

Prepared for



Santee Cooper
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**PERIODIC HAZARD POTENTIAL
CLASSIFICATION ASSESSMENT
SOUTH ASH POND**

**WINYAH GENERATING STATION
Georgetown, South Carolina**

Prepared by



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INTRODUCTION

Winyah Generating Station (WGS) is a 1,260 megawatt coal-fired steam electric generating facility owned and operated by South Carolina Public Service Authority (Santee Cooper). The Site is situated between Pennyroyal and Turkey Creeks and is located in Georgetown, South Carolina. Coal combustion residuals (CCR) generated at WGS have been historically managed in existing CCR surface impoundments.

This report presents the hazard potential classification assessment for the South Ash Pond at the Winyah Generating Station (WGS) by Geosyntec Consultants, Inc. (Geosyntec). Hazard potential classification of impoundments is required under the United States Environmental Protection Agency (USEPA) Coal Combustion Residual Rule (CCR Rule) published on 17 April 2015 (40 CFR §257.73(a)(2)). Under the CCR Rule, the South Ash Pond is an “existing surface impoundment” and its hazard potential must be assessed by a Qualified Professional Engineer.

The CCR Rule categorizes and defines hazard potentials as follows:

- *High Hazard Potential— a diked surface impoundment where failure or mis-operation will probably cause loss of human life.*
- *Significant Hazard Potential—a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact to other concerns.*
- *Low Hazard Potential—a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner’s property.*

The FEMA guidance document¹, which was used by USEPA as one of the guidance documents further states the following:

“...The classification assigned should be based on the worst-case probable scenario of failure or mis-operation of the dam, i.e., the assigned classification should be based

¹ Federal Guidelines for Dam Safety – Hazard Potential Classification System for Dams, Federal Emergency Management Agency (FEMA).

on failure consequences that will result in the assignment of the highest hazard potential classification of all probable failure and mis-operation scenarios...”

Moreover, the FEMA document also states the following:

“In most situations, the investigation of the impact of failure or mis-operation of a dam on downstream human life, property damage, lifeline disruption, and environmental concerns is sufficient to determine the appropriate hazard potential classification. However, if failure or mis-operation of a dam contributes to failure of a downstream dam(s), the hazard potential classification of the dam should be at least as high as the classification of the downstream dam(s) and should consider the adverse incremental consequences of the domino failures.”

SOUTH ASH POND

The South Ash Pond is encircled by the Site’s railroad track, which delivers coal for combustion and steam generation. The South Ash Pond is bounded by the Coal Pile and power block to the north, Pennyroyal Creek to the west, a forested area to the south, and an access road and the Discharge Canal to the east. The hazard potential classification assessment for the South Ash Pond was initially conducted in 2016 and the South Ash Pond was assigned “Low Hazard Potential” classification. The initial hazard potential classification was based on an evaluation of consequences from an assumed worst-case scenario, a perimeter dike failure or mis-operation of the surface impoundment during the probable maximum flood (PMF). The 2016 hazard potential classification assessment for the South Ash Pond indicated that a perimeter dike failure or mis-operation of the surface impoundment could result in a discharge or displacement of water and CCR into the Cooling Pond, located within the property boundary of WGS. The Cooling Pond is a diked pond bounded primarily by forested area to the southwest, south, and east; and bounded by a small residential community and Turkey Creek to the north. The 2016 hazard potential classification assessment also indicated that a failure of the South Ash Pond perimeter dike would provoke a minimal rise in the water level in the Cooling Pond, given the size of the Cooling Pond, and that the rise in water level will not cause the Cooling Pond to fail.

An estimation of the PMF in the area remains unchanged from 2016. Changes have been made to the South Ash Pond since 2016 such that consequences from the worst-case scenario assumed for the 2016 hazard potential classification assessment are anticipated to be similar to or less severe than those estimated from the 2016 assessment. The changes include an initiation of pond closure. In accordance with §257.102(g), a Notice of Intent for the South Ash Pond was posted to the Operating Record on 9 April 2021 to



initiate pond closure, and CCR and wastewater inflow to the South Ash Pond ceased in April 2021. Additionally, a review of the topographic survey dated August 2021 and the topographic survey used in the 2016 Assessment indicated that the volume of CCR impounded within the South Ash Pond has not changed significantly.

Based on the 2016 hazard potential classification assessment and considering the recent closure activities, a discharge or displacement of water and CCR caused by a perimeter dike failure or mis-operation of the South Ash Pond would likely result in environmental damage, but likely limited to Santee Cooper's property. However, no probable loss of human life is anticipated. Moreover, the release of water and CCR from the surface impoundment will likely not disrupt the facility's long-term ability to operate, would not result in lifeline losses, and would not affect critical habitats. Based on these considerations, the hazard potential classification assessment for the South Ash Pond remained unchanged and the surface impoundment was re-assigned a "Low Hazard Potential" classification.

CERTIFICATION

The periodic hazard potential classification specified in paragraph (a)(2)(i) of this section (§ 257.73 Structural integrity criteria for existing CCR surface impoundments) was conducted in accordance with the requirements of this section.

Certified by:



The seal is circular with a double-line border. The outer ring contains the text "SOUTH CAROLINA" at the top and "WOO-KUEN SHIN" at the bottom. The inner ring contains "LICENSED PROFESSIONAL ENGINEER". In the center, it says "No. 36052".

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South Carolina Registration No. 36052
Date: 10/15/2021