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COAL COMBUSTION RESIDUAL CLASS 3 LANDFILL INSPECTION – WINYAH GENERATING STATION

Georgetown, South Carolina



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Executive Summary

This assessment of the stability and functionality of the Winyah Generating Station (WGS) coal combustion residual (CCR) Class 3 Landfill is based on a review of available documents and on-site assessment conducted by Santee Cooper engineering staff on October 5th, 2021.

In summary, the WGS CCR Class 3 Landfill was generally found in satisfactory condition. No recognized existing or potential management unit safety deficiencies were noted at the time of inspection within the parameters of design and operation.

Summary of Recommendations

1. Bare soil areas should be reseeded and continued to be monitored as part of routine maintenance.
2. Tall vegetation at the north and east outside slopes should be cut down and kept trimmed as part of routine maintenance.

This assessment of the Class 3 Landfill at Winyah Generating Station reported herein is based on field observations and review of readily available information provided to the inspection team of the subject coal combustion residual (CCR) management unit(s). Qualified Santee Cooper engineering staff performed the field observations and review of pertinent information and made the assessment in conformance with the requirements of Section 257.84 of the Code of Federal Regulations and in accordance with reasonable and generally accepted engineering practices.

Coal Combustion Residual Class 3 Landfill Inspection – WINYAH Generating Station

1.0 General Information and Introduction

1.1 Purpose and Scope

The purpose of this report is to fulfill the requirements of Section 257.84(b) of the Code of Federal Regulations regarding the safety and inspection of CCR storage units. Section 257.84(b) states that “Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards.” The inspection must, at a minimum, include:

- i. A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections)
- ii. A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

The inspection report must also be written by a qualified professional engineer and must address the following:

- i. Any changes in geometry of the structure since the previous annual inspection
 - **No changes in the geometry of the Class 3 Landfill beyond normal filling operations**
- ii. The approximate volume of CCR contained in the unit at the time of the inspection
 - **The Class 3 Landfill contains approximately 1,102,424 cubic yards of material**
- iii. Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit

- **Several maintenance items noted on Class 3 Landfill as discussed in the Executive Summary and Sections 4.2 and 5.3; however, the landfill is safe for continued operation**
- iv. Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection
- **No other changes noted on the Class 3 Landfill that impact the stability or operation of the landfill**

2.0 Description of Coal Combustion Residual Management Units

2.1 Location and General Description

The Winyah Generating Station (WGS) is located on Penny Royal Road, Georgetown, South Carolina, near Penny Royal Creek.

WGS currently has a single operational CCR landfill (the Class 3 Landfill), which entered operation at the end of 2018. Table 2.1 below shows a summary of the size and general dimensions of the CCR management unit at WGS as well as the current volume:

Table 2.1: Summary of Landfill Dimensions and Size

	Class 3 Landfill
Base Width (ft)	850
Base Length (ft)	1600
Side Slopes H:V	3:1 (design)
Approximate Current Storage Volume (cy)	1,102,424

2.2 Type of CCRs Currently Stored in Landfill

The landfill started receiving material in August of 2019. It has received approximately 1,102,424 cy of material. This includes contact soil from the GGS site and CCRs from the WGS Ponds.

2.3 Principal Project Structures

The CGS Class 3 Landfill is regulated under SCDHEC's Solid Waste Management regulations. It was permitted in November 2018.

The Landfill is approximately 850 feet wide at its base and 1600 feet long. The side slopes are designed to be 3:1 (horizontal to vertical).

3.0 Summary of Relevant Reports and Incidents

3.1 Summary of Reports on the Safety of CCR Units

Furnished reports of weekly inspections conducted by WGS personnel, indicated no major structural or operational problems at the WGS Class 3 Landfill. No significant deterioration was indicated in the documentation reviewed.

4.0 Field Observations

4.1 Project Overview and Significant Findings

Santee Cooper qualified engineering staff performed the inspection on October 5th, 2021. Weather conditions during the visit were cloudy and dry with temperatures of approximately 79 degrees Fahrenheit.

The overall condition of the CCR Class 3 Landfill was found to be in satisfactory condition with no significant findings noted.

4.2 Class 3 Landfill

4.2.1 Crest/Operating Area

The operating area of the Class 3 landfill was found to be in satisfactory condition upon inspection.

4.2.2 Outside Slopes

The outside slopes of the Class 3 Landfill were generally found to be in satisfactory condition. No obvious signs of slumps, slides, bulges, tension cracks, seepage, or animal burrows were observed on the slope. Several areas on the slope were bare of vegetation. The north and east sides of the landfill had some tall vegetative growth on the outside slopes.

4.2.3 Stormwater Conveyance Structures

The landfill drainage system pumps stormwater from the landfill to the Discharge Canal, where it is then routed to the Cooling Pond.

4.2.4 Roads/Ramps/Other Infrastructure

All roads and ramps were found to be in satisfactory condition.

4.3 Adequacy of Maintenance, Operating, and Surveillance Procedures

4.3.1 Adequacy of Maintenance Procedures

Overall, maintenance of the Class 3 CCR Landfill appears to be adequate. No major maintenance issues were noted during the field inspection or in the weekly inspection reports completed by WGS personnel and reviewed by the inspection team.

4.3.2 Adequacy of Operating Procedures

Based on field observations and discussions with WGS personnel, the operating procedures for the Class 3 CCR Landfill appear to be adequate.

4.3.3 Adequacy of Surveillance Procedures

WGS personnel complete daily informal inspections and weekly formal inspections on the Class 3 CCR Landfill in accordance with good engineering practice and Section 257.84 of the Code of Federal Regulations. These inspections are being properly documented and should continue as they are currently being conducted.

5.0 Conclusions and Recommendations

Conclusions are based on visual observations from a one-day site visit on October 5th, 2021, and review of technical documentation provided to the inspector.

5.1 Conclusions Regarding the Structural Soundness of the Management Unit(s)

Based on a review of the engineering data provided and observations during the inspection, the WGS Class 3 Landfill appears to be structurally sound under static loading conditions.

5.2 Conclusions Regarding Field Observations

The Class 3 Landfill was found to be in satisfactory condition, with no apparent indications of unsafe conditions. Recommendations regarding minor maintenance issues are noted in Section 5.3.

5.3 Recommendations

1. Bare soil areas should be reseeded and continued to be monitored as part of routine maintenance.
2. Tall vegetation at the north and east outside slopes should be cut down and kept trimmed as part of routine maintenance.