

**NOTIFICATION OF COMPLIANCE**  
**ALTERNATIVE CLOSURE**  
**CERTIFICATION OF NO ALTERNATIVE CCR DISPOSAL CAPACITY**  
**40 CFR § 257.103(a)(1)**

**PLANT BOWEN ASH POND (AP-1)**  
**GEORGIA POWER COMPANY**

Under the U.S. Environmental Protection Agency's (EPA's) coal combustion residuals (CCR) rule (CCR Rule), an owner or operator of a CCR surface impoundment must, within six months of determining that an existing surface impoundment has triggered certain location standards specified in 40 CFR §257.60 through §257.64, cease placing CCR and non-CCR waste streams into such unit unless the owner complies with the alternative closure procedures of 40 C.F.R. §257.103. In accordance with the CCR Rule, on October 17, 2018, Georgia Power Company (Georgia Power) posted information pertaining to location standards relative to AP-1.<sup>1</sup> Currently, Georgia Power has no alternative disposal (treatment) capacity for the flue gas desulfurization (FGD) waste streams currently provided by the gypsum dewatering cells within Ash Pond 1 (AP-1). Based on this determination and in accordance with 40 C.F.R. § 257.103, Georgia Power is providing this certification that the gypsum dewatering cells must continue to be managed within AP-1 due to the absence of alternative sources for FGD wastewater treatment on-site or off-site and no alternative system for removal, storage and handling of gypsum solids. All other non-CCR and CCR waste streams routed to AP-1 will cease by April 17, 2019.

**PLANT BOWEN BACKGROUND**

Plant Bowen is a four-unit, coal-fired, electric-generating facility located nine miles southwest of Cartersville in Bartow County, Georgia. The facility is capable of producing 3,376 megawatts of electricity and can supply enough energy to power over 1.9 million homes annually. Operations commenced in 1975 with one ash pond (AP-1) storing CCR in an area of approximately 254 acres. The infrastructure at AP-1 includes two lined ash dewatering cells, concrete bottom ash dewatering cells, two lined gypsum dewatering cells, and a lined gypsum clear water return basin, all located within the southern portion of the AP-1 footprint.

In compliance with the CCR Rule, Georgia Power is closing AP-1. In the process of closing AP-1, CCR within AP-1 will be excavated and consolidated into an approximately 144-acre fully

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<sup>1</sup> <https://www.georgiapower.com/company/environmental-compliance/ccr-rule-compliance-data/ccr-rule-compliance-plant-list/plant-bowen.html>

contained engineered structure (composite-lined and capped area) that will be constructed in the south-central portion of the current AP-1 footprint.

The two gypsum dewatering cells were constructed in 2008 with a capacity of 4,074,764 cubic feet (cf) for Cell 1 (north cell) and 3,489,140 cf for Cell 2 (south cell). The interior of both cells was constructed on top of the existing CCR within AP-1 with a 60-mil high density polyethylene (HDPE) liner. The HDPE geomembrane separates the bottom of the gypsum dewatering cells from the underlying unit and provides maximum separation of the bottom of the gypsum dewatering cells and the groundwater table. In 2012, a composite lined (HDPE placed over 2-ft. compacted clay soil) clear water return basin was constructed between Cell 1 and Cell 2 to return decant water from the gypsum dewatering cells to the FGD area for use as process water. The dewatering cells were not designed for disposal, but rather for temporary detention of the FGD waste stream, allowing settlement of the gypsum solids. The cells are operated in an alternating fashion such that one cell is in operation while the other cell is dewatered and the settled gypsum is excavated and transported to an on-site permitted landfill. The water from the gypsum dewatering cells is collected and returned to the FGD process or is co-mingled with other flows and discharged through the Plant's existing NPDES outfall. The total storage capacity after the initial filling and clean-out of each cell is approximately 56.5 million gallons (Mgal). Much of the available capacity of each cell is consumed by gypsum solids in approximately six to nine months of operation.

Currently, the gypsum dewatering cells receive the CCR waste stream from the FGD process via the Unit 1 & 2 transfer sump and the Unit 3 & 4 transfer sump. The transfer sumps collect flows from the gypsum dewatering hydrocyclone overflow, the FGD area sump, limestone area sump, and the JBR direct drains. The Units 1 & 2 sump is equipped with a 1,250 gallons per minute (gpm) pump while the Units 3 & 4 sump is equipped with a 3,500 gpm pump. The average flow to the gypsum dewatering cells varies depending on the number and capacity of the units online. Based on an average 12 to 14 - hour day and a 68% capacity factor, the FGD waste stream to the dewatering cells is approximately 3,400 gpm, which is approximately 1,787 Mgal over a one - year period of operation. The solids concentration is generally from 3% to 4% but can be as high as 10%.

Low volume waste (LVW) flows are currently routed through the ash dewatering cells in AP-1 to the LVW basin and returned to the plant for use or discharged through the Plant's existing NPDES outfall. Projects at Plant Bowen to manage non-CCR waste streams, including LVW streams, are scheduled to be complete prior to April 17, 2019 thereby removing these non-CCR waste stream contributions to AP-1 upon completion.

### **NEW WASTEWATER TREATMENT FACILITIES**

Projects at Plant Bowen to add additional redundancy to dry fly ash handling for consistent operation and to convert bottom ash to a closed-loop system are scheduled to be completed on or before April 17, 2019. After April 17, 2019, CCR waste streams including ash transport water for fly ash and bottom ash will no longer go to AP-1, however waste streams produced as a

function of the wet FGD process will continue to be sent to the gypsum dewatering cells until the infrastructure and treatment equipment necessary to remove these waste streams from AP-1 are completed.

Construction and implementation of the necessary solid's management and wastewater treatment technology to finalize the transition of all remaining CCR flows from AP-1 requires multiple, intricate changes throughout the plant. Projects are further complicated by the need to coordinate with unit outages and Southern Company Fleet's requirements to meet system demand. The CCR waste streams from the wet FGD processes (directly or through co-mingling) are routed to AP-1. These FGD waste streams include process waste streams and process area sumps. Some waste streams will require treatment even when the plant is not operating, such as in response to stormwater events or equipment maintenance and washdown.

The treatment technology selected to treat these waste streams will utilize clarifiers, media filters, settling tanks, centrifuges, and additional process equipment to remove suspended solids from the incoming water. Coagulant, polymer, and pH adjustment chemicals will be added as needed to the treatment system to assure National Pollutant Discharge Elimination System (NPDES) permit discharge limits are met and receiving stream water quality is protected. In addition to the water treatment equipment procurement, fabrication, and installation, substantial construction efforts at the plant are required to route the waste streams to the new wastewater treatment facility. This large and complex project is a substantial financial investment that is scheduled to be completed in 2019.

Georgia Power evaluated temporary alternatives to remove the FGD waste stream from AP-1 for treatment by April 2019. Georgia Power did not identify a feasible wastewater treatment system or solids removal and handling system to replace the gypsum dewatering cells that could be reliably operational by April 2019. The specific equipment needed on this scale is not readily available and much of it would have to be fabricated with long lead times. Additionally, a temporary system would not be reliable to support plant operations.

The new CCR (FGD) treatment system is designed to treat up to approximately 2,550 gallons per minute with a large variability in flow to ensure a range of treatment capacity that varies with megawatt output. The balance of FGD waste stream (approximately 850 gpm) will be routed back through the FGD process for re-use. In addition to the waste stream that will be treated, a 3<sup>rd</sup> gypsum dewatering belt and storage barn are under construction to remove the solids from the waste stream prior to treatment. The material and large process equipment components associated with these new systems have significant lead times and installation schedules.

As indicated in the attached schedule, beginning in 2016 Georgia Power initiated a planning and design phase for the removal of the waste streams from AP-1, which included an extensive water balance study, to develop scenarios for when AP-1 would not be available. Detailed design of these systems, which began in September 2016, remains on-going, and will continue until May 2019. Procurement, manufacture, and delivery of long-lead time equipment began in September 2016 and will extend to September 30, 2019. Construction of new wastewater treatment systems for treatment of low volume waste (LVW) flows and FGD waste streams was

initiated in 2017. The current schedule allows for the necessary start-up, commissioning, and performance testing activities extending to December 31, 2019.

With the completion of the FGD wastewater treatment facility and 3<sup>rd</sup> gypsum dewatering belt, all FGD waste streams will be removed from the dewatering cells located on the ash pond, treated through the new treatment facility, and returned to the FGD process or be discharged through the Plant's existing NPDES outfall.

Given the challenges and overall scope of the project, significant time and resources have been invested and are needed for proper start-up and commissioning of the ash conversion and wastewater treatment systems at Plant Bowen as is typically required for any significant operational control or modification. For these reasons, Georgia Power needs additional time at Plant Bowen beyond April 17, 2019, until December 31, 2019, to adequately construct and properly calibrate a complex wastewater treatment and solids removal system to steady state operation, accounting for quantity and quality variations in CCR waste streams, scrubber cycling and chloride concentrations. This additional time required for construction and thorough calibration of the new system will ensure compliance with the limitations in Plant Bowen's NPDES permit.

#### **NO ALTERNATIVE DISPOSAL CAPACITY (40 CFR 257.103(a)(1))**

To address certain unique and plant-specific CCR waste stream challenges, the CCR Rule provides that an owner or operator of a CCR unit may continue to receive CCR in a specific unit beyond the closure dates, provided no alternative CCR disposal capacity is available. Specifically, 40 C.F.R. § 257.103(a)(1) provides that an owner or operator can continue to receive CCR waste streams in certain units provided the four criteria outlined in 40 C.F.R. § 257.103(a)(1) can be met. With respect to the need to continue the FGD process flows to the gypsum dewatering cells until the completion of construction of the treatment facility on or before December 31, 2019, Georgia Power certifies compliance as follows:

- (i) *No alternative disposal capacity is available on-site or off-site;*

Settled gypsum from the dewatering cells is currently excavated and stockpiled or transported to a permitted on-site landfill. Process water is recycled back to the FGD process, recycled for plant use, or is discharged through the plant's permitted NPDES outfall. Upon completion of the FGD wastewater treatment facility on or before December 31, 2019, all FGD waste streams to the dewatering cells in AP-1 will be removed and routed through the FGD treatment facility.

Temporary options for removing the FGD waste stream from the dewatering cells at AP-1 have been evaluated. Georgia Power has been unable to identify any technically feasible or operationally reliable methods of dewatering and treatment of the waste stream during the interim period from April 17, 2019 to

December 31, 2019. In analyzing disposal options for FGD waste streams, numerous factors were considered by Georgia Power including:

1. The dewatered gypsum solids from the dewatering process will continue to be marketed for beneficial use or transported to the on-site landfill for disposal. However, disposal or treatment within the landfill area is not an option for the FGD waste stream because the landfill is permitted only for conditioned CCR which does not include liquid CCR waste streams.
2. The FGD process results in 3,400 gpm (or 4.9 million gallons per day (MGD)) of wastewater which would need alternative disposal. However, storage and transportation of 4.9 MGD of FGD wastewater would create significant logistical, reliability and safety issues at Plant Bowen. Specifically, the following factors support Georgia Power's certification that alternative capacity for FGD disposal at Plant Bowen is not available.
  - a) Assuming 9000 - gallon capacity tankers, 45 trips per hour (12 – hour day) or one trip every 45 seconds, would be required to transport the FGD waste stream to privately - owned treatment facilities.
  - b) Multiple, high-volume storage tanks would be required for on-site storage, emergency storage, and multiple load-out stations. Land-space requirements for the tanks and infrastructure would be extensive. Available land space in proximity to the FGD equipment is not available due to existing land use within the Plant Bowen site.
  - c) With the extent of these logistics, the impact on Plant Bowen and local infrastructure and traffic flows would be extensive and would create significant safety risks for drivers and residents in the area.
  - d) With respect to the schedule, the short construction period to construct temporary capacity for these waste streams before April 17, 2019 is unachievable from a technical, engineering, and operational perspective.
  - e) Finally, any off-site or temporary treatment options for FGD wastewater would not provide the assurance of continued operation of Plant Bowen. Additionally, any such options would take focus off of completing the ongoing construction of a permanent system to support future plant operations without the ash pond.

(ii) *The owner/operator has made, and continues to make, efforts to obtain additional capacity;*

Georgia Power initiated the Bowen Water Management Project (for low volume wastewater and FGD waste stream treatment facilities) in August 2016 with conceptual designs and planning. This was followed closely by the launch of detailed, complex design and procurement in September 2016 to facilitate the procurement and delivery of the long lead time, specialized equipment required for the treatment systems. The construction schedule is contingent upon supply

and demand market forces, equipment, commodity and labor availability, and weather. Given the challenges and overall scope of the project, significant time and resources have been invested and continue to be needed for proper start-up and commissioning of the FGD waste stream treatment system at Plant Bowen, as is typically required for any significant operational control or modification. Georgia Power continuously and diligently monitors the construction schedule and activities to identify opportunities to shorten the schedule for completion of the system.

- (iii) *The owner/operator must remain in compliance with all other requirements of this subpart, including the requirement to conduct any necessary corrective action;*

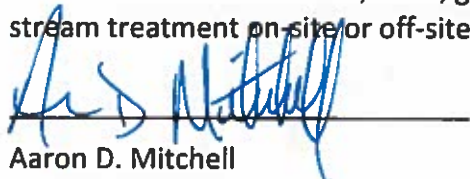
Georgia Power has implemented, and is currently implementing, significant operational and waste stream treatment changes at Plant Bowen to achieve compliance with the CCR Rule. Georgia Power will continue to remain in compliance with the CCR Rule, including the requirement to conduct any necessary corrective action. Georgia Power will also remain in compliance with the NDPEs permitting requirements related to the FGD process waste streams at Plant Bowen.

- (iv) *The owner/operator must prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.*

Georgia Power will prepare an annual progress report, as necessary, documenting the continued lack of alternative capacity for these FGD waste streams and the progress towards the completion of the necessary modifications to plant systems to handle the FGD wastewater.

For the above reasons, Georgia Power needs the additional time at Plant Bowen beyond April 17, 2019 to December 31, 2019 to continue to receive these FGD waste streams in AP-1.

I hereby certify that the information provided above is accurate to the best of my knowledge and that the gypsum dewatering cells within AP-1 must continue to accept the FGD waste streams until December 31, 2019, given the absence of feasible alternative sources of waste stream treatment on-site or off-site.



Aaron D. Mitchell  
General Manager, Environmental Affairs

# ATTACHMENT 1



## Water Management EPC

2017		2018			2019			2020			2021															
J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Front End Planning																										
Detailed Engineering																										
Procurement, Manufacture and Delivery of Long Lead Time Equipment																										
Site Work																										
Foundation																										
Prime Structural/Mech/Elect/I&C																										
Startup and Commissioning																										
Performance Testing																										