

Prepared for



Santee Cooper
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**PERIODIC HAZARD POTENTIAL
CLASSIFICATION ASSESSMENT
SLURRY 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 Slurry Pond 3&4 (Slurry 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 Slurry 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.”

SLURRY POND

The Slurry Pond is bounded to the south by the West Ash Pond and to the east by plant cooling towers and the plant area. The Slurry Pond perimeter dikes are bordered by Pennyroyal Creek and residential property on the west and north sides. There is a residential property immediately to the north that is approximately at elevation 18 feet National Geodesic Vertical Datum of 1929 (NGVD29) and approximately 250 feet away from the toe of the impoundment. The hazard potential classification assessment for the Slurry Pond was initially conducted in 2016 and the Slurry Pond was assigned “High Hazard Potential” classification. The initial hazard potential classification (2016 Assessment) 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 Assessment indicated that a perimeter dike failure or mis-operation of the surface impoundment could result in measurable environmental damage by a discharge or the displacement of water and CCR, particularly to Pennyroyal Creek and potentially loss of life in the adjacent residential property.

An estimation of the PMF in the area remains unchanged from 2016. A review of the topographic survey dated September 2021 and the topographic survey used in the 2016 Assessment indicated that the volume of CCR impounded within the surface impoundment is very similar to that observed during the last assessment (i.e., 2016 Assessment). Changes have been made to the Slurry Pond since 2016, which include an initiation of pond closure. In accordance with §257.102(g), a Notice of Intent for the Slurry Pond was posted to the Operating Record on 9 April 2021 to initiate pond closure, and CCR and wastewater inflow to the Slurry Pond 3&4 ceased in April 2021.

Based on the 2016 hazard potential classification assessment and no significant changes to the volume of CCR impounded, despite the recent closure activities, a discharge or

displacement of water and CCR caused by a perimeter dike failure or mis-operation of the Slurry Pond could result in measurable environmental damage particularly to Pennyroyal Creek and potentially loss of life in the adjacent residential property. Based on these considerations, the hazard potential classification assessment for the Slurry Pond remained unchanged and the surface impoundment was re-assigned “High 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:



A circular professional seal for a Licensed Professional Engineer in South Carolina. The seal contains the text "SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER" around the perimeter, "No. 36052" in the center, and "WOO-KUEN SHIN" at the bottom. A blue ink signature is written over the seal.

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Date: 10/15/2021