PLANT McDONOUGH-ATKINSON
CCR SURFACE IMPOUNDMENT
(CCR UNIT AP-2 AND 3/4)
COBB COUNTY, GEORGIA
PART A SECTION 7
CLOSURE PLAN

FOR

Georgia Power

February 2025

WSP USA Inc.
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1.0 INTRODUCTION

This Closure Plan for Georgia Power's AP-2, AP-3 and AP-4 (Combined Unit AP-3/4) was prepared in accordance with 40 CFR Part §257, Subpart D and meets the requirements of 40 CFR §257.102(b) as well as the State of Georgia Solid Waste Management Rule (State Rule) 391-3-4-.10(9)(c)(6)(v) for inactive surface impoundments.

AP-2 has undergone CCR removal in accordance with §257.102(c). AP-3 and the adjacent AP-4 are currently being consolidated and closed in place as Combined Unit AP-3/4 in accordance with §257.102(d), and no longer receives CCR.

Facility details are as follows:

Site Name / Address

Georgia Power Company
Plant McDonough – Atkinson
5551 South Cobb Drive SE
Smyrna, GA 30080

Responsible Official

Manager, Environmental Affairs
Georgia Power Company
241 Ralph McGill Boulevard
Atlanta, GA 30308
404-506-6505

CCR Unit

Ash Pond 2 (AP-2)
Ash Pond 3 (AP-3)
Ash Pond 4 (AP-4)

Closure Method

Close in Place (AP-3 and AP-4)
Closure by Removal (AP-2)

2.0 CLOSURE PLAN

The purpose of this Closure Plan is to outline the methods and procedures underway to close AP-2, AP-3, and AP-4 consistent with recognized and generally accepted good engineering practices. A Notification of Intent to Initiate Closure was completed for AP-2 on December 7, 2015, and for AP-3 and AP-4 on December 8, 2015. AP-2 will undergo closure in accordance with 40 CFR §257.102(c), AP-3 and AP-4 will undergo closure in accordance with 40 CFR §257.102(d), and all units will undergo closure in accordance with Georgia Rule 391-3-4-.10(9)(c)6(v).

This Closure Plan may be amended in accordance with the requirements of State Rule 391-3-4-.10(7)(b).

2.1 Methods and Procedures

The AP-2 closure plan consists of closure-by-removal of CCR and backfilling with earth fill borrow to create a landform suitable for potential future Plant site use. The approximate pre-closure CCR limits for AP-2 total 7 acres.

"CCR removal" refers to the process of verifying and documenting that the CCR has been removed from the CCR Units. The CCR Units contain a mixture of fly ash and bottom ash collectively referred to as CCR. The CCR removal verification is based on removing visible CCR and a minimum of six additional inches of soil. The documentation of this procedure is presented in Section 5 of the companion Construction Quality Assurance (CQA) Plan.

During closure, AP-2 was dewatered and all CCR was removed from the limits of AP-2. The majority of CCR material removed from AP-2 was dry stacked within the closure footprint of CCR Unit Ash Pond 1 (AP-1), being permitted for closure under a separate application, with minor amounts of CCR from AP-2 also dry stacked within the closure footprint of AP-3/4 or disposed at offsite waste management facilities.

AP-3 and AP-4 are being consolidated and closed in place as combined unit AP-3/4. CCR in the northwest portion of AP-3 and eastern portion of AP-4 will be relocated to the western portions of the combined AP-3/4 unit. Since AP-3/4 is undergoing closure as a consolidated Closure in Place, certain areas of CCR are undergoing excavation, relocation, and consolidation into the reduced CCR footprint. CCR excavation verification for portions of AP-3/4 where CCR is being excavated and relocated involves verification procedures as outlined in the CQA Plan submitted with this Permit application. Starting in 2020, CCR excavation verification activities have additionally incorporated visual classification and logging according to ASTM D2488 (the Standard Practice for Description and Identification of Soils) and designation of the color of the natural ground soils below CCR according to the soil color according to a Munsell Soil Color Chart.

During closure, AP-3 and AP-4 are being dewatered as required to facilitate closure. CCR will be graded within the footprint of the impoundment to create a stable subgrade for the final cover system. The approximate pre-closure CCR limits for AP-3 and AP-4 total 81 acres, consisting of a pre-closure CCR sluiced footprint of 66 acres and the 15-acre dry-stacked area in between. Following closure of the Combined Unit AP-3/4, the final limits of CCR total 64 acres, and the final extents of liner will total 79 acres.

Closure shall be conducted in a manner that minimizes the need for further maintenance and controls, and minimizes or eliminates, to the maximum extent feasible to protect human health and the environment, the post closure infiltration of liquids into the CCR and potential releases of CCR from the unit. This will be accomplished by providing sufficient grades and slopes to:

- Preclude the probability of future impoundment of water, sediment, or slurry;
- Ensure slope and cover system stability;
- Minimize the need for further maintenance of the CCR unit; and
- Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

2.1.1 Closure Activities

AP-2

The closure procedures for CCR Unit AP-2 included the following activities:

- Clearing and grubbing of all vegetative intermediate cover present at AP-2. All organic material was removed and disposed of off-site;
- Excavating all visible CCR;
- Over excavating into the subgrade soils; and
- Placement of topsoil and seeding for vegetative cover to provide erosion control for the completed surfaces.

All CCR from the Plant McDonough CCR Unit AP-2 has been removed at the time of this permit submittal. The majority of CCR from AP-2 was placed in McDonough CCR Unit AP-1 to achieve final grades and provide surface drainage to facilitate the closure in place of AP-1, with minor volumes of CCR from AP-2 placed in CCR Unit AP-3/4 or disposed offsite. The AP-1 closure is being presented as a separate permit submittal.

Surface water inflow to AP-2 is composed entirely of stormwater runoff from the unit footprint, totaling approximately 7 acres of contributing area. AP-2 has no permanent, automatically operating outlet system, and a pump is used to drain the pond during closure until backfilling efforts allow for gravity surface water drainage. Based on an engineering evaluation of the closure conditions of AP-2, the AP-2 inflow design flood control system has more than sufficient hydraulic capacity to manage the 25-year, 24-hour and 100-year, 24-hour storm events.

Closure of AP-2 will also include future backfilling with soil borrow to allow for gravity stormwater drainage and future land uses. Groundwater monitoring is currently ongoing for AP-2 and AP-3/4. CCR removal activities for AP-2 began in March 2016 and were completed in September 2019.

Following completion of CCR removal, Georgia Power submitted a certification report to GA EPD documenting the removal. Dated March 30, 2020, the CCR Removal Certification for the CCR excavation at AP-2 was subsequently acknowledged by GA EPD in a letter dated October 14, 2020. Since AP-2 is permitted along with Combined CCR Unit AP-3/4, when closure certification is completed for AP-3/4 then AP-2 will enter into post-closure care alongside AP-3/4.

Combined Unit AP-3/4

As stated in Section 2.1, the closure of AP-3 and AP-4 consists of the grading and compaction of the CCR material in place within the footprint of the existing AP-3 and the western portion of AP-4, and the relocation of CCR from the eastern portion of AP-4 to AP-3 and the western portion of AP-4 for stacking. Smaller quantities of CCR material from the northwest, north, and southern perimeter of the pre-closure AP-3 and AP-4 areas were also excavated for closure-by-removal and stacked within the AP-3/4 closure limits. Areas of CCR excavation are indicated on Sheet 3 of the Ash Pond 2, 3 and 4 Closure Plans, located in Part A of this permit application.

Existing CCR material in AP-3 and AP-4 was generally covered with a thin layer of soil and grassed interim cover prior to the start of closure activities. The pre-closure CCR materials were re-shaped and supplemented by additional CCR placement and stacking to allow for the formation of the design closure grades and configuration. Prior to the installation of structural fill, CCR fill, and final cover system, all surficial organic material present in the footprint of AP-3 and AP-4 was removed and disposed of off-site. In place CCR materials, and where applicable structural fill and CCR fill, were then compacted as a subgrade for the final cover system installation. Compacted structural fill and CCR subgrade beneath the geomembrane component of the final cover was specified to be free of roots, debris, and all stones and clay clods greater than one-quarter ($^1/_4$) inch maximum. CCR materials relocated to Combined Unit AP-3/4 for closure as fill were placed in uniform layers of twelve (12) inches maximum thickness, and upon completion of compaction, the slopes were cut back to the final grades.

In addition, Georgia Power has elected to implement advanced engineering methods (AEMs) to supplement the closure design for CCR Unit AP-3/4. The AEMs selected for Combined Unit AP-3/4 include (1) the under-slope drainage system presented in the Closure Drawings (Part A Section 9), for the collection and conveyance of subsurface water that may be present above the bottom elevation of the drainage system for discharge in accordance with applicable NPDES requirements and (2) the continued use of temporary AEM wells presented on Sheet 35 of the Closure Drawings for enhanced water removal during closure and in the years directly following closure to accelerate the pace at which the groundwater table will lower to the modeled expected long-term post-closure level, which is below the base of the Combined Unit AP-3/4.

The closure plans for AP-3/4 include a comprehensive surface water management plan that utilizes three separate detention ponds within the permit boundary for AP-3/4. As such, the majority of the pre-closure AP-4 dam is no longer needed for surface water storage in the closed condition, thus allowing the lowering of the crest of the dam. The concept of lowering the dam and re-using the embankment materials was accepted by the Georgia Safe Dams Program (GASDP) in December 2017. Lowering of the dam as approved by the GASDP is ongoing through the completion of AP-3/4 closure construction activities.

Surface water inflow to AP-3/4 is composed of stormwater runoff primarily from the unit footprint, which totals approximately 80 acres of contributing area. Stormwater at the AP-3/4 Unit is routed via a network of benches and perimeter channels to the three detention ponds for the combined unit. The three stormwater management detention ponds 1, 2, and 3 for the AP-3/4 Unit were designed to provide controlled stormwater conveyance and attenuation of peak stormwater flows. Each AP-3/4 detention pond is designed with capacity to manage stormwater from greater than the 100-year, 24-hour storm. The surface water management systems for the closed units are presented in Section 4.6 of the Engineering Report located in Part B of this permit submittal.

As the detention ponds are not designed to retain water long-term, they exist in a dry state during typical conditions, with only short-term water accumulation directly following storm events. The ponds, including upgradient detention pond 1, do not contribute any appreciable infiltration into the subsurface nor do they impact the measured and predicted groundwater levels around the Unit. Additionally, detention ponds 2 and 3 are lined with a flexible membrane to eliminate infiltration.

Upon completion of closure construction, and pursuant to State Rule 391-3-4-.10(7)(e), a professional engineer registered in Georgia will prepare and GPC will submit to the Director of GA EPD a certification report documenting closure. The closure construction certification report will include certification of CCR excavation in areas of AP-3/4 where applicable.

2.1.2 CCR Material Estimate

Approximately 260,000 cubic yards of CCR were removed from AP-2. The final closed configuration of Combined Unit AP-3/4 will contain approximately 4,900,000 cubic yards of CCR consolidated and closed in place.

2.1.3 Fugitive Dust Control

This fugitive dust control plan identifies and describes the fugitive dust control measures that GPC will use to minimize CCR from becoming airborne at the facility, including fugitive dust originating from ash ponds, roads, and material handling activities. GA EPD State CCR Rule 391-3-4-.10(2)(a) (incorporating 40 CFR § 257.53 by reference) defines “CCR fugitive dust” as “solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than through a stack, or chimney.” This plan demonstrates compliance with fugitive dust requirements under CCR Rule 391-3-4-.10(9)(c) [40 CFR § 257.80 (b)(1) through (7)].

Fugitive dust originating from the ash ponds and ash pond closure activities will be controlled using water suppression, dust suppression agents (e.g., polymer tackifiers), and/or synthetic liners.

The fugitive dust control measures identified and described in this plan were adopted and implemented based upon an evaluation of site-specific conditions and are determined to be applicable and appropriate for the Plant McDonough ash pond closure. Evaluation included assessing the effectiveness of the fugitive dust control measures for the facility, taking into consideration various factors such as site conditions, weather conditions, and operating conditions.

CCR that is transported via truck for stockpiling will be conditioned to appropriate moisture content prior to loading to reduce the potential for fugitive dust.

Water suppression will be used as needed to control fugitive dust on facility roads used to transport CCR and other CCR management areas. Speed limits will be utilized to reduce the potential for fugitive dust. Trucks used to transport CCR will be filled to or under capacity to reduce the potential for material spillage.

GPC and construction personnel will assess the effectiveness of the control measures by performing visual observations of the CCR units and surrounding areas and implementing appropriate corrective actions for fugitive dust, as necessary.

Any complaint received from a citizen regarding a CCR fugitive dust event at the facility will be documented and investigated. Appropriate steps will be taken, including any corrective action, if needed.

2.1.4 Stabilization of CCR

AP-2

During the excavation of CCR material from AP-2, work was completed to maintain the integrity of all dikes to ensure future stability during water impoundment. Golder evaluated the stability of the dikes and closure conditions of AP-2 in the four loading conditions in accordance with the permitting requirements of the State of Georgia Solid Waste Management Rule 391-3-4-.10:

- Maximum Pool Storage
- Maximum Pool Surcharge
- Seismic Loading Conditions
- Post-Seismic Liquefaction Conditions (when liquefaction susceptible materials are present)

For each loading case, the closure conditions were calculated to meet the target factor of safety presented in the CCR Rule. Additional detail for the stability of AP-2 dikes following CCR material excavation in its closure condition is presented in Section 2 of the Engineering Report in Part B of the permit application.

Combined Unit AP-3/4

Combined Unit AP-3/4 was originally formed by construction of a contiguous set of side-hill embankments. The closure design of Combined Unit AP-3/4 includes a combination of ash and soil slopes, embankments, and earthen buttresses to achieve stable closure. Final slopes comprised of compacted ash are a maximum of 4H:1V, and the eastern closure slope is supported by an earthen buttress along the lower face and at the toe of the embankment. Golder evaluated the stability of the dikes and closure faces surrounding AP-3/4 in the four loading conditions in accordance with the permitting requirements of the State of Georgia Solid Waste Management Rule 391-3-4-.10:

- Maximum Pool Storage
- Maximum Pool Surcharge
- Seismic Loading Conditions
- Post-Seismic Liquefaction Conditions (when liquefaction susceptible materials are present)

For each loading case, the dikes and closure conditions were calculated to meet the target factor of safety presented in the CCR Rule. Additional detail is presented in the Engineering Report provided in Part B of the permit application.

2.1.5 Dewatering

Dewatering during closure activities includes removing water using a variety of methods, including but not limited to passive, gravity-based methods (e.g. rim ditches) and/or active dewatering methods (e.g. pumps and well points) as needed to allow for CCR excavation and transportation.

In addition to dewatering, Georgia Power developed and implemented a plan for water treatment at the site during closure consisting of a range of treatment technologies, compliance sampling (constituents, frequency, and locations) for compliance with both the site's National Pollutant Discharge Elimination System (NPDES) permit and the CCR Rule to provide treatment and management of discharge of contact water from the units.

At this time, closure efforts for the removal of CCR within AP-2 are complete. Additionally, the majority of closure construction efforts to complete closure by removal in select portions of AP-3/4 with consolidation of CCR for capping in place within a consolidated footprint of AP-3/4 are complete. CCR contact water continues to be treated by an on-site wastewater treatment system (WWTS) to support other ongoing ash pond closure activities in compliance with the EPD approved Ash Pond Dewatering Plan (Dewatering Plan). This plan provides a summary of both previously completed dewatering activities and discussion of AEM well operation related to CCR closure and post-closure care and provides a summary of the dewatering activities during the closure of the CCR Ponds at Plant McDonough. The Dewatering Plan provides the generic framework for these activities during removal, relocation, and consolidation of CCR during the Plant McDonough CCR Pond closure project. Variations in site conditions, construction means and methods, climate conditions, and other factors may impact the dewatering sequencing and/or approach to the project. During the closure project, specific construction means and methods are reviewed and approved by the construction management and oversight team.

2.1.5.1 Initial Ponded Water Removal

Initial stages of construction and dewatering included the removal of historic ponded water contained in the CCR units. AP-2, AP-3 and AP-4 are inactive surface impoundments that ceased receipt of newly generated CCR in 2011 when the plant stopped coal fire generation. At the time of initiation of closure activities, ponded water was contained within all three units. Primary outflow from the CCR units was through the AP-4 supernatant settling pond prior to closure, where free water was discharged through the NPDES permitted outfall.

At the start of closure construction, free water pond levels within AP-2 were lowered via pumping to the AP-3 S-ditch feeding to the AP-4 supernatant pond area and water treatment was established at the site. The CCR closure wastewater treatment system (WWTS) is located on a built platform over an area of natural high ground to the south of and between AP-3 and AP-4 adjacent to the AP-4 outfall area. Once water treatment was established and confirmed to provide treatment within compliance with the selected water treatment constituent and parameter limits, the AP-4 outlet was closed off from regular flows from the AP-4 supernatant settling pond.

Dewatering during closure at Plant McDonough is achieved through wastewater treatment following pumping of CCR contact water into the WWTS, and ultimately discharged through the existing permitted NPDES outfall at AP-4. Free water dewatering at high pool levels (defined as pool levels within 10 vertical feet of normal pool at each pond) was limited to a maximum drawdown of one foot per week in line with good dam safety practices.

Sediment containment and trapping features such as floating sediment curtains and diversion berms were installed around the outlet structure and within the temporary settling ponds designed and built for use at AP-3, AP-4, and the water treatment area over the course of construction to limit total suspended solids (TSS) loading to wastewater treatment as well as to prevent TSS releases from the CCR pond via emergency outfalls as a result of increased suspended solids in the ponded water within areas of Closure by Removal in AP-2, AP-3 and AP-4.

Prior to closure initiation, AP-2 contained a water level visible on the north end of the unit. Dewatering consisted of all water being pumped to AP-3 and AP-4. Upon the initiation of closure activities for AP-3 and AP-4, all CCR contact water, including free water, has undergone wastewater treatment prior to discharge. Following treatment and any applicable compliance testing, the water is discharged into a modified AP-4 outlet structure, which conveys the flow through an existing 24-inch diameter fiberglass pipe which discharges in accordance with the site NPDES permit. Wastewater treatment is performed to comply with and/or exceed water quality limits as defined and approved by GA EPD for Plant McDonough before being discharged through the AP-4 NPDES permitted outfall.

Wastewater treatment is conducted on an as needed demand basis during closure and will be adjusted as applicable to meet the changes in volumetric demands during and post-closure.

2.1.5.2 Contact Water Removal During Closure

Water level lowering within the Units will occur naturally as free water is removed and CCR areas are capped and closed. Additionally, in order to allow for safe excavation and working on ash areas it is necessary to lower water levels below the surface and back behind cut slope areas.

During CCR removal, run-on stormwater and run-off contact water (e.g., stormwater that has come into contact with CCR) is controlled with best management practices such as channels, diversion berms, and pumps and managed in accordance with the NPDES Construction Storm Water, Industrial Storm Water and Industrial Wastewater Discharge permit(s). Phased erosion and sediment control plans have been developed for closure construction activities, as needed.

Additionally, to facilitate safe construction and to accelerate drainage active dewatering techniques may be used. Both passive and active dewatering has occurred throughout the construction process to provide for moisture conditioning and slope stability and as progress towards the long-term dewatering of capped CCR materials. Removal of contact water has and will be completed within the limits of the CCR units using both in-situ (in place prior to excavation / handling) and ex-situ (with means after initial handling / excavation) techniques. In-situ dewatering techniques consist of but are not limited to the following: trench drains, rim ditching, wick points, well points, and deep wells. Ex-situ dewatering techniques consist of but are not limited to the following: gravity dewatering (settling basins and/or lateral trenching), racking and windrowing, filter press drying, centrifuge dewatering, geotextile tube dewatering, paste thickening, and absorbent desiccation.

Dewatering for AP-2

Following pond lowering, dewatering for the closure of AP-2 progressed with a combination of in-situ and ex-situ dewatering techniques as required to moisture condition CCR materials for safe excavation and to prepare them for hauling and placement as fill within the AP-1 closure area.

A combination of well points, rim ditches, windrows, trenches, racking, preferential sloping to drain, gravity drainage, and natural drying were used during the safe removal of CCRs from AP-2 which were completed prior to the timing of this permit submittal.

Combined Unit AP-3/4

Following initial pond level lowering, additional active dewatering was required to allow for: the safe deep excavation planned along the eastern side of the proposed closure configuration, the planned rate of CCR handling and moving, changes to the Unit drainage patterns, and the anticipated construction phasing. Designated areas of AP-3 and AP-4 require active dewatering concurrent with construction activities for the combined unit AP-3/4.

The AP-3/4 closure work involves protocols such as:

- Vibrating wire piezometers were installed and are used to monitor groundwater levels ahead of excavations;
- Dewatering to provide stability of ash cut faces before proceeding with excavations;
- Deep dewatering wells along the eastern portions of the AP-4 closure are installed and used for active dewatering during construction;
- Hold points to check and confirm dewatering requirements as excavations reach the proposed drainage terraces along the eastern cut face; and
- Regular dewatering progress meetings to allow for discussion and evaluation of observed conditions and dewatering efforts.
- As part of the selected AEM, temporary (AEM) wells, the AEM enhanced underdrain system, and a series of vibrating wire piezometers were installed during closure to accelerate and monitor the lowering the groundwater table. Continued use of the temporary AEM wells may be necessary in the years directly following closure of combined unit AP-3/4. Operation and maintenance of the temporary AEM wells following closure are described in the Post-Closure Care Plan.

2.2 Identification of Pipes and Utilities

AP-2

Several abandoned, buried fiberglass, steel and plastic pipes were encountered during the clean-out of AP-2, which were removed and disposed offsite. The following lines were identified which run through the east side of AP-2 from north to south:

- 6-inch steel line
- 10-inch fiberglass line
- Two 8-inch fiberglass lines

Along the east dike of AP-2, there is a buried 24-inch fiberglass AP-4 blow-down line that was modified as part of closure. On the south dike of AP-2, there was an existing concrete emergency overflow structure. This structure was exposed during the excavation of CCR and decommissioned in November 2016. Decommissioning included grouting of the riser and pipe from the outfall point to the interior of the dam using a concrete slurry mix after the pipe and structure were surveyed using cameras.

Additionally, existing transmission line structure foundations are located in and adjacent to AP-2. Upgrades to transmission foundations were made as necessary to allow for excavation around these existing structure foundations. These transmission lines remain in the excavated AP-2 and are located on the Closure Plan Drawings located in Section 10 as part of this permit application.

It should be noted that Plant McDonough is an operating power generation facility, and has been in operation since the early 1930's. As such, there is plant infrastructure integral to power generation located in close proximity to the proposed permit boundary, as well as historical plant infrastructure no longer in use.

Combined Unit AP-3/4

Sheet 3 of the Design and Operation Plan Drawings presents the pipes and utilities located within the permit boundary of Combined Unit AP-3/4 prior to closure. These structures are summarized below and inspected as applicable according to EPD and CCR Rule requirements as outlined in the following section.

- A 24-inch fiberglass AP-4 blow-down line runs from the pre-closure AP-4 discharge structure to the west and along the east side of AP-2 eventually discharging into a plant stormwater pond. The pipe flows can be stopped by a plant-operated valve.
- A 90-inch corrugated metal pipe (CMP), lined in 2007 by a combination of 84- to 72-inch fiberglass piping runs beneath AP-3/4, conveying existing stream flows beneath the earthen dams and AP-3/4. This culvert enters the unit footprint under the north embankment of AP-3/4 and exits under the south embankment of AP-3/4. Closure construction includes the excavation of CCR around the stream conveyance culvert encasement. Following closure, the post-closure limits of CCR are located a minimum of 50 feet west of the stream conveyance culvert alignment.
- An existing large diameter (24 to 30-inch) natural gas pipeline is located to the south of AP-3/4 and runs within the southern embankment of AP-3 for a portion of its length. This gas line is part of the plant's power generation infrastructure. Existing overhead electric lines are located above AP-3/4; these lines are specified to remain following closure.
- Historic ash sluice lines and a small diameter gas line were present in the southern embankment of AP-3. These lines were mostly abandoned and removed pre-closure with the remaining portions of these lines removed as part of closure construction.
- Toe Drains located around the perimeter of the pre-closure CCR Unit footprint: Most toe drains around AP-3/4 ceased flowing as part of the closure activities. Dry toe drains located around the perimeter of AP-3/4 are proposed to either be grouted, or where possible removed prior to the completion of closure construction activities. Toe drains 2 North and 2 South are anticipated to remain in service at CCR Unit AP-3/4 post closure. Toe Drain Sump #15 saw the removal and abandonment of toe drain inflows to the sump during closure but remains in place post closure as a backup water handling feature for the dual wall leak detection of the northeast AEM well conveyance line.

An existing emergency overflow structure at AP-3 was decommissioned between July and August 2016. This pipe abandonment consisted of grouting the pipe and riser using a concrete slurry mix after the pipe and structure were surveyed using cameras prior to decommissioning.

As with AP-2, it should be noted that Plant McDonough is an operating power generation facility, and has been in operation since the early 1930's. As such, there is plant infrastructure integral to power generation located in close proximity to the proposed permit boundary, as well as historical plant infrastructure no longer in use.

2.3 Inspections and Reporting

2.3.1 7-day Inspections and 30-Day Monitoring

Prior to the completion of closure construction for the Units, GPC inspects the soil embankments of the Units at intervals not exceeding seven (7) days. The 7-day inspections are made by a Qualified Person and include observation and documentation of any appearance of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the closure activities or the safety of the surface impoundment.

Additionally, at intervals not exceeding seven days, the following items at AP-4 are inspected:

- The primary discharge point of AP-4 located at the southwestern corner of AP-4 is inspected for abnormal conditions and any potential inflows other than from the on-site wastewater treatment system.
- The stream diversion culvert beneath AP-4 is inspected for abnormal conditions including any potential for abnormal discoloration, flow, or discharge of debris or sediment.

GPC records these inspections on a form that is filed in the facility's operating record.

If a potential deficiency or release is identified during an inspection, GPC will remedy the deficiency or release as soon as feasible. GPC will prepare documentation detailing the corrective measures taken and place it in the facility's operating record.

30-day instrumentation monitoring of applicable CCR unit instrumentation is ongoing per the requirements of the CCR Rule.

2.3.2 Annual Inspections

As required by Chapter 391-3-4-.10(5)(b), which incorporates the operating criteria listed in 40 CFR 257.80, 40 CFR 257.82, and 257.84 of the Federal CCR Rules, a Professional Engineer registered in Georgia performs annual inspections of AP-2 and AP-3/4 on an annual basis through the completion of closure construction. The inspection includes, at a minimum:

- A visual inspection of the Units to identify signs of distress or malfunction of the compacted soil embankment and/or the principal spillway.
- A review of available information regarding the status and condition of the Units, including, but not limited to, files available in the facility's operating record such as:
  - The results of weekly inspections and the results of previous annual inspections,
  - Files available in the operating record and other conditions which have disrupted or have the potential to disrupt the closure activities or safety of the Units.

2.3.3 Annual Reporting

At the completion of each annual inspection, the Professional Engineer who completed the inspection prepares an annual report that includes the following:

- Any changes in geometry of the soil embankments since the previous annual inspection;
- The approximate volume of CCR contained in the Units at the time of the inspection;

- Any appearances of an actual or potential structural weakness of the CCR within the Units, or any existing conditions that are disrupting or have the potential to disrupt the closure activities and stability of the CCR within the Units; and
- Any other change(s) which may have affected the stability or operation of the soil embankments since the previous annual inspection.

Annual Inspection Reports for the Plant McDonough Inactive CCR Units, which meet the requirement of Chapter 391-3-4-.10(5) of the Georgia Rules, can be found online at Georgia Power Company website under Environmental Compliance Information.

2.3.4 Recordkeeping / Notification / Internet Requirements

GPC will comply with the requirements of State CCR Rule 391-3-4-.10(8) which reference the closure recordkeeping, notification, and internet posting requirements listed in 40 CFR 257.105(i), 40 CFR 257.106(i) and 40 CFR 257.107(i) of the Federal Rules.

2.3.5 Reporting - Certification of Closure and CCR Removal

Following completion of CCR removal at AP-2, Georgia Power submitted a certification report to GA EPD documenting the removal. Dated March 30, 2020, the CCR Removal Certification for the CCR excavation at AP-2 was subsequently acknowledged by GA EPD in a letter dated October 14, 2020.

Upon completion of the closure construction for AP-3/4, a professional engineer registered in Georgia will prepare and GPC will submit a Closure Construction Certification Report and a Removal Certification Report to GA EPD documenting the completion of closure activities and the removal of CCR from the applicable portions of AP-3/4.

GPC, as required by EPD, will submit confirmation that a notation on the property deed has been recorded in accordance with State CCR Rule 391-3-4-.10(7)(f).

2.3.6 Groundwater Monitoring

In accordance with Georgia Rules for Solid Waste Management section 391-3-4-.10(6), the monitoring network will be sampled semi-annually. Groundwater sampling will be conducted following the Groundwater Monitoring Plan (GWMP) for Plant McDonough-Atkinson Ash Pond 2 and Ash Pond 3/4. Groundwater monitoring will be conducted during the post-closure care period of AP-2 and AP-3/4. Evaluation of groundwater monitoring results may include, but are not limited to, additional sampling, analysis, statistical calculations, and/or modeling to demonstrate compliance with the rule as determined by the qualified groundwater scientist and approved by GA EPD.

2.4 Final Cover

Combined Unit AP-3/4

The final cover system for AP-3/4 was designed in accordance with 40 CFR 257.102(d)(3)(ii) to minimize maintenance after closure of the CCR units. The final cover system was designed to prevent the future impoundment of water, and includes measures to prevent infiltration, sloughing, minimize erosion from wind and water, settling, and subsidence. The final limits of CCR total 64 acres, and largest area subject to final cover under the closure design is approximately 79 acres and covers Combined Unit AP-3/4. The engineered final cover system consists of the following minimum components, listed from top to bottom.

- Specified final cover infill as outlined in final closure plan design;

- 1/2” minimum sand infill
- 1/2" minimum sand infill with ArmorFill® application
- 3/4” minimum HydroBinder® infill
- Rock or articulated concrete block overlying a geosynthetic separation and protection layer

- Engineered Synthetic Turf (ClosureTurf®); and
- 40 mil minimum low density polyethylene geomembrane liner.

The final cover system, consisting of engineered synthetic turf with run-on and run-off controls, meets the closure standards of §257.102(d)(3)(i). Engineering calculations for the final cover design are presented in Section 4 of the Engineering Report located in Part B of this permit submittal.

2.5 Pilot Solar Installation at AP-3/4

A pilot solar installation is located along the southwest portion of AP-3/4. The pilot installation was completed and the monitoring of the system went live in Q1 2019. The WatershedGeo® (or Watershed Solar) PowerCap™ system, a direct surface installation which consists of a solar array placed on the ClosureTurf engineered cover system, is used for the pilot installation, and the system covers an area of nominally 3,000 square feet (0.07 acres). Panels of the photovoltaic system are attached to rails, attached to polyethylene friction strips (SureGrip® friction layer). These friction strips are placed directly on the ClosureTurf system, and do not penetrate the engineered turf or geomembrane components of the system or use racking materials or concrete ballast in the installation. The configuration of the pilot solar installation is presented in Sheet 35 of the Closure Drawings.

It is anticipated that this pilot solar installation will remain through permit issuance until sufficient data has been collected and the decision is made to remove the system. Care will be taken so as not to disturb the integrity of the final cover system during pilot solar installation removal. Equipment used for pilot solar installation removal will follow applicable guidelines for trafficking over ClosureTurf when accessing the areas outside of the designed and constructed access roads. Work limits, unit access points, and laydown areas will be managed to minimize impacts to the final cover system. No impacts to the final cover system are anticipated, however any unanticipated impacts to the final cover system will be addressed in accordance with the CQA Plan.

3.0 SCHEDULE AND COST

Closure activities for AP-2 are outlined in the schedule presented in Table 1. AP-2 has undergone CCR removal in accordance with §257.102(c) and no longer receives CCR. CCR removal activities for AP-2 began in March 2016 and were substantially completed in September 2016 with subsequent removal completed in September 2019. Following CCR removal activities, future development for AP-2 includes backfilling with earthen fill to achieve final grades level with surrounding site development.

Table 1: AP-2 Closure Milestones Schedule

Closure Activity	AP-2
Notification of Intent to Initiate Closure	December 7, 2015
Begin Dewatering Activities	Q1 2016
End of CCR Removal Activities	Q3 2019
Earthen Fill of AP-2	Q4 2023

As indicated in Table 1, closure construction activities for AP-2 have been completed as of September (Q3) 2019.

Closure activities for Combined Unit AP-3/4 are outlined in the schedule presented in Table 2. Closure milestones and activities are approximate and some of the activities will overlap. Georgia Power estimates that closure activities for Combined Unit AP-3/4 will be completed by 2024. As of March 2024, ongoing closure activities for Combined Unit AP-3/4 include CCR excavation, final cover system installation, access road construction, and stormwater management system construction.

Table 2: AP-3/4 Estimated Closure Milestones Schedule

Closure Activity	Combined Unit AP-3/4
Notification of Intent to Initiate Closure	December 8, 2015
Begin Dewatering Activities	Q1 2016
Additional CCR Excavation and Final Cover Installation	Q1 2025
End of Closure Construction Activities	Q3 2025

The closure cost estimate is provided in the attached table titled *McDonough 2,3,4 Ash Ponds Closure Cost Estimate*. In compliance with applicable securities laws and regulations, GPC will provide unredacted cost estimates to GA EPD under separate cover. The closure costs include all items necessary for a third-party to complete the project in accordance with the Closure Plan as set forth herein. The closure cost estimate is based on the largest area subject to final cover under the closure design (i.e., 79 acres) and is generated in current dollars. The cost estimate will be adjusted annually for inflation. GPC will provide a demonstration of financial assurance upon approval of the closure and post-closure care cost estimates by GA EPD.

ATTACHMENT

McDonough 2,3,4 Ash Ponds Closure Cost Estimate

McDonough 2,3,4 Ash Ponds Closure Cost Estimate

Item Description		Quantity	Unit	Unit Cost	Cost
Program Management					
	Regulatory Compliance, Fees & Reporting				
	Groundwater Sampling & Reporting, Compliance Evaluations[1]				
AP Closure Construction					
Construction Management, Construction Support					
	Construction Management				
	Support Facilities				
	Engineering and CQA Construction Support				
CCR - Excavate, Transport, Place, Manage					
	CCR Excavate, Conditioning for compaction, Transport, and Place & Compact[2]				
Foundation Improvements					
	Foundation Improvements (InSite Grouting, Solution Features Evaluation/Abatement)[3]				
Procure, Transport, Place Structural and Non-Structural Fill					
	Procure, Transport, Place Structural and Non-Structural Fil[4]				
Water Management (Stormwater and Ash Pond Dewatering)					
	Water Treatment				
Site Maintenance During Construction & Restoration					
	Site Maintenance During Construction & Restoration				
Stability and Performance Monitoring Equipment					
	Stability and Performance Monitoring Equipment				
Major Engineering Components					
	Major Engineering Components				
Subtotal					
Contingency					
Total Closure Cost Estimate					

Notes:

1. Groundwater monitoring includes costs for conducting routine monitoring of App III & IV during the construction period.

2. Includes costs for excavation, offsite haul, tipping fees at landfill, import of backfill material, asphalt paving and site stabilization.

3. Includes costs for grouting on the annulus space between the inner Hobas pipe and outer corrugated metal pipe.

4. Includes costs for road paving and maintenance.