



Prepared for

Santee Cooper
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**HAZARD POTENTIAL
CLASSIFICATION ASSESSMENT
– SLURRY POND 3&4
WINYAH GENERATING STATION**

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 at 661 Steam Plant Drive in Georgetown, South Carolina. Coal combustion residuals (CCR) generated at WGS have been historically managed in existing CCR surface impoundments.

This report presents Geosyntec Consultants' (Geosyntec's) hazard potential assessment for the Slurry Pond 3&4 at the Winyah Generating Station (WGS).

Hazard potential classification of impoundments is required under the United States Environmental Protection Agency (USEPA) Coal Combustion Residual (CCR) 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:

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

“... 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 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’ National Geodesic Vertical Datum (NGVD) and approximately 250’ away from the toe of the impoundment.

A worst case scenario of this impoundment would be when it is affected by the probable maximum flood (PMF), which in this area is 53” in 72 hours. Although the impoundment safely contains the PMF, the level of water in the Slurry Pond would reach a maximum of 35.28’ NGVD and the amount of water stored would be in the order of 481 ac-ft. An additional amount of CCR equivalent to 50% of the water stored at normal operating level is assumed to liquefy and flow out with the water yielding a total volume of 493 ac-ft.

A perimeter dike failure or mis-operation of the impoundment resulting in a discharge or the displacement of water and CCR could result in measureable environmental damage particularly to Pennyroyal Creek and potentially loss of life in the adjacent residential property. Based on these potential consequences of failure, the Slurry Pond was assigned a “High Hazard Potential” classification.

CERTIFICATION

The initial 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:



Date 10/12/2016

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