**PERIODIC INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN**
**391-3-4-.10(5) and 40 C.F.R. PART 257.82**
**PLANT HAMMOND ASH POND 1 (AP-1)**
**GEORGIA POWER COMPANY**

The Federal CCR Rule, and, for Existing Surface Impoundments where applicable, the Georgia CCR Rule (391-3-4-.10) require the owner or operator of a CCR surface impoundment to design, construct, operate and maintain an inflow design flood control system capable of adequately managing flow during and following the peak discharge of the specified inflow design flood. The owner or operator must prepare an inflow design flood control system written plan documenting how the inflow design flood control system has been designed and constructed. *See* 40 C.F.R. § 257.82; Ga. Comp. R. & Regs. r. 391.3-4-.10(5)(b). In addition, the Rules require periodic inflow design flood control system plans within 5 years of development of the previous plan. *See* 40 C.F.R. § 257.82(c)(4); Ga. Comp. R. & Regs. r. 391.3-4-.10(5)(b).

The existing CCR surface impoundment known as AP-1 is located in Floyd County, west of Rome, Georgia on Plant Hammond property. The facility consists of a 35-acre CCR storage area. The inflow design flood consists primarily of the rainfall that falls within the limits of AP-1, along with a nominal amount (relative to rainfall) of periodic flows from other ponds. The Notification of Intent to Initiate Closure was placed in the Operating Record on 8/31/2020 and closure has been designed to have no negative impacts on the inflow design flood control plan.

Stormwater is temporarily stored within the limits of AP-1 and discharged through the spillway system. The principal spillway for AP-1 is located on its western edge and consists of a 36-inch diameter fiberglass reinforced pipe (FRP). The 36-inch FRP extends from a reinforced concrete intake structure into the Plant for process water return flows or blowdown to the river through the Plant's discharge tunnel. The auxiliary spillway for AP-1 is located in the southwestern corner of the pond and consists of a 3'-8" by 3'-8" (interior dimension) reinforced concrete riser structure 18 ft. tall with stop logs. The riser is connected to a 36-inch diameter reinforced concrete pipe (RCP) which remains closed during normal operations. The discharge pipe flows into a small pool which is connected to the Coosa River.

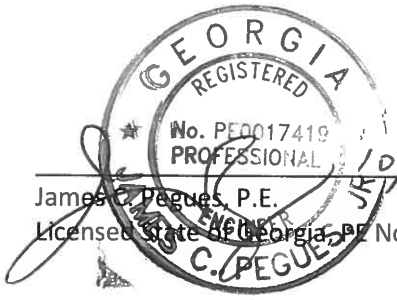
The inflow design flood has been calculated using the Natural Resources Conservation Service method (also known as the Soil Conservation Service (SCS) method) using the 1,000-yr storm event required for

a Significant hazard potential facility. Appendix A and B from the Urban Hydrology for Small Watersheds (TR-55) were used to determine the rainfall distribution methodology. Precipitation values were determined from the National Oceanic and Atmospheric Administration's (NOAA's) Precipitation Frequency Data Server (Atlas-14).

This information was placed into the computer software program PC-SWMM to analyze the design storm while assuming 100% run-off into the surface impoundment from the contributing drainage area. Resulting calculations indicate that AP-1 can safely store and pass the 1,000-yr, 24-hr inflow design flood. This plan is supported by appropriate engineering calculations which are attached.

The facility is operated subject to and in accordance with § 257.3-3 of EPA's regulations.

I hereby certify that the inflow design flood control system plan meets the requirements of 40 C.F.R. § 257.82.




10/15/2021

James C. Pegues, P.E.
Licensed State of Georgia, PE No. 17419

**Inflow Design Control System Plan:**
**Hydrologic and Hydraulic Calculation Summary**

for

***Plant Hammond Ash Pond 1***

Prepared by:

Southern Company Services
T&PS Environmental Solutions

Originator: Stantec Consulting Services, Inc.

Reviewer: Joshua K Myers 10/8/21
Joshua K. Myers Date

Approval: 10/8/21
James C. Pegues Date

## 1.0 Purpose of Calculation

The purpose of this report is to demonstrate the hydraulic capacity of the subject CCR impoundment in order to prepare an inflow design flood control plan as required by the United States Environmental Protection Agency's (EPA) final rule for Disposal of CCR from Electric Utilities (EPA 40 CFR 257) and the Georgia Environmental Protection Division's (EPD) Georgia CCR Rule (391-3-4-.10).

## 2.0 Summary of Conclusions

A hydrologic and hydraulic model was developed for the Plant Hammond Ash Pond 1 to determine the hydraulic capacity of the impoundment. Ash Pond 1 is located in the eastern portion of the plant. Stormwater is temporarily stored within the limits of Ash Pond 1 and then discharged through a riser structure into the Coosa River.

The design storm for the Plant Hammond Ash Pond 1 is a 1000-year rainfall event. Southern Company has selected a storm duration of 24-hours for all inflow design flood control plans. The results of routing a 1,000-year, 24-hour rainfall event through the impoundment are presented in Table 1 below:

**Table 1 - Flood Routing Results for Plant Hammond Ash Pond 1**

| Plant Hammond | Normal Pool El (ft) | Top of Embankment El (ft) | Auxiliary Spillway Crest El (ft) | Peak Water Surface Elevation (ft) | Freeboard* (ft) | Peak Inflow (cfs) | Peak Outflow (cfs) |
|---|---|---|---|---|---|---|---|
| Ash Pond 1 | 584.0 | 591.0 | 589.0 | 586.40 | 4.6 | 450.2 | 0** |

*Freeboard is measured from the top of embankment to the peak water surface elevation

**The principal spillway is not being used for this analysis and the peak water surface elevation does not reach the auxiliary spillway crest elevation.

## 3.0 Methodology

### 3.1 HYDROLOGIC ANALYSES

The Plant Hammond Ash Pond 1 is classified as a significant hazard structure. The design storm for a significant hazard structure is a 1,000-year rainfall event. A summary of the design storm parameters and rainfall distribution methodology for these calculations is summarized below in Table 2.

**Table 2 - Plant Hammond Ash Pond 1 Storm Distribution**

| Hazard Classification | Return Frequency (years) | Storm Duration (hours) | Rainfall Total (Inches) | Rainfall Source | Storm Distribution |
|---|---|---|---|---|---|
| Significant | 1000 | 24 | 10.7 | NOAA Atlas 14 | SCS Type II |

The hydraulic capacity of Ash Pond 1 was evaluated using stage-storage methodology. The contributing drainage area to Ash Pond 1 is approximately 34.9 acres and consists of the dam and impoundment and the immediate ground surface that drains to Ash Pond 1. The drainage basin for Ash Pond 1 is shown on Figure 1 within the supporting information. Other inflows into the pond include flows pumped from Ash Pond 4 and discharge from Ash Pond 2.

## 3.2 HYDRAULIC ANALYSES

Storage values for Ash Pond 1 were developed by utilizing existing ground contours. The spillway system at the Plant Hammond Ash Pond 1 consists of a principal spillway and an auxiliary spillway. The principal spillway for Ash Pond 1 consists of a pipe that discharges directly to the wastewater treatment facility located southwest of Ash Pond 1. However, it has been deemed inactive and was not included in this analysis. The auxiliary spillway consists of a 36” riser structure that discharges directly into the NPDES pond through a series of 36” RCP and HDPE pipes. Table 3 summarizes the spillway system of Ash Pond 1.

**Table 3 – Ash Pond 1 Hydraulic Characteristics**

| Plant Hammond – Pond 1 | Material / Size | Rim Elevation, ft | US Invert, ft | DS Invert, ft | Length, ft |
|---|---|---|---|---|---|
| **Principal Spillway** | Pipe | Inactive | | | |
| **Auxiliary Spillway** | Riser Structure with 36” dia. RCP into 36” dia. HDPE pipe | 589.0 | 572.0 | 570.9 | 296 |

For the 1,000-yr, 24-hr storm, the spillway in Ash Pond 1 is not activated and inflow is contained within the pond. Flows from Ash Pond 4 are pumped to Ash Pond 1. The pumping rate used in the model was 2,250 gallons per minute (gpm) or 5.01 cubic feet per second (cfs).

## 4.0 SUPPORTING INFORMATION

### 4.1 Drainage Basin

## 4.2 STAGE STORAGE

Name:
AP1

Description:
Storage of Ash Pond 1

Data:

| | Depth (ft) | Area (ft²) |
|---|---|---|
| 1 | 0 | 152116.9 |
| 2 | 2 | 323975 |
| 3 | 4 | 448948 |
| 4 | 6 | 756776.6 |
| 5 | 8 | 826392.8 |
| 6 | 10 | 899930.1 |
| 7 | 12 | 1028750 |
| 8 | 14 | 1251053 |
| 9 | 16 | 1244630 |
| 10 | 18 | 1281550 |
| 11 | | |
| 12 | | |