

October 11, 2021

Tennessee Valley Authority
1101 Market Street
Chattanooga
Tennessee, 37402-2801**Subject: Engineer's Certification of 2021 Periodic Hazard Potential Classification Assessment
Ash Pond A
Tennessee Valley Authority Gallatin Fossil Plant
Gallatin, Tennessee**

1.0 PURPOSE

The purpose of this document is to provide the periodic hazard potential classification assessment and associated certification for the Tennessee Valley Authority (TVA) Gallatin Fossil Plant (GAF) Ash Pond A in compliance with 40 CFR § 257.73(a)(2) of the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals Rule (CCR Rule). According to 40 CFR § 257.73(f), a hazard potential classification assessment is required every five years from the posting of the initial hazard potential classification assessment in the facility's Operating Record. An initial hazard potential classification assessment was completed and was placed in the facility's operating record on October 12, 2016.

2.0 BACKGROUND

Per 40 CFR § 257.73(a)(2) and (f)(1), owners and operators of CCR surface impoundments were required to complete an initial hazard potential classification assessment for each existing CCR surface impoundment by October 17, 2016, documenting the hazard potential classification of each CCR unit as either high hazard potential, significant hazard potential, or low hazard potential. The owners or operators of the CCR surface impoundment were required to obtain a certification from a qualified professional engineer stating that the initial hazard potential classification was conducted in accordance with the requirements of 40 C.F.R. § 257.73. An initial hazard potential classification assessment was completed and certified for Ash Pond A (Stantec, 2016). Based on the initial assessment, Ash Pond A was assigned a *significant* hazard potential classification rating. The primary basis for the rating was a breach analysis conducted for the GAF Ash Pond Complex (Stantec, 2013).

3.0 SUMMARY OF FINDINGS

This periodic hazard potential classification assessment was based on AECOM's review of the initial hazard potential classification assessment (Stantec, 2016), a breach analysis for the GAF Ash Pond Complex (Stantec, 2013), available inspection reports, best available topographic contours developed from TVA surveying (TVA, 2019), aerial imagery provided on the Sumner County Property Search Application (2021), and AECOM's understanding of current conditions. Annual inspections of CCR facilities at the plant including Ash Pond A have been completed since 2016 with the most recent on July 29, 2021. The potential failure scenario considered as part of the initial hazard potential classification assessment (Stantec 2016) involved dam failure into the Stilling Basin Complex. This potential failure scenario was reconsidered as part of the periodic hazard potential classification assessment.

AECOM's review of the breach analysis for the GAF Ash Pond Complex (Stantec, 2013) indicates that methods and results were appropriate and consistent with accepted standards of practice. Solely for the purpose of the 2013 study, the Ash Pond Complex is comprised of Ash Pond A, Ash Pond E, and the Stilling Basin Complex (Stilling Ponds B, C, and D). The worst-case dam failure scenario of the Ash Pond Complex was represented in the 2013 study by a dam failure of Ash Pond A into the adjacent Stilling Basin Complex. The dam failure was modelled for both sunny day and Probable Maximum Precipitation (PMP) dam failure scenarios. Based on review of available inspection reports and recent topographic information and aerial imagery, conditions associated with the Ash Pond Complex have not changed substantially since the 2013 study, with the exception that CCR and non-CCR waste streams to the Ash Pond Complex have been ceased and normal pool levels have been lowered in Ash Pond A since the initial 2013 breach analysis. As a result, the flood inundation zones provided by the 2013 study should be applicable for current conditions. Based on review of the aerial imagery provided on the Sumner County Property Search Application (2021), no new structures were identified within the inundation zones for both the sunny day and PMP scenarios. Therefore, the original conclusion of the initial hazard potential classification assessment (Stantec 2016) that a breach to the north would result in no probable loss of human life is still valid based on the current conditions.

The initial hazard potential classification assessment (Stantec 2016) also concluded that because Ash Pond A is located near the Cumberland River, a dam failure would likely result in release of CCR into waters of the United States. AECOM concurs with the conclusion of the initial assessment that a dam failure could continue to result in potential environmental damage and economic losses due to off-site release of CCRs.

Based on AECOM's review of the available information and comparison to existing conditions, failure of the dam associated with Ash Pond A should result in no probable loss of human life but could cause economic loss or environmental damage. As a result, it is recommended that Ash Pond A continue to be classified as a *significant* hazard potential CCR surface impoundment.

4.0 CERTIFICATION

I, David Skeggs, being a Professional Engineer in good standing in the State of Tennessee, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification has been prepared in accordance with the accepted practice of engineering; that the information contained herein is accurate as of the date of my signature below; and that this periodic hazard potential classification assessment was conducted in accordance with the requirements of 40 C.F.R. § 257.73(a)(2).

SIGNATURE:



David Skeggs, PE

DATE: October 11, 2021

ADDRESS: 5438 Wade Park Boulevard
Suite 200
Raleigh, NC 27607

TELEPHONE: 919-461-1100

REFERENCES: Stantec (2016), *Initial Hazard Potential Classification Assessment, Ash Pond A, EPA Final Coal Combustion Residuals (CCR) Rule, TVA Gallatin Fossil Plant, Gallatin, Tennessee*, October 6, 2016.
Stantec (2013), *Report of Breach Analysis, Ash Pond Complex, Gallatin Fossil Plant, Sumner County, Tennessee*, September 25, 2013.
Sumner County, Tennessee (2021), *Sumner County, Tennessee, Property Search Application*.
<https://sumnertn.geopowered.com/propertysearch/>. Accessed August 12, 2021.
TVA (2019), Topographic contours developed from TVA surveying, May 30, 2019.

