

POST-CLOSURE PLAN

PLANT MCINTOSH COAL COMBUSTION RESIDUALS (CCR) INACTIVE LANDFILL NO. 3 EFFINGHAM COUNTY, GEORGIA

FOR



Georgia Power

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TABLE OF CONTENTS

1.	POST-CLOSURE PLAN	1
1.1	Amendments to the Post-Closure Care Plan	1
1.2	Post-Closure Care Period	1
1.3	Post-Closure Use of the Property	1
1.4	Final Cover System Maintenance	1
1.5	Environmental Monitoring	2
1.6	Notification of Monitoring Standards Exceeded	3
1.7	Routine Inspections	3
1.8	Storm Water Management System Maintenance	3
1.9	Limited Access	3
1.10	Responsible Official	4
1.11	Site Equipment	4
1.12	Removal of CCR for Beneficial Use	4
1.13	Dust Control	4
1.14	Final Cover Repairs	4
1.15	Vegetative Plan	4
1.16	Post-Closure Care Cost Estimate	5
1.17	Financial Assurance	5
1.18	Notification and Certification	5
1.19	Recordkeeping	6

1. POST-CLOSURE PLAN

This Post-Closure Plan fulfills the requirements of Rule 391-3-4-.10(7) for the Inactive CCR Landfill No. 3 in accordance with Rules 391-3-4-.10(9)(c)4. and 391-3-4-.10(9)(c)3.(i)–(iv). Landfill No. 3 was closed in 2005 with the completion of the final cover system and submittal of the closure certification report to the Georgia EPD. Georgia EPD approved the certification report and issued a Closure Certificate for Landfill No. 3, Permit No. 051-008D(LI) on March 21, 2008. The 30-year post-closure care period began on March 21, 2008. The closure certification and deed notification are provided in Part B, Section 2 of this application.

1.1 Amendments to the Post-Closure Care Plan

Georgia Power Company (Georgia Power) may amend the initial or any subsequent plan at any time. Georgia Power must amend whenever there is a change in the operation of the unit that would substantially affect the written post-closure plan, or after post-closure care activities have commenced unanticipated events necessitate a revision of the written plan. The Post-Closure Plan must be amended at least 60 days prior to a planned change in operation of the facility, and no later than 60 days following an unanticipated event, or 30 days following a trigger event. Post-Closure Plan Amendments will be certified by a Georgia Professional Engineer.

1.2 Post-Closure Care Period

Post-closure care is required for a period of 30 years and must consist of at least the following:

- Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover system as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing stormwater run-on and run-off from eroding or otherwise damaging the final cover.
- Maintaining the groundwater monitoring system and monitoring program in accordance with the requirements of Rule 391-3-4-.10(6).

If under assessment monitoring at the end of the post-closure care period, GEORGIA POWER will continue to conduct post-closure care until the site returns to detection monitoring. The release from the post-closure care requirements in this plan must be approved by the Director of the Georgia EPD.

1.3 Post-Closure Use of the Property

The post-closure use of Landfill No. 3 will be for green space. Prior to any other future use, Georgia EPD approval will be obtained by GEORGIA POWER. GEORGIA POWER is responsible for continuing the post-closure care of the property for the 30-year post-closure care period, which will begin upon issuance of the closure certification by the Georgia EPD.

1.4 Final Cover System Maintenance

GEORGIA POWER will maintain the integrity and effectiveness of the final cover system, including making repairs to the final cover, as necessary. The final cover system for Inactive CCR Landfill No. 3 was designed and constructed to minimize leachate generation by limiting percolation through the final cover barrier layer, promoting subsurface drainage to limit head on the barrier layer, and establishing vigorous plant growth to maximize evapotranspiration. The final cover system was also designed and constructed for

stability and to reduce maintenance. The Inactive CCR Landfill No. 3 final cover consists of the following from bottom to top:

- Prepared ash surface or soil surface
- Geosynthetic clay liner (GCL)
- Protective soil cover layer (minimum 12-inches thick)
- Topsoil layer (6-inches thick)
- Permanent vegetation

A construction documentation report was submitted to the Georgia EPD and approval of the report was granted with the issuance of the Closure Certificate. The constructed final cover system for Landfill No. 3 meets the requirements Rules 391-3-4-.10(9)(c)(4) and 391-3-4-.10(9)(c)(3)(iv) and the final cover performance standards of 40 CFR 257.102(d).

Erosion repairs to the vegetation, topsoil, and protective soil layers are typical for maintenance of final cover systems. Erosion repairs will be made as soon as feasible to prevent damage to the final cover. Any repairs to the liner shall be documented and certified by a professional engineer and placed in the facility Operating Record.

Any identified areas that require repair will be reseeded immediately after any repairs are completed. Areas which are slow to establish vegetation shall receive additional temporary seeding. The operator may submit soil samples to the County Extension Agent for analysis and determination of proper soil conditioners including lime. Planting dates, fertilizer rates, and seeding rates shall meet the requirements in the *Manual for Erosion and Sediment Control in Georgia*.

The erosion control measures shall remain in place until a satisfactory stand of grass is growing. A satisfactory stand of grass is defined as a full cover: 100 percent of the soil surface is uniformly covered in permanent vegetation with a density of 70 percent or greater.

1.5 Environmental Monitoring

Groundwater monitoring will continue throughout the post-closure care period as described in the approved Groundwater Monitoring Plan included in Part A of this Permit Application. Following each semi-annual sampling event, results will be provided to EPD for its review. The groundwater monitoring wells will be maintained throughout this period.

The CCR landfill will continue to monitor groundwater according to the Groundwater Monitoring Plan approved for the facility. Georgia Power will be responsible for conducting all monitoring activities. If at any time the monitoring results indicate an exceedance of established standards or indicate a threat to human health or the environment, Georgia Power will notify the EPD and comply with all requirements of Georgia Rule 391-3-4-.10(6).

Georgia Power will monitor groundwater semi-annually pursuant to the requirements defined in the Groundwater Monitoring Plan included in the permit. Georgia Power proposes to monitor groundwater for a period of at least thirty (30) years following closure of the landfill to confirm that groundwater constituent concentrations are not detected at statistically significant levels above the groundwater protection standards established in State CCR Rule 391-3-4-.10(6)(b), which references 40 CFR 257.104. If

at the end of the 30-year post-closure care period the facility is operating under assessment monitoring in accordance with Georgia Rule 391-3-4-.10(6) and 40 CFR 257.95, the owner or operator must continue to conduct post-closure care until the facility returns to detection monitoring.

Following the post-closure care period, a qualified groundwater scientist will certify that the site is in Detection Monitoring prior to release from post-closure care. The certification statement will be submitted to EPD for review and concurrence and will include the following language: "I am a qualified groundwater scientist and I hereby certify that the groundwater monitoring program at the CCR landfill is operating under detection monitoring in accordance with 257.94 and Georgia Rules for Solid Waste rule 391-3-4-.10 and monitoring requirements for post-closure care have been met."

1.6 Notification of Monitoring Standards Exceeded

GEORGIA POWER will be responsible for conducting all monitoring activities. If at any time the monitoring results indicate an exceedance of established standards or indicate a threat to human health or the environment, GEORGIA POWER shall notify the Georgia EPD and comply with all requirements of Georgia Rule 391-3-4-.10(6).

1.7 Routine Inspections

Throughout the post-closure care period, the site shall be inspected on a quarterly basis and after any extreme weather event by a qualified person, and on an annual basis by a Professional Engineer to ensure that all CCR disposed of in the facility remains properly covered and that the final cover is in good condition. Repairs to the final cover system shall be made as necessary to maintain the integrity and effectiveness of the final cover system. The repairs shall meet or exceed the original construction requirements. Areas noted to have less than the required cover from the effects of erosion, vehicular traffic, settlement, subsidence, or other events shall be repaired as soon as practical. All areas lacking proper vegetation shall be grassed and maintained according to the *Manual for Erosion and Sediment Control in Georgia*.

1.8 Storm Water Management System Maintenance

The storm water management features shall be maintained in proper working condition in accordance with the permit application to prevent run-on and run-off from eroding or otherwise damaging the final cover. Inspections of the ditches, culverts, storm water diversion berms, slope drains, rock lined flumes, and sedimentation ponds checking for signs of erosion, areas lacking vegetation, ponding water, and accumulation of sediments will be performed. Inspections should be completed quarterly, and after significant storm events (greater than 3 inches in 24 hours) by a qualified person. Deficiencies identified shall be addressed as soon as practical.

1.9 Limited Access

Inactive CCR Landfill No. 3 is located entirely on Georgia Power property. Access is controlled by fencing, gates, and property buffers. Access to the site is limited to authorized personnel or personnel under the supervision/permission of authorized personnel.

1.10 Responsible Official

The post-closure care of the site will be the responsibility of the General Manager of Environmental Affairs. The contact information is:

Facility Contact:	General Manager – Environmental Affairs Georgia Power Company
Address:	241 Ralph McGill Boulevard Atlanta, Georgia 30308
Telephone Number:	(404) 506-6505

1.11 Site Equipment

Georgia Power will make available necessary equipment to ensure that post-closure care requirements are executed correctly and efficiently. Dedicated landfill or rental equipment will be used as necessary. The equipment required will depend on the type and extent of the necessary repair.

1.12 Removal of CCR for Beneficial Use

Georgia Power will request and receive written approval from Georgia EPD prior to conducting any activities to remove CCR from the landfill for beneficial use.

1.13 Dust Control

The final cover of Inactive CCR Landfill No. 3 is fully vegetated. There is no active source of dust during the post-closure period. However, if work (such as cover repairs) is performed at the landfill with the potential to create dust, Georgia Power will implement dust control measures such as the application of water or other approved dust control agent on haul roads to limit and control airborne dust in accordance with 391-3-4-.10(5) and 40 CFR 257.80.

1.14 Final Cover Repairs

Georgia Power will continue to conduct post-closure care of Inactive CCR Landfill No. 3, which includes making repairs to the final cover, as necessary, to maintain the integrity and effectiveness of the final cover system. Typical maintenance items include repairs due to erosion which should be made as soon as practical to prevent unintended damage to the GCL. If any repairs to the final cover system require repair of the GCL, a written repair plan will be prepared by a professional engineer. The repair plan will specify the materials of construction, contractor means and methods or performance criteria, and provide construction quality assurance to document that the repair is completed in accordance with the original design of the final cover. Any repairs to the GCL shall be documented and placed in the facility's operating record.

1.15 Vegetative Plan

Vegetative cover should be re-established within 2 weeks after any repairs. Permanent covers which are slow to establish shall receive additional seeding. Deep rooting plants such as weeping love grass and lespedeza should not be used to reseed areas. Planting dates, fertilizer rates, and seeding rates shall follow the requirements in the *Manual for Erosion and Sediment Control in Georgia*.

The erosion control measures shall remain in place until a satisfactory stand of grass is growing. A satisfactory stand of grass is defined as a full cover: 100 percent of the soil surface is uniformly covered in permanent vegetation with a density of 70 percent or greater.

1.16 Post-Closure Care Cost Estimate

Georgia EPD issued a Closure Certificate on March 21, 2008. In accordance with the Conditions for Post-Closure Care, Georgia Power is responsible for conducting Post-Closure Care of the landfill for a minimum of 30 years after the date of the Closure Certificate.

In compliance with applicable securities laws and regulations, GEORGIA POWER will provide cost estimates for post-closure to GA EPD under separate cover. The costs will include all items necessary for a third party to complete post-closure care in accordance with the Post-Closure Plan as set forth herein. The cost estimate will be generated in current dollars and will be adjusted annually for inflation. GEORGIA POWER will provide a demonstration of financial assurance upon approval of the post-closure care cost estimates by GA EPD.

McIntosh #3 Landfill Post-Closure Cost Estimate

Item Description	Quantity	Unit	Unit Cost	Cost
Post Closure Cost				
Maintenance - Grass/Turf ¹				
Dike, Road, and Maintenance				
Environmental Monitoring				
Groundwater Monitoring & Reporting ²				
Sampling				
Reporting				
Laboratory Analysis				
Groundwater Well Maintenance and Abandonment				
Well Maintenance & Replacement ³				
Well Abandonment ⁴				
			Subtotal	
			Contingency	
			16 Year Post Closure Cost Estimate⁵	

Notes:

- Maintenance - Grass includes cost for mowing the site five times per year.
- Assumes 12 wells + 6 QA/QC samples = 18 samples collected 2 times/year for 16 years. Includes cost for additional analyses for semiannual well inspections, Alternate Source Demonstrations, resamples, and rush analysis. Assumes semi-annual reporting for 16 years.
- Assumes 5% of miscellaneous costs in post-closure care are associated with well maintenance and replacement. Assumes, no additional wells will be installed during post-closure care.
- Well abandonment includes 12 wells completed above grade.
- McIntosh Landfill #3 entered into Post-closure under Solid Waste Permit No. 051-008D(LI) in 2008. Therefore a 16-year Post Closure period has been used in the cost table above to credit the facility 14-years completed under Post Closure under Solid Waste Permit No. 051-008D(LI).

1.17 Financial Assurance

Rule 391-3-4-.10(10)(a) requires financial assurance for all CCR units be provided in accordance with Rule 391-3-4-.13. Georgia Power will submit the financial assurance mechanism for post-closure care on forms as provided or in a format as prescribed by the Director, Georgia EPD. In compliance with applicable securities laws and regulations, GEORGIA POWER will provide cost estimates for post-closure to GA EPD under separate cover. The costs will include all items necessary for a third party to complete post-closure care in accordance with the Post-Closure Plan as set forth herein. The cost estimate will be generated in current dollars and will be adjusted annually for inflation. GEORGIA POWER will provide a demonstration of financial assurance upon approval of the post-closure care cost estimates by GA EPD.

1.18 Notification and Certification

Georgia Power shall obtain written certification from a professional engineer registered in the State of Georgia that the post-closure care plan meets the requirements of Rule 391-3-4-.10(7).

No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit must prepare a notification verifying that post-closure care has been completed. The notification must include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with this plan. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 391-3-4-.10(8) and provided to the Director of Georgia EPD. The release of the CCR unit of post-closure care must be approved by the Georgia EPD.

1.19 Recordkeeping

Georgia Power will comply with all recordkeeping requirements for maintaining quality control records of inspection and testing during the post-closure care period. The records will be compiled and maintained in accordance with the solid waste handling permit and post-closure care responsibilities for Landfill No. 3. All records will be forwarded to the Plant McIntosh's permanent operating record to be retained as a permanent record of the project.