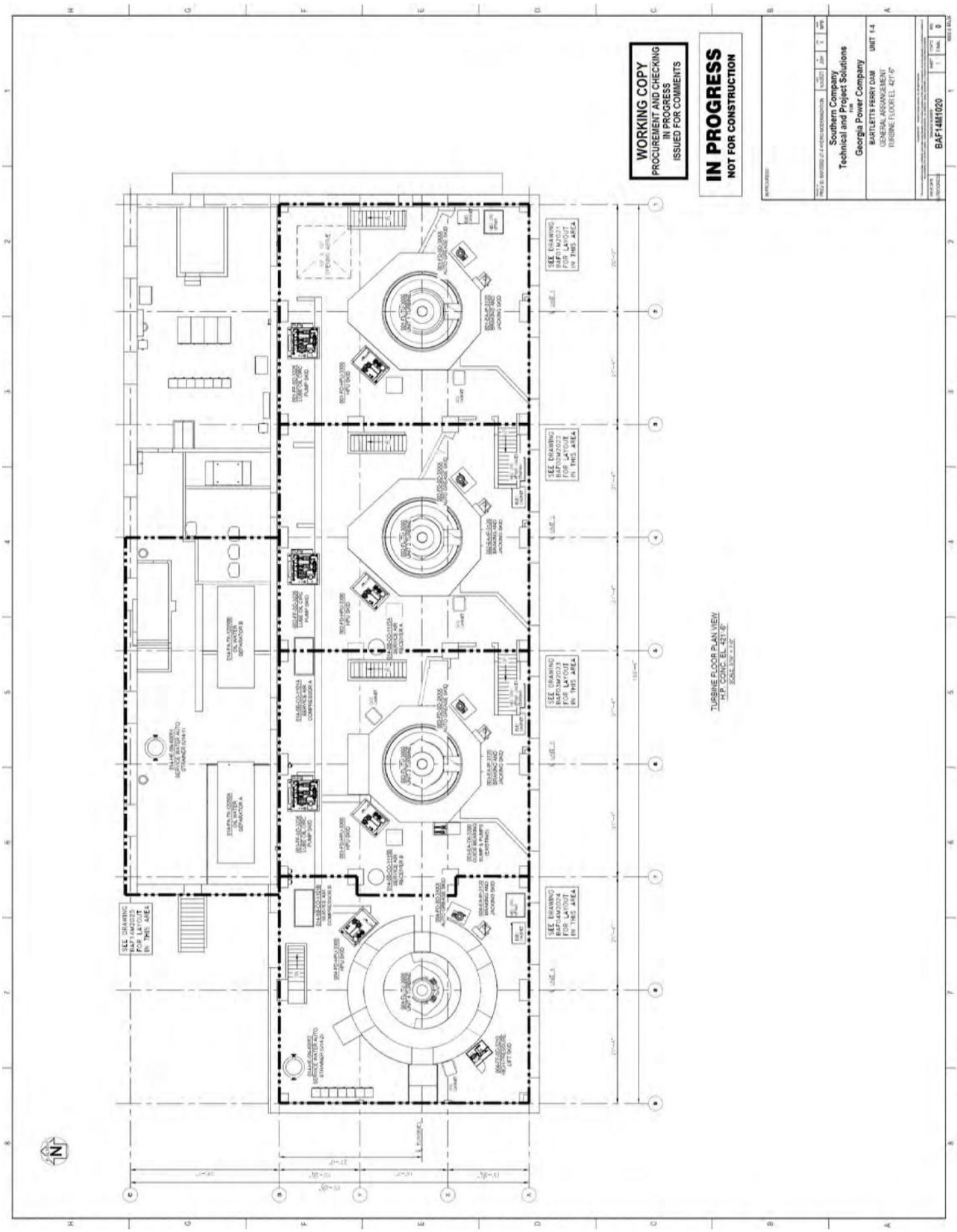


Figure 7. Plan drawing of turbine floor after modernization.

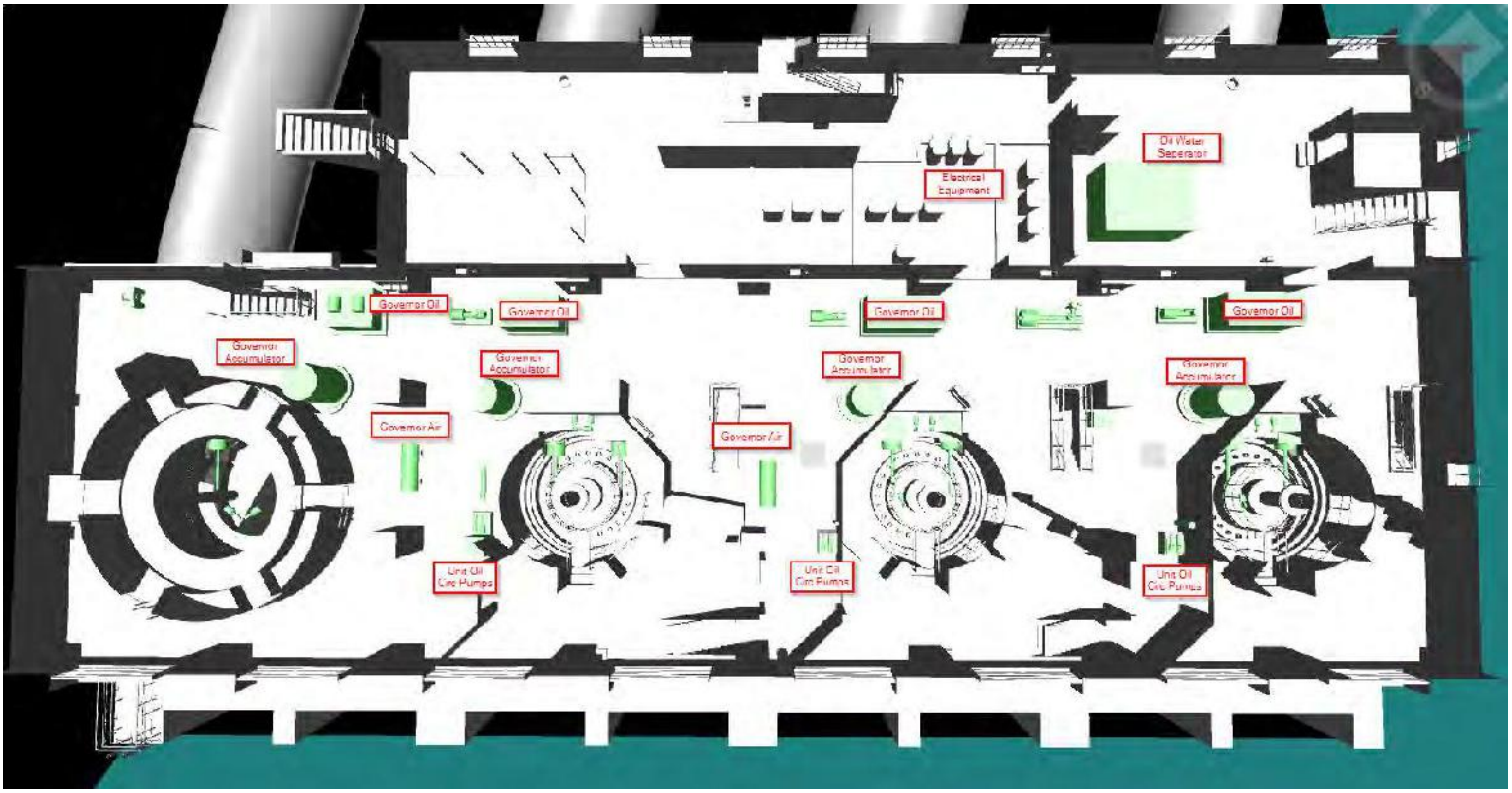


Figure 8. Model of turbine floor before modernization.

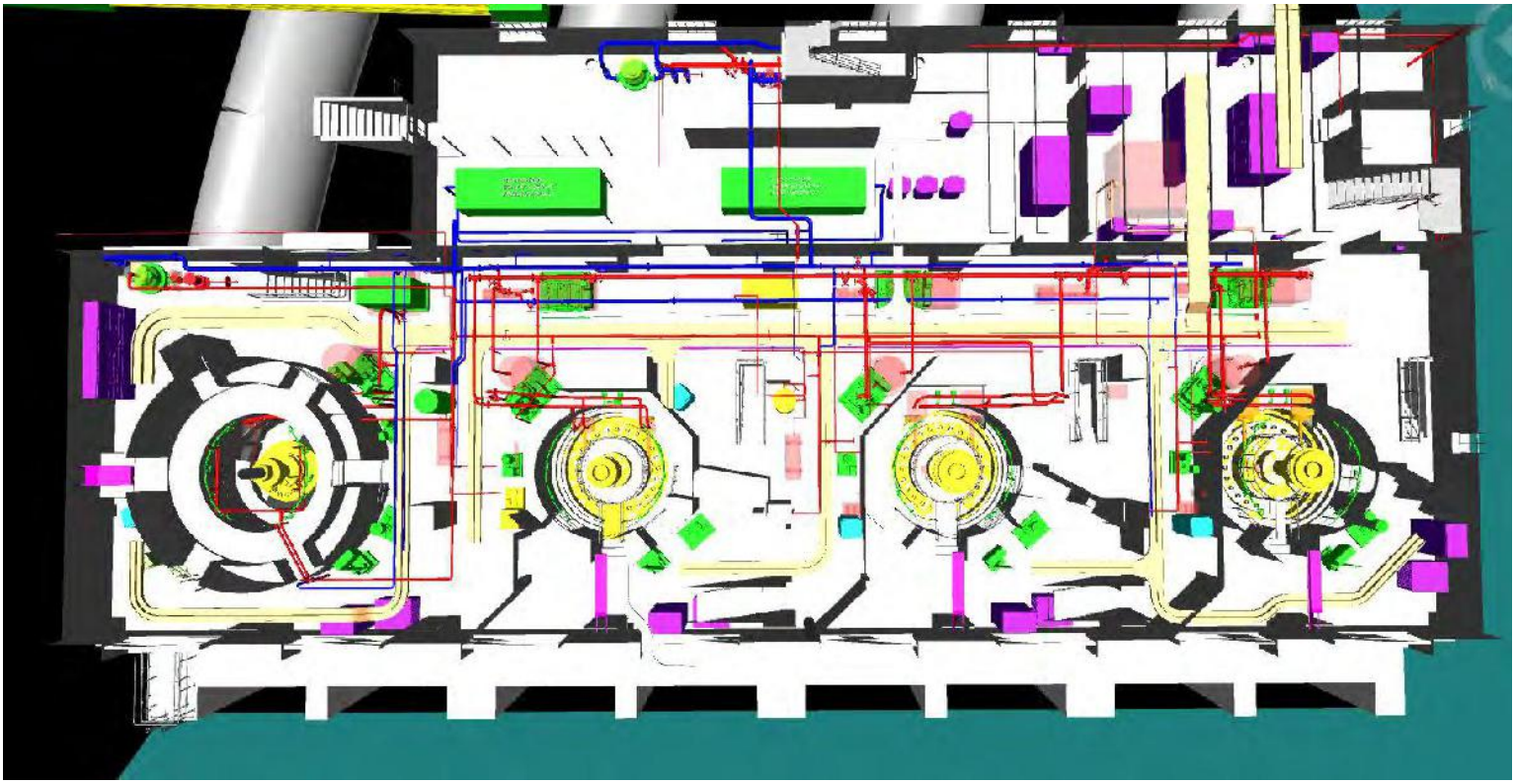


Figure 9. Model of turbine floor after modernization.

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.

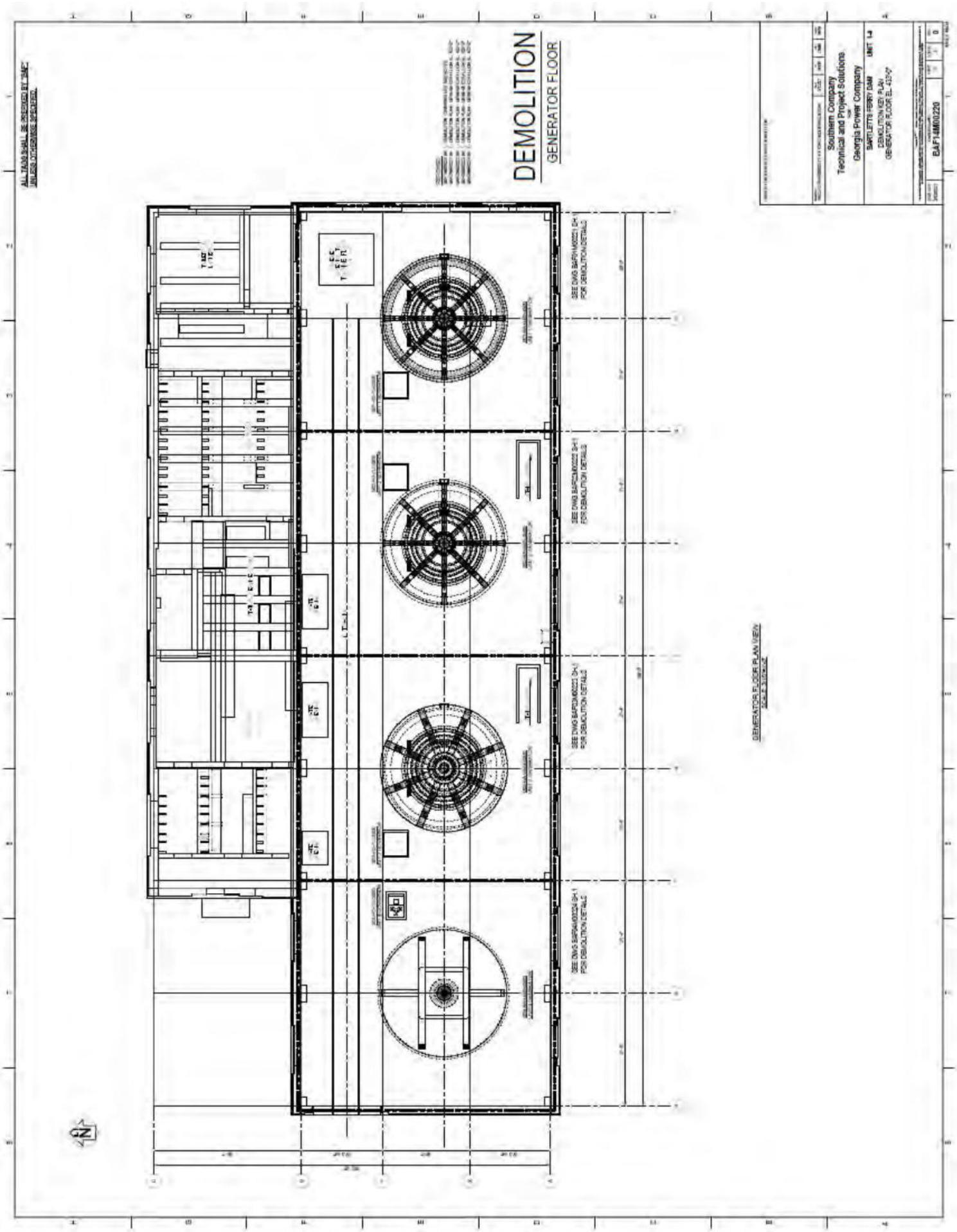


Figure 11. Current plan drawing of generator floor.

Written Correspondence with AHC

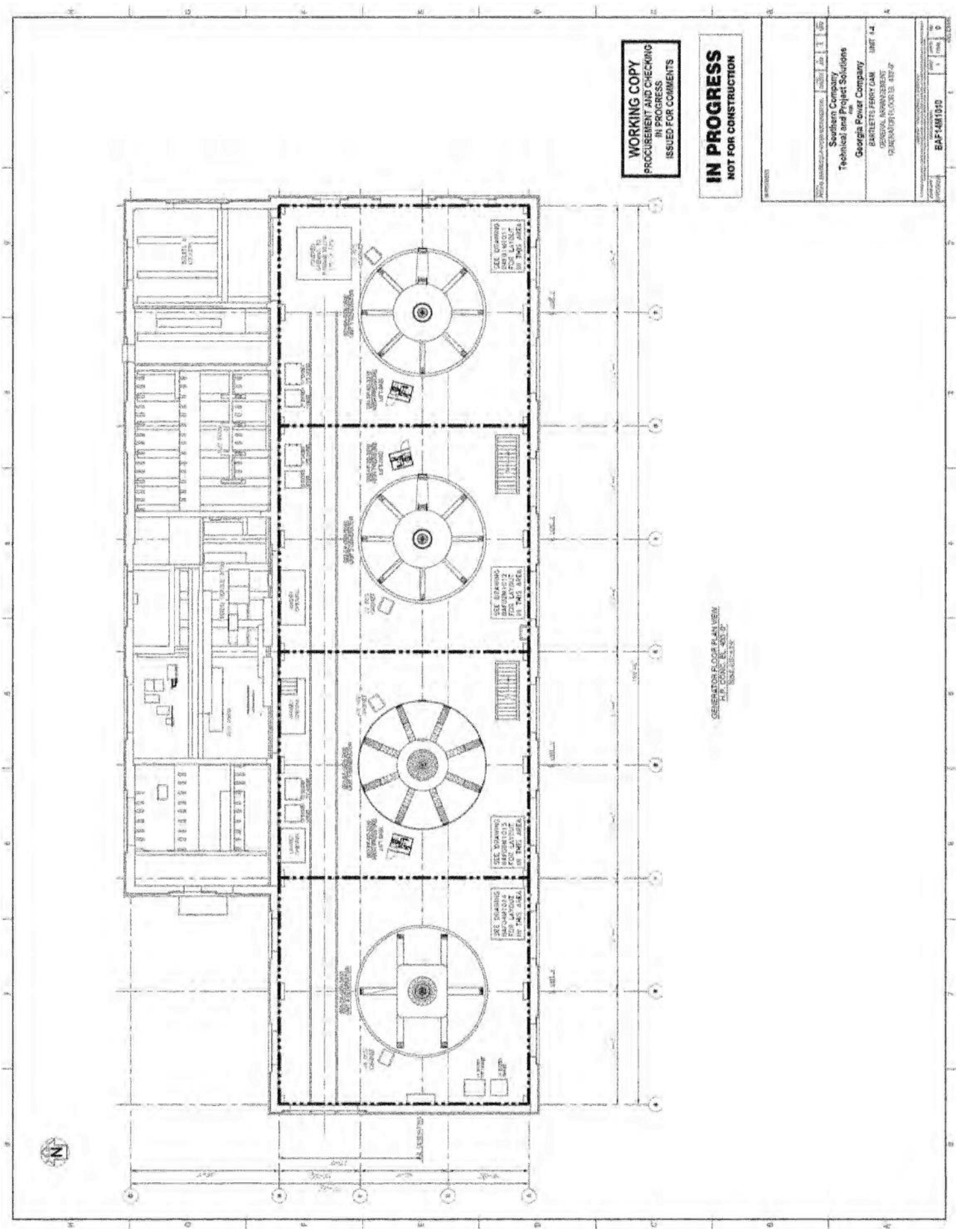


Figure 12. Plan drawing of generator floor after modernization.

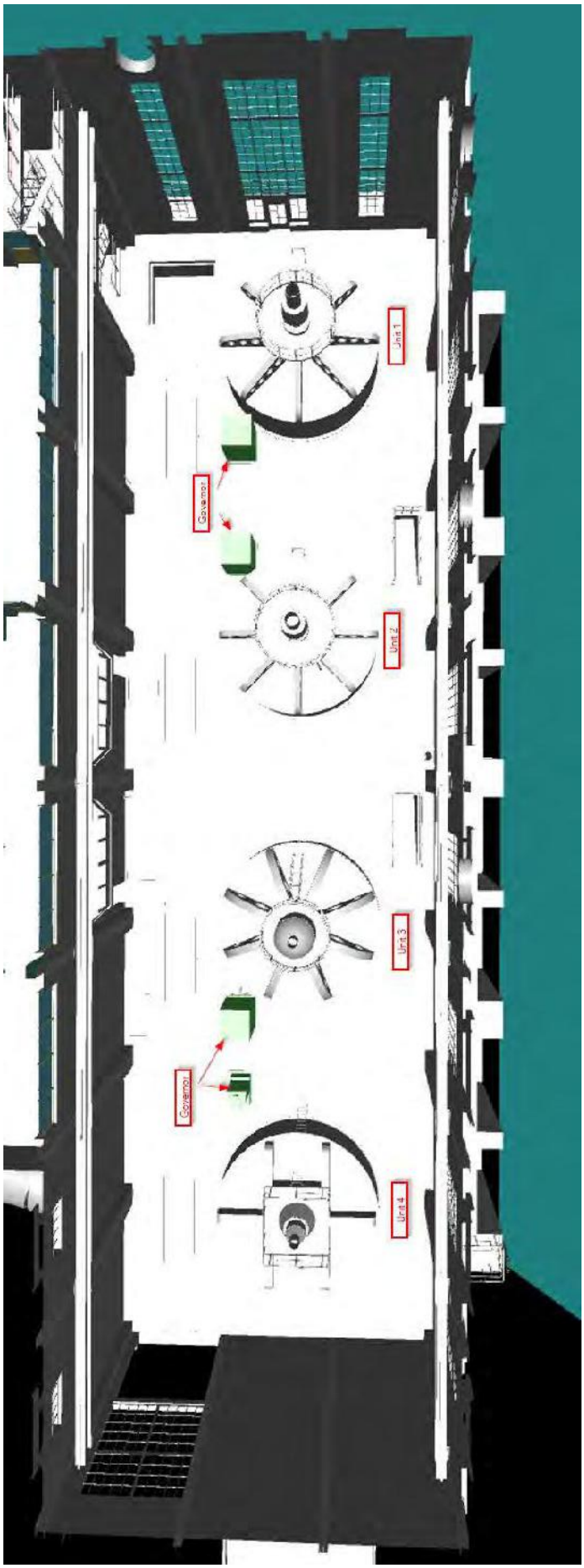


Figure 13. Model of generator floor before modernization.



Figure 14. Model of generator floor after modernization.

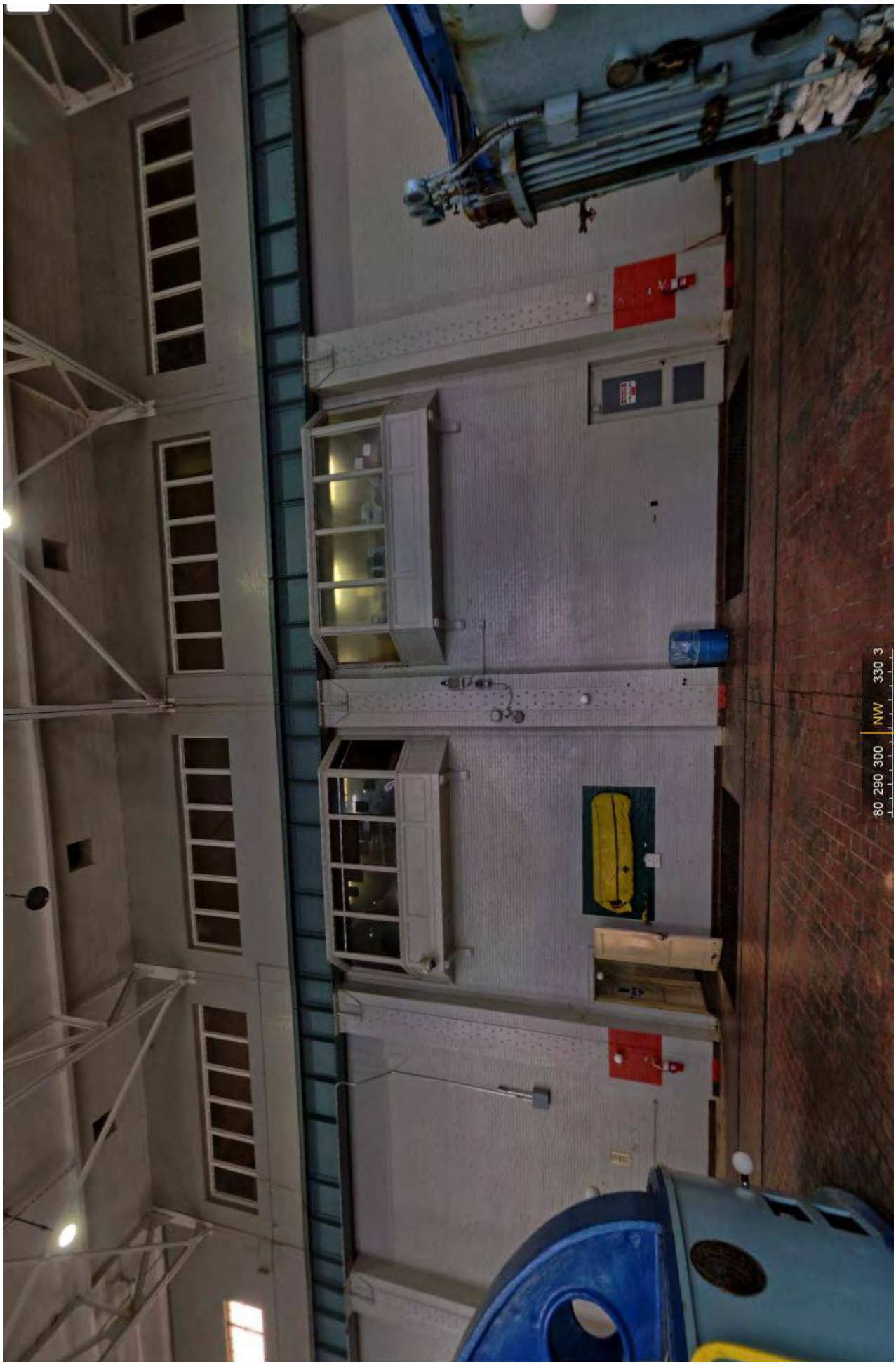


Figure 15. View from generator floor showing the original control room (bay windows) and the proposed new control room above.

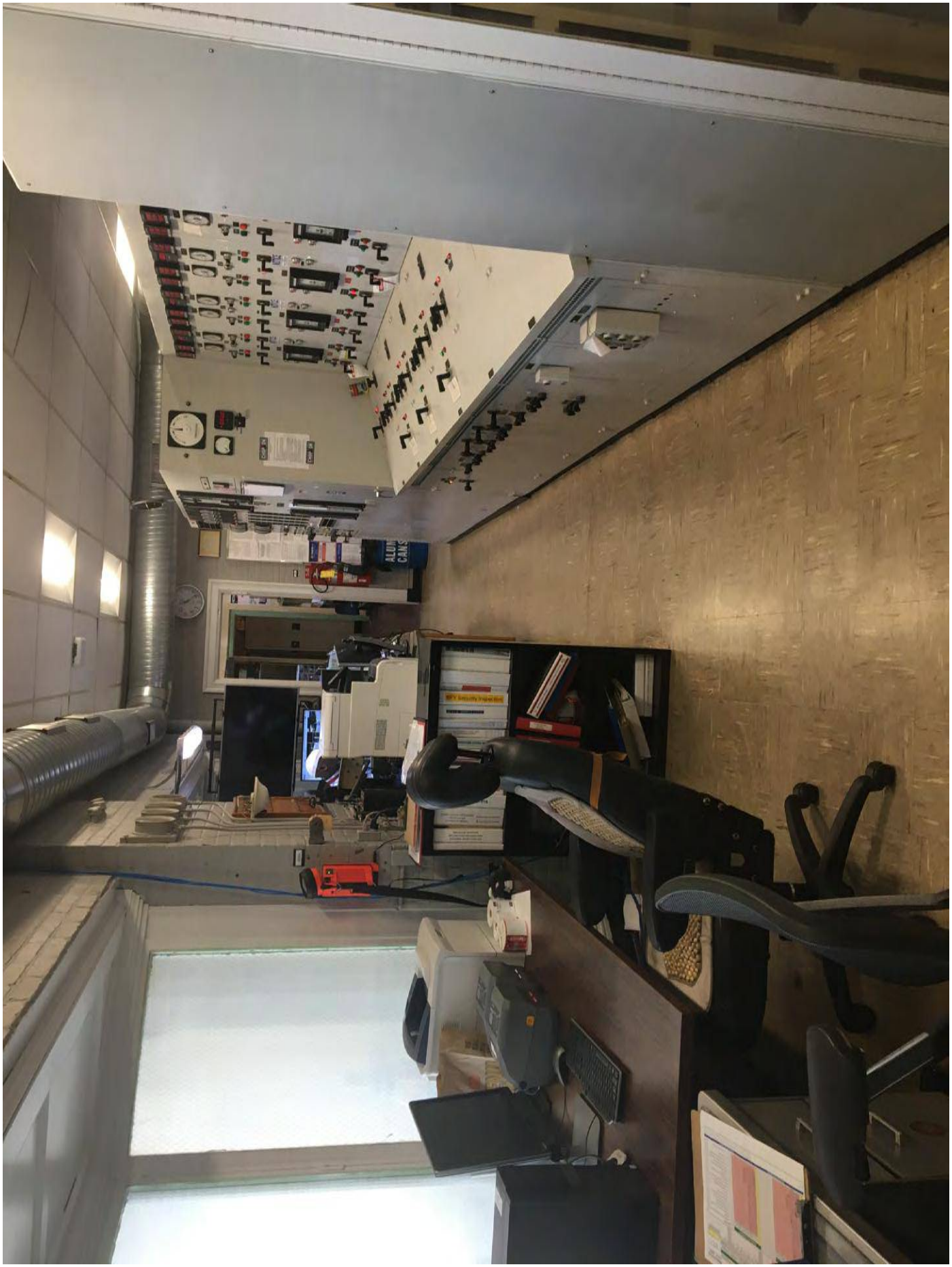


Figure 16. View of current control room.

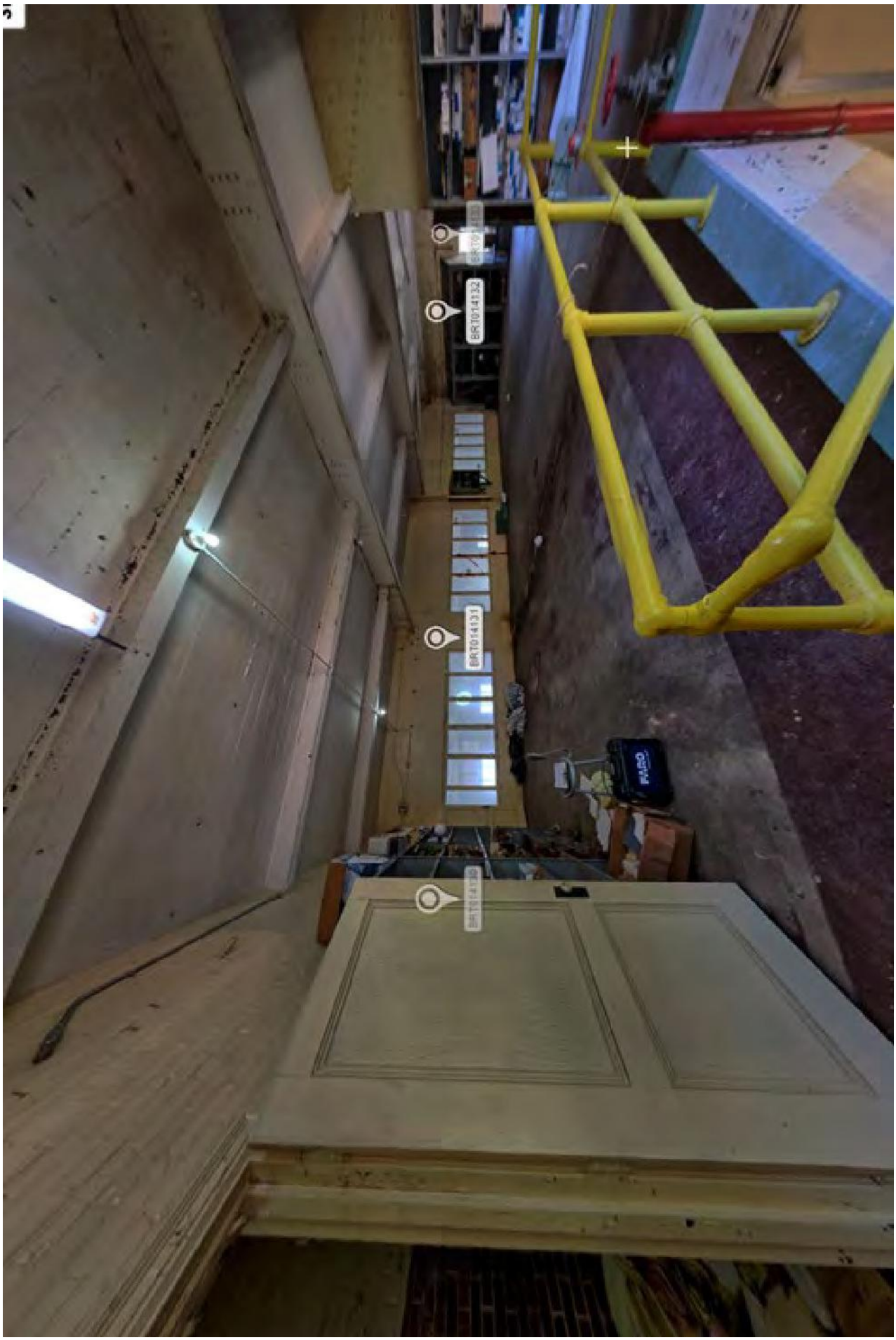


Figure 17. View of proposed new control room taken from a 3D scan.

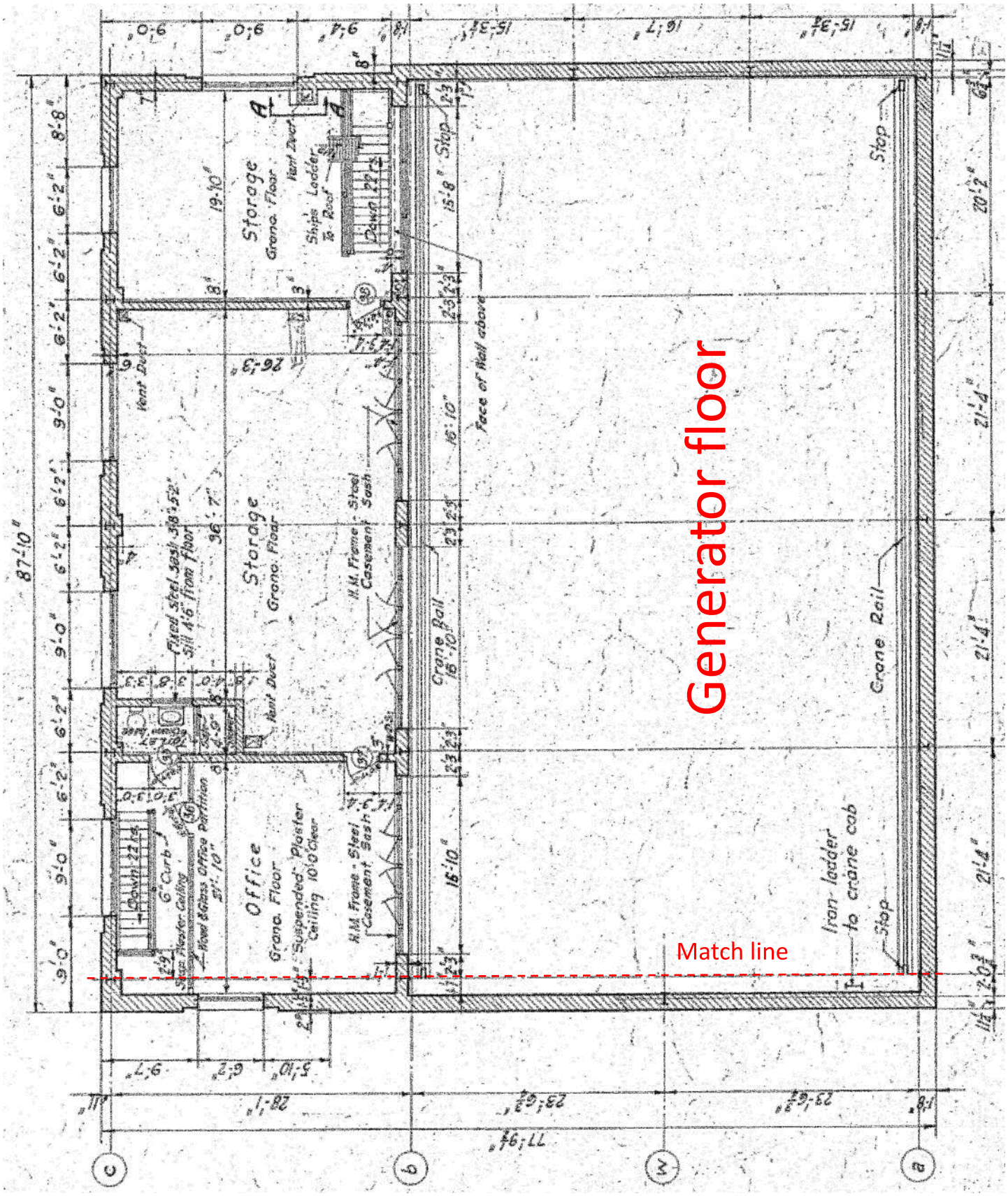


Figure 18. Plan drawing of original 1926 4th floor.

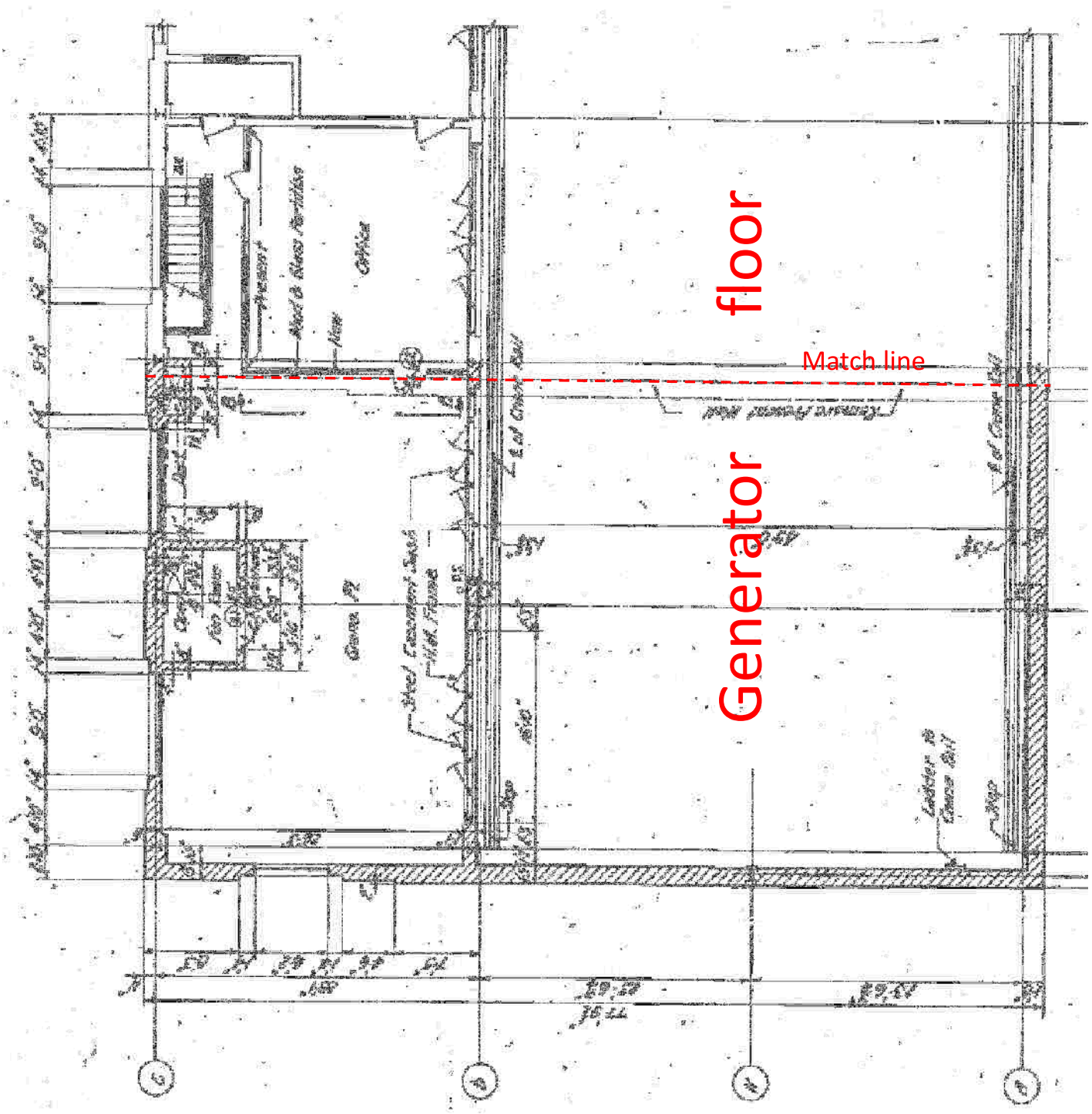


Figure 19. Plan drawing of 4th floor after 1928 expansion for Units 3 and 4.

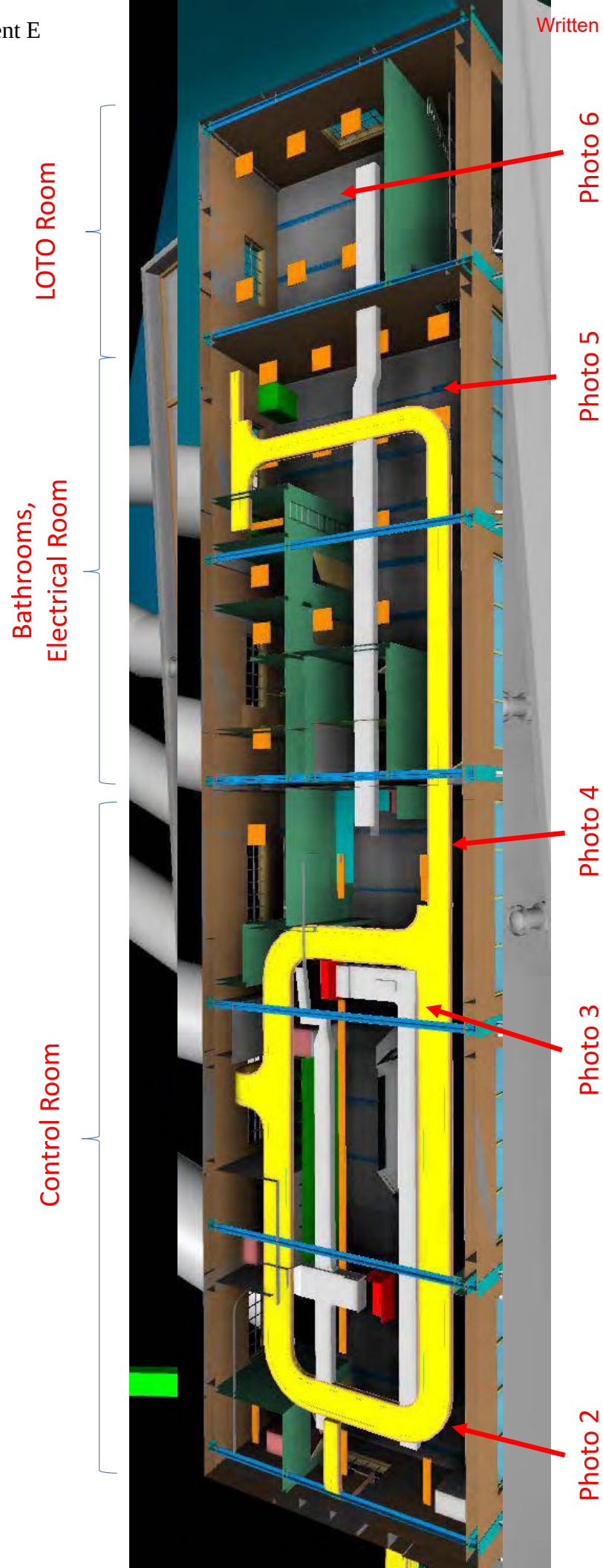


Figure 20. Overview of proposed 4th floor build out.



Figure 21. Model of proposed new control room.



Figure 22. Model of proposed new control room.

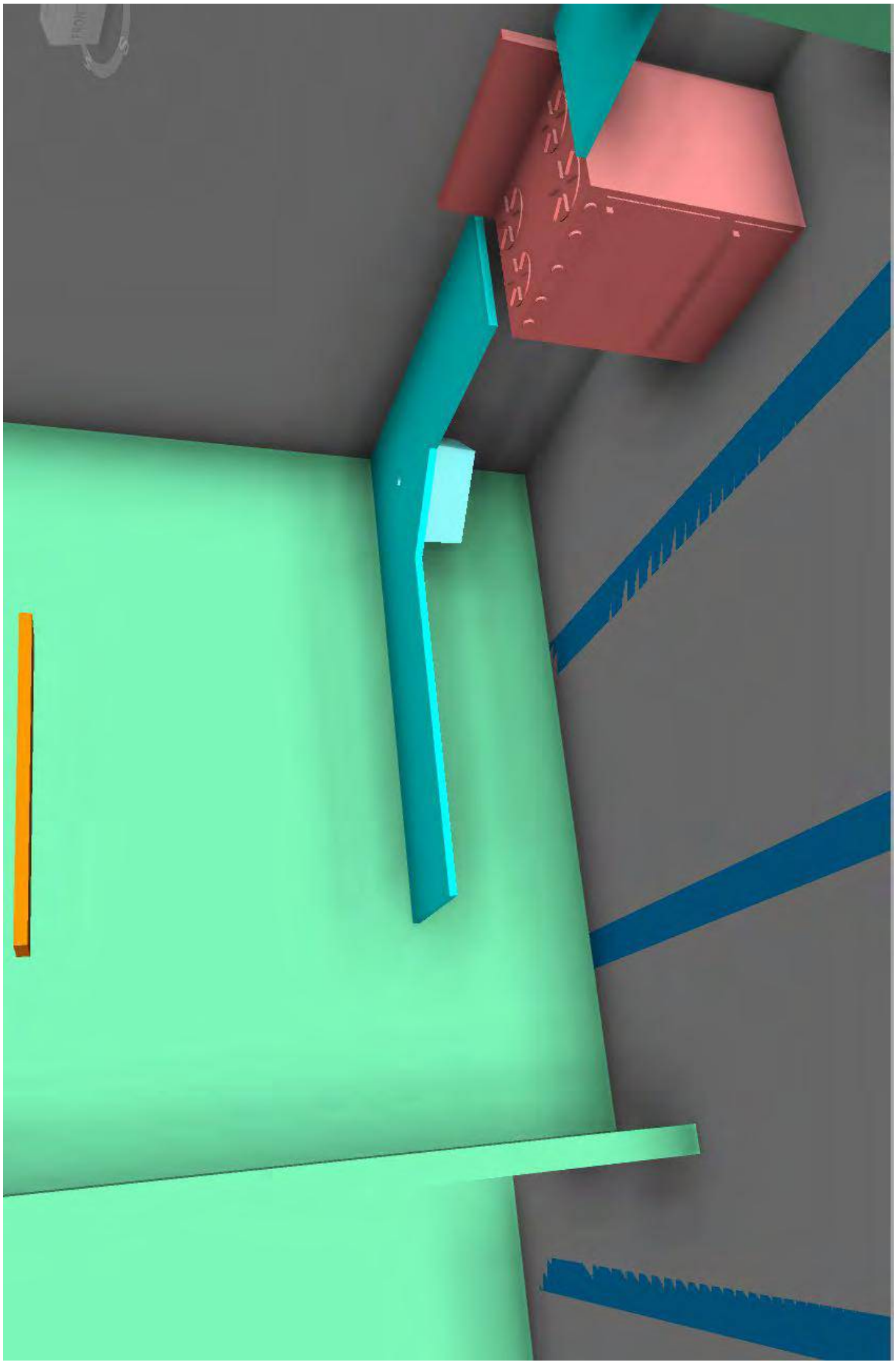


Figure 23. Model of proposed new kitchenette area.

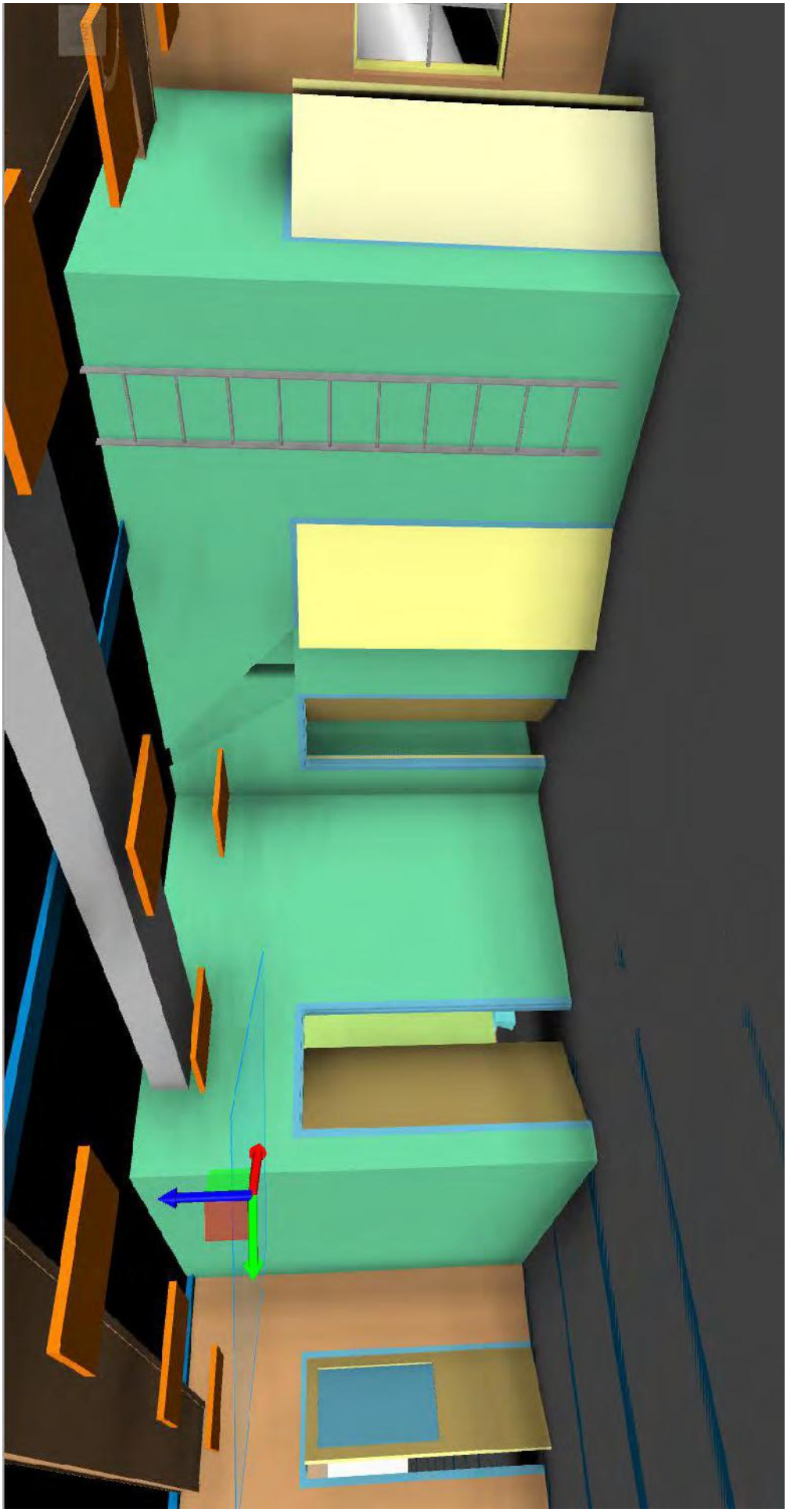


Figure 24. Model of proposed restroom, electrical room, and storage closet.

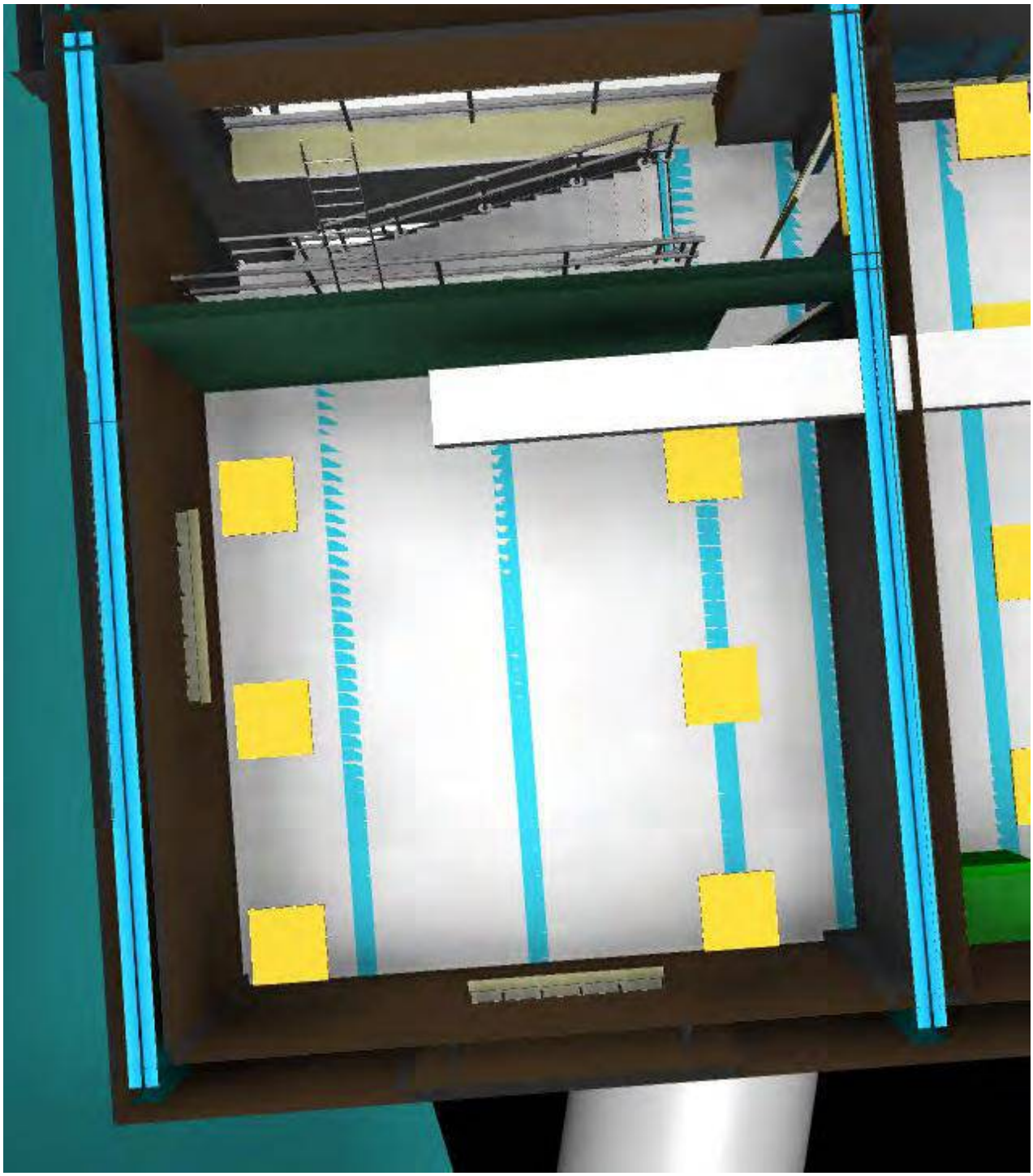


Figure 25. Model of proposed new LOTO room.

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

Written Correspondence with AHC

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 11 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.

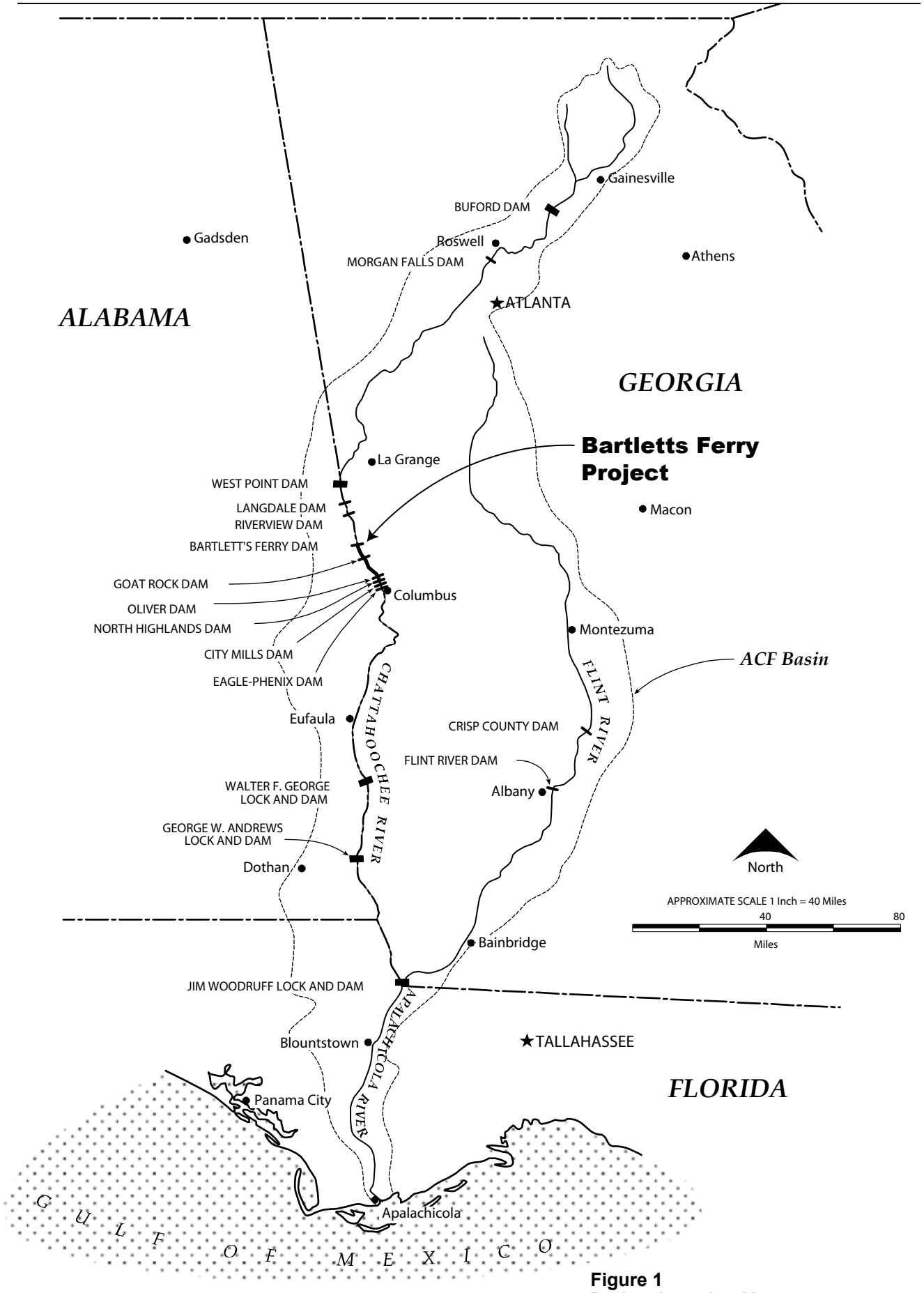


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company



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

Written Correspondence with ADCNR

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
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Georgia Power

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

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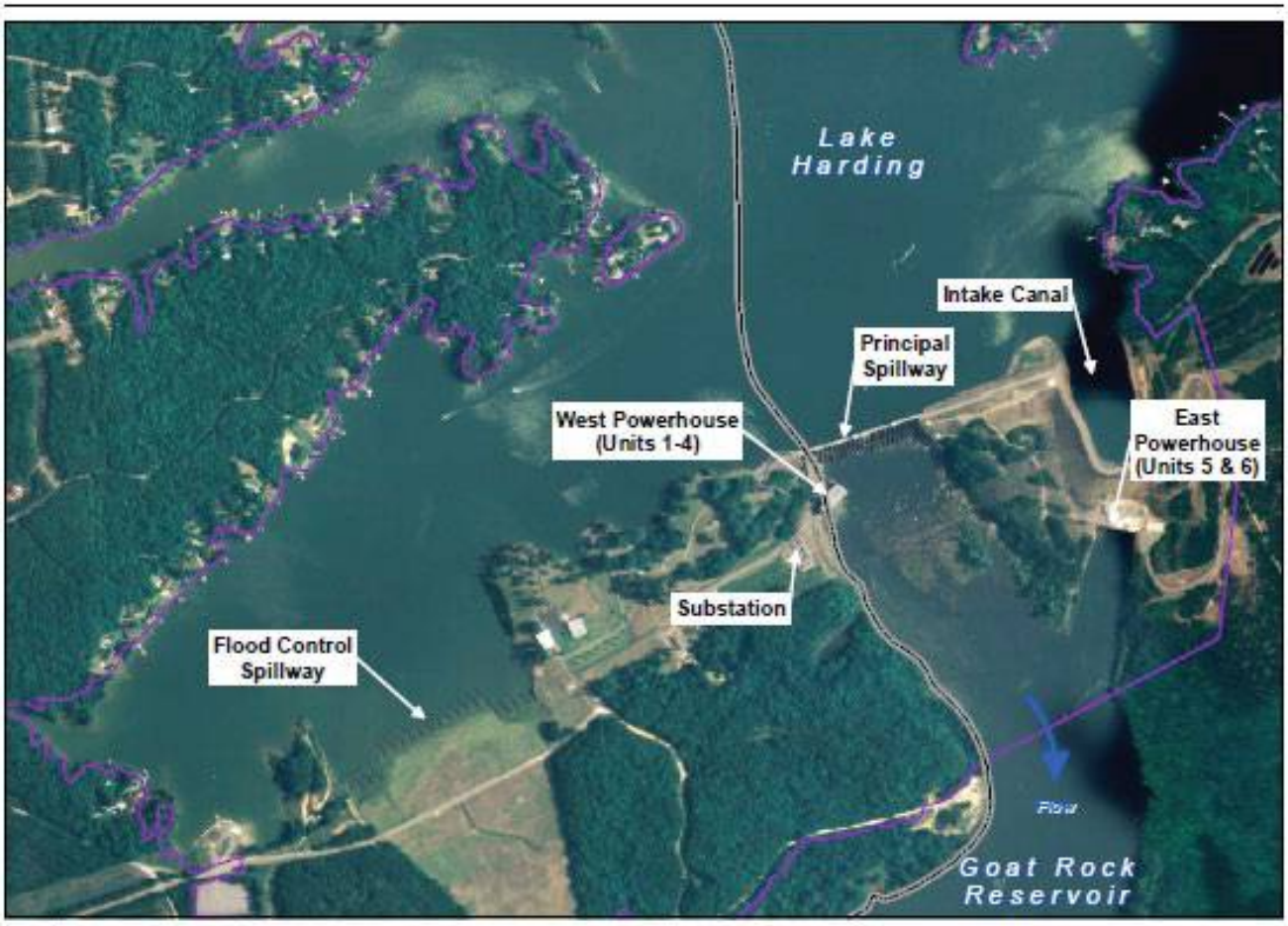


Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

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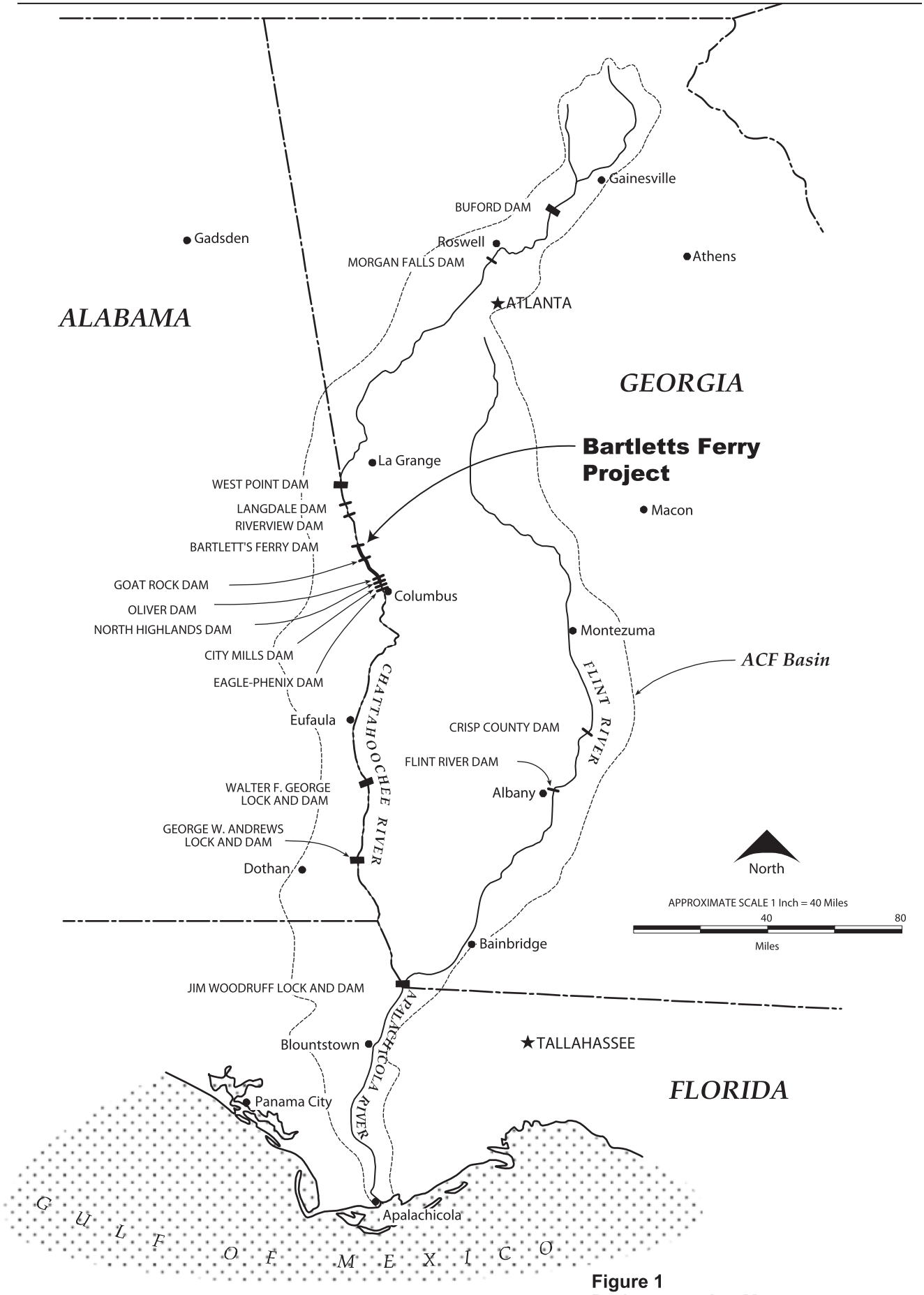


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

ATTACHMENT C

DRAFT DISSOLVED OXYGEN AND WATER TEMPERATURE MONITORING PLAN

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 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.

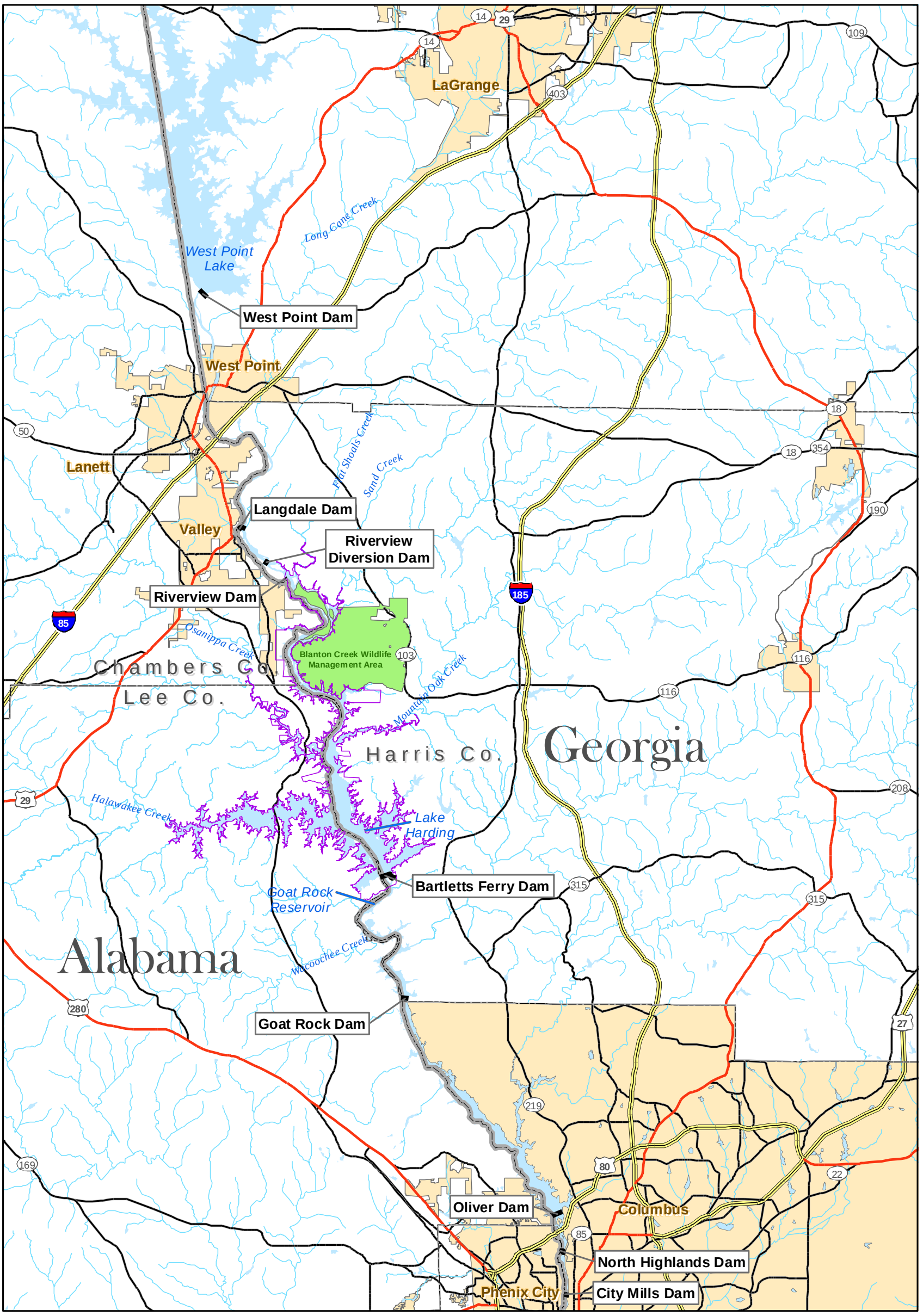
Monitoring data will be collected from a buoy anchored to the lake bottom in a manner to allow for fluctuations in water level due to dam releases and peak storm flows. A water quality monitoring sonde will be secured to/in the buoy in a manner that provides measurements of DO (mg/L) and water temperature (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.

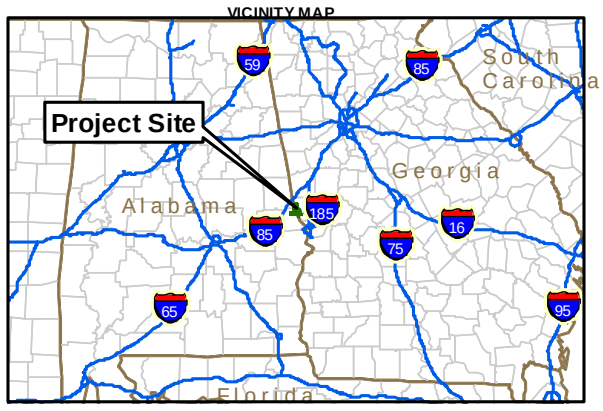
Equipment calibration records will be maintained by Georgia Power. Data will be downloaded from the sonde either directly or remotely on a frequent basis and stored in electronic files along with equipment maintenance logs.

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



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)

CH2MHILL

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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)

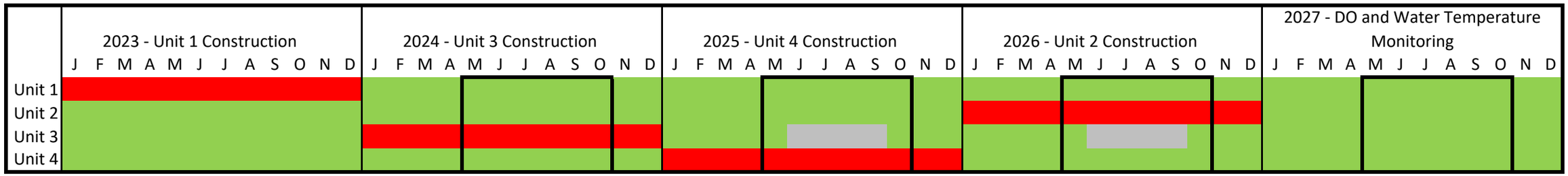
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Figure 3.
GR01 water quality monitoring location downstream of Bartletts Ferry Dam



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
- DO and Water Temperature Monitoring

ATTACHMENT D

REVISED EXHIBIT A – TRACK CHANGE VERSION

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 ~~October 1, 1977~~December 22, 2014, and expires December 22,~~14~~, 2044 ~~014~~. After the 2023-2026 upgrade, the ~~T~~total nameplate capacity of the development will be~~is~~ ~~173~~ 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

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

is planning to install new runners on Units 1 through 4 and rewind generators of 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.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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 will be ~~is~~ ~~173~~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 turbine~~four will be Voith Hydro 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.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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, 480 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~~ 27,000 hp (U1 & U2) and 26,000 hp (U3) at 112 feet of head and 150 rpm. ~~Units 1,2 and 3 t~~Turbines for Unit~~-~~s1 – 3 will be manufactured by Voith. ~~Turbines for Units 1 and 2 were manufactured by S. Morgan Smith and the turbine for Unit 3 was manufactured by Allis Chalmers.~~
	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~~ 33,500 hp at 112 feet of head and 150 rpm. ~~The t~~Turbine for Unit 4 ~~was~~

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Structure	General Item	Specific Description
		will be manufactured by Voith. ~~S. Morgan Smith.~~
	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 rated ~~15,000~~ 18,400 KW at 0.8 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 ~~15,000~~ 18,450 KW at 0.80 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~~23,400 KW at 0.80 p.f., ~~6,~~12,09~~0~~0 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-

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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-

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Exhibit A

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,

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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.

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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	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Turbine Manufacturer	~~S. Morgan Smith~~Voith	~~S. Morgan Smith~~Voith	~~Allis Chalmers~~Voith	~~S. Morgan Smith~~Voith	Hitachi	Hitachi
Rated Capacity of Turbine (hp)	2~~27~~,000	2~~27~~,000	2~~26~~,~~05~~00	33~~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

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	251,0100	215,1,000	224,409500	31125,0300	60,000	60,000
Voltage (volts)	12,000	12,000	12,000	6,90012,000	13,800	13,800
Amperage (amps)	1,010208	1,010208	1,085174	2,0901,506	2,510	2,510
Power Factor	0.8	0.8	0.8	0.8	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 (KW)	15,000 18,400	15,000 18,400	15,000 18,450	20,000 23,400	54,000	54,000

ATTACHMENT E

REVISED EXHIBIT A – CLEAN VERSION

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

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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, and expires December 22,, 2044 . After the 2023-2026 upgrade, the 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 rewind generators of 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.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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 2027 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, four will be Voith Hydro 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.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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, 480 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 27,000 hp (U1 & U2) and 26,000 hp (U3) at 112 feet of head and 150 rpm. Turbines for Units1 – 3 will be manufactured by Voith.
	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 33,500 hp at 112 feet of head and 150 rpm. Turbine for Unit 4 will be manufactured by Voith.
	Turbine Unit 4 Auxiliary Equipment	Actuator type oil pressure governor, oil pumps, accumulator tank, and other auxiliary equipment.

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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 rated 18,400 KW at 0.8 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 18,450 KW at 0.80 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 23,400 KW at 0.80 p.f., 12,000 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.

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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.

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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,

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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	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Turbine Manufacturer	Voith	Voith	Voith	Voith	Hitachi	Hitachi
Rated Capacity of Turbine (hp)	27,000	27,000	26,500	33,500	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	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

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	25,100	25,100	24,409	31,300	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	0.8	0.8	0.8	0.8	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 (KW)	18,400	18,400	18,450	23,400	54,000	54,000

ATTACHMENT F

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

ATTACHMENT A

INITIAL STATEMENT AND APPLICATION FOR NON-CAPACITY RELATED LICENSE AMENDMENT

DRAFT

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Georgia Power Company **FERC Project No. 485**

APPLICATION FOR NON-CAPACITY RELATED AMENDMENT OF LICENSE

Pursuant to Section 4.200 of the Federal Energy Regulatory Commission's (Commission or FERC) regulations,[1] Georgia Power Company (Georgia Power), hereby submits this Application for Non-Capacity Related Amendment of License (Application) for the Bartletts Ferry Project, FERC Project No. 485 (Project). In filing this Application, Georgia Power seeks to amend the license[2] by upgrading the four generating units in the west Bartletts Ferry powerhouse.

INITIAL STATEMENT

1. Georgia Power applies to FERC under 18 CFR § 4.201 for a non-capacity amendment of the license for the Bartletts Ferry Project, a major existing waterpower project with capacity of over 5 megawatts (MW), as generally described in the attached Exhibit A. This Application is for a non-capacity amendment to upgrade the four generating units in the west Bartletts Ferry powerhouse, which includes replacing the turbine runners, generators, and intake trashracks. The nameplate rated capacity[3] is 15 MW each for units 1 through 3 and 20 MW for unit 4. Following the upgrade, units 1 through 3 will be approximately 18 MW and unit 4 will be approximately 23 MW. Existing maximum hydraulic capacity is approximately 2,330 cubic feet per second (cfs) for units 1 and 2, approximately 2,260 cfs for unit 3, and 2,880 cfs for unit 4.
2. The exact name and business address and telephone number of the applicant are:

   Georgia Power Company
   241 Ralph McGill Boulevard, NE
   BIN 10193
   Atlanta, Georgia 30308-3374

   Communication and correspondence pertaining to this Application should be addressed to:

   Courtenay O'Mara
   241 Ralph McGill Boulevard, NE
   BIN 10193
   Atlanta, Georgia 30308-3374
   404-506-7219

[1] 18 C.F.R. § 4.200.
[2] *Georgia Power Company*, 149 FERC ¶ 62,210 (2014).
[3] Nameplate rated capacity is "best gate".

3. Georgia Power is a domestic corporation and is licensee for the waterpower project, designated as Project No. 485 in the records of FERC, issued on December 22, 2014.

4. The amendments of license proposed and the reason(s) why the proposed changes are necessary, are:

    a. CURRENT CONDITIONS

    The Bartletts Ferry Project is located on the mainstem Chattahoochee River along the Georgia-Alabama border in Harris County, Georgia, and Lee and Chambers Counties, Alabama. The Project consists of a dam, two powerhouses (west and east), and a reservoir, known as Lake Harding. The Project dam is located at river mile (RM) 177.9, approximately 23.5 miles downstream of the U.S. Army Corps of Engineers' West Point Dam (RM 201.4).

    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 and two trash gates. 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, then to the east powerhouse. 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 that flows into the backwaters of the Goat Rock Reservoir, part of the separately licensed Middle Chattahoochee Project.[4] The west powerhouse discharges to an approximately 1,700-foot-long backwater section of Goat Rock Reservoir. Power from the four west units is passed to a substation located adjacent to the powerhouse. 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, primarily to meet demand of the Southern Electric System during peak periods of the day. During periods of low 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 efficiently use the inflow without spilling water.

    In accordance with the FERC license issued December 22, 2014, 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 taken for generation, resulting in improved dissolved oxygen (DO) in the tailrace. A 3-year monitoring study conducted from 2015 through 2017 demonstrated that the stoplog installation resulted in improved DO that meets the 4.0 milligram per liter (mg/L) instantaneous and the 5.0 mg/L daily Georgia water quality standards for DO. The Project's east powerhouse located on the eastern side of the river achieved the Georgia DO water quality standards without modifications.

    b. PROPOSAL

[4] *Georgia Power Company*, 109 FERC ¶ 62,246 (2004).

The proposed scope of work for the Bartletts Ferry Project includes the following:

- Replace existing turbine runners
- Rehabilitate generators
- Install new trashracks

1) Georgia Power proposes to upgrade the four generating units in the west powerhouse. West powerhouse work is scheduled to begin in 2023, with a unit upgrade each year beginning in January 2023, 2024, 2025, and 2026.

   Table 1 shows 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.

TABLE 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

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). Following the upgrade and with only a 5 cfs change in maximum hydraulic capacity, Georgia Power's operations at the Bartletts Ferry Project will remain largely unchanged.

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 operating, 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 and as such, only two aerating units are needed in mixed flow (aerating plus non aerating) to achieve Georgia's water quality standards for DO. 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.

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 (ft/s) 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. 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 ft/s 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.

To facilitate the generating unit upgrade, Georgia Power may need to implement a reservoir drawdown. If a drawdown is needed, Article 401 requires consultation with the Georgia Department of Natural Resources (Georgia DNR), the Alabama Department of Conservation and Natural Resources (ADCNR) and U.S. Fish and Wildlife Service (USFWS) and notification to FERC at least 10 days in advance of implementing the drawdown. During consultation on this Application, the Alabama Department of Environmental Management (ADEM) requested that Georgia Power notify ADEM of scheduled drawdowns associated with upgrading the generating units; therefore, Georgia Power will also notify ADEM should a drawdown be necessary (and provide boat ramp elevations) to complete the upgrade. Documentation of consultation conducted on the Application is included in Attachment B.

2) Section 7(a)(2) of the Endangered Species Act of 1973 requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of their designated critical habitat. 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 ADCNR is authorized by Alabama Code section 9-2-2 to "protect, conserve, and increase the wildlife of the state" and by Alabama Administrative Code section 220-2-.92 to protect nongame species.

   In preparing the Application, Georgia Power reviewed the USFWS Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) tool and consulted with USFWS, Georgia DNR, and ADCNR. The federally endangered plant, Relict Trillium (*Trillium reliquum*), the threatened Wood Stork (*Mycteria americana*), Purple Bankclimber (*Elliptoideus sloatianus*), Georgia Rockcress (*Arabis georgiana*), and the candidate species Monarch Butterfly (*Danaus plexippus*) are known to occur in the project vicinity, but outside the Bartletts Ferry Project boundary. Should a drawdown be required to complete the proposed work described in this 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.

3) Section 106 of the National Historic Preservation Act (NHPA) requires FERC to consider any adverse effects to historic properties before issuing an order approving a license

amendment. FERC executed a Programmatic Agreement (PA) (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 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 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 be included in a memorandum of agreement under Section 106 consultation.

4) (i) The statutory or regulatory requirements of the state(s) in which the project would be located that affect the project as proposed with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes are as follows:

   1) Section 401(a) of the Clean Water Act (CWA) of 1977 requires that an applicant for a federal license to construct or operate facilities, which may result in any discharge into navigable waters, must provide the federal agency with a certificate from the state in which the discharge originates or from the appropriate interstate water pollution control agency. In Georgia, Water Quality Certifications (WQC) are issued by the Georgia Environmental Protection Division (Georgia EPD) under O.C.G.A. Title 12 Chapter 5-21.

   (ii)The steps which the Applicant has taken, or plans to take to comply with each of the laws cited above, are:

   The work proposed in this 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 this license amendment. Georgia EPD will require 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 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. Documentation of consultation specific to the plan is provided in Attachment B.

   The Application proposes a change to the existing dissolved oxygen enhancement measures at the Project. The draft Dissolved Oxygen and Water Temperature Monitoring Plan (Attachment C) will demonstrate Georgia Power's ability to continue to comply with Georgia DO and temperature water quality standards following the unit upgrades. Because the Chattahoochee River also borders the state of Alabama, Georgia Power

provided a copy of the draft Application and draft Dissolved Oxygen and Water Temperature Monitoring Plan to ADEM.

REQUIRED EXHIBITS

In accordance with 18 CFR §4.201(c), only the following applicable exhibit(s) that require revision are made part of this Application:

a) Exhibit A – Project Description

Georgia Power is attaching a revised Exhibit A in track change (Attachment D) and a clean version of Exhibit A (Attachment E). Georgia Power will file any updates to Exhibit F after the as-built drawings are complete if necessary.

Georgia Power also requests amendment of Article 403 Tailrace Water Quality Enhancement and Article 404 Tailrace Water Quality Monitoring of the project license to implement the proposed Dissolved Oxygen and Water Temperature Monitoring Plan following the unit upgrades at the Bartletts Ferry west powerhouse.

CONSULTATION

In accordance with Commission regulations under 18 CFR §4.38(a)(7), Georgia Power contacted the following agencies to consult on the Application:

a. U.S. Fish and Wildlife Service
b. Georgia Department of Natural Resources - Environmental Protection Division
c. Georgia Department of Natural Resources -Wildlife Resources Division
d. Georgia Department of Community Affairs - Historic Preservation Division
e. Alabama Department of Environmental Management
f. Alabama Department of Conservation and Natural Resources
g. Alabama Historical Commission

Georgia Power submitted a summary of the proposed upgrade to the agencies listed above and provided an opportunity to meet and discuss it between December 2021 - April 2022. Georgia Power also provided the agencies with the draft Application, including the initial statement, revised Exhibit A, and the draft Dissolved Oxygen and Water Temperature Monitoring Plan for review and comment on May 3, 2022. Documentation of consultation is provided in Attachment B.

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LITERATURE CITED

Ingram, K., K. Dow, L. Carter, J. Anderson, eds. 2013. Climate of the Southeast United States: Variability, change, impacts, and vulnerability. Washington DC: Island Press.

U.S. Fish and Wildlife Service (USFWS). 2007. Wood Stork (*Mycteria americana*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Southeast Region Jacksonville Ecological Services Field Office, Jacksonville, Florida.

U.S. Fish and Wildlife Service (USFWS). 2020. Purple Bankclimber (*Elliptoides sloatianus*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service South Atlantic-Gulf Region Panama City Ecological Services Field Office, Panama City, Florida.

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ATTACHMENT C

DRAFT DISSOLVED OXYGEN AND WATER TEMPERATURE MONITORING PLAN

DRAFT

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 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.

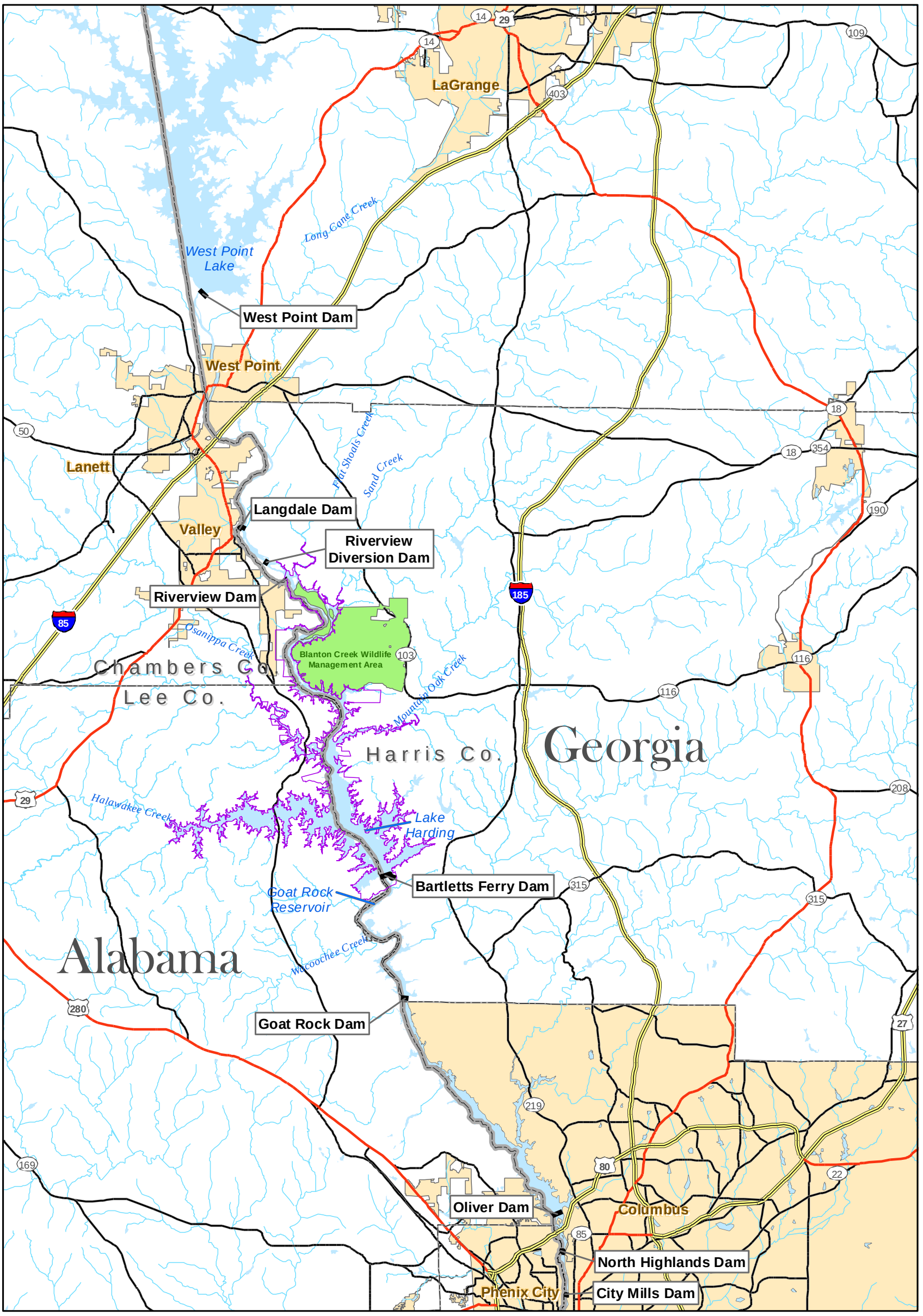
Monitoring data will be collected from a buoy anchored to the lake bottom in a manner to allow for fluctuations in water level due to dam releases and peak storm flows. A water quality monitoring sonde will be secured to/in the buoy in a manner that provides measurements of DO (mg/L) and water temperature (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.

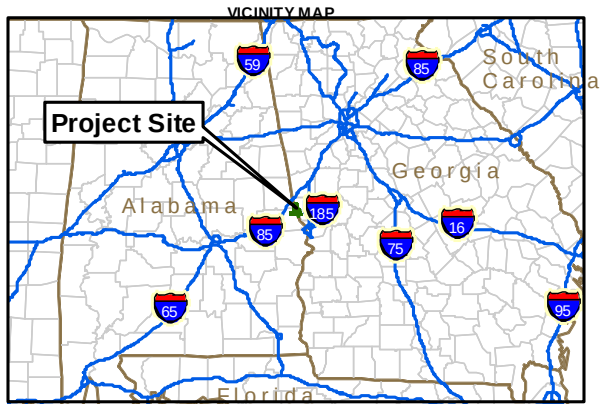
Equipment calibration records will be maintained by Georgia Power. Data will be downloaded from the sonde either directly or remotely on a frequent basis and stored in electronic files along with equipment maintenance logs.

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



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)

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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)

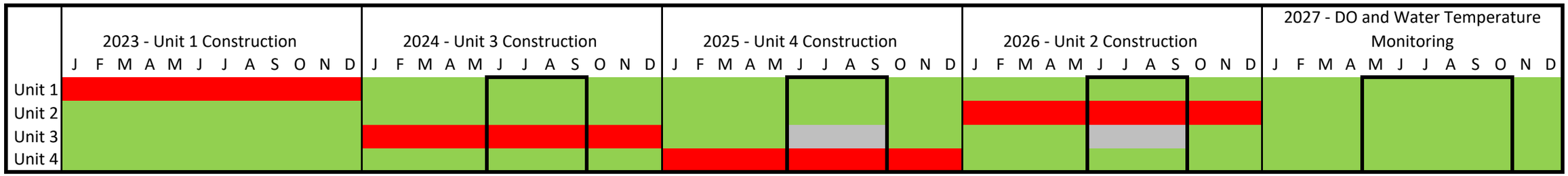
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Figure 3.
GR01 water quality monitoring location downstream of Bartletts Ferry Dam



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
- DO and Water Temperature Monitoring

ATTACHMENT D

REVISED EXHIBIT A – TRACK CHANGE VERSION

DRAFT

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 ~~October 1, 1977~~December 22, 2014, and expires December 22,~~14~~, 2044 ~~014~~. After the 2023-2026 upgrade, the ~~T~~total nameplate capacity of the development will be~~is~~ ~~173~~ 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

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

is planning to install new runners on Units 1 through 4 and rewind generators of 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.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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 will be ~~is~~ ~~173~~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 turbine~~four will be Voith Hydro 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.

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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, 480 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~~ 27,000 hp (U1 & U2) and 26,000 hp (U3) at 112 feet of head and 150 rpm. ~~Units 1,2 and 3 t~~Turbines for Unit-s1 – 3 will be manufactured by Voith. ~~Turbines for Units 1 and 2 were manufactured by S. Morgan Smith and the turbine for Unit 3 was manufactured by Allis Chalmers.~~
	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~~ 33,500 hp at 112 feet of head and 150 rpm. ~~The t~~Turbine for Unit 4 ~~was~~

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

Structure	General Item	Specific Description
		will be manufactured by Voith. ~~S. Morgan Smith.~~
	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 rated ~~15,~~ ~~000~~ 18,400 KW at 0.8 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 18~~15~~,0~~45~~0 KW at 0.80 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 2~~5~~3~~0~~,~~40~~00 KW at 0.80 p.f., ~~6,~~12,09~~0~~0 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-

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Exhibit A

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-

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Exhibit A

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,

Georgia Power Company
Bartletts Ferry Project P-485
Exhibit A

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	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Turbine Manufacturer	~~S. Morgan Smith~~Voith	~~S. Morgan Smith~~Voith	~~Allis Chalmers~~Voith	~~S. Morgan Smith~~Voith	Hitachi	Hitachi
Rated Capacity of Turbine (hp)	2~~27~~,000	2~~27~~,000	2~~26~~,~~05~~00	33~~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

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	251,0100	215,1,000	224,409500	3125,0300	60,000	60,000
Voltage (volts)	12,000	12,000	12,000	6,90012,000	13,800	13,800
Amperage (amps)	1,010208	1,010208	1,085174	2,0901,506	2,510	2,510
Power Factor	0.8	0.8	0.8	0.8	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 (KW)	2015,010018,400	2015,100018,400	1915,050018,450	250,00023,400	54,000	54,000

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

ATTACHMENT B

CONSULTATION SUMMARY

DRAFT

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

EXTERNAL MAIL: Caution Opening Links or Files

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

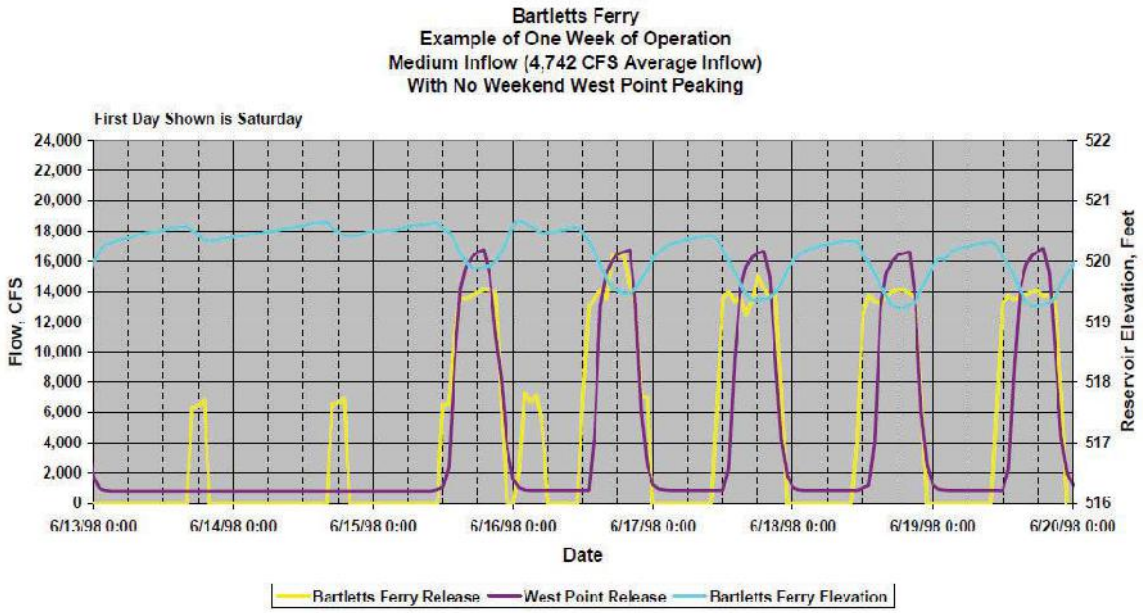


FIGURE 3

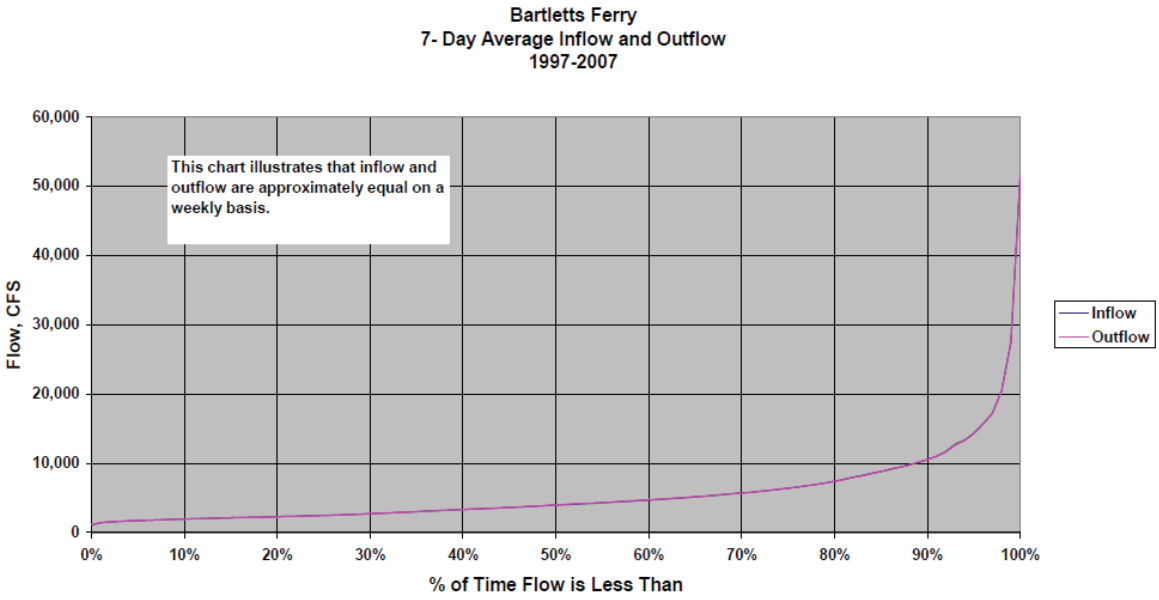


FIGURE 21

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

EXTERNAL MAIL: Caution Opening Links or Files

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
(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 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

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

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.

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

Table 2
Data on Bartletts Ferry Turbines

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1	15	2,330	1926
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3	15	2,260	1928
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6	54	7,200	1985

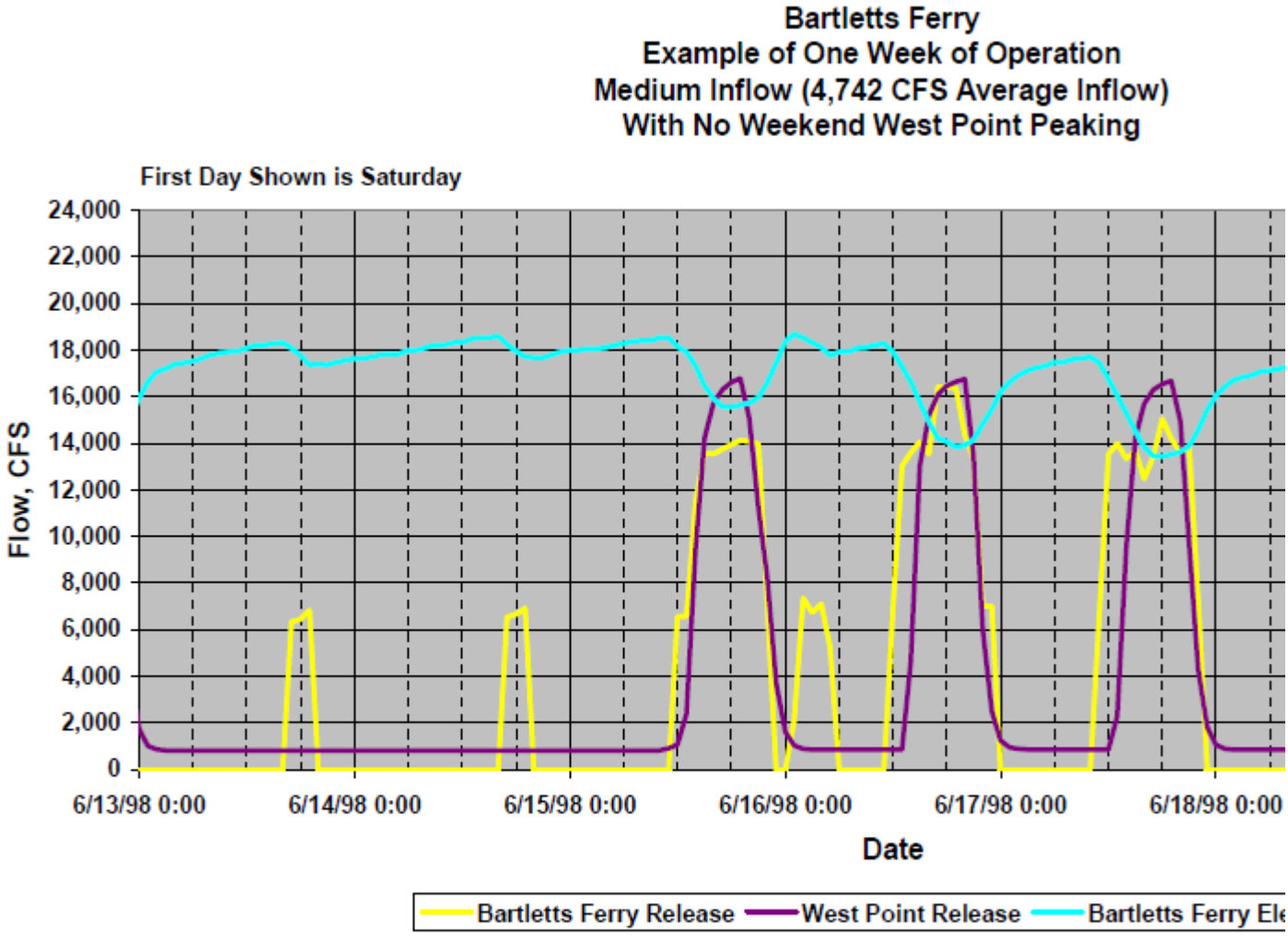


FIGURE 3

Written Correspondence with USFWS

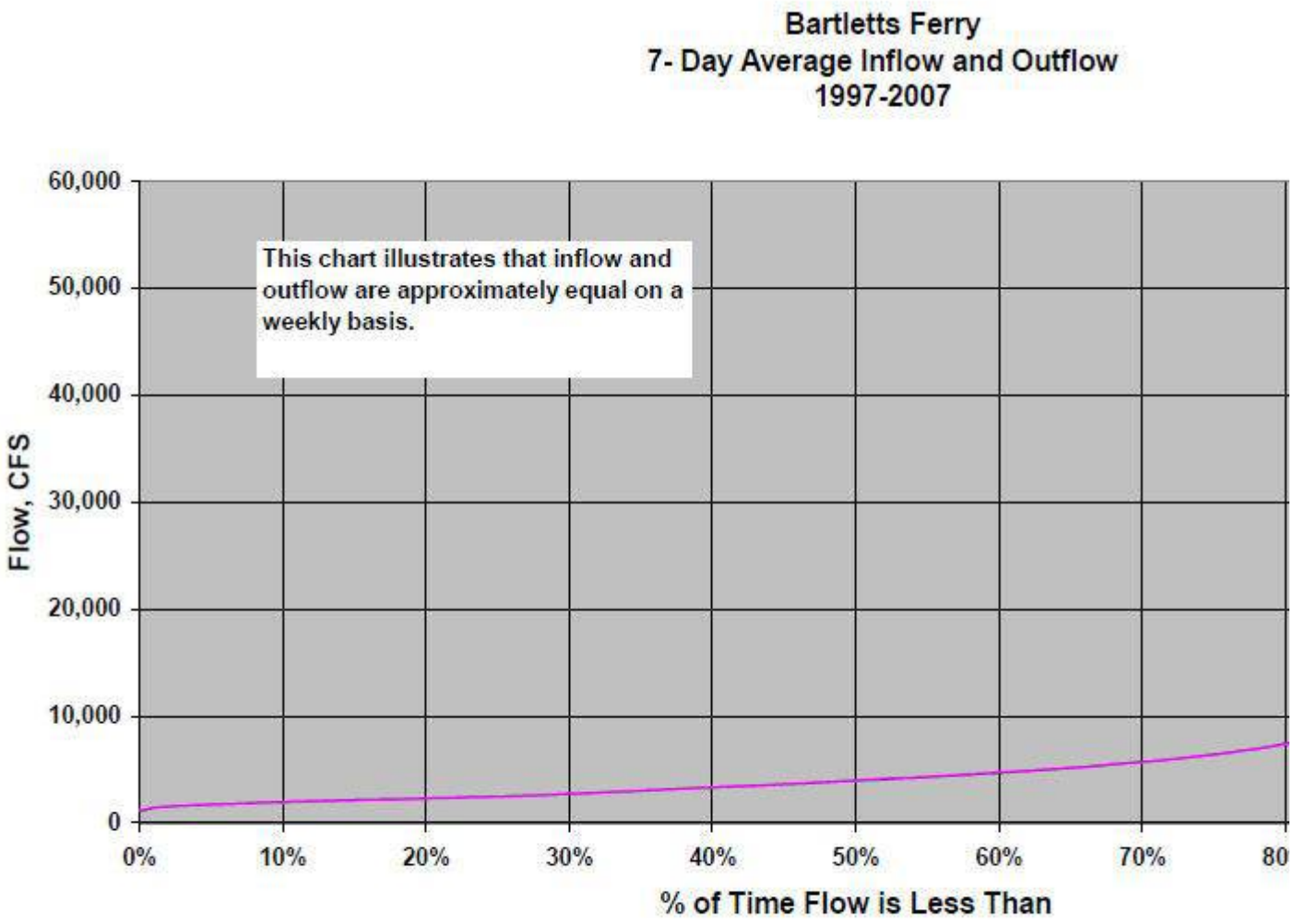


FIGURE 21

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

EXTERNAL MAIL: Caution Opening Links or Files

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
(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 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

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

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)

Attachment to Georgia Power's 2/18/2022 Email to USFWS

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.

Attachment to Georgia Power's 2/18/2022 Email to USFWS

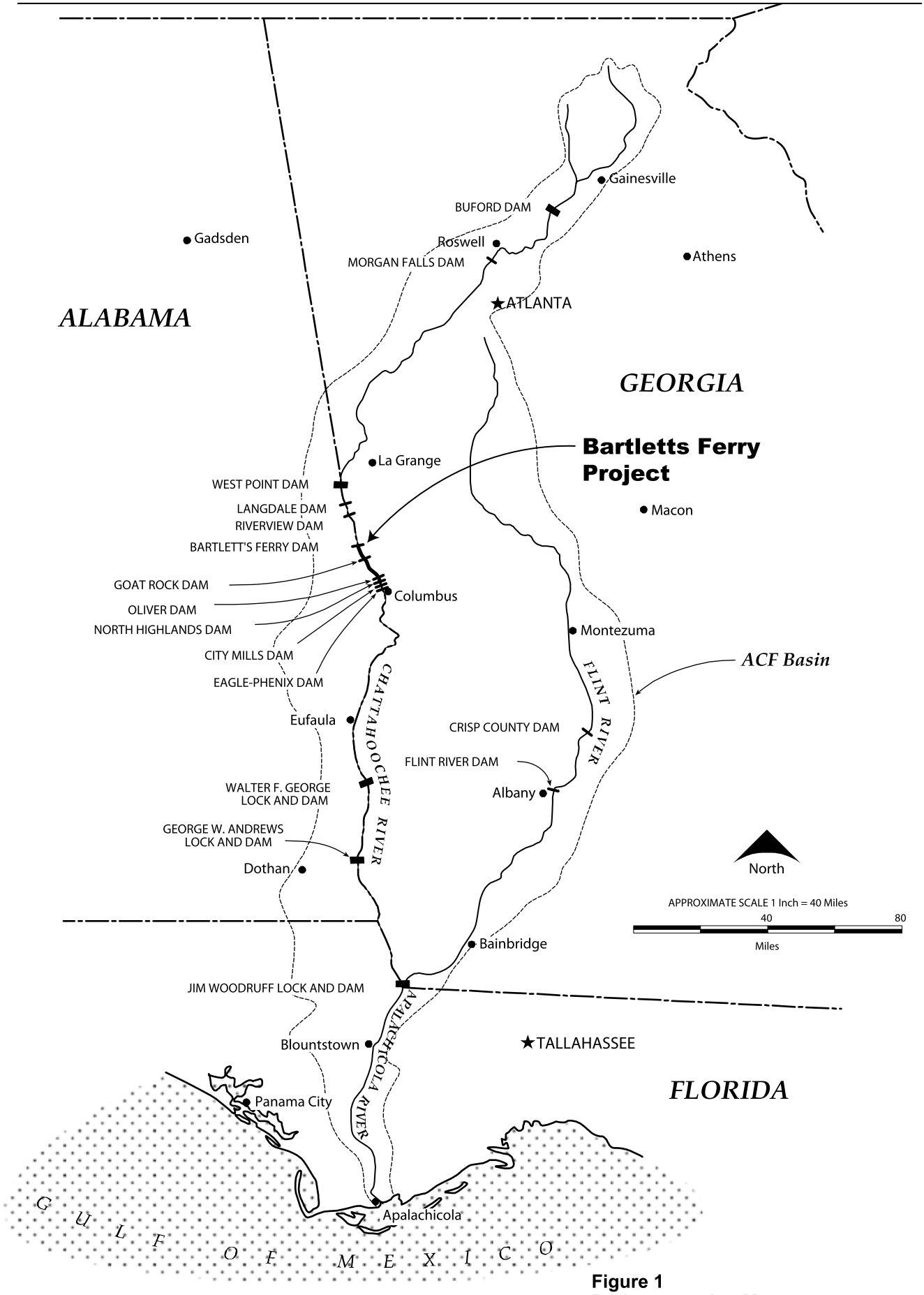


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company



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

CH2MHILL

Attachment to Georgia Power's 2/18/2022 Email to USFWS

Attachment to Georgia Power's 2/18/2022 Email to USFWS

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
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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.

Georgia Department of Natural Resources

Environmental Protection Division

Written Correspondence with EPD

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



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Written Correspondence with EPD

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
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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.

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- 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
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Written Correspondence with EPD

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.

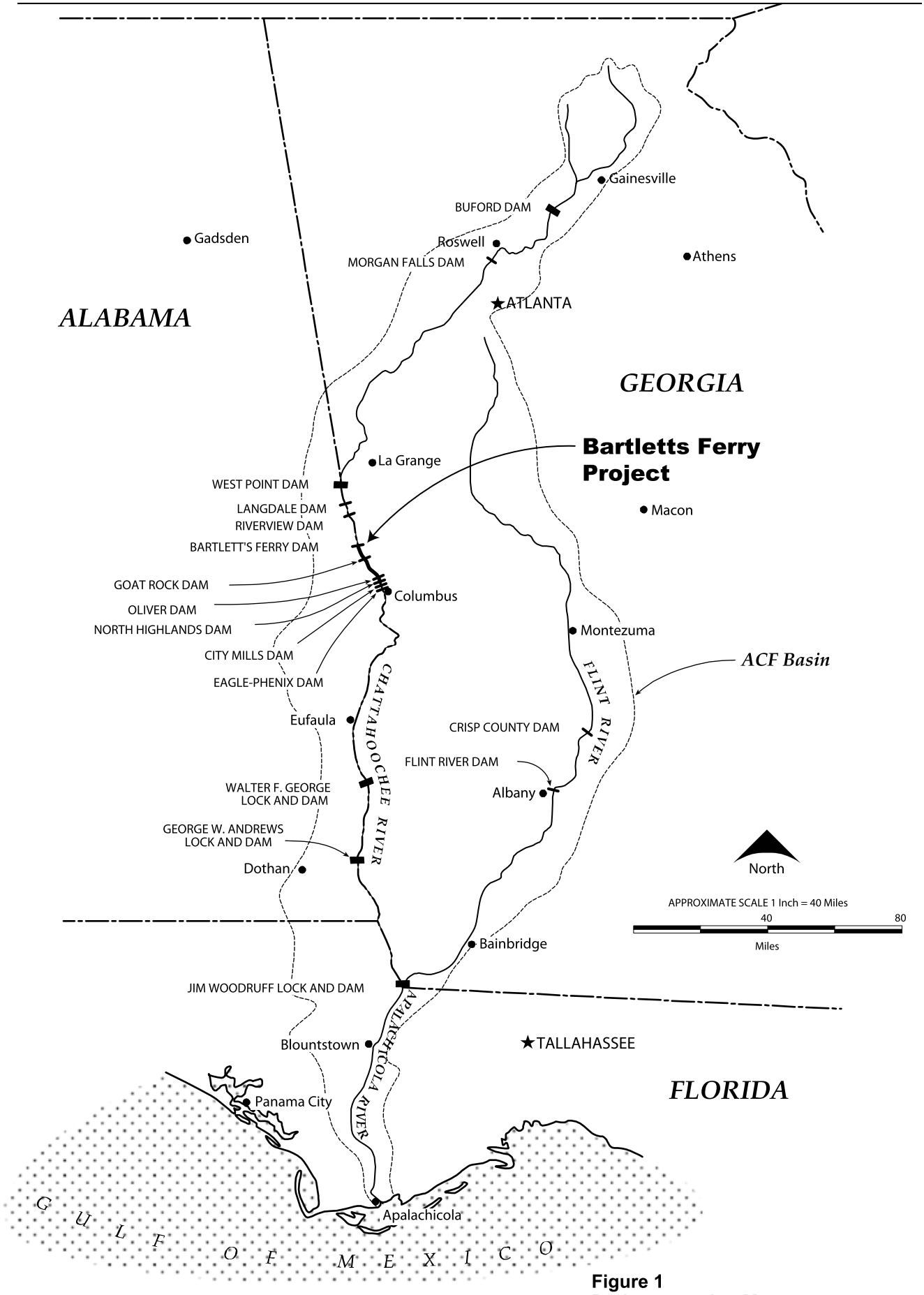
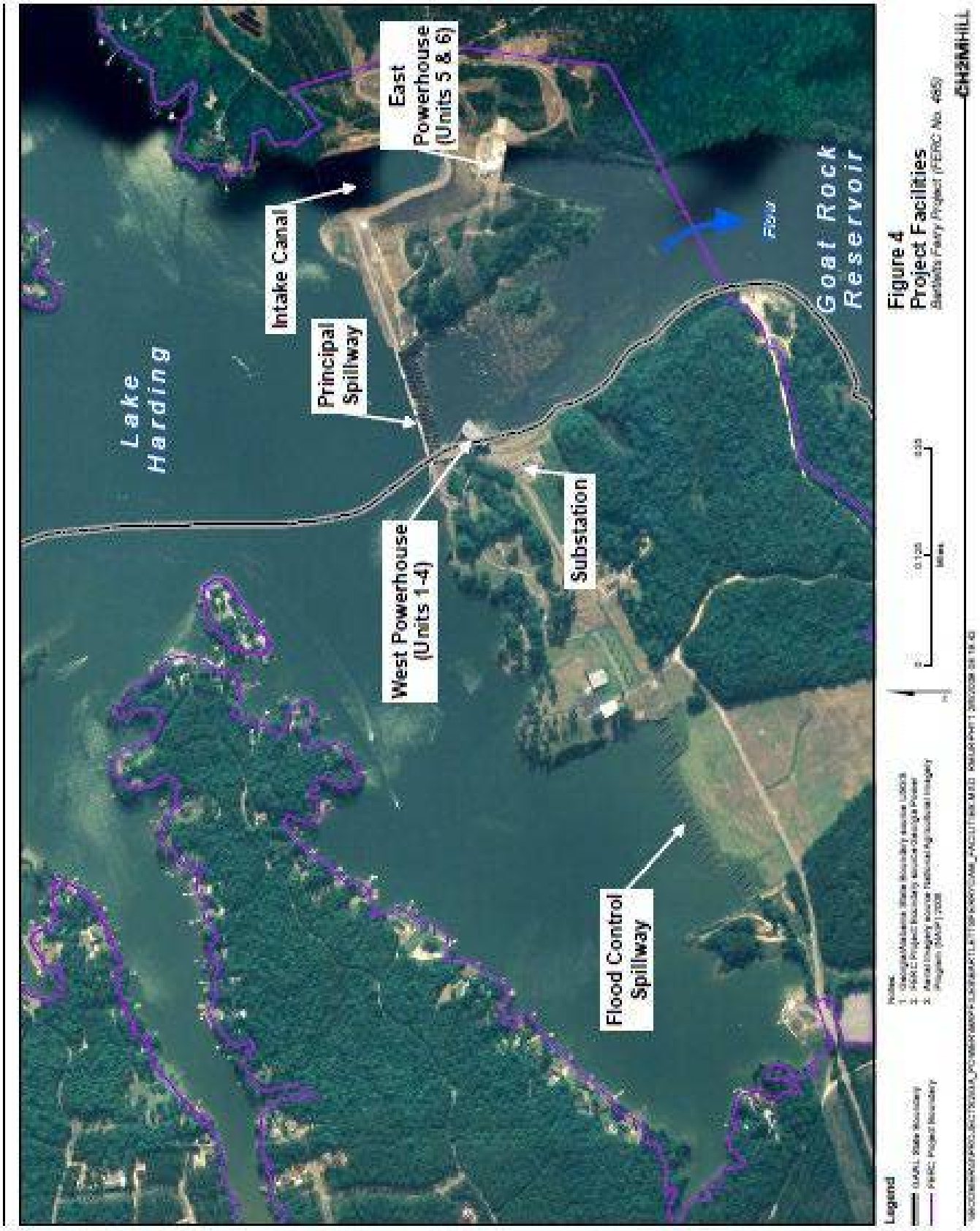


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company


Lake Harding
Intake Canal
East Powerhouse (Units 5 & 6)
Principal Spillway
West Powerhouse (Units 1-4)
Substation
Flood Control Spillway
Flow
Goat Rock Reservoir
Legend
Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)
CH2MHILL

Written Correspondence with EPD

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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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

EXTERNAL MAIL: Caution Opening Links or Files

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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you

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.

Get Outlook for iOS

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

EXTERNAL MAIL: Caution Opening Links or Files

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

1. Page 1 paragraph 2 second sentence – 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)
3. Page 1 last paragraph second and third sentences – replace the word "uptake" with "increase"
4. Page 2 paragraph 1 last sentence – how will we now 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.
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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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
Desk: 404-506-5026
Email: ardodd@southernco.com

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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
241 Ralph McGill Blvd, NE
Atlanta, GA 30308
Cell: 404-434-9412
Desk: 404-506-5026
Email: ardodd@southernco.com



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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

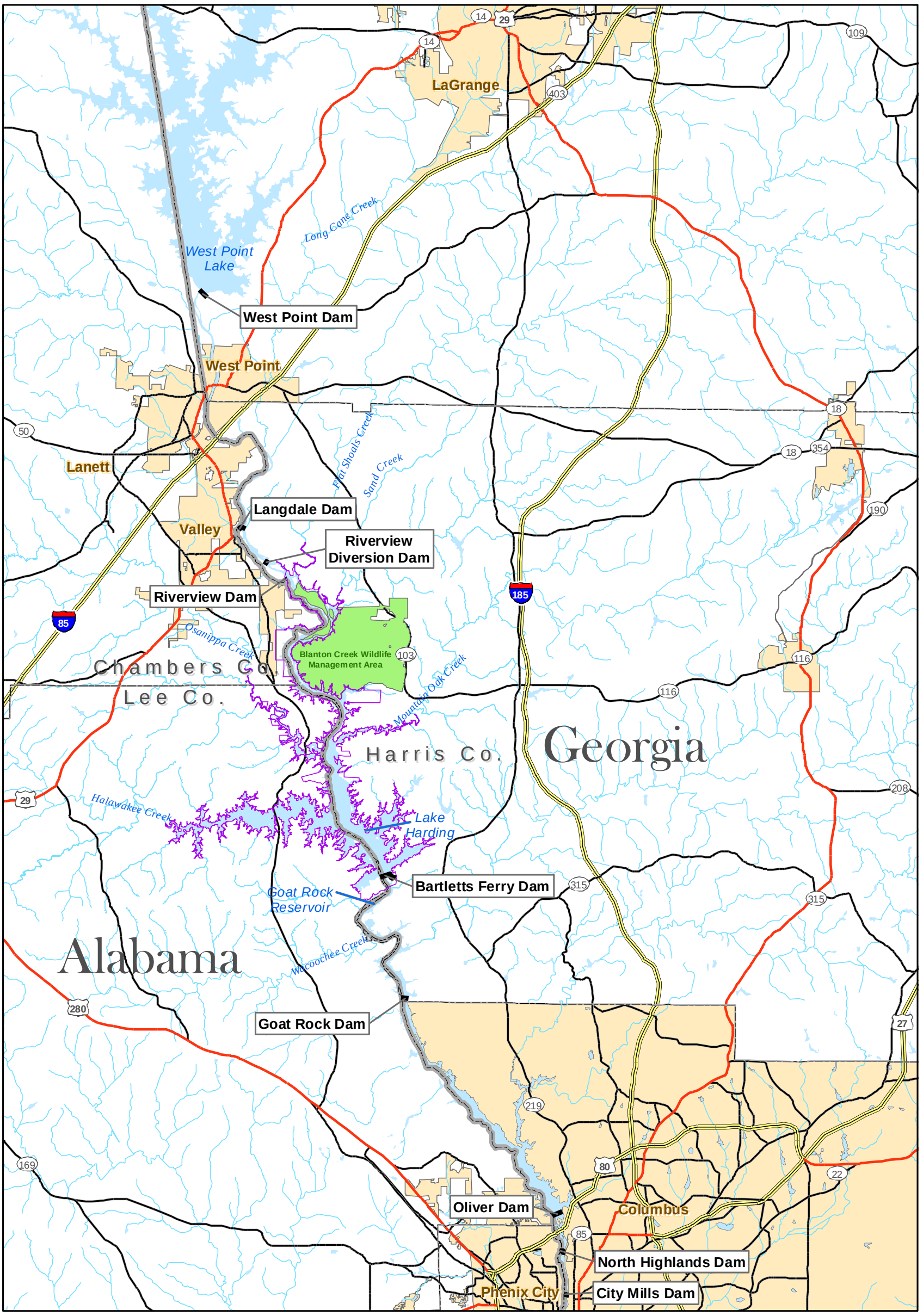
To demonstrate that Georgia water quality standards are met with normal operation of the refurbished units, Georgia Power is proposing to evaluate the performance of the mixed (aerated plus non-aerated conditions) by conducting a water quality monitoring study in Bartletts Ferry tailwaters during the 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.

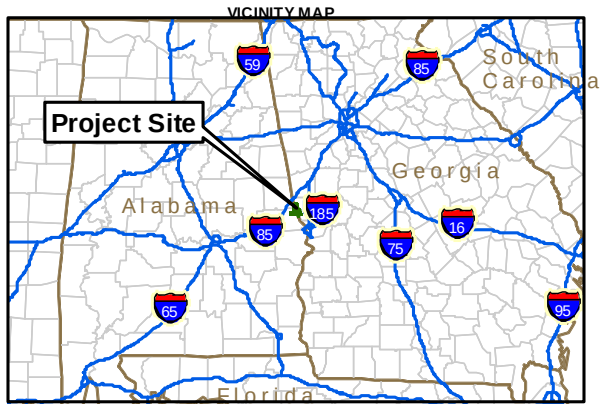
Monitoring data will be collected from a buoy anchored to the lake bottom in a manner to allow for fluctuations in water level due to dam releases and peak storm flows. A water quality monitoring sonde will be secured to/in the buoy in a manner that provides measurements of DO (mg/L) and water temperature (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)

\\BOOMER\G\PROJECTS2\GA_POWER\MAPFILES\BARTLETTSFERRYOVERVIEWMAP.MXD RMURPHY1 2/5/2009 10:37:08



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

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Miles

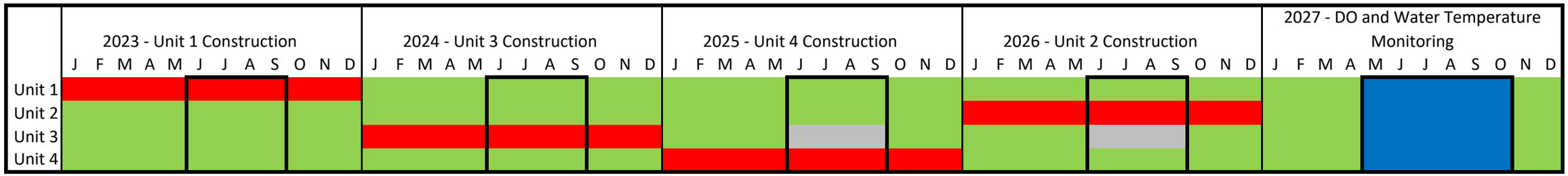
Figure 2
Project Facilities
Bartletts Ferry Project (FERC No. 485)

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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

Written Correspondence with WRD

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

pmorouke@southernco.com
241 Ralph McGill Blvd.
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.

Attachment to Georgia Power's 2/25/2022 Email to WRD

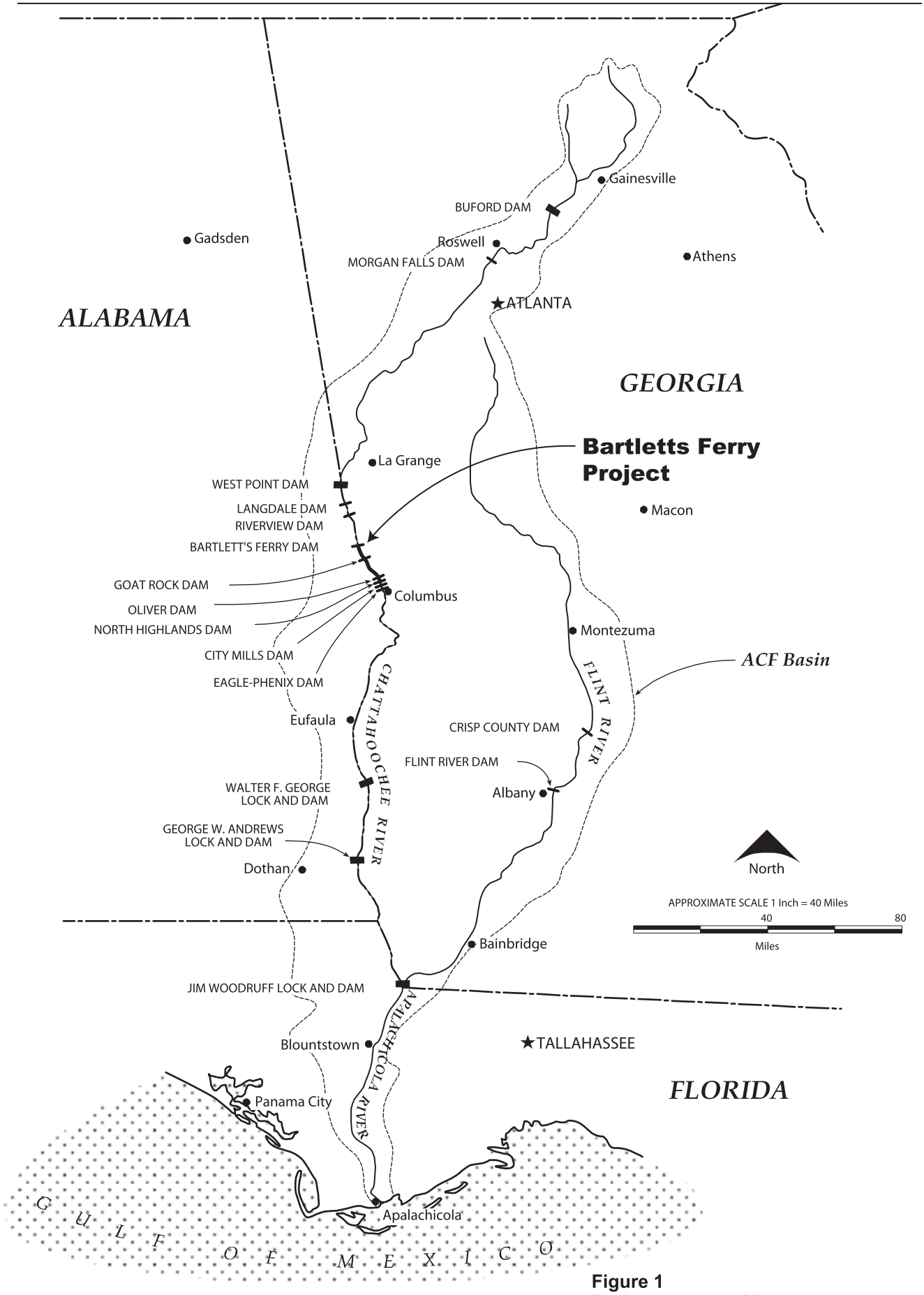


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

Attachment to Georgia Power's 2/25/2022 Email to WRD



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

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

Written Correspondence with HPD

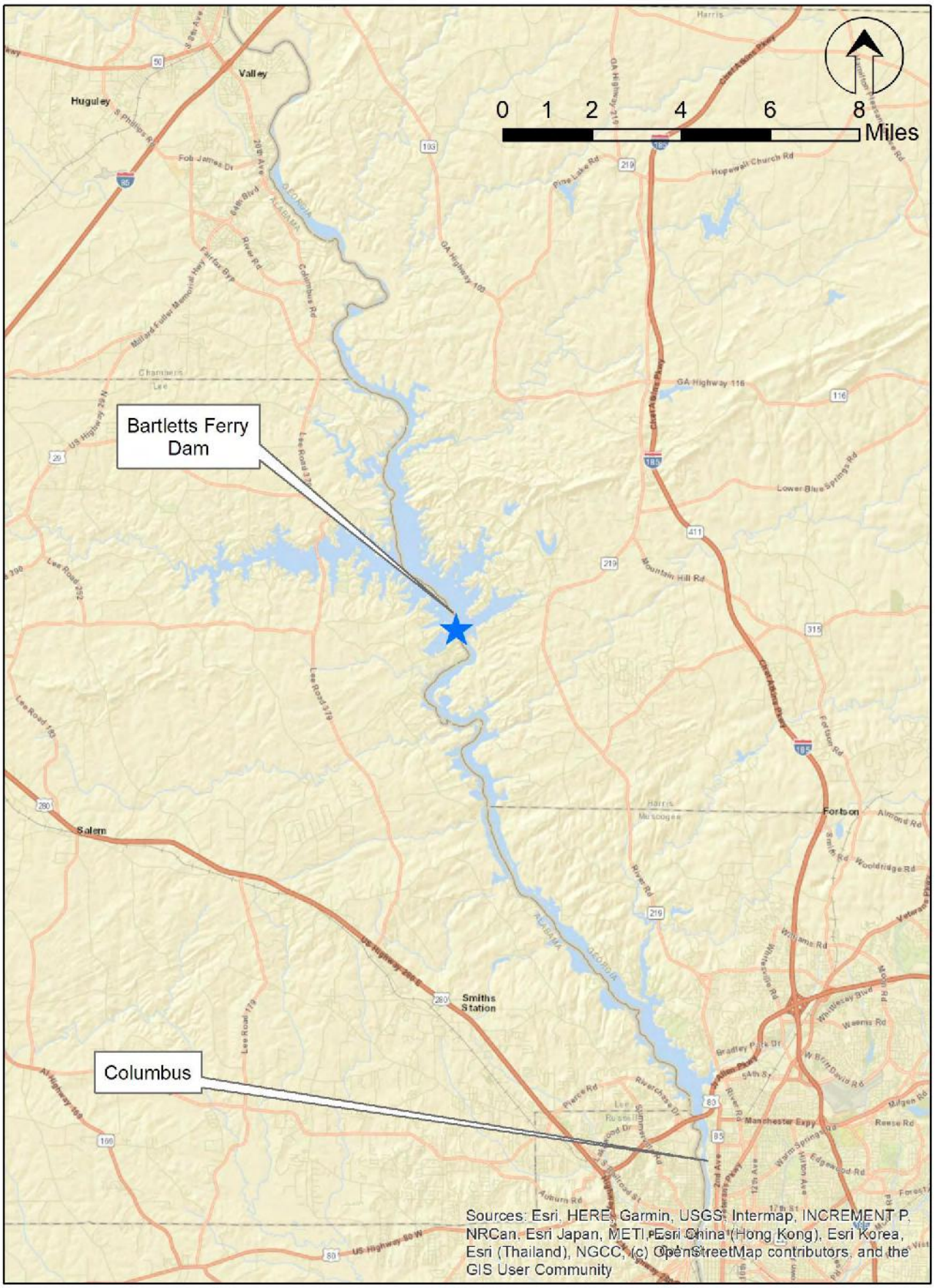


Figure 1. Bartletts Ferry Project and surroundings.

Written Correspondence with HPD

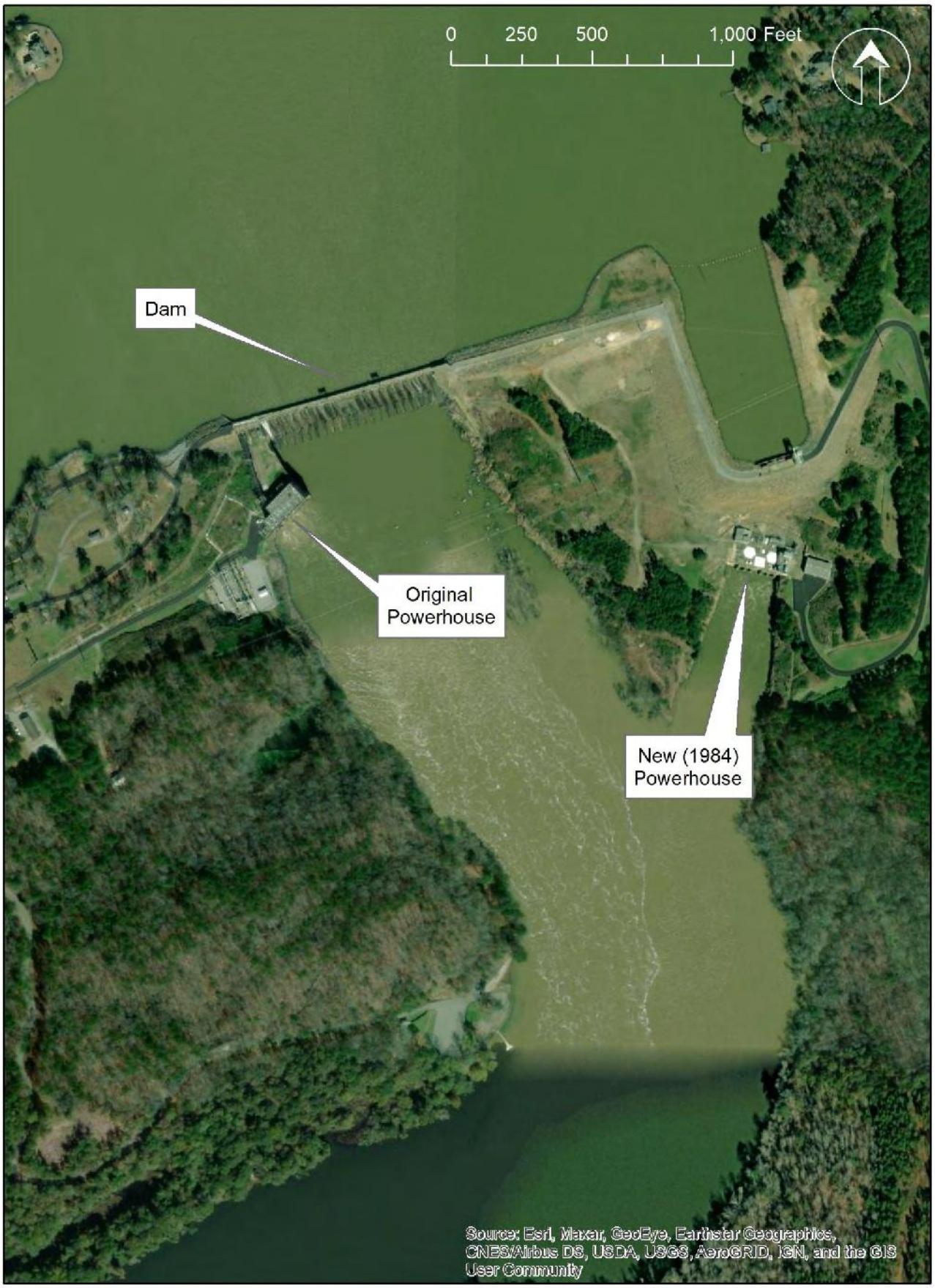


Figure 2. Aerial photograph of Bartletts Ferry project works.



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



Figure 4. Photograph showing turbine floor.



Figure 5. Photograph showing turbine detail.

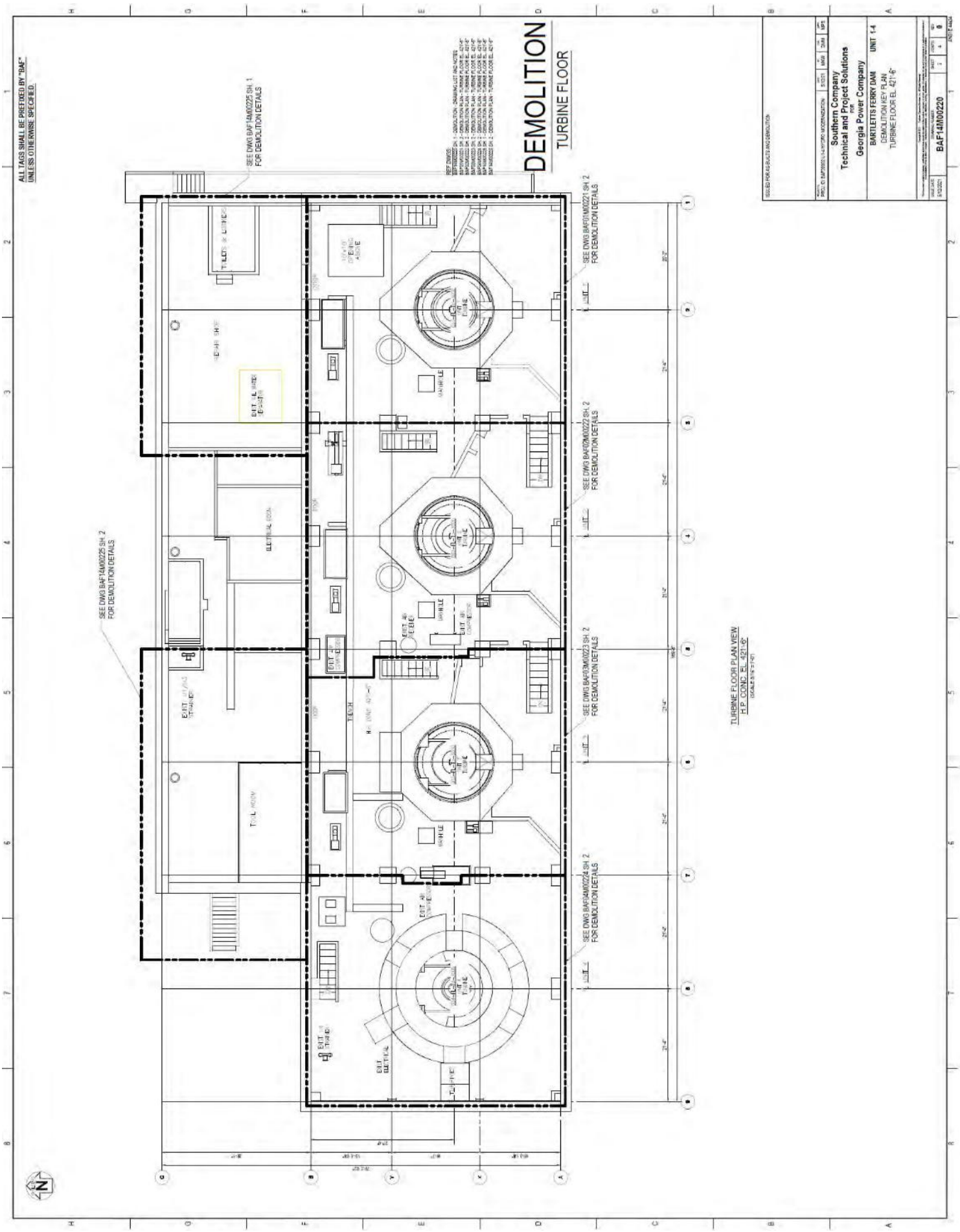


Figure 6. Current plan drawing of turbine floor.

Written Correspondence with HPD

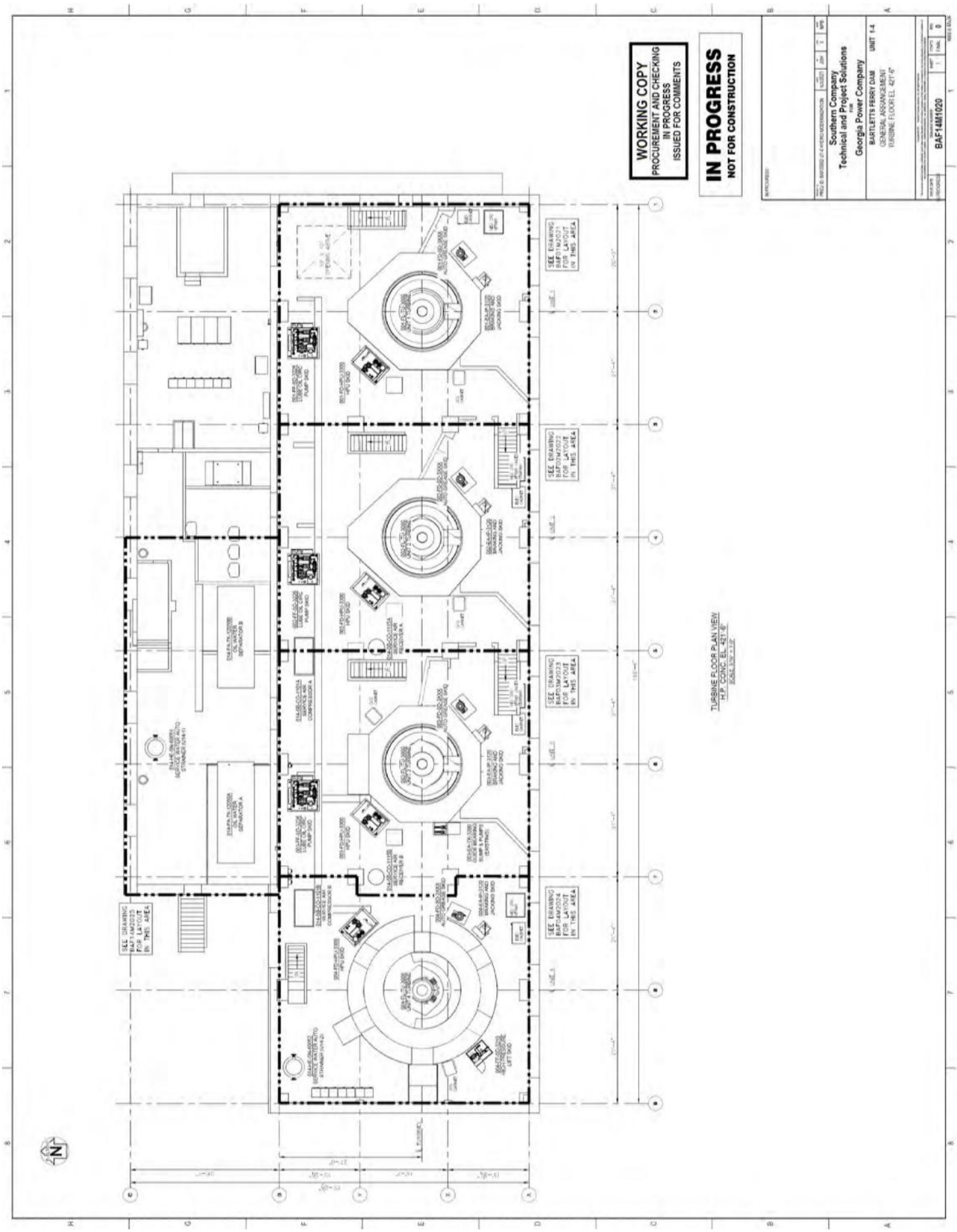


Figure 7. Plan drawing of turbine floor after modernization.

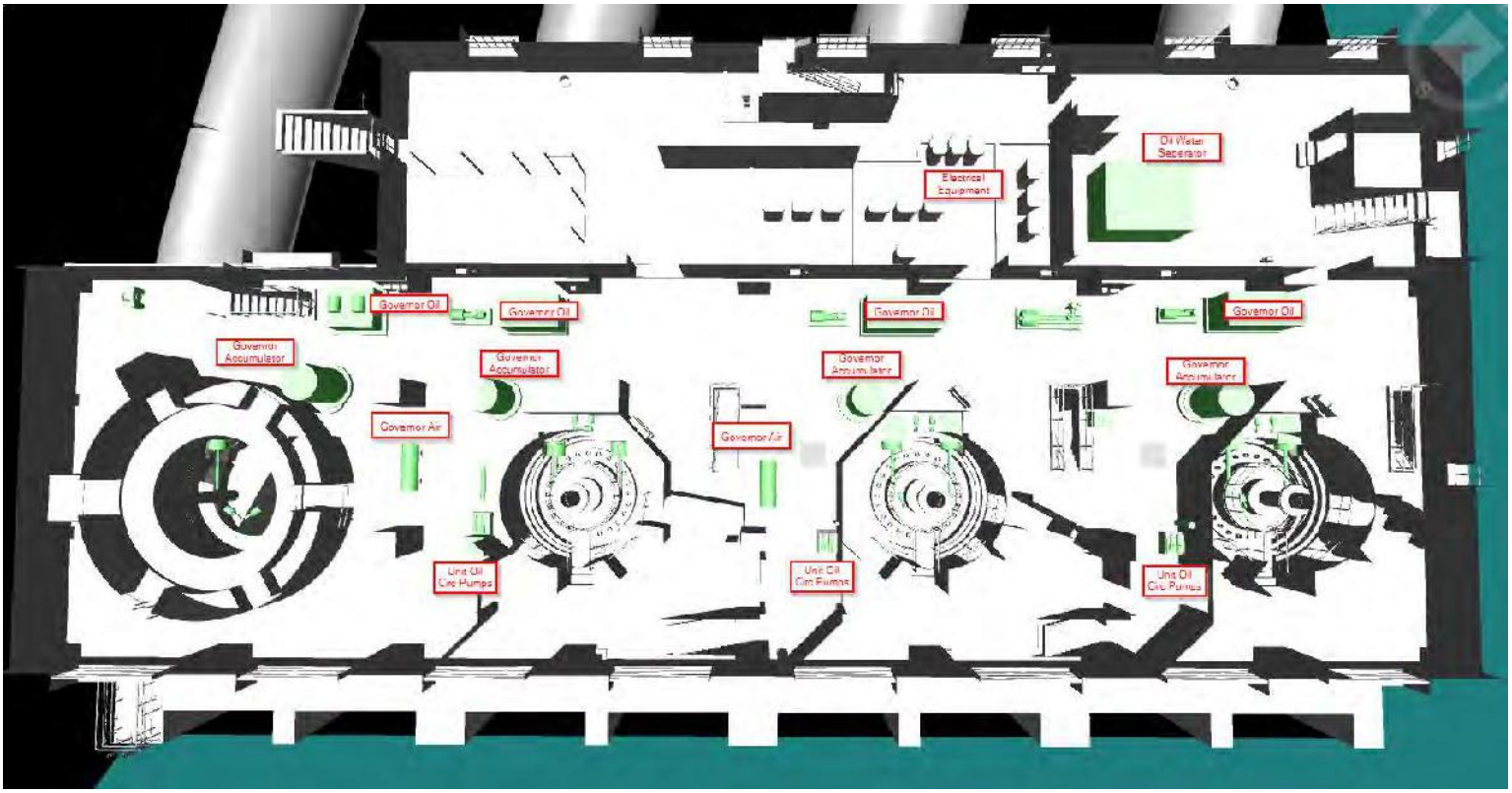


Figure 8. Model of turbine floor before modernization.

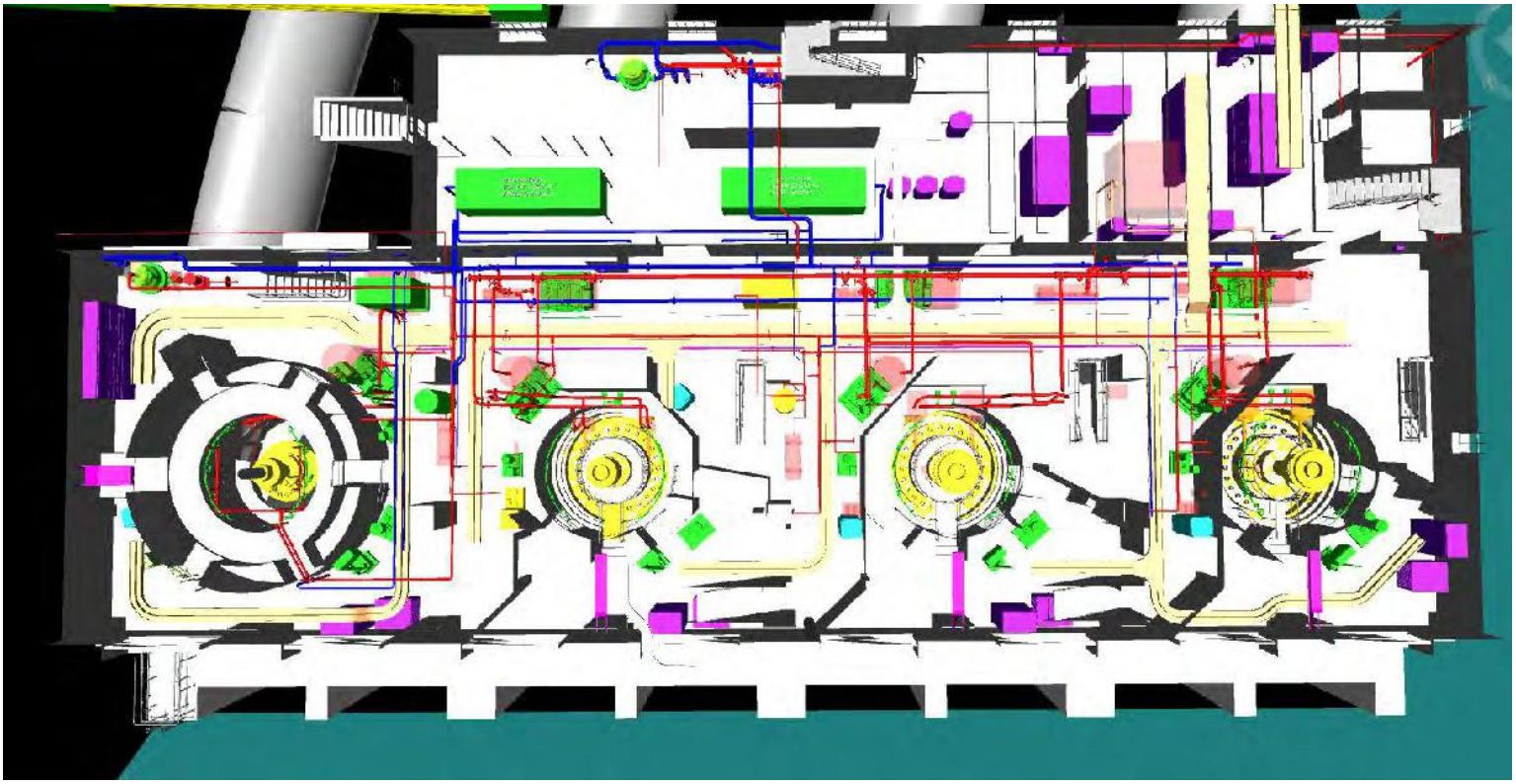


Figure 9. Model of turbine floor after modernization.

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.

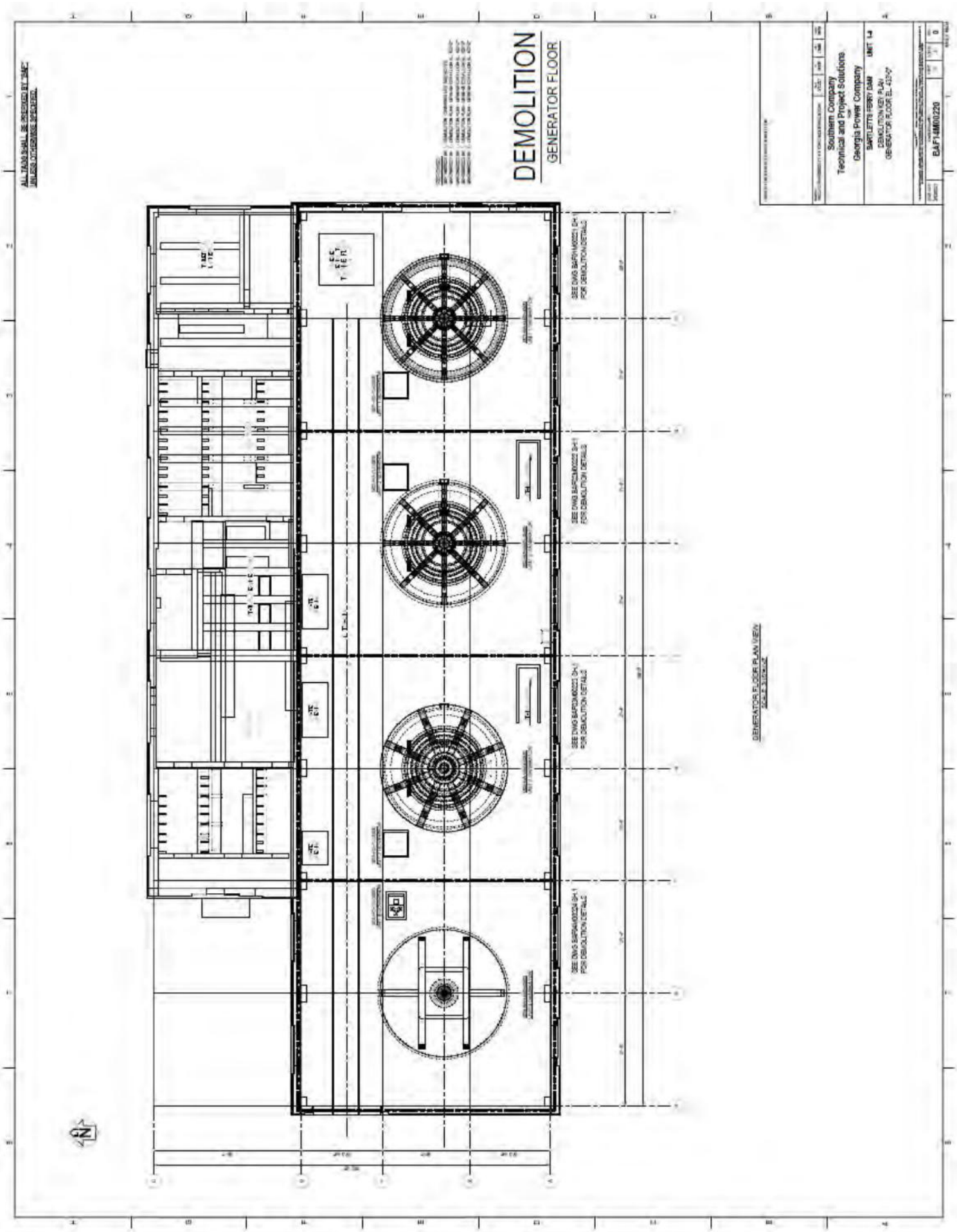


Figure 11. Current plan drawing of generator floor.

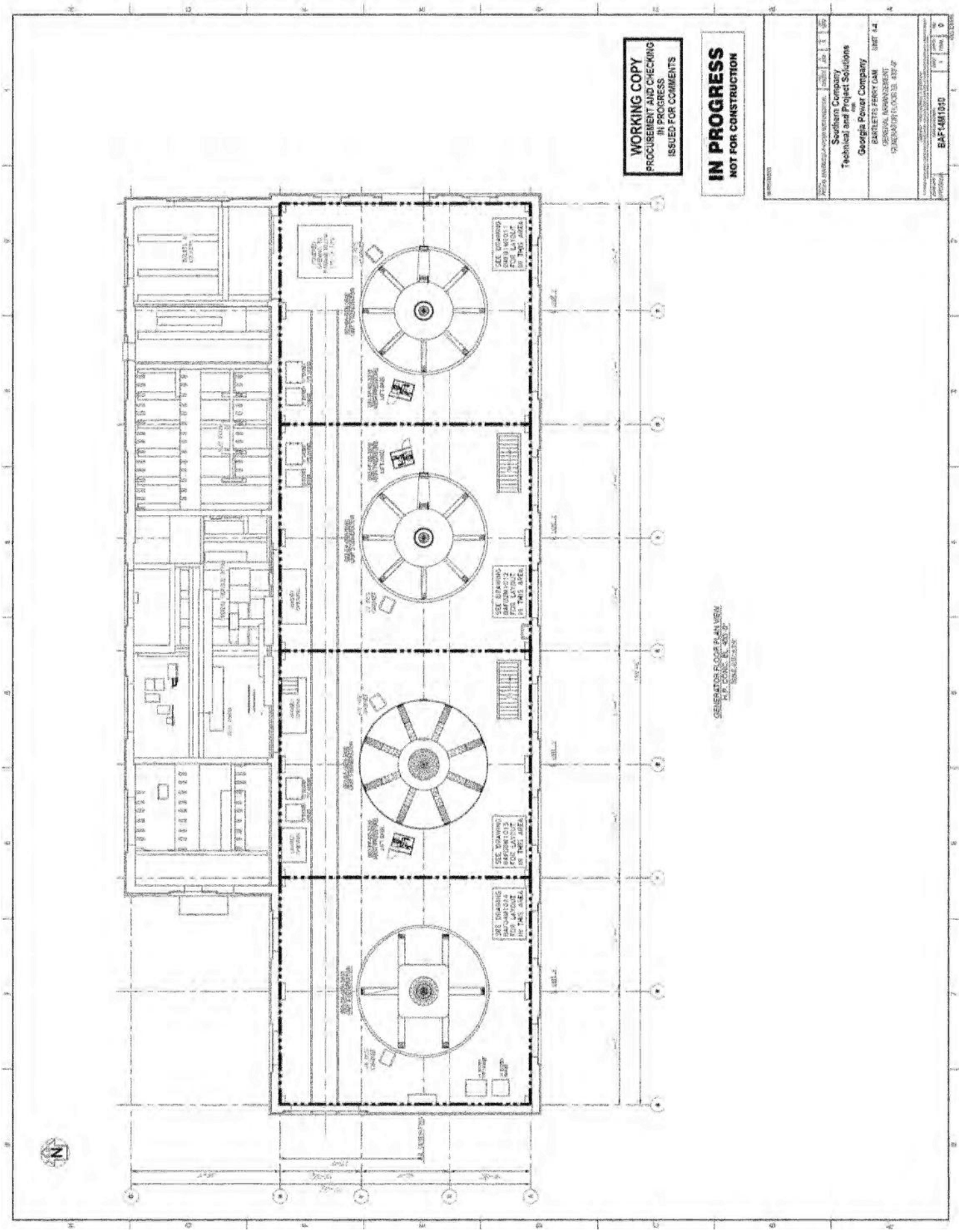


Figure 12. Plan drawing of generator floor after modernization.

Written Correspondence with HPD

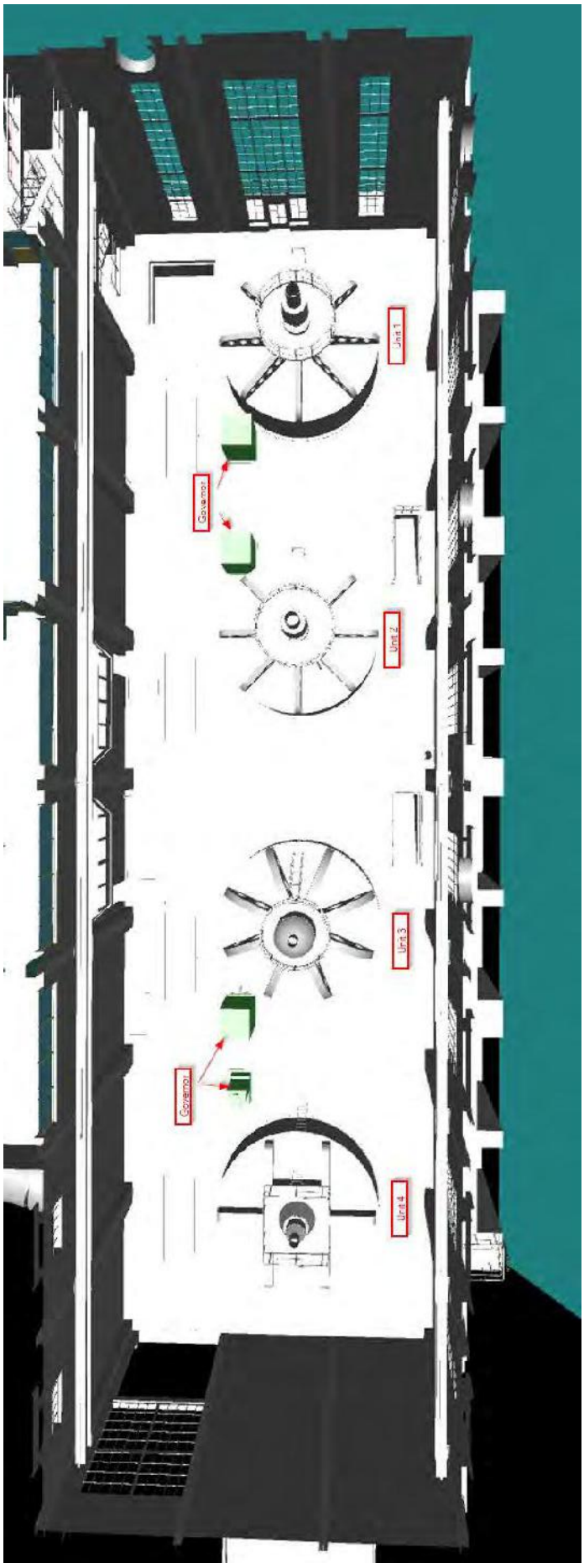


Figure 13. Model of generator floor before modernization.



Figure 14. Model of generator floor after modernization.

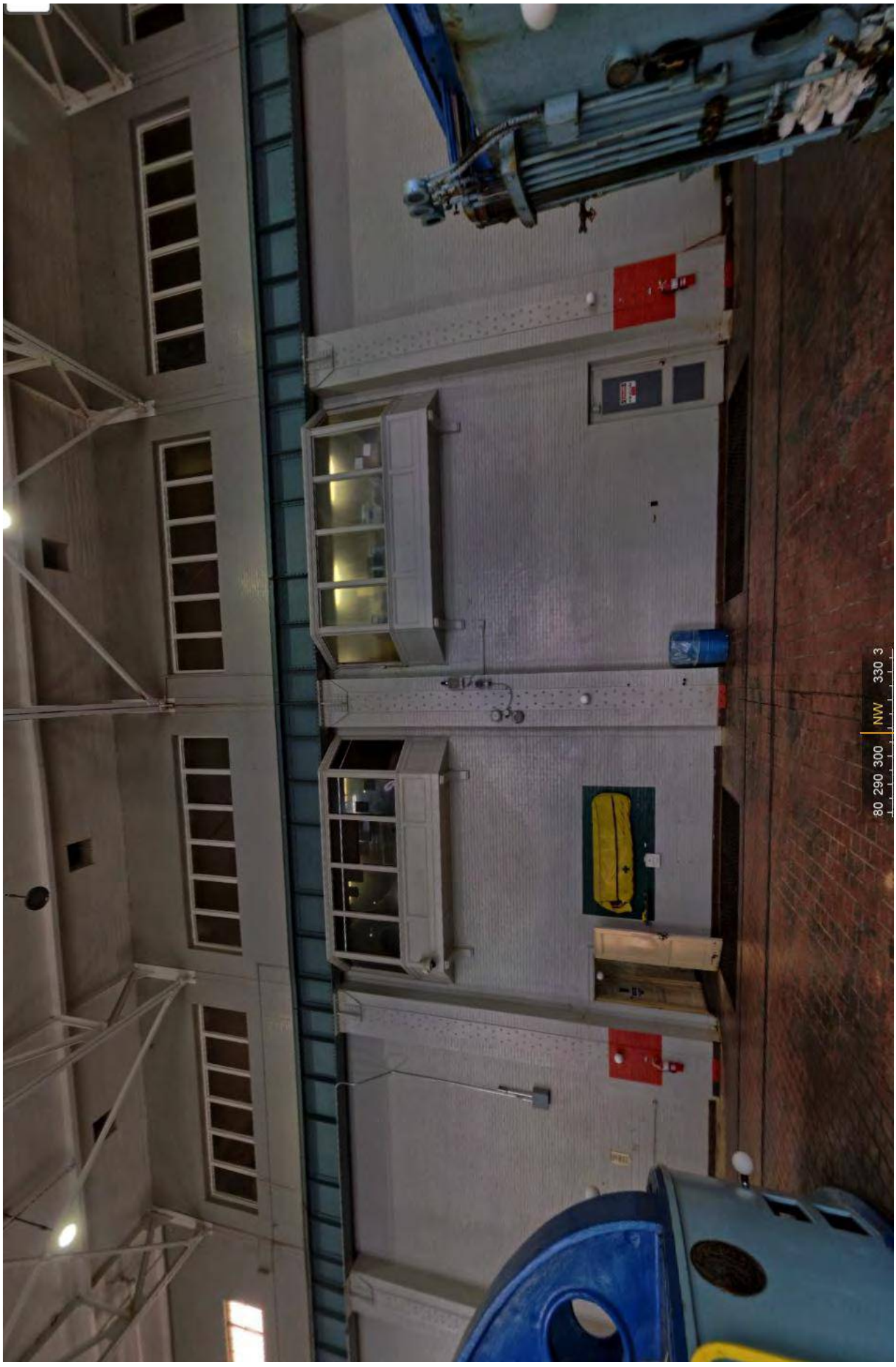


Figure 15. View from generator floor showing the original control room (bay windows) and the proposed new control room above.

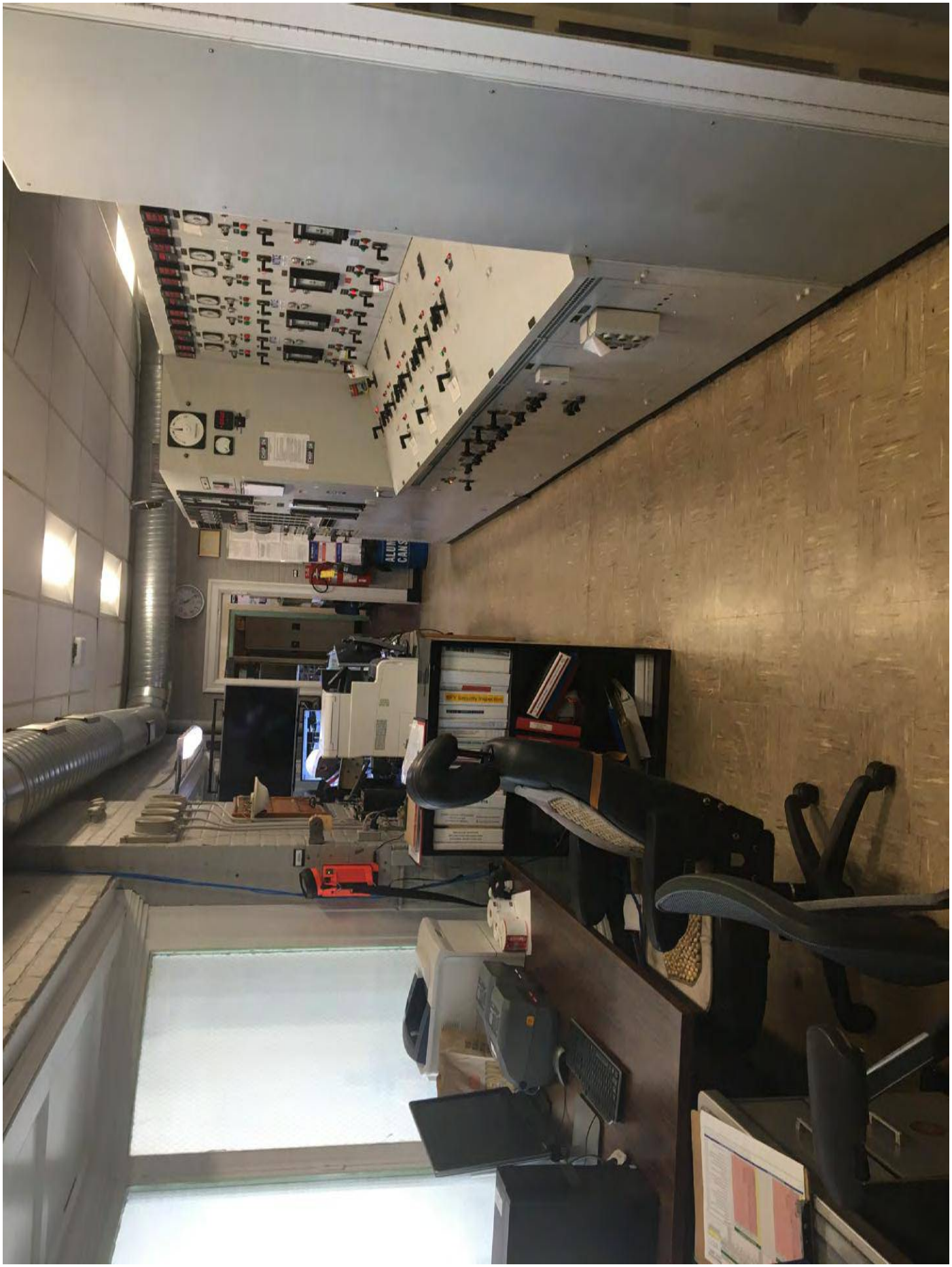


Figure 16. View of current control room.

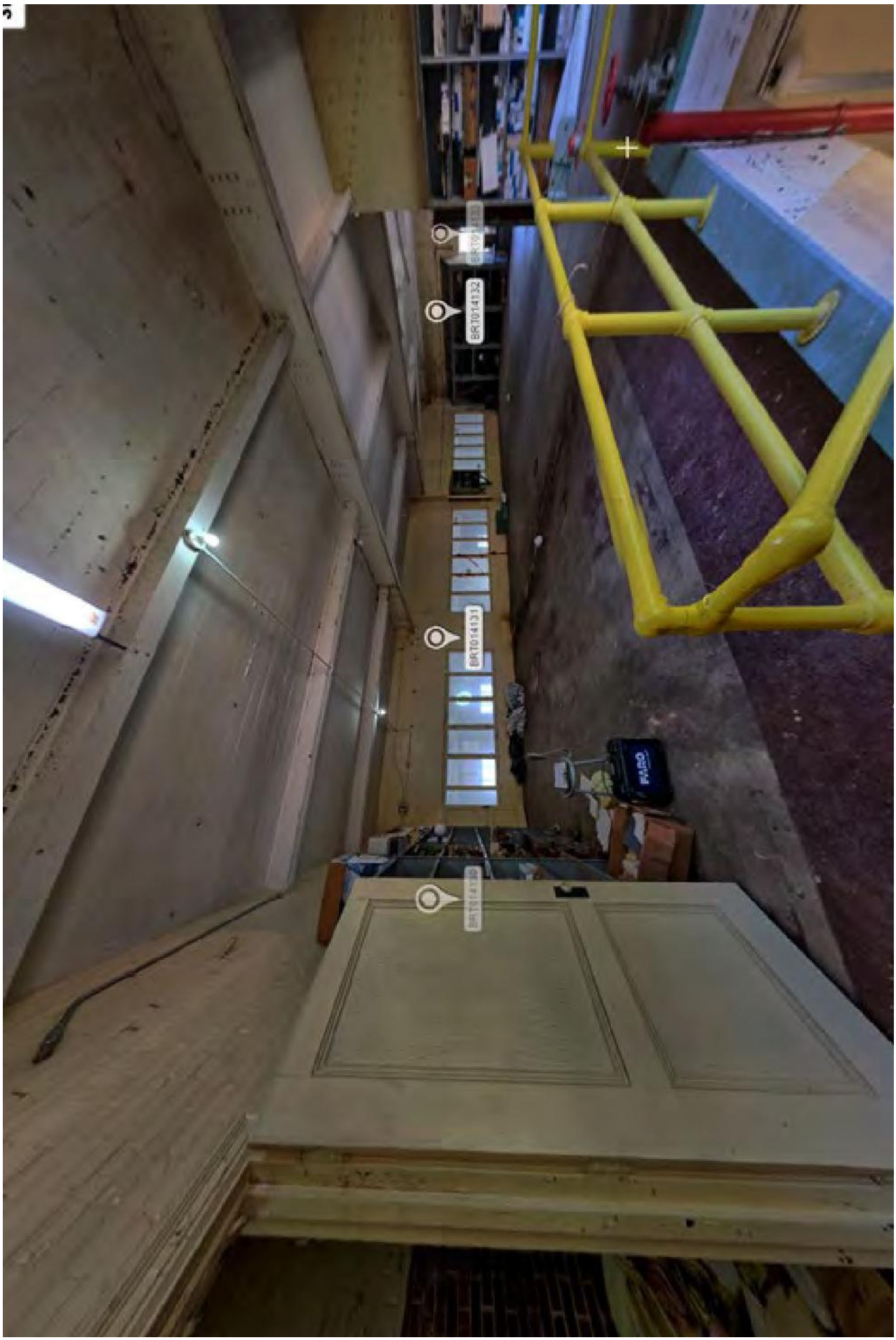


Figure 17. View of proposed new control room taken from a 3D scan.

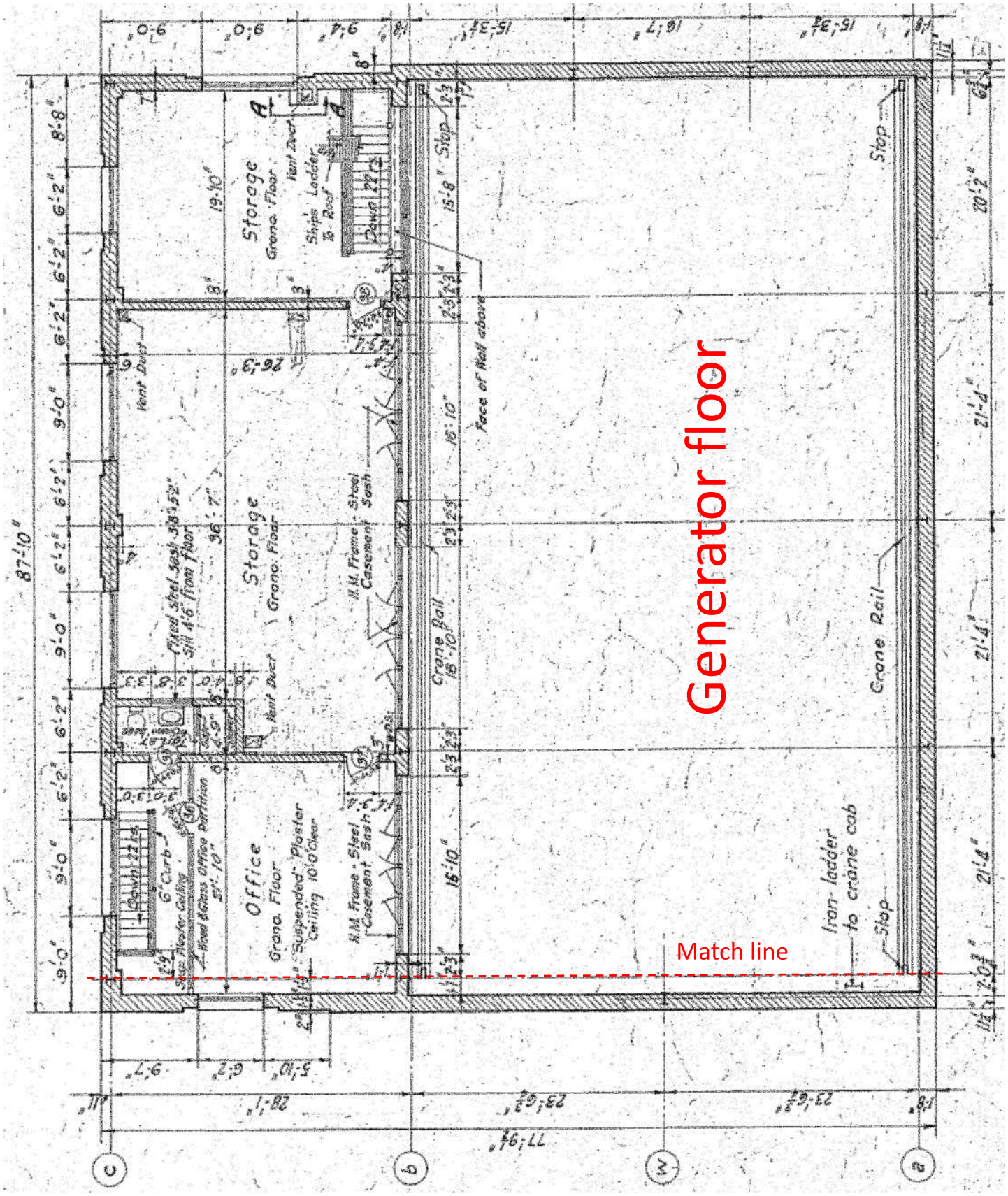


Figure 18. Plan drawing of original 1926 4th floor.

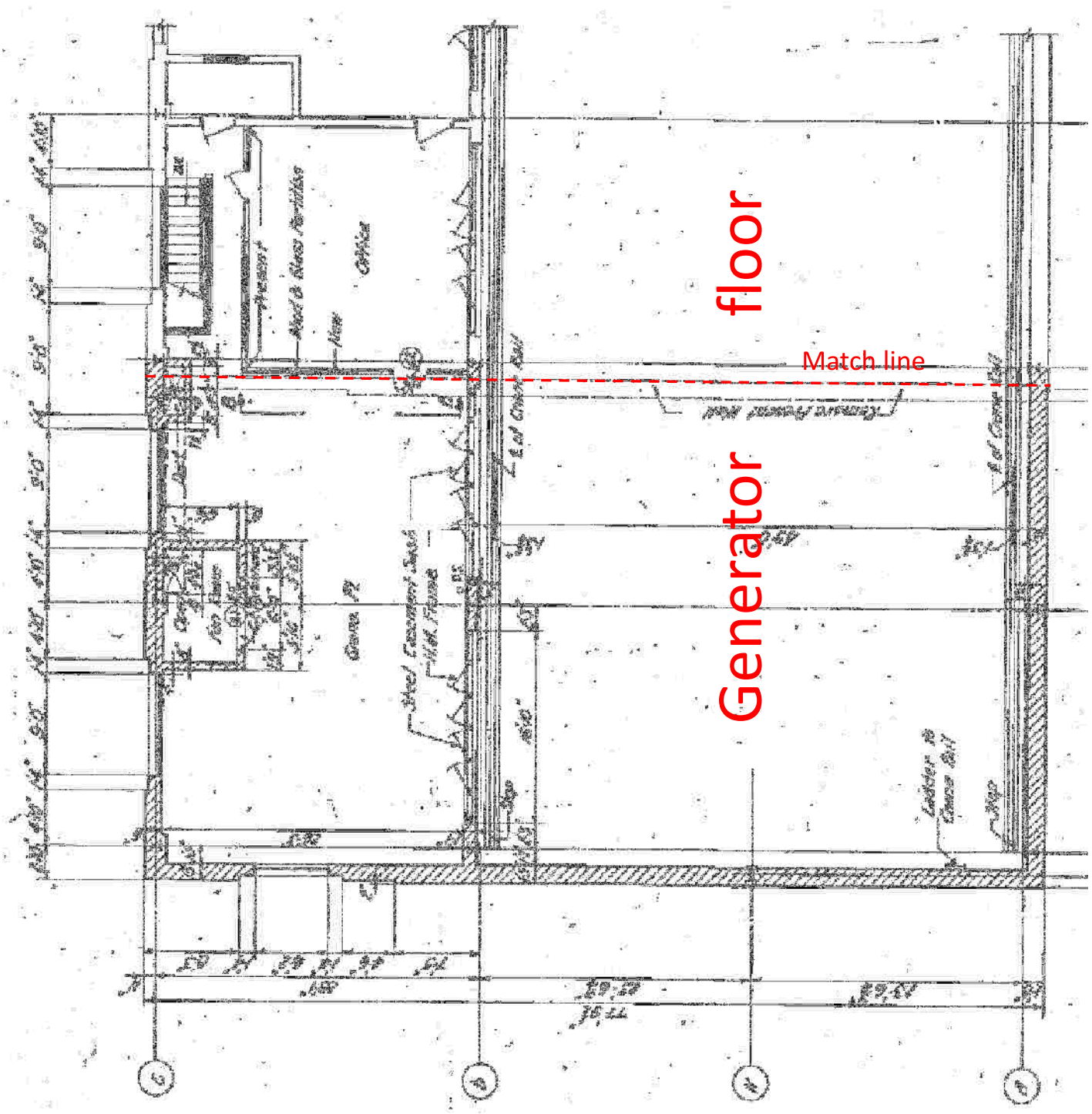


Figure 19. Plan drawing of 4th floor after 1928 expansion for Units 3 and 4.

Written Correspondence with HPD

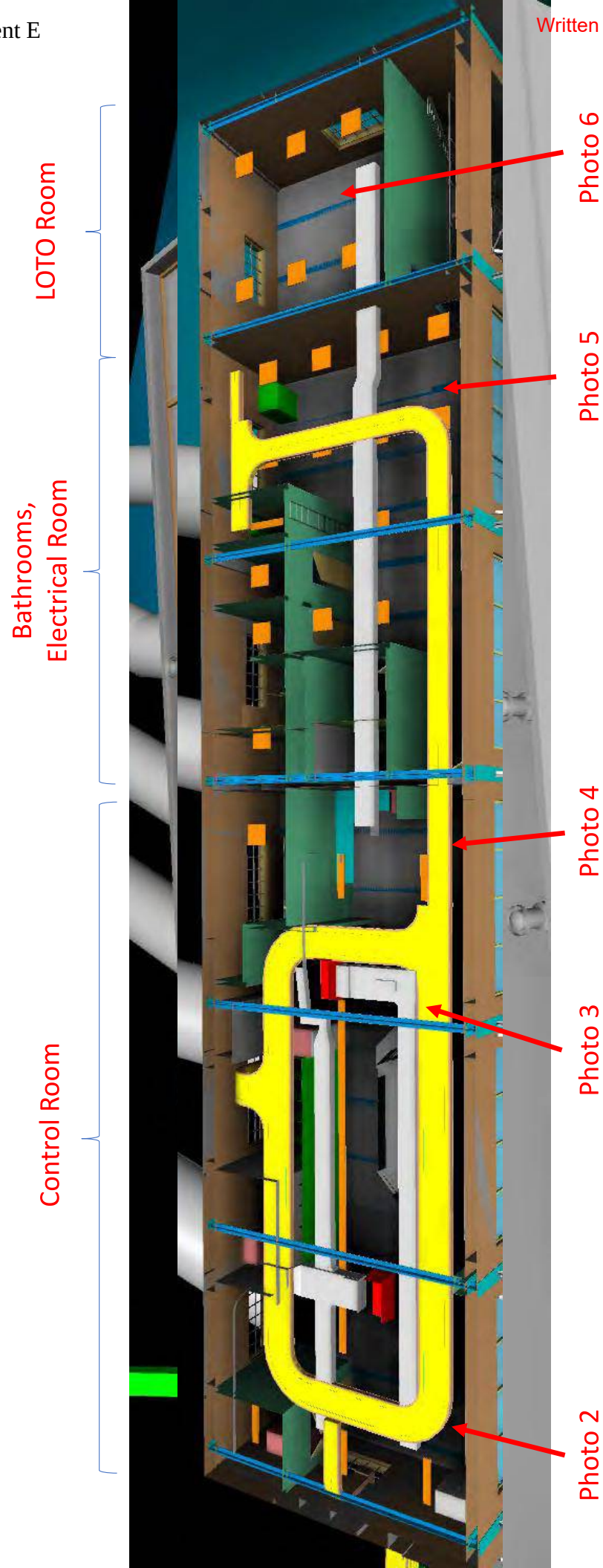


Figure 20. Overview of proposed 4th floor build out.



Figure 21. Model of proposed new control room.



Figure 22. Model of proposed new control room.

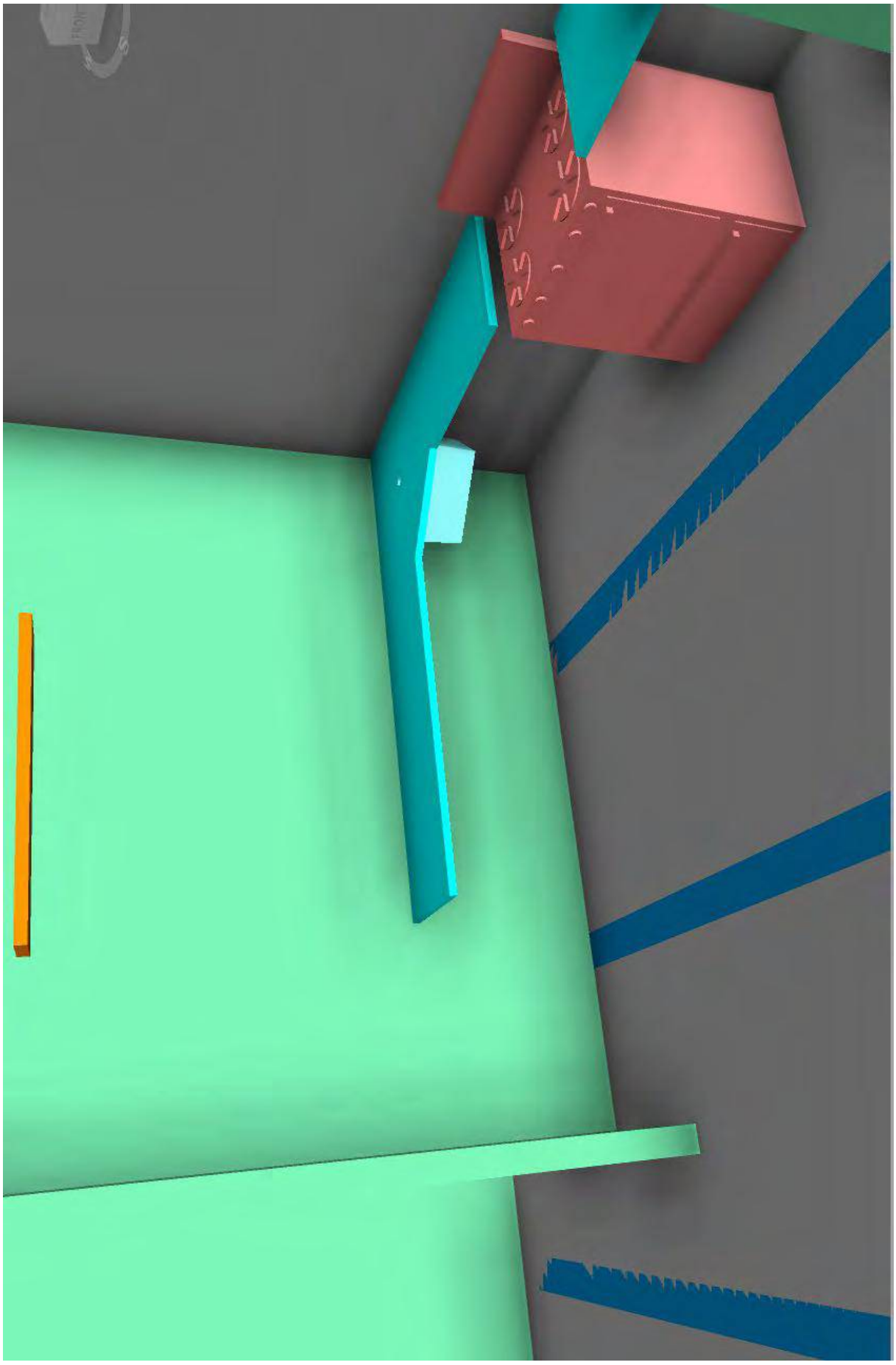


Figure 23. Model of proposed new kitchenette area.

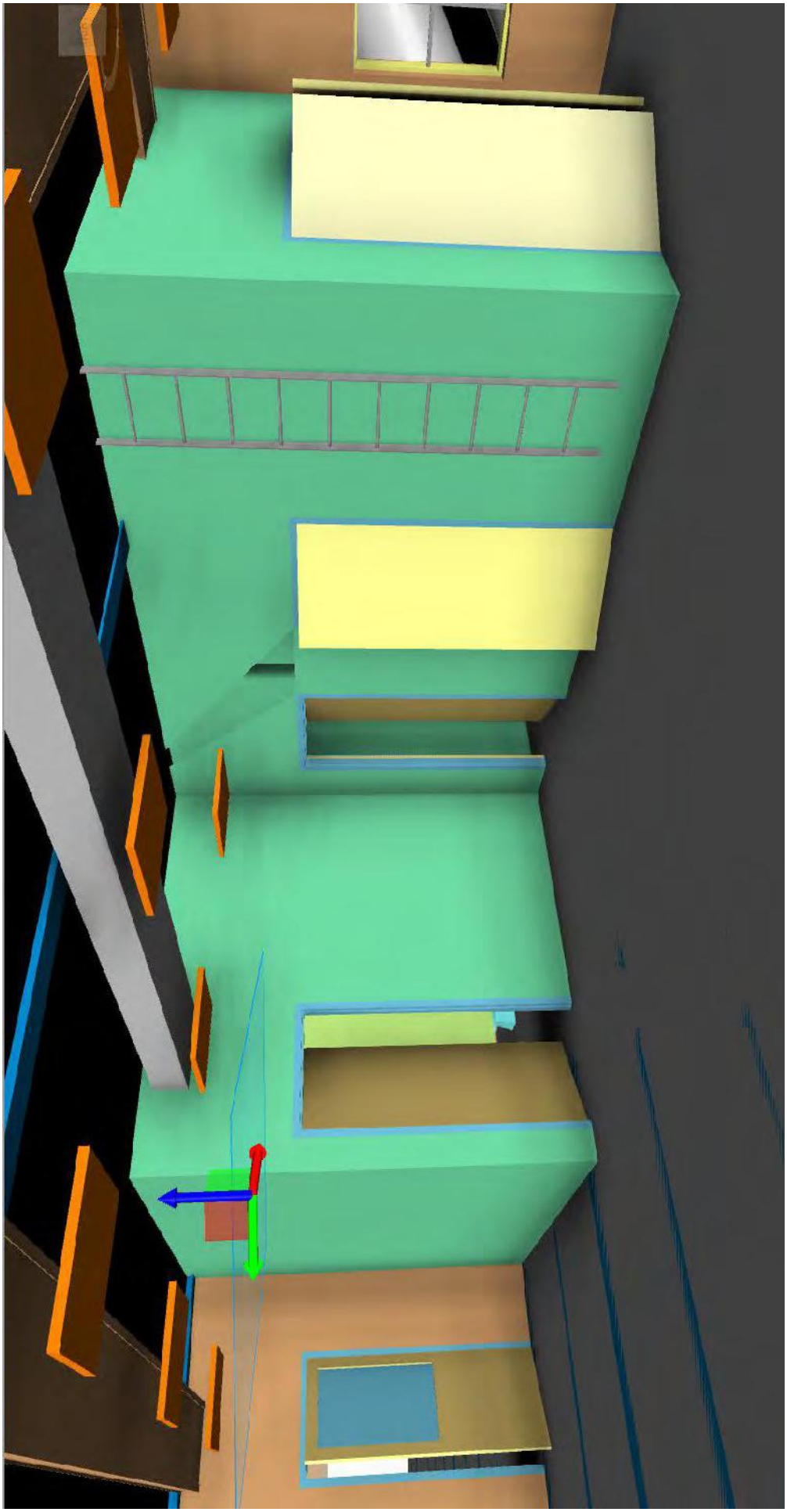


Figure 24. Model of proposed restroom, electrical room, and storage closet.

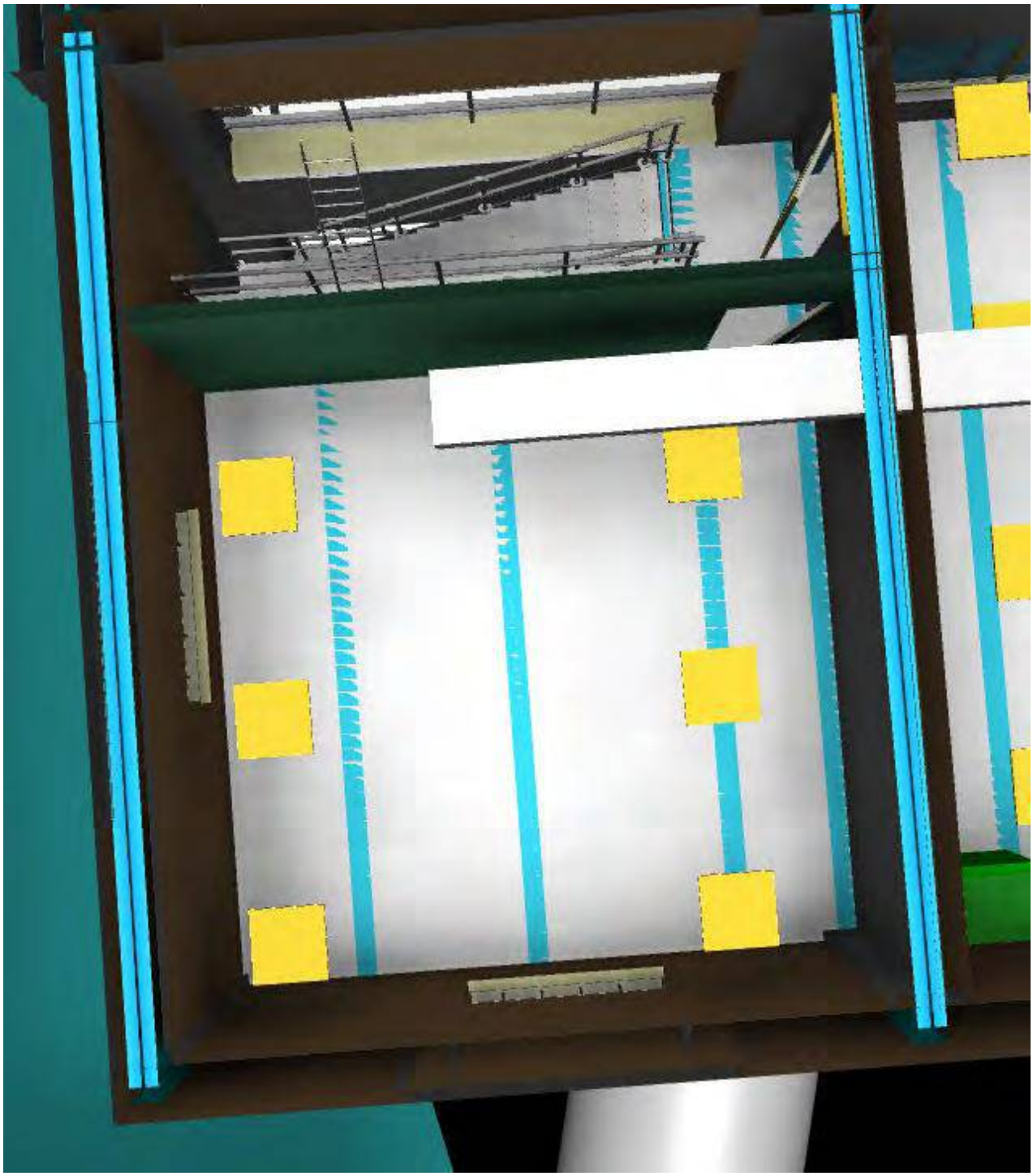


Figure 25. Model of proposed new LOTO room.

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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
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Environmental Review & Preservation Planning
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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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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



Learn more about our commitment to fair housing [dca.ga.gov] [gcc02.safelinks.protection.outlook.com] [gcc02.safelinks.protection.outlook.com] [gcc02.safelinks.protection.outlook.com] [gcc02.safelinks.protection.outlook.com].



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)

Written Correspondence with HPD

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

Project Review Submittal to AHC

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 Review Submittal to AHC

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.

Project Review Submittal to AHC

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.

Project Review Submittal to AHC

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.

Project Review Submittal to AHC

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.

Project Review Submittal to AHC

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

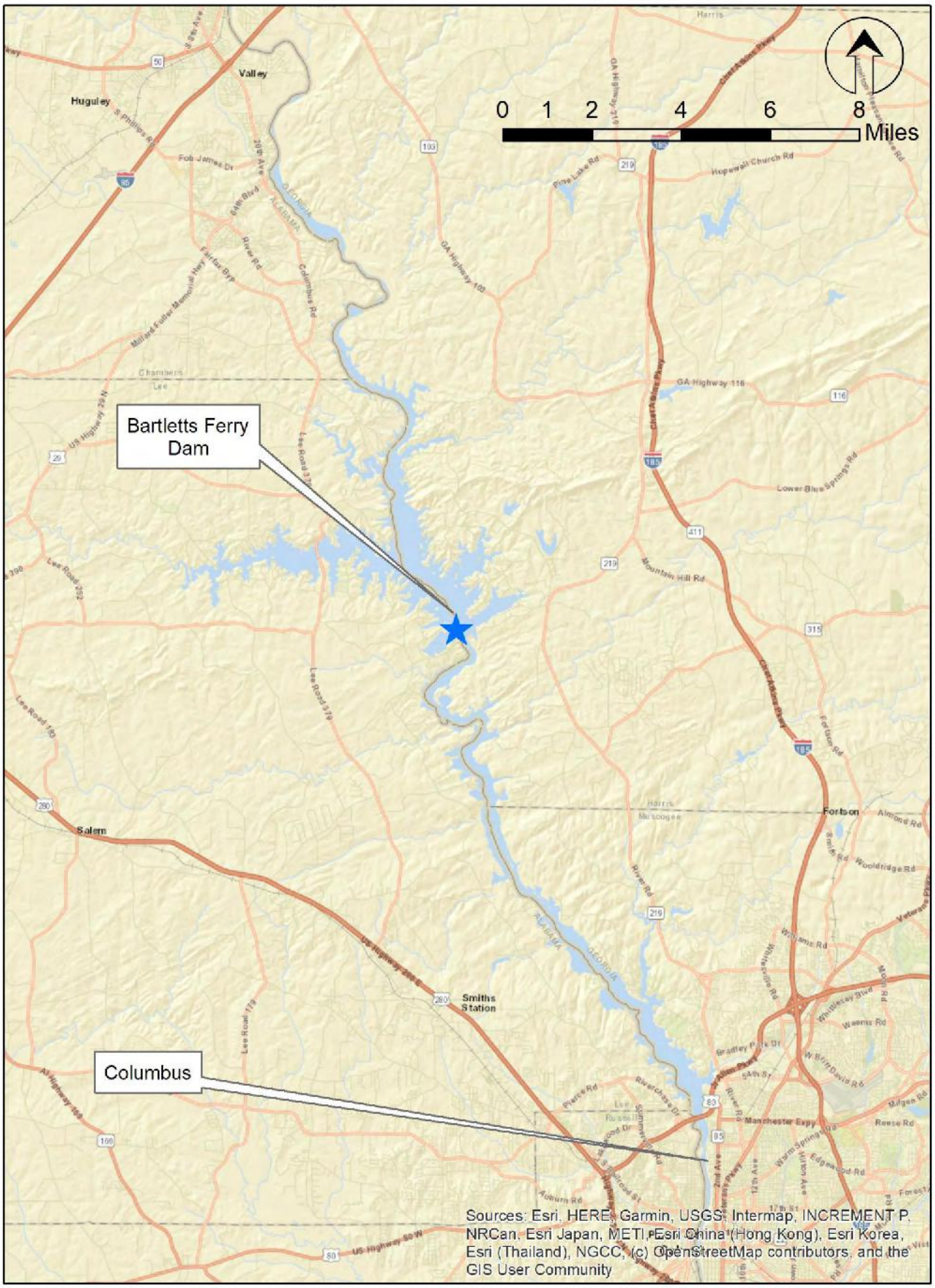


Figure 1. Bartletts Ferry Project and surroundings.

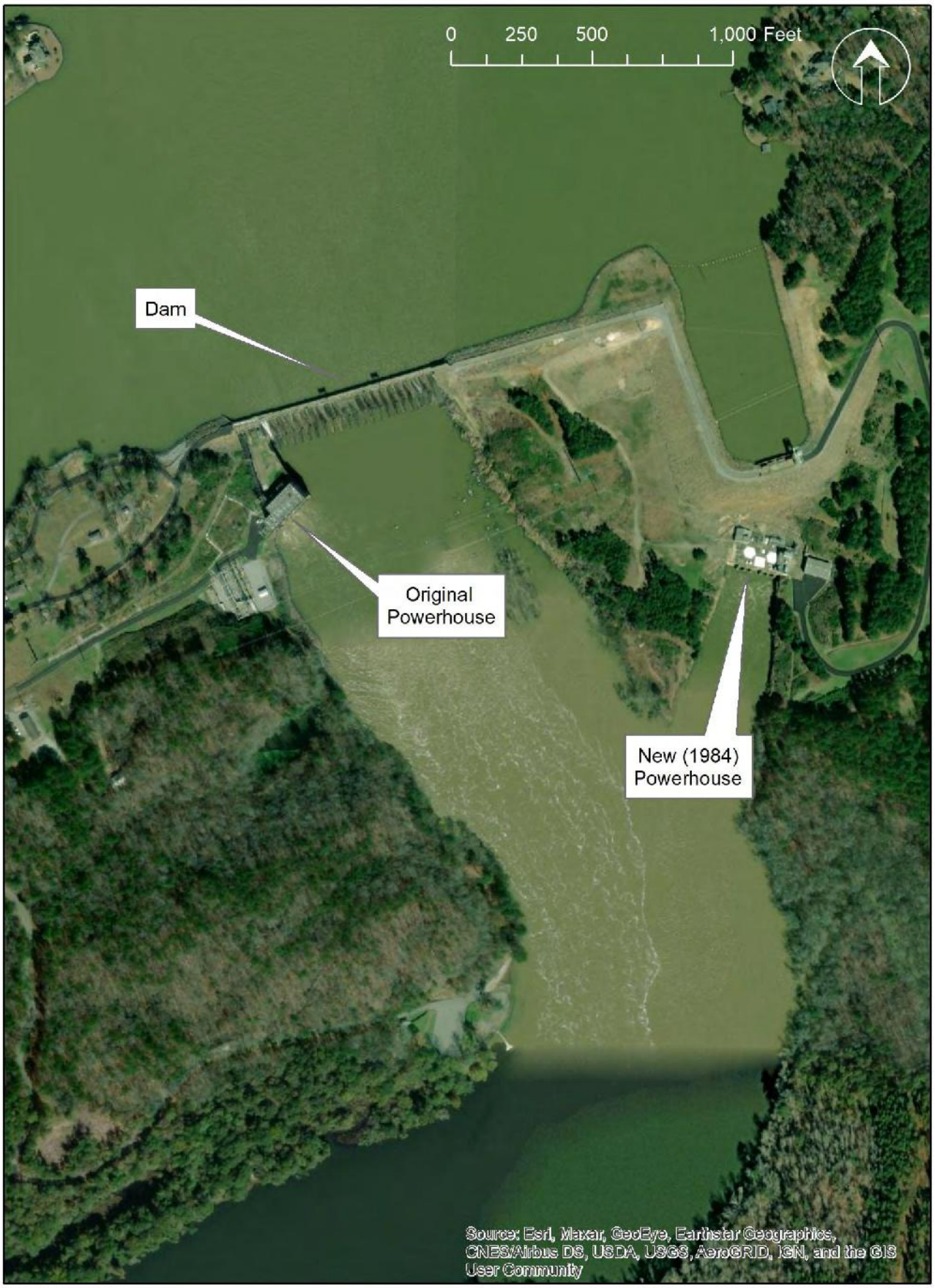


Figure 2. Aerial photograph of Bartletts Ferry project works.



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

Written Correspondence with AHC



Figure 4. Photograph showing turbine floor.



Figure 5. Photograph showing turbine detail.

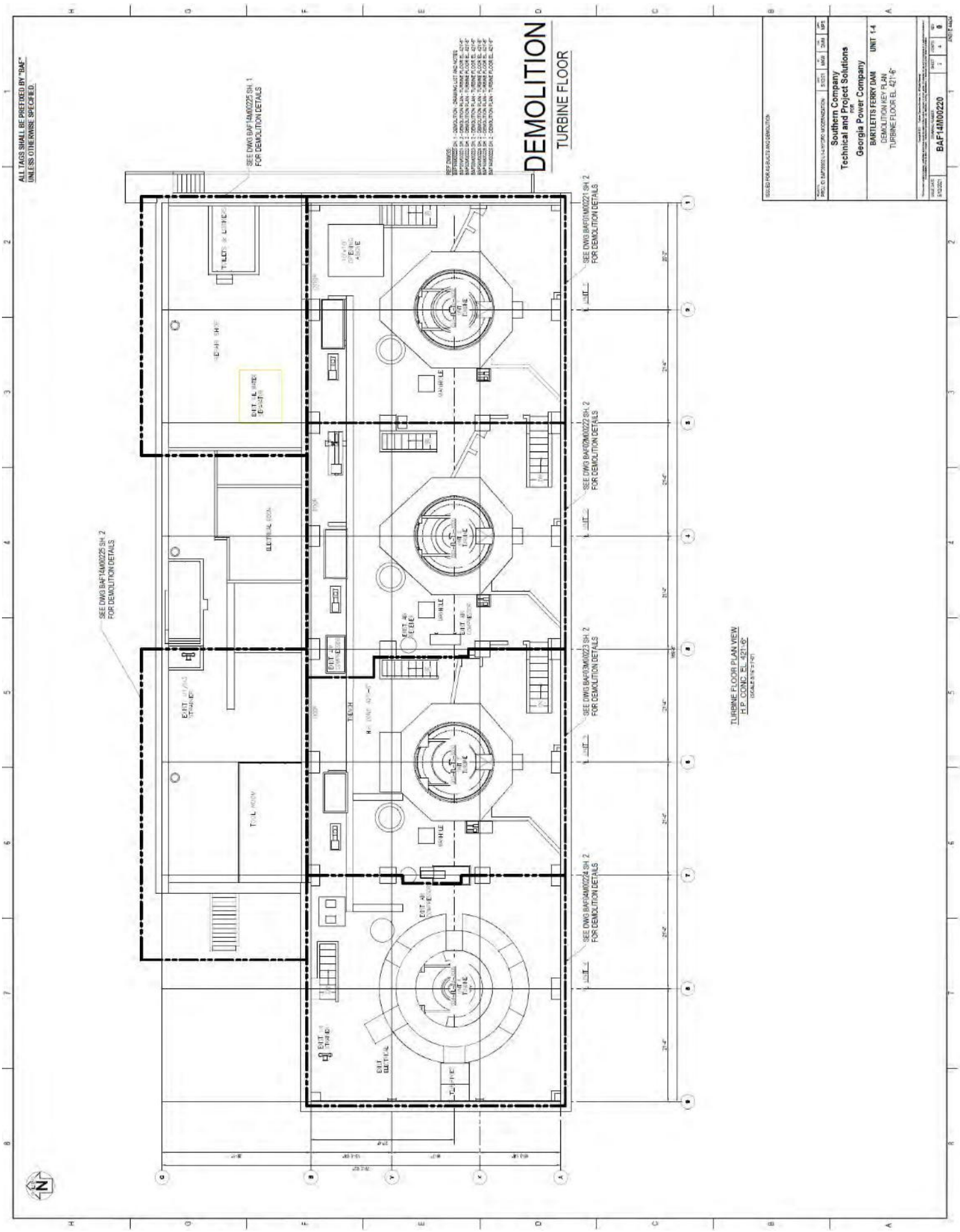


Figure 6. Current plan drawing of turbine floor.

Written Correspondence with AHC

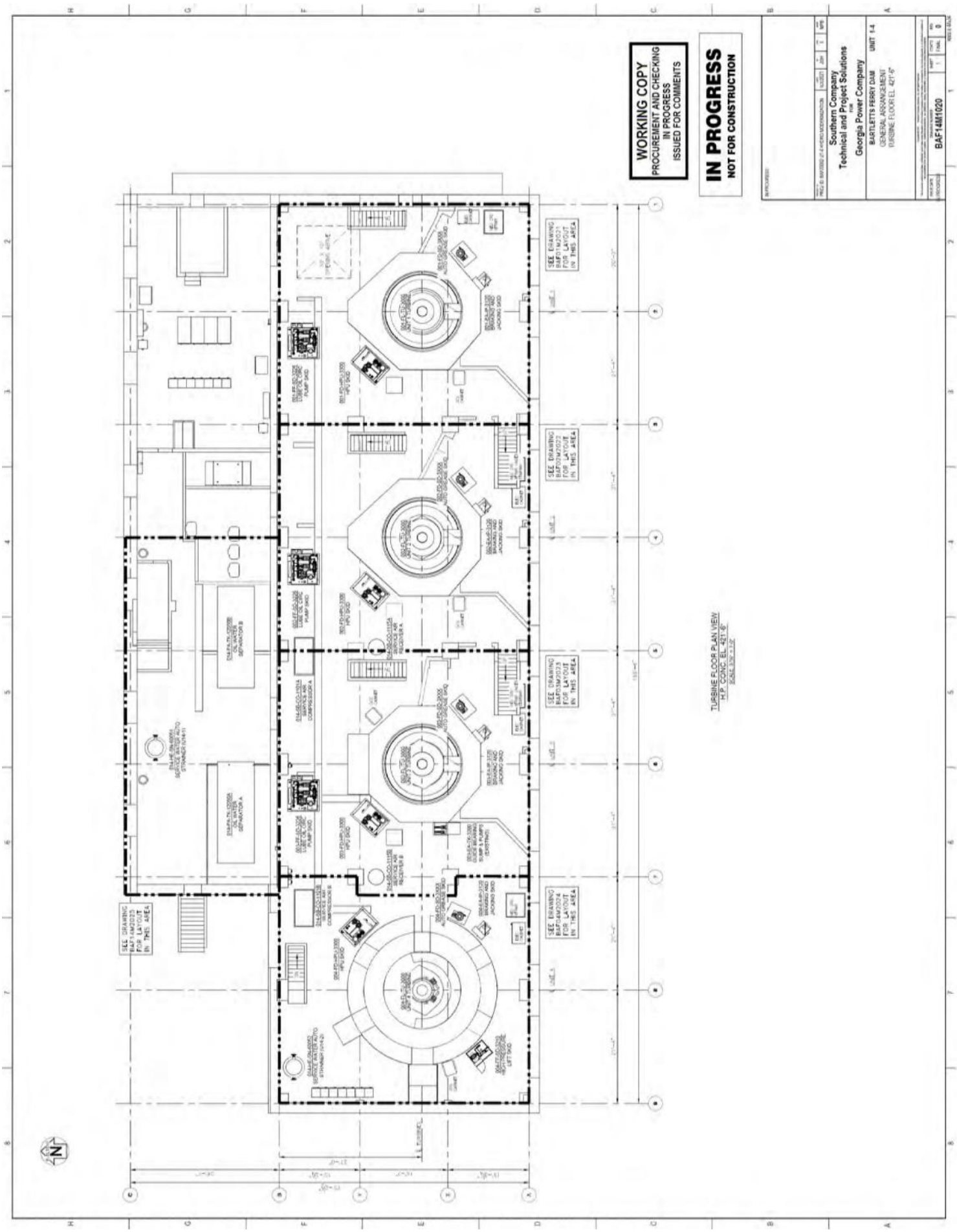


Figure 7. Plan drawing of turbine floor after modernization.

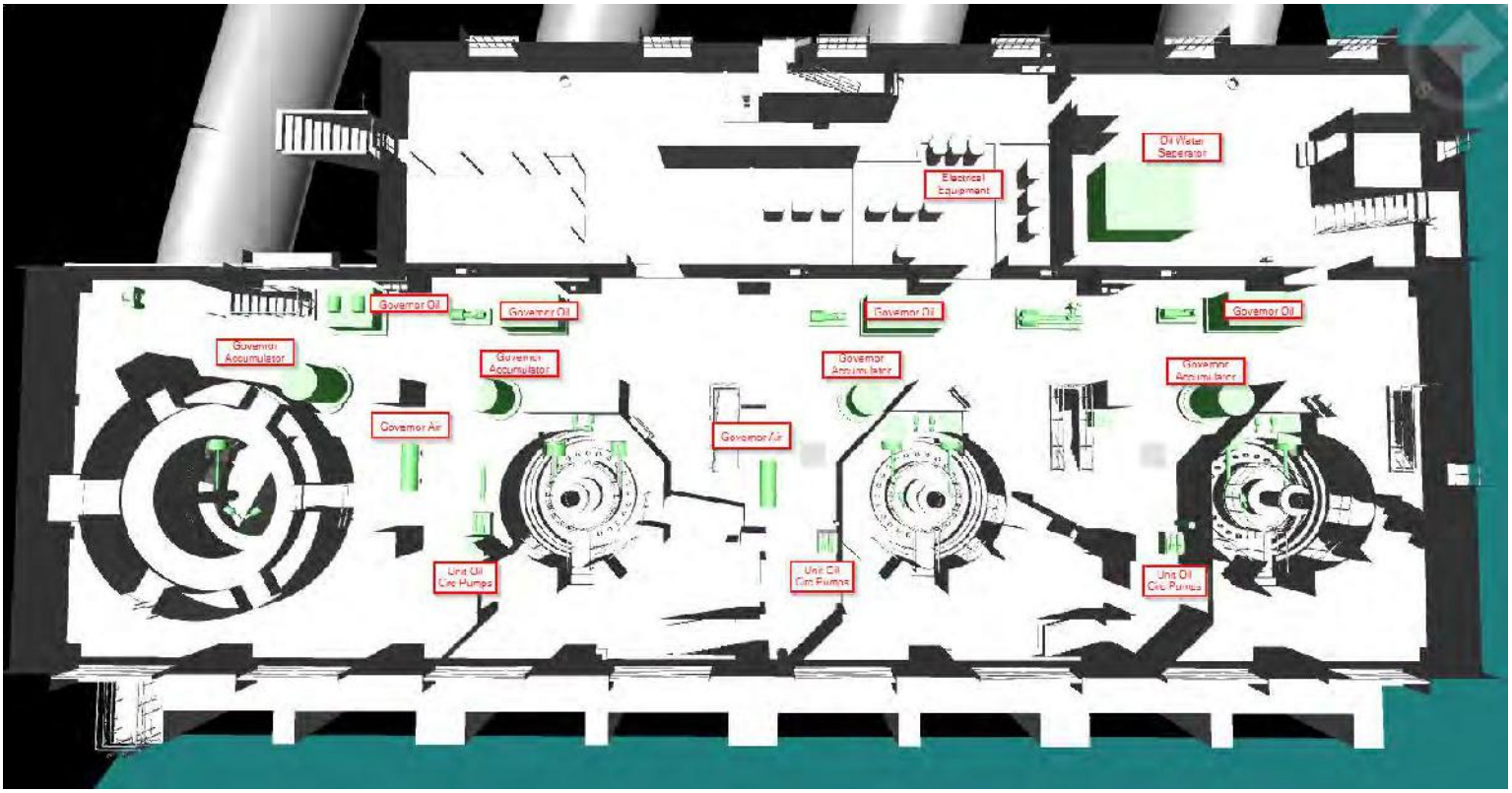


Figure 8. Model of turbine floor before modernization.

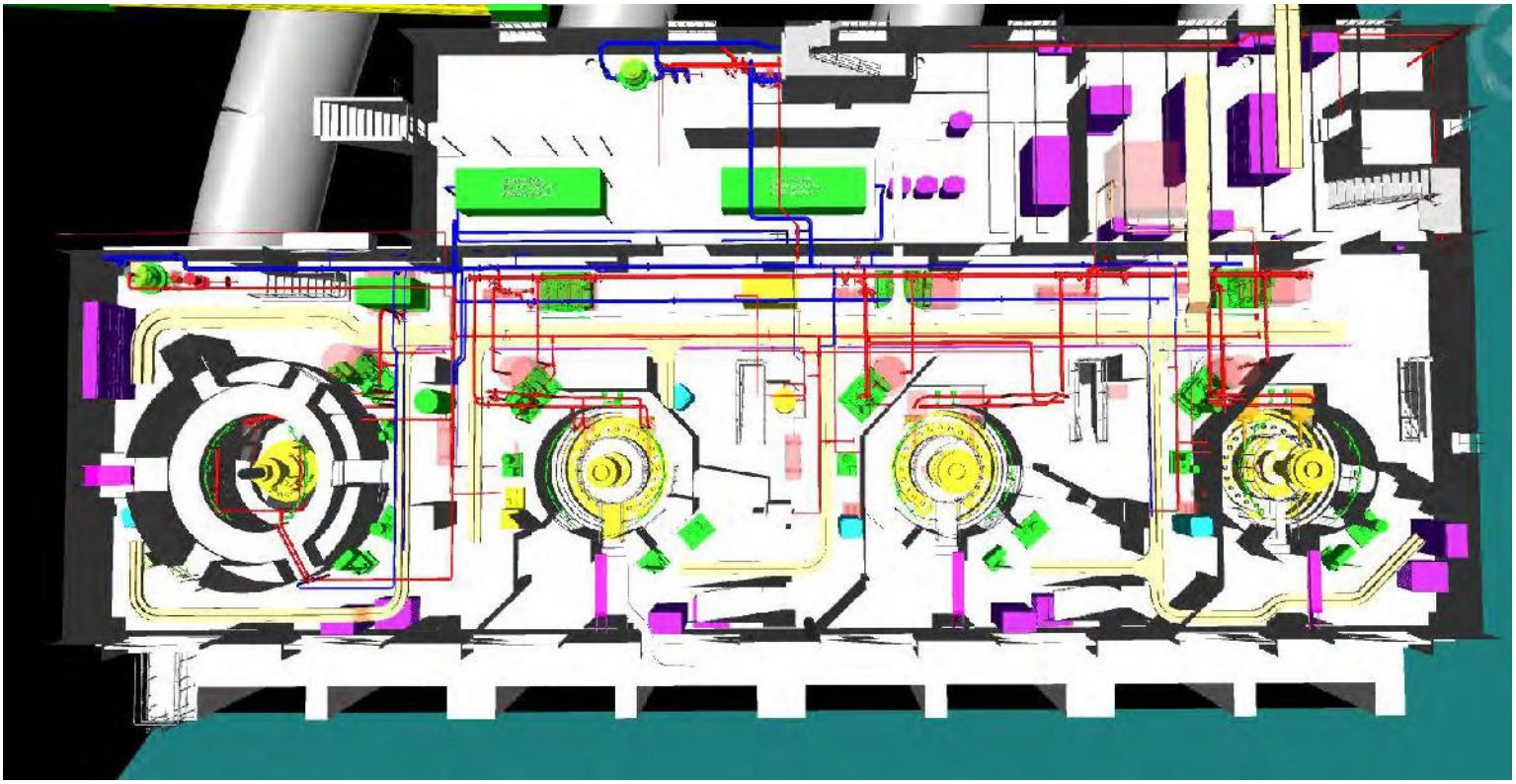


Figure 9. Model of turbine floor after modernization.

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.

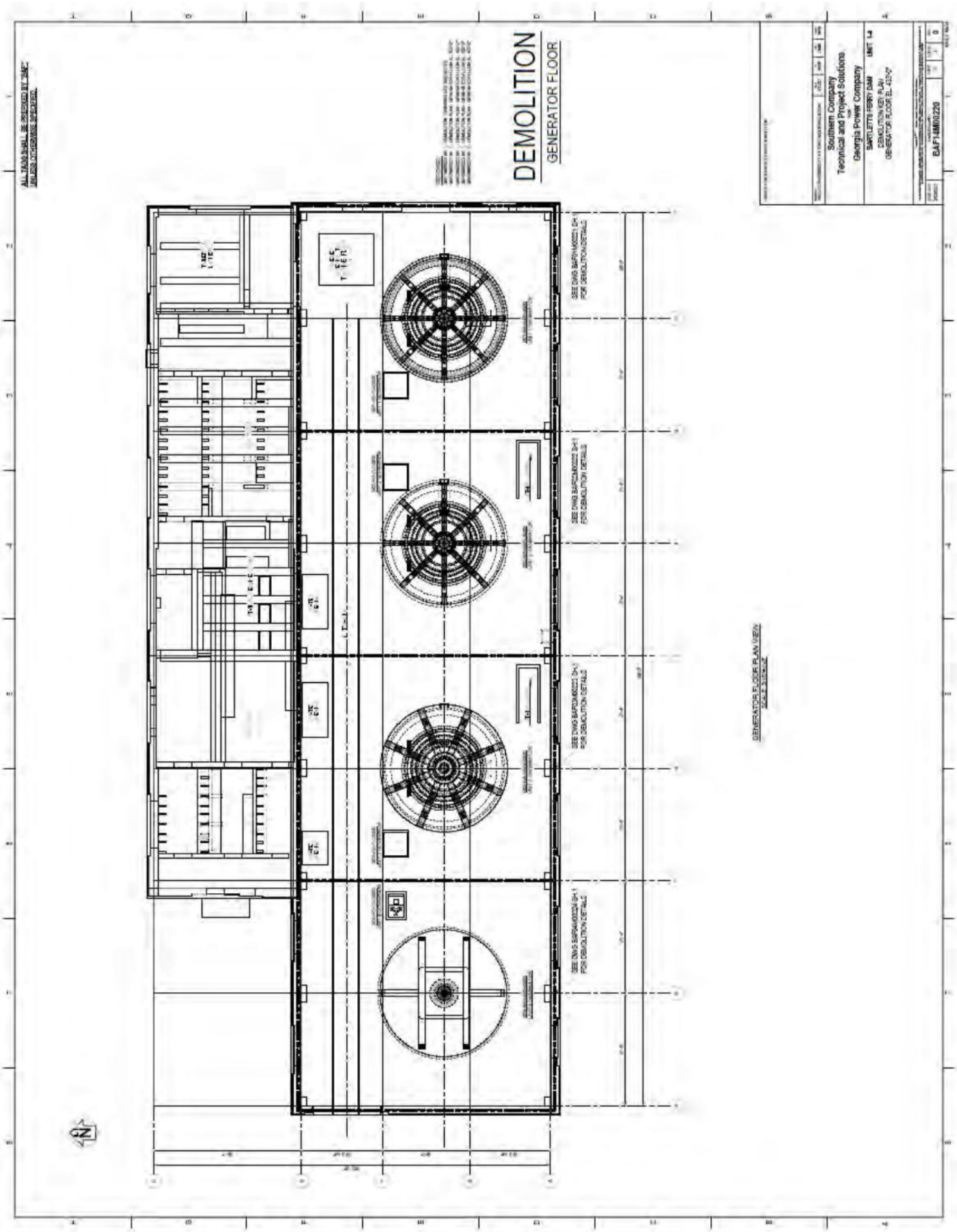


Figure 11. Current plan drawing of generator floor.

Written Correspondence with AHC

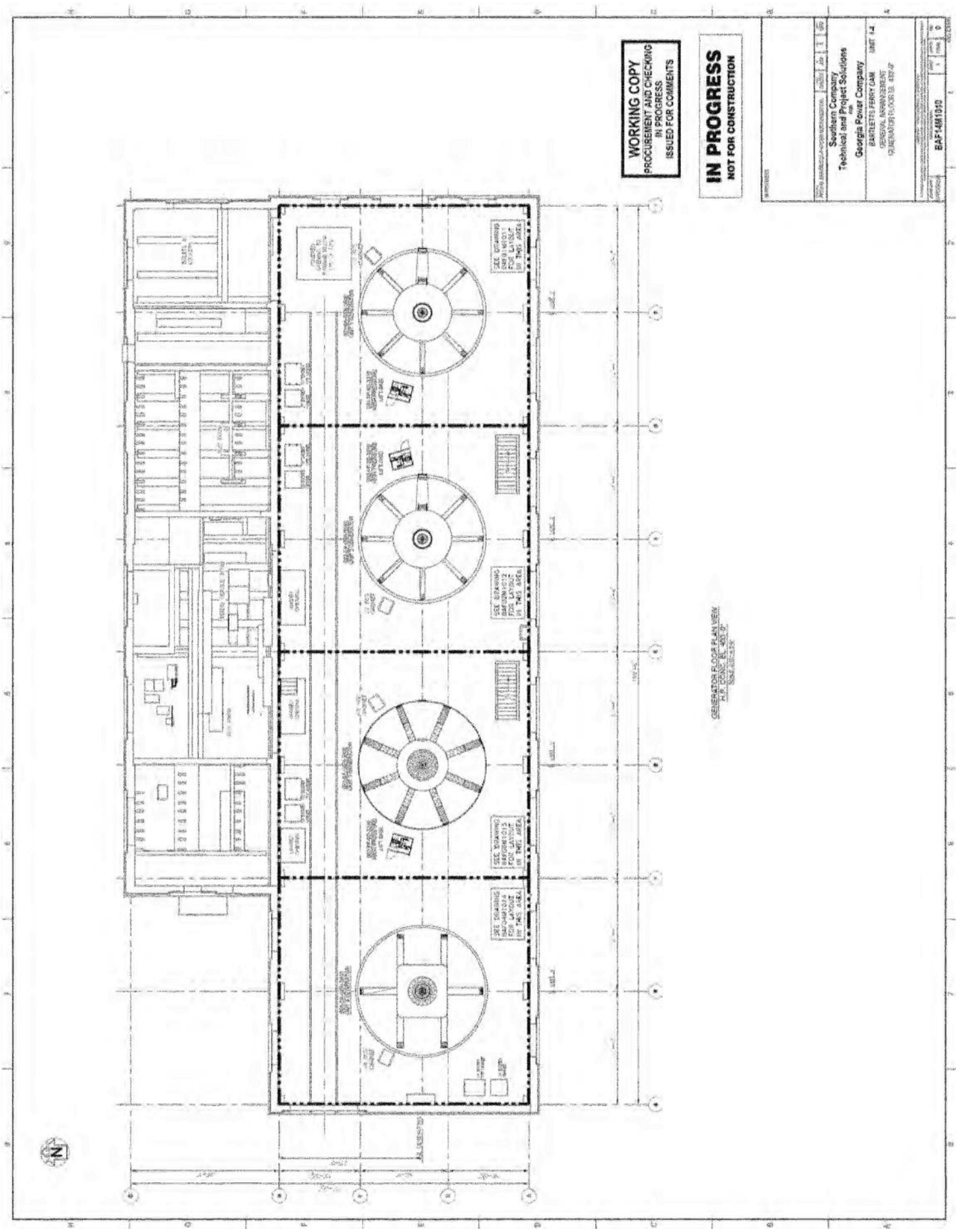


Figure 12. Plan drawing of generator floor after modernization.

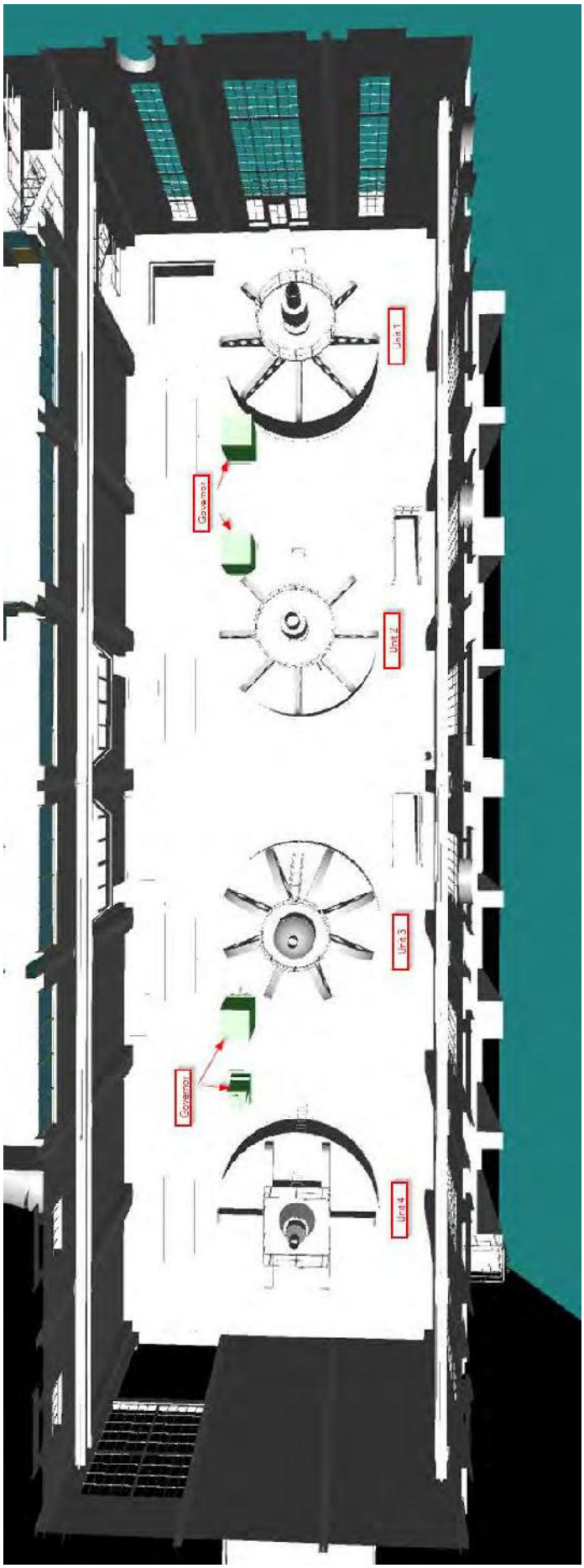


Figure 13. Model of generator floor before modernization.



Figure 14. Model of generator floor after modernization.

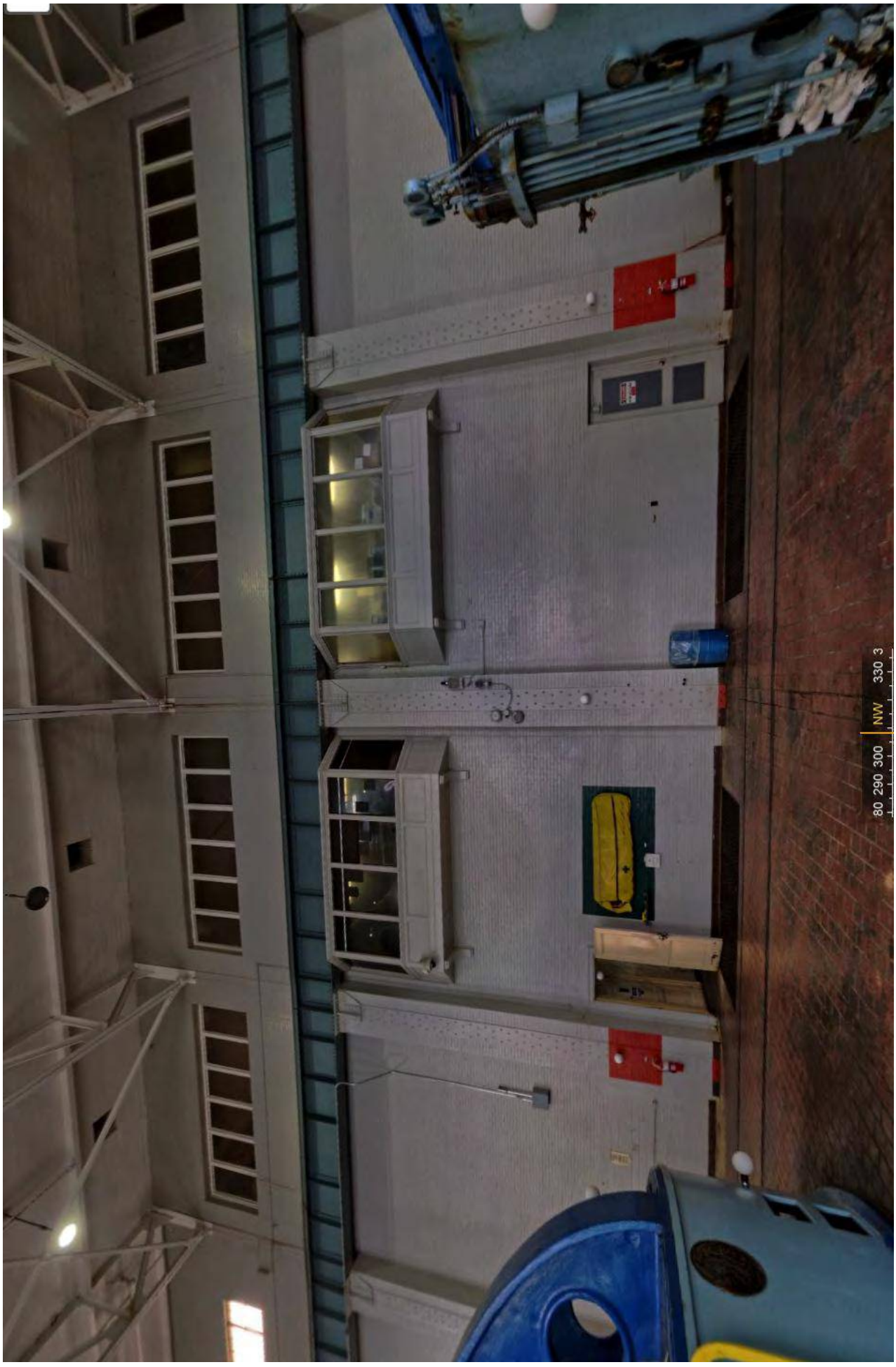


Figure 15. View from generator floor showing the original control room (bay windows) and the proposed new control room above.

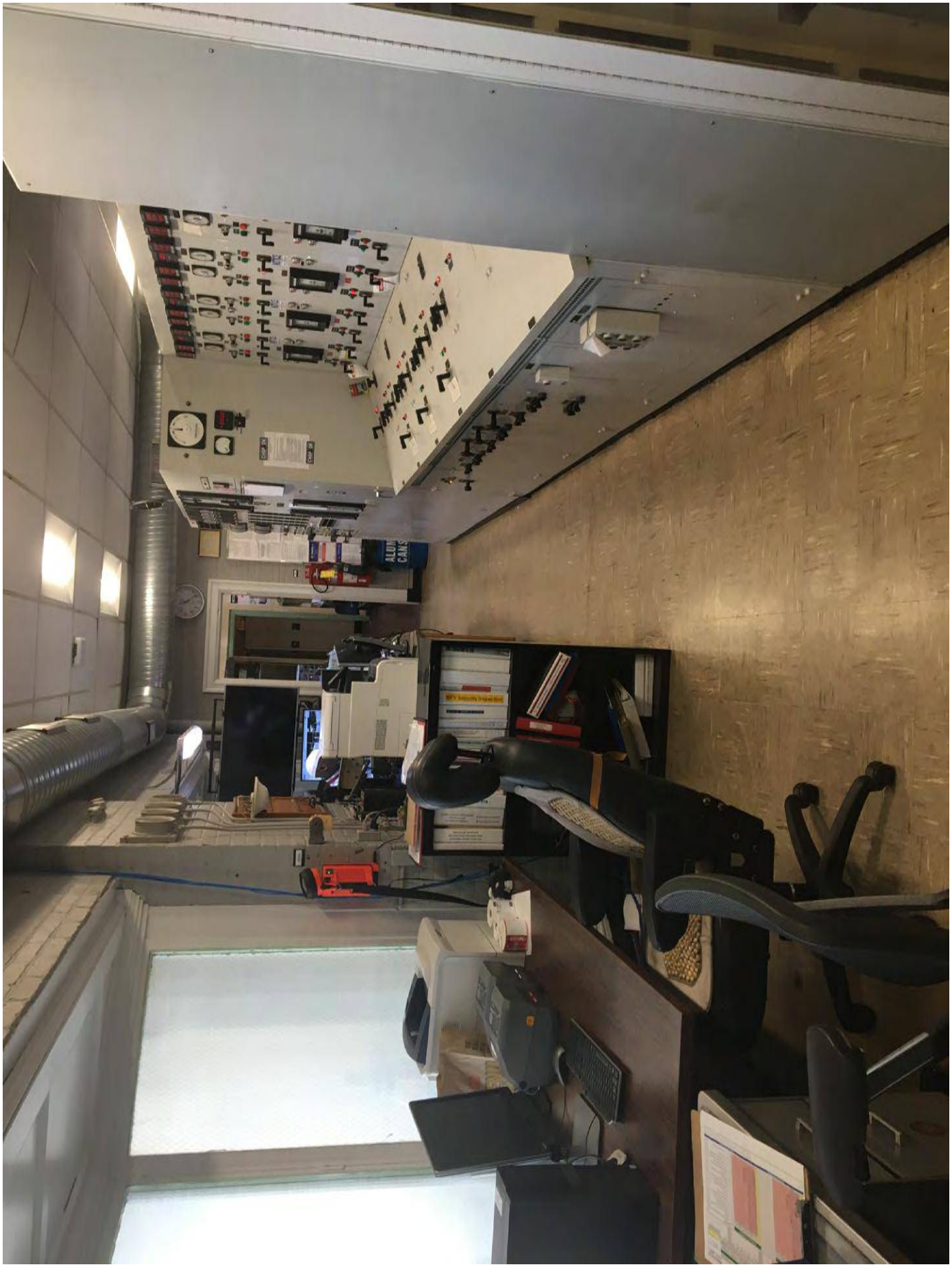


Figure 16. View of current control room.

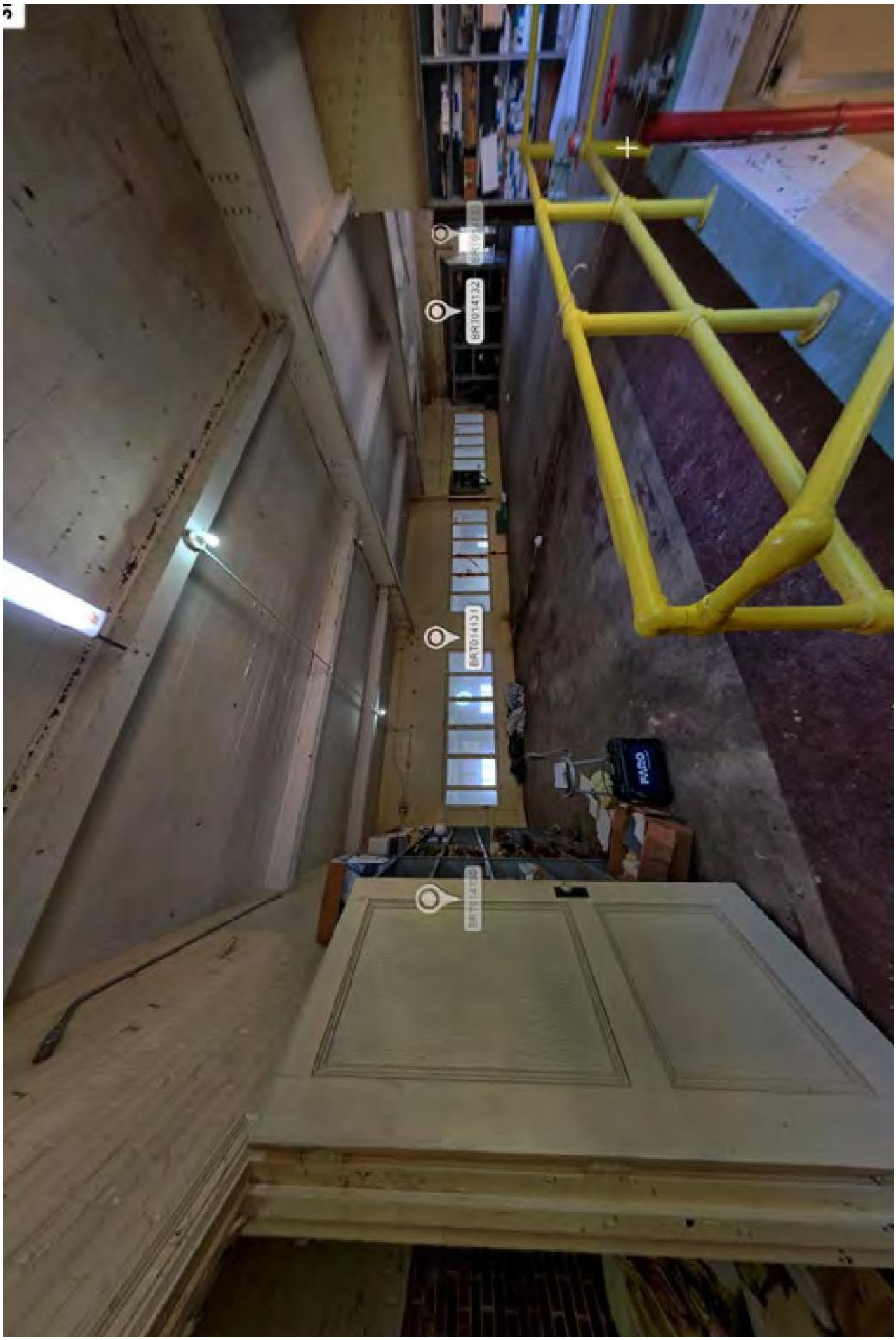


Figure 17. View of proposed new control room taken from a 3D scan.

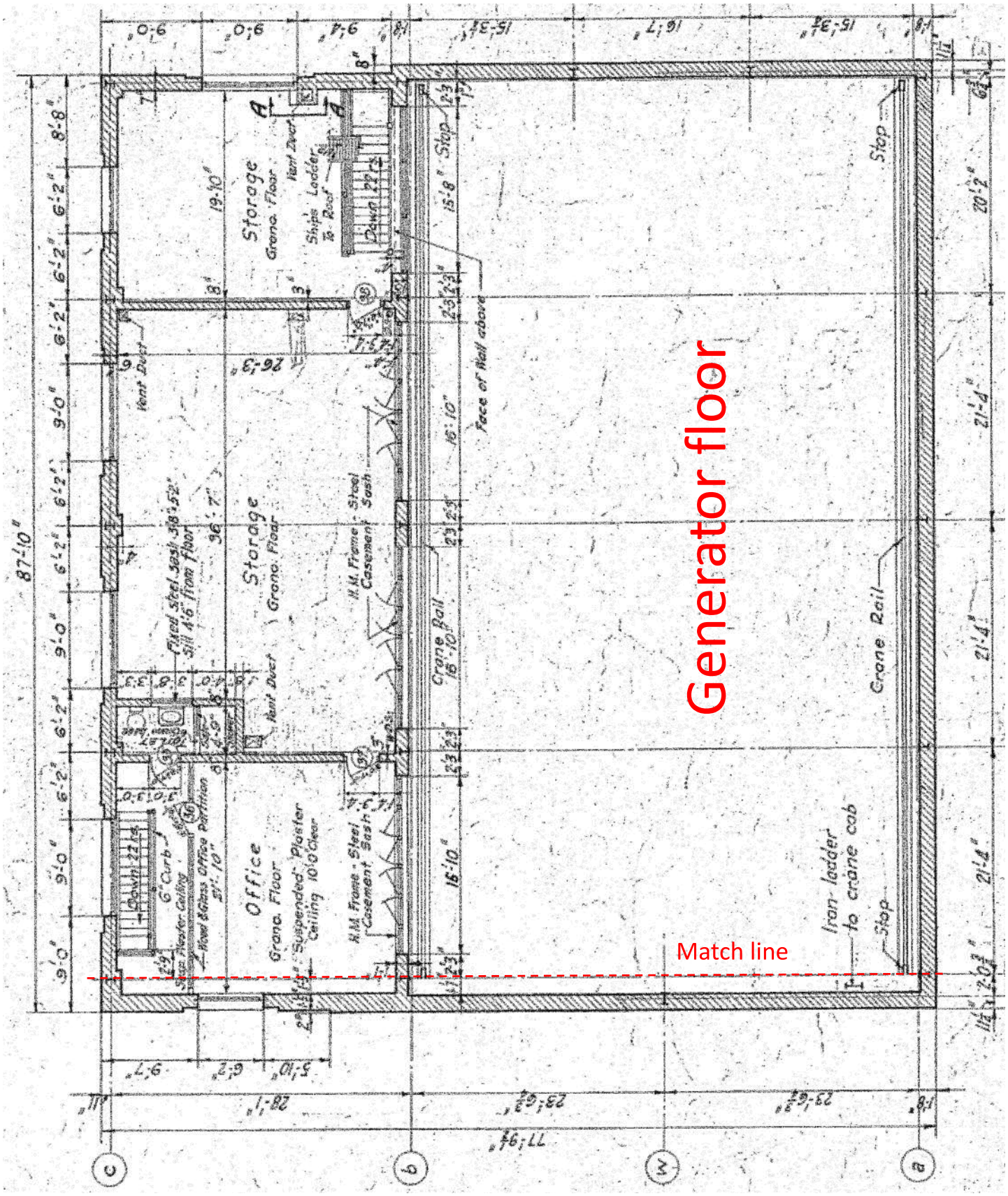


Figure 18. Plan drawing of original 1926 4th floor.

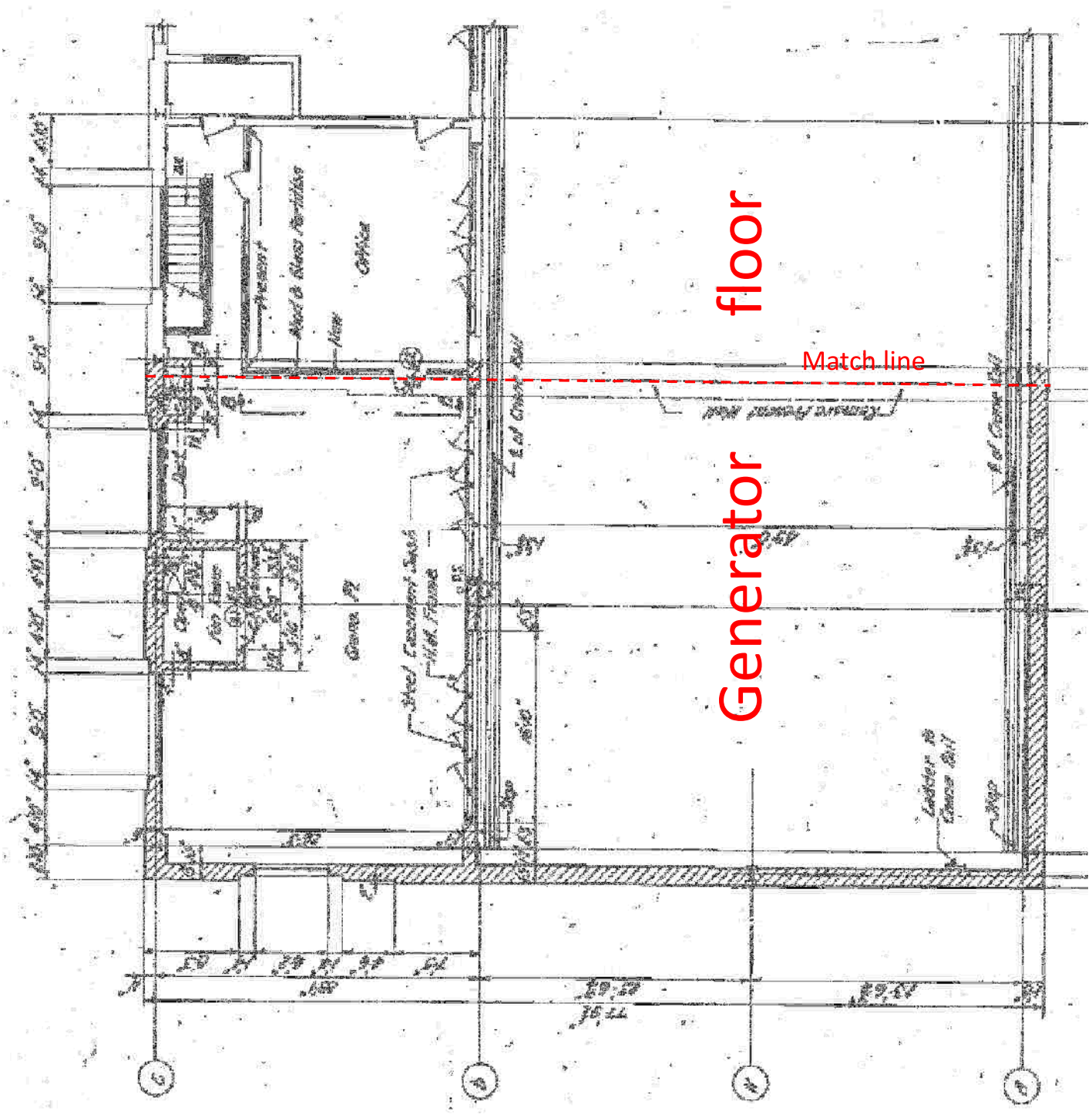


Figure 19. Plan drawing of 4th floor after 1928 expansion for Units 3 and 4.

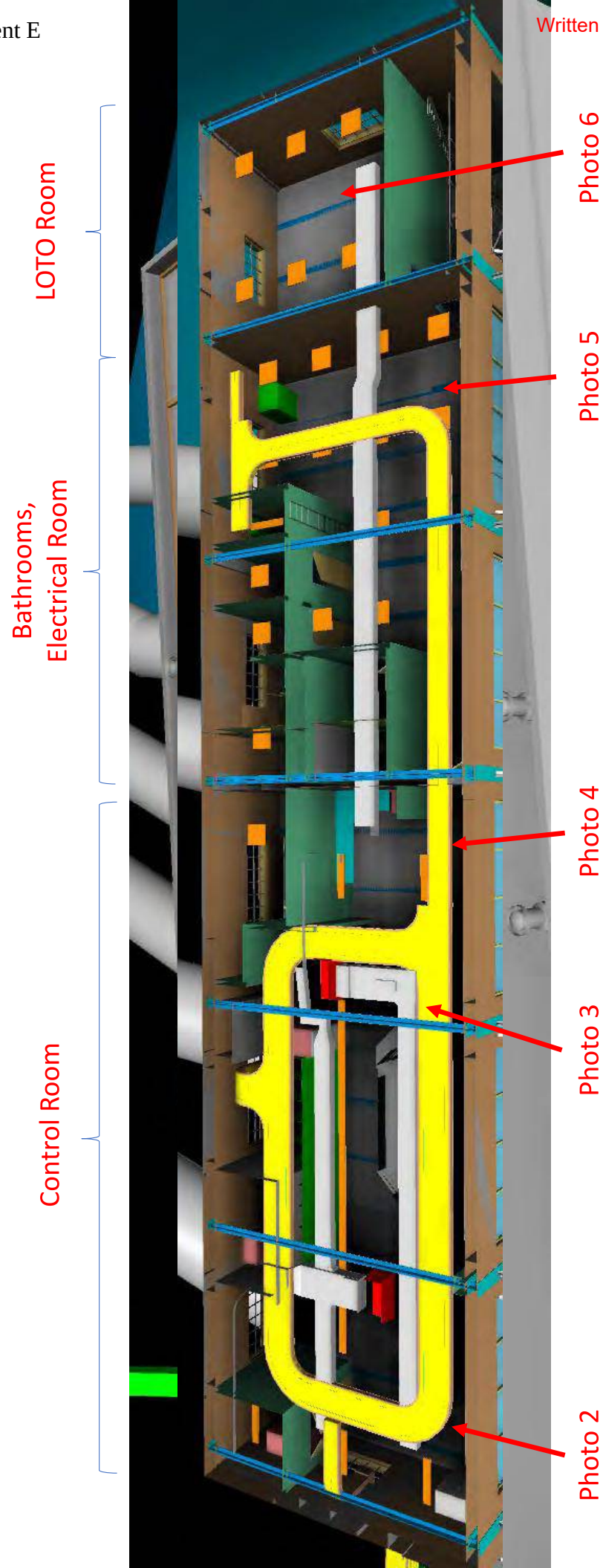


Figure 20. Overview of proposed 4th floor build out.



Figure 21. Model of proposed new control room.



Figure 22. Model of proposed new control room.

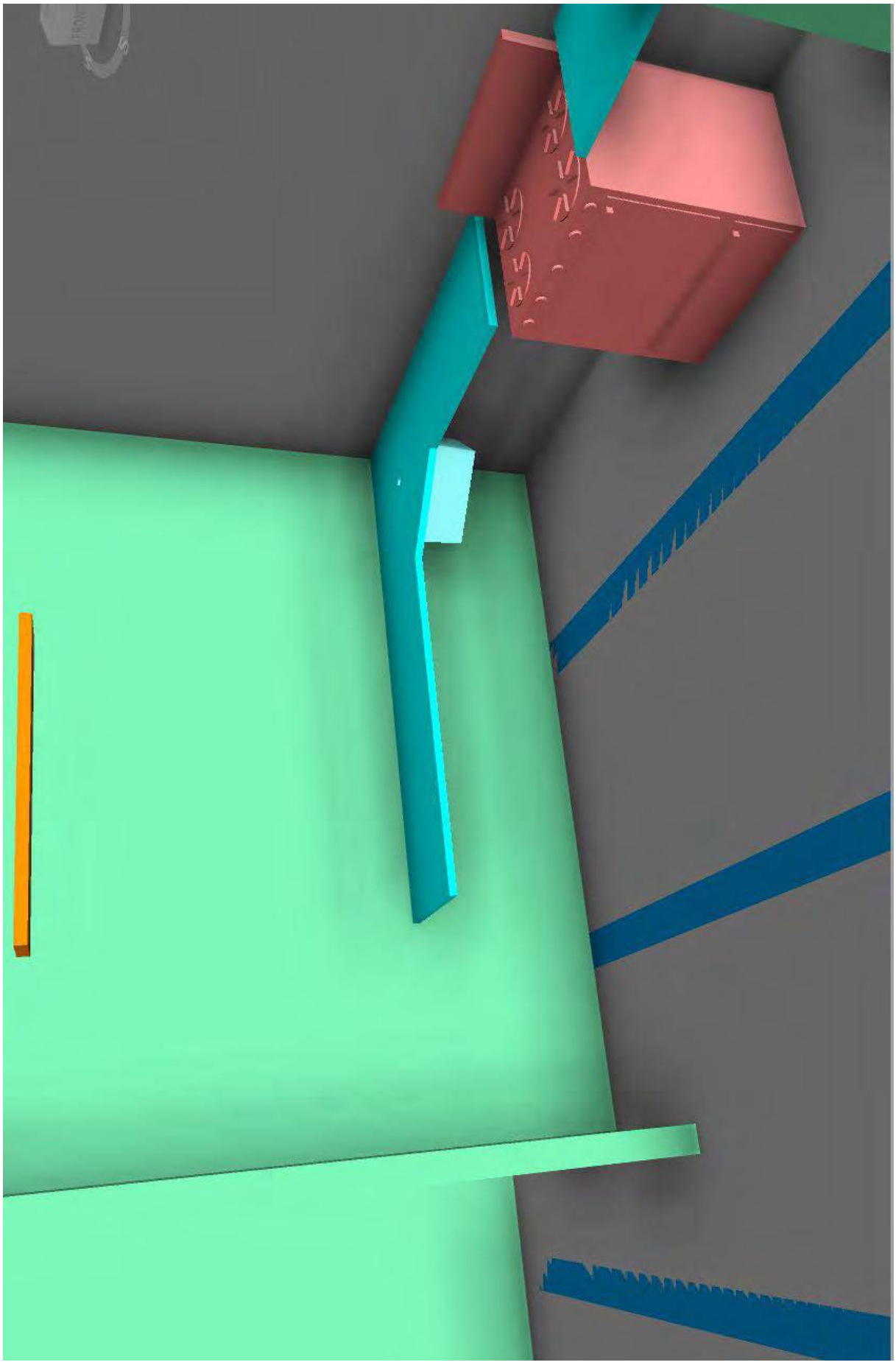


Figure 23. Model of proposed new kitchenette area.

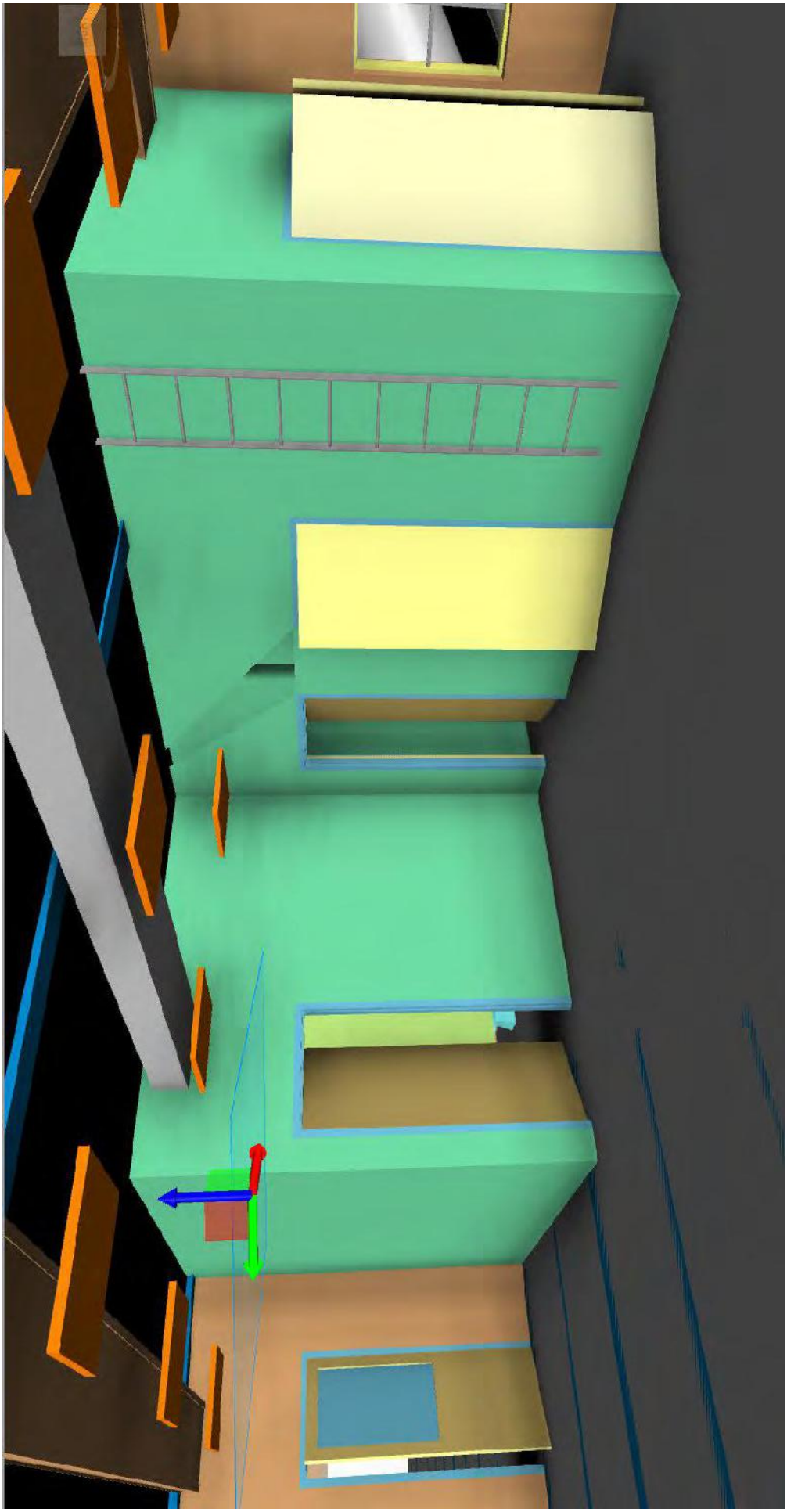


Figure 24. Model of proposed restroom, electrical room, and storage closet.

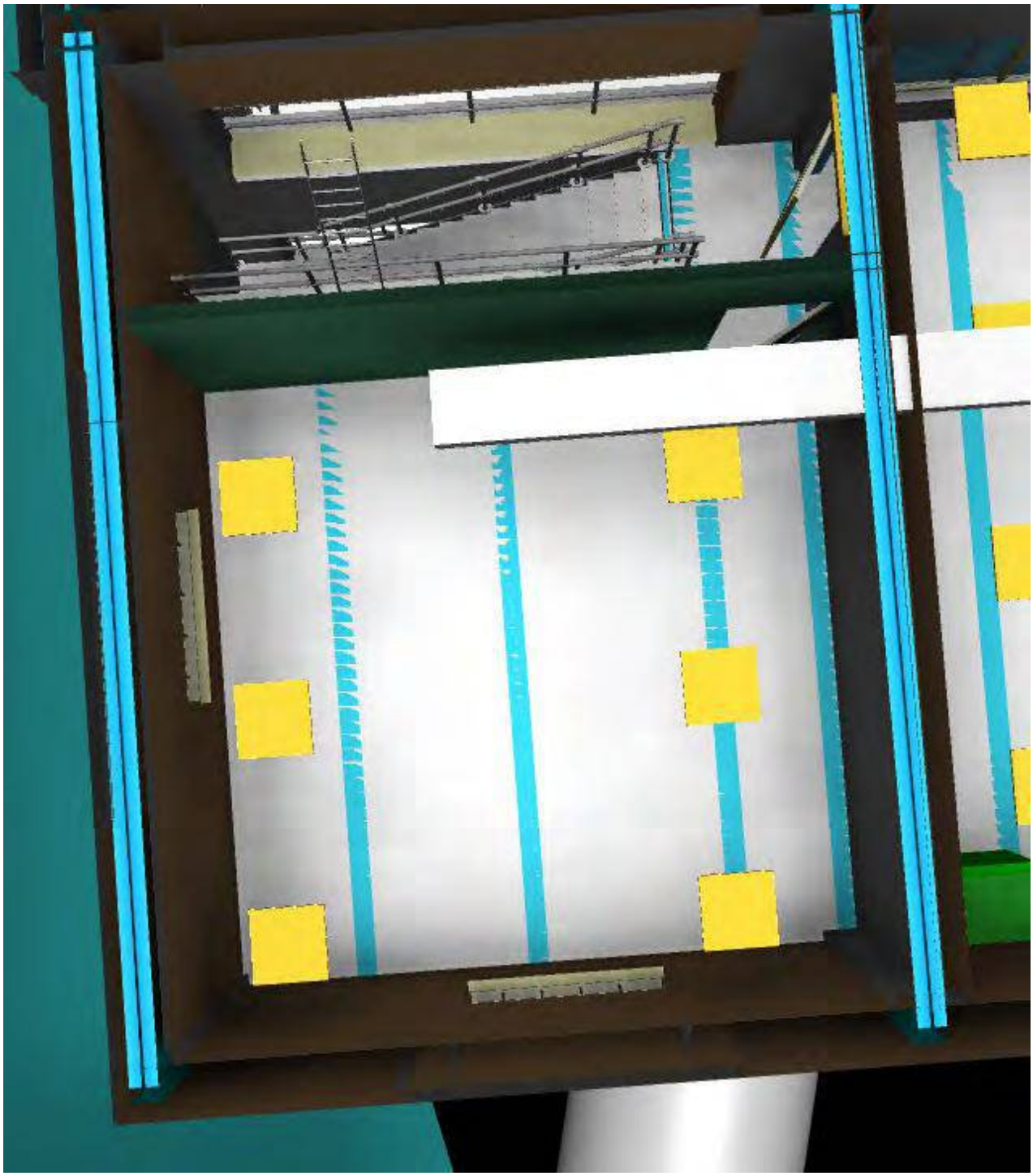


Figure 25. Model of proposed new LOTO room.

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

EXTERNAL MAIL: Caution Opening Links or Files

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

Written Correspondence with AHC

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 11 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.

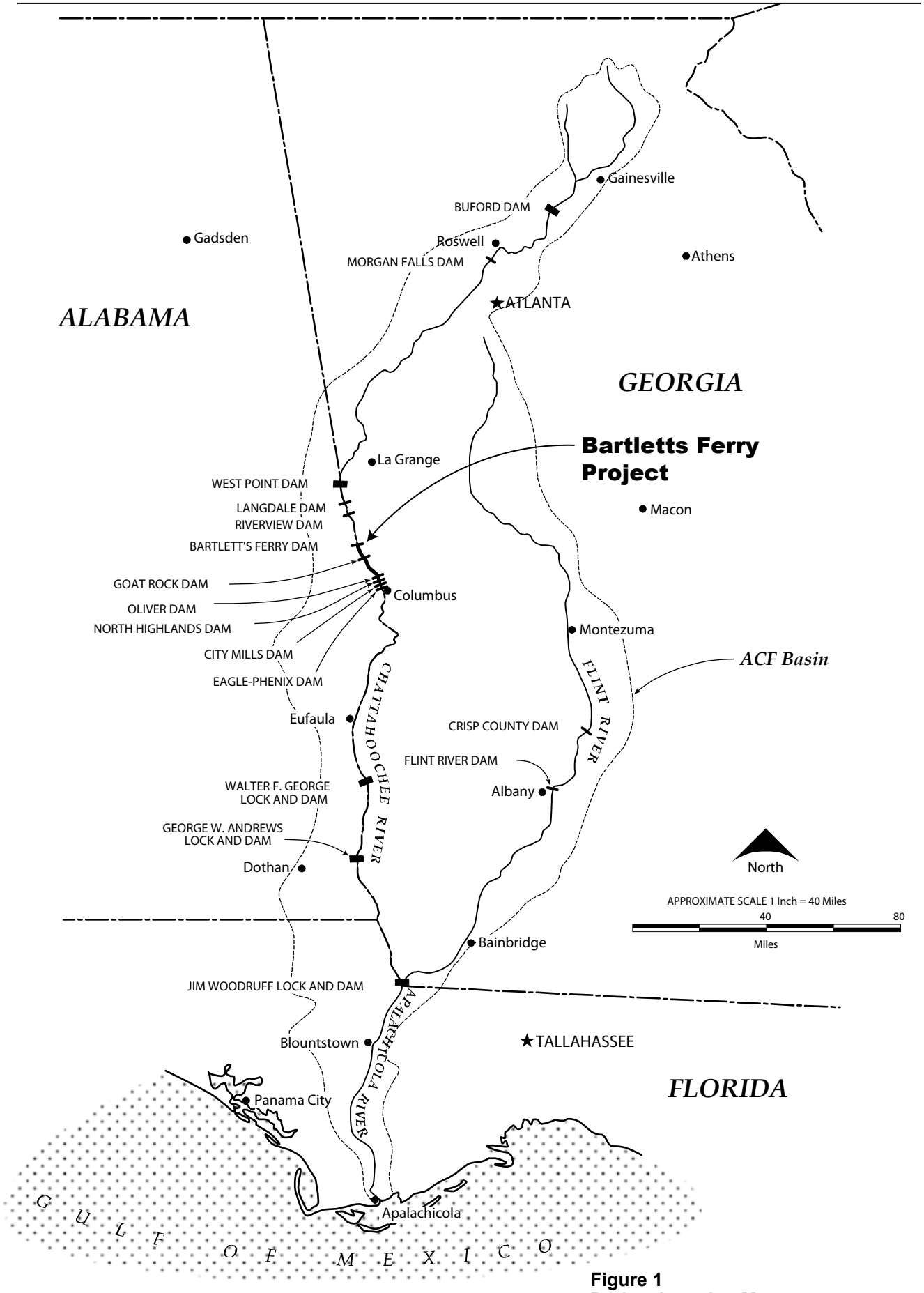


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company



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

Written Correspondence with ADCNR

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

pmorouke@southernco.com
241 Ralph McGill Blvd.
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.

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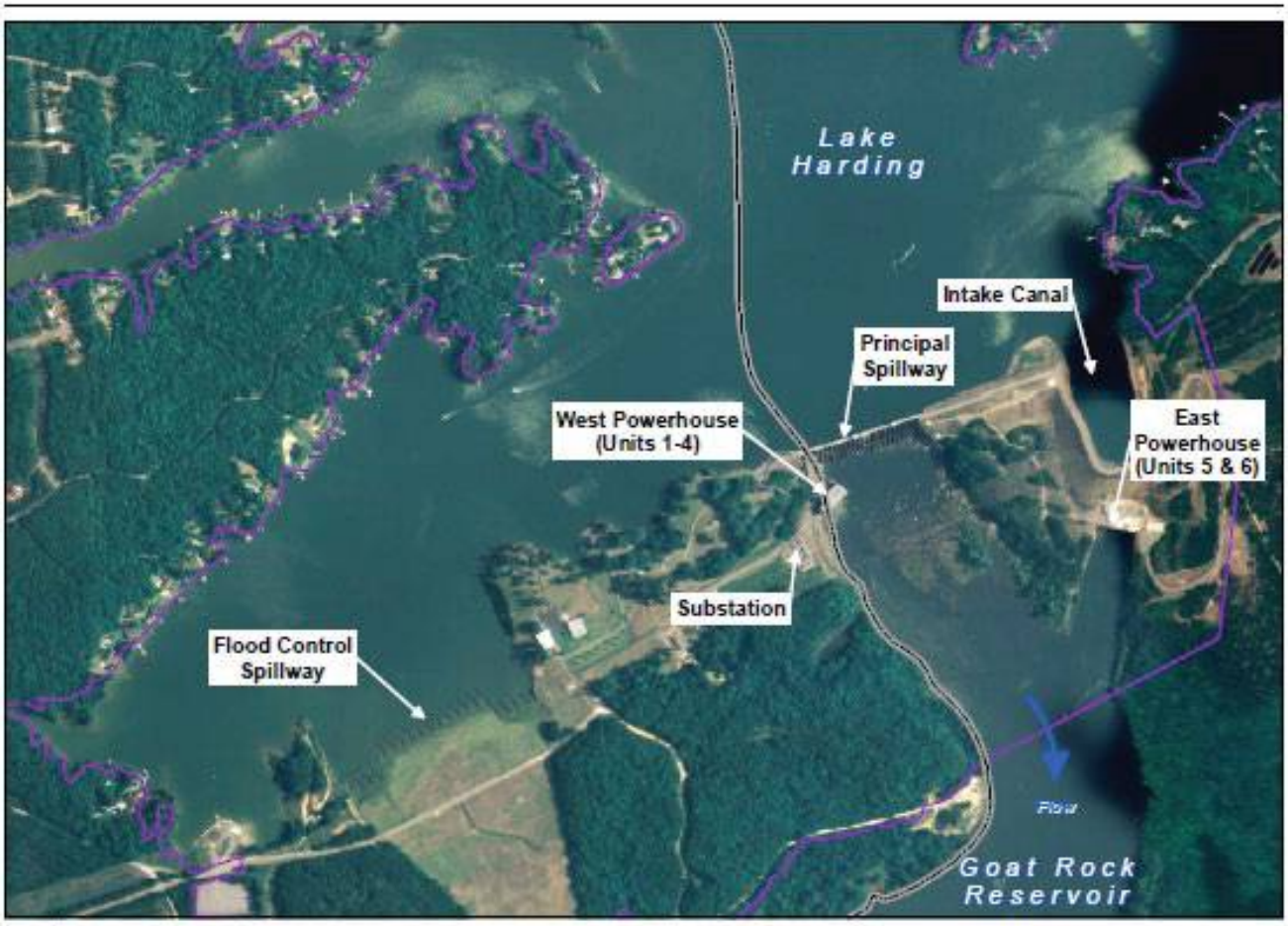


Figure 4
Project Facilities
Bartletts Ferry Project (FERC No. 485)

CH2MHILL

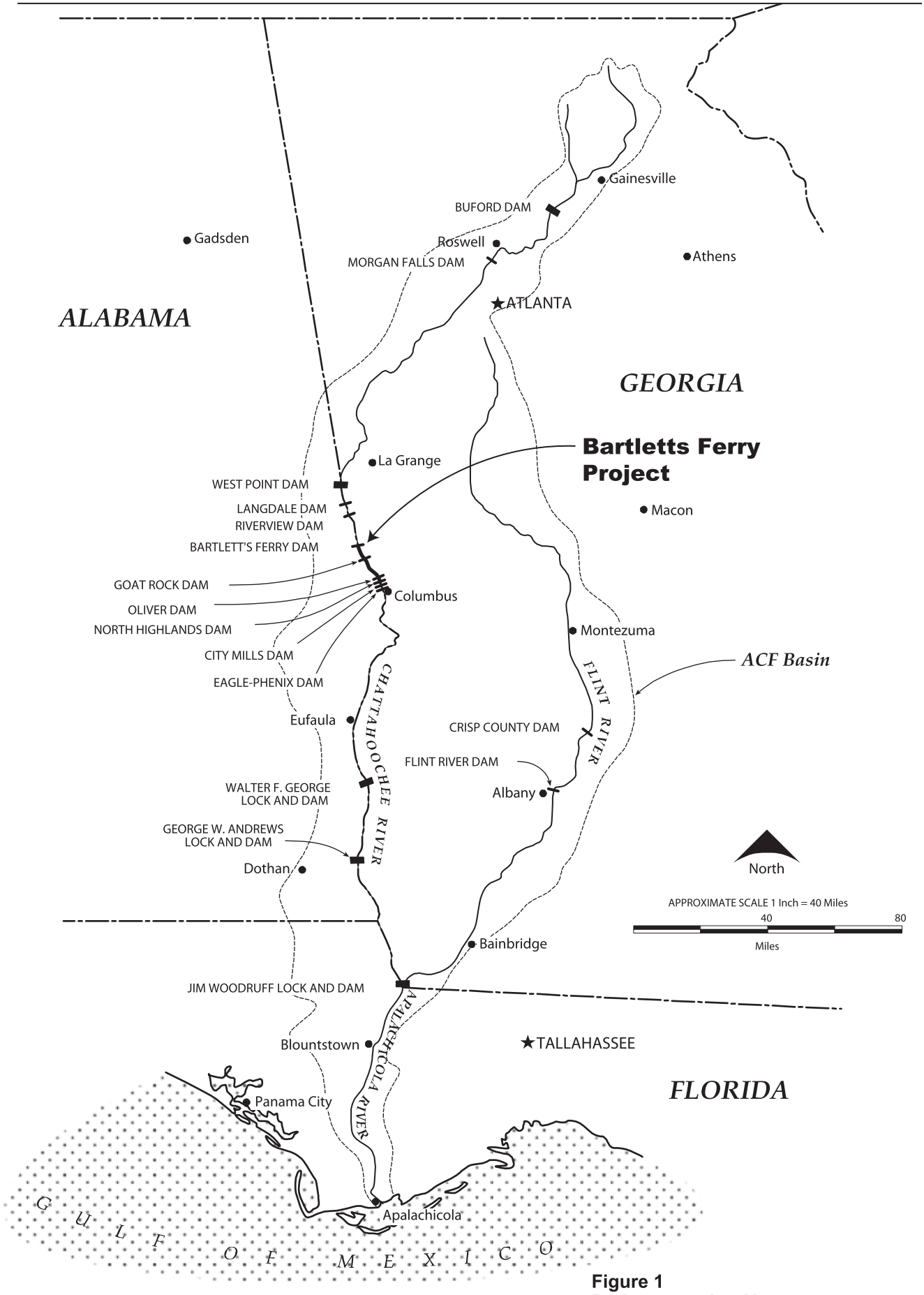


Figure 1
Project Location Map
Bartletts Ferry Project (FERC No. 485)

Source: © 2004 Georgia Power Company

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

EXTERNAL MAIL: Caution Opening Links or Files

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>

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



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

EXTERNAL MAIL: Caution Opening Links or Files

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

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

EXTERNAL MAIL: Caution Opening Links or Files

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

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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
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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

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Part 1 of 2

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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

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