

Cross Generating Station Bottom Ash Pond

Periodic (5-Yr) Hazard Potential Classification Assessment



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07 Nov 2021

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Rev	Description	Originator	Reviewer	Approver	Revision Date
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1. Introduction

The United States Environmental Protection Agency (EPA) promulgated regulations regarding Coal Combustion Residuals (CCRs). These regulations (40 CFR Part 257) were published in the Federal Register on April 17, 2015. One of the requirements of the regulations (§257.73(a)(2)) is to conduct initial and periodic hazard potential classification assessments of the CCR unit. The unit must be classified as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The basis for these classifications is FEMA's Federal Guidelines for Dam Safety [Ref. 4].

The preamble to the CCR rule defines each hazard potential classification as follows:

- High hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.
- Significant hazard potential CCR surface impoundment means 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 other concerns.
- Low hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment's owner's property.

Two sets of revisions to 40 CFR Part 257 have been published in the Federal Register since the 2015 CCR Rule was first published. The first set of revisions was published on July 30, 2018 and the second on November 12, 2020. However, neither set of revisions included any changes to the §257.73(a)(2) requirements addressing initial and periodic hazard potential classification assessments.

§257.73(f)(3) requires that periodic hazard potential assessments are completed every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent periodic assessment. The initial hazard potential assessment of the Bottom Ash Pond at Cross Generating Station was placed in the operating record on October 17, 2016 [Ref. 5]. The first periodic hazard potential assessment therefore must be completed and placed in the operating record on or before October 17, 2021.

This report presents the first periodic hazard potential assessment of the Bottom Ash Pond at the Cross Generating Station in Pineville, South Carolina and provides the required certification by a qualified professional engineer.

2. Discussion

The Bottom Ash Pond at Cross Generating Station covers an area of approximately 87 acres as measured inside the centerline of the perimeter dike system. The historic high-water pool covers an area of approximately 84 acres, and has a volume of approximately 1,216 acre-feet. The embankments around the pond are approximately 11 feet high and sloped at 3 horizontal to one vertical (3:1).

Based on familiarity with the site and the surrounding area, as well as a review of a current map of the area surrounding Cross Generating Station (App. A) prepared using the Berkeley County GIS online mapping tool, the nearest residential area is approximately 0.4 miles east of the Bottom Ash Pond, and separated from the pond by a small unnamed tributary connected to Lake Moultrie. The low-lying area between the Bottom Ash Pond and this tributary is tree-covered and contains some swampy areas. Based on topographic data [Ref. 3], the ground surface is slightly lower toward Lake Moultrie, but there is no significant topographic relief. The ground surface elevation is approximately 80 feet. There is an un-improved gravel road (Hall's Road) serving the residents along Lake Moultrie that would likely be impacted by a failure of the northeast pond dike. However, there are other gravel roads maintained by Cross Generating Station that would be made available to provide an alternate means of ingress/egress for the residents along Lake Moultrie in the event that the section of Hall's Road near the Bottom Ash Pond becomes impassable. The land surrounding the Bottom Ash Pond and extending to the Lake, including the residential areas, is owned by Santee Cooper, so any environmental impacts of significance would be contained within the owner's property.

Failure of the Bottom Ash Pond would result in no probable loss of life and low economic and environmental losses. Losses would be limited to property owned by Santee Cooper. Temporary alternate ingress/egress to the nearest residential area is available to maintain lifeline facilities. Therefore, the Bottom Ash Pond at Cross Generating Station warrants a low hazard potential classification.

A low hazard potential classification for the Cross Bottom Ash Pond is consistent with previous assessments, including the initial hazard potential assessment [Ref. 5] as well as the Dam Assessment Report prepared by Dewberry & Davis, LLC in December 2011 for the EPA [Ref. 1], both of which concluded that the Bottom Ash Pond should have a low hazard potential classification. For some impoundment facilities "hazard creep" can occur (e.g. construction of residences, structures, or other facilities) that may warrant a change to the hazard potential classification. No hazard creep has occurred with respect to the Cross Bottom Ash Pond or surrounding area.

3. Conclusions

The Bottom Ash Pond at the Cross Generating Station warrants a low hazard potential classification. This classification is based on the following observations:

- The nearest resident is located approximately 0.4 miles from the ash pond; failure of the pond dikes would result in no probable loss of life.
- Alternate means of ingress/egress to the nearest residents is available; lifeline facilities will be maintained in the event of pond dike failure.
- The ground surface around the pond is generally flat and covered with trees and swampy areas; transport of ash away from the pond to environmentally-sensitive areas outside the property (e.g. Lake Moultrie) in the event of pond dike failure is unlikely.
- The area around the Bottom Ash Pond is owned by Santee Cooper; environmental impacts in the event of pond dike failure would be limited to the owner's property.

4. Certification

I, the undersigned Professional Engineer registered in good standing in the State of South Carolina, do hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I certify, for the Cross Generating Station Bottom Ash Pond CCR impoundment, that the periodic hazard potential classification as specified in Section 40 CFR §257.73(a)(2)(i) was conducted in accordance with the requirements of the section.



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Fletcher Wood

Printed Name of Professional Engineer

5. References

1. Dewberry & Davis, LLC, Coal Combustion Residue Impoundment Round 9 - Dam Assessment Report Cross Generating Station, December 2011.
2. BA-117-S0002, Rev. 0, Bottom Ash Pond Expansion Sections and Details, Gilbert/Commonwealth, Inc., February 4, 1994.
3. Stantec Consulting Services, Inc., Topographic Survey Cross Generating Plant, January 7, 2011.
4. U.S. Department of Homeland Security, Federal Emergency Management Agency, Federal Guidelines for Dam Safety: Hazard Potential Classification System for Dams, October 1998, reprinted January 2004.
5. WorleyParsons, Santee Cooper Cross Generating Station Bottom Ash Pond Initial Hazard Potential Classification Assessment, October 14, 2016.

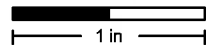


Appendix A. Berkeley County GIS Map

Berkeley County GIS Online Mapping



1 inch = 1,333 feet



Date: 8/13/2021
Berkeley County GIS



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