aes Indiana

Harding Street Generating Station

2021 CCR Surface Impoundment Hazard Potential Classification Assessment

Revision 0

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Issue Purpose: Use

Project No.: 10572-141

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1.0 PURPOSE

AES Indiana's Harding Street Generating Station ("Harding Street" or the "Station") has three existing coal combustion residual (CCR) surface impoundments, Ponds 1, 2A/2B, and 3, that are regulated by the U.S. Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," 40 CFR Part 257 Subpart D, also referred to herein as the Federal CCR Rule. In accordance with 40 CFR 257.73(a)(2), this report documents the 2021 hazard potential classification assessment for Ponds 1, 2A/2B, and 3 at Harding Street. Pursuant to 40 CFR 257.73(f), this hazard potential classification assessment was conducted and completed within five years of the previous assessment.

2.0 APPLICABLE FEDERAL CCR RULE REGULATION

The 2021 hazard potential classifications for Ponds 1, 2A/2B, and 3 are determined in accordance with the following excerpt from 40 CFR 257.53:

> *Hazard potential classification* means the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances. The hazardous potential classifications include high hazard potential CCR surface impoundment, significant hazard potential CCR surface impoundment, and low hazard potential CCR surface impoundment, which terms mean:
>
> (1) *High hazard potential CCR surface impoundment* means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.
>
> (2) *Low hazard potential CCR surface impoundment* means 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.
>
> (3) *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.

3.0 ASSESSMENT

The bases of the 2016 hazard potential classifications for Ponds 1, 2A/2B, and 3 as documented within the 2016 hazard potential classification assessment are reviewed to determine if any changes have occurred since 2016. Identified changes are then evaluated to determine if the ponds' previous hazard potential classifications warrant an adjustment. Where no changes are noted for a given input, or where identified

changes are determined to have no impact to the results and conclusions of the 2016 hazard potential classification assessment, the previous evaluation of that input is considered to still be valid.

In instances where changes to one or more factors used as the bases for the 2016 hazard potential classifications are identified (*e.g.*, downstream development that was not present in 2016), hypothetical dike breaches are considered at each of the three CCR surface impoundments to evaluate the impacts that a release of CCR and CCR wastewater would have on the identified factor(s). These hypothetical dike breaches are evaluated regardless of potential causes and/or apparent dike stability. When evaluating a hypothetical dike breach at a subject CCR surface impoundment, the solid waste materials in the given CCR surface impoundment are conservatively considered as an equivalent volume of liquid (*i.e.*, the ash pond is assumed to be entirely filled with liquid).

3.1 SUMMARY OF 2016 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

When conducting the 2016 hazard potential classification assessment, the following features at, near, or downstream of Ponds 1, 2A/2B, and 3 were considered:

- Buildings or areas where people reside, work, or congregate (Station facilities, private residences, private businesses, public buildings or spaces, *etc.*).
- Transportation infrastructure (roads, railroads, *etc*.).
- Bodies of water (rivers, creeks, lakes, *etc*.).
- Lifeline facilities (*e.g.*, electrical transmission towers and poles).

In the 2016 hazard potential classification assessment, it was noted that no private residences, private businesses, or public buildings or spaces near, or downstream of Ponds 1, 2A/2B, and 3 would be impacted by a failure or mis-operation at any of the ponds such that a loss of human life would be probable. The 2016 hazard potential classification assessment also concluded that no public roads, railroads, or highways downstream of Ponds 1, 2A/2B, and 3 would be impacted by a hypothetical failure at any of the CCR surface impoundments such that a loss of human life would be probable. Finally, the 2016 hazard potential classification assessment concluded that the areas within the Station's property that would be impacted by a hypothetical failure or mis-operation at Ponds 1, 2A/2B, and 3 are undeveloped and thus unlikely to have Station personnel present when the hypothetical dike breach occurs.

The 2016 hazard potential classification assessment also evaluated the potential impact a hypothetical failure along the southern boundary of Pond 2A/2B would have on Hanson Aggregates's Harding Street Quarry. An access road used by quarry personnel that is immediately south of Pond 2A/2B is higher than the southern boundary of Pond 2A/2B. Therefore, it was concluded that the southern boundary of Pond 2A/2B is effectively incised into the topography adjacent to the quarry, and, therefore, does not have a diked portion

that can fail. Thus, no impacts to the Harding Street Quarry caused by a hypothetical failure or mis-operation at Pond 2A/2B were identified.

Based on the preceding evaluations and observations, the 2016 hazard potential classification assessment concluded that a loss of human life is not probable should a hypothetical failure or mis-operation occur at Ponds 1, 2A/2B, or 3. Therefore, none of these ponds were classified as high hazard potential CCR surface impoundments. However, the assessment concluded that the contents released from hypothetical breaches at Ponds 1 and 3 could be deposited into Lick Creek and eventually spread into the White River and the immediate downstream area. Therefore, both Ponds 1 and 3 were classified as significant hazard potential CCR surface impoundments due to the environmental damage to the White River and other areas immediately downstream that could result from a hypothetical failure or mis-operation at either pond.

Finally, Pond 2A/2B was classified as a low hazard potential CCR surface impoundment because a failure or mis-operation at any of its dikes would be unlikely to cause economic or environmental damage, disruption of lifeline facilities, or impact other concerns. It was determined that the contents released from breaches in Pond 2A/2B's northern and eastern dikes would be contained within Ponds 1 and 3 since all three CCR surface impoundments have approximately the same crest elevations, and Ponds 1 and 3 have significantly greater storage capacities. As previously discussed, the southern boundary of Pond 2A/2B is incised and, therefore, does not have a diked portion which may fail. Therefore, it was determined that any losses caused by a failure or mis-operation of Pond 2A/2B should be principally limited to AES Indiana's property.

3.2 CHANGES IN BASES FOR 2016 HAZARD POTENTIAL CLASSIFICATIONS

The only significant change made to a basis of the 2016 hazard potential classification assessment is the operational statuses of Ponds 1, 2A/2B, and 3. In October 2020, AES Indiana initiated closure of Ponds 1, 2A/2B, and 3 and, therefore, no longer uses these three CCR surface impoundments to manage any of Harding Street's wastestreams or indirect stormwater flows. As of the 2020 annual inspection performed in accordance with 40 CFR 257.83(b), no impounded water was present in Ponds 1 and 2A/2B, and only about 1 foot of water was present in Pond 3. As previously stated, the 2016 hazard potential classification assessment assumed that Ponds 1, 2A/2B, and 3 were completely full with water at the time of the hypothetical dike breaches considered. This assumption is conservative relative to the surface water conditions observed during the 2020 annual inspection and given the fact that Harding Street no longer uses these three CCR surface impoundments to manage its wastestreams. Because the surface water elevations assumed for Ponds 1, 2A/2B, and 3 in the 2016 hazard potential classification assessment are conservative relative to the ponds' current operating conditions, no updates to the surface water elevations are necessary for this 2021 hazard potential classification assessment.

Other than the change in operational status of each CCR surface impoundment, there have been no significant modifications to Ponds 1, 2A/2B, and 3 (mass excavations, major embankment modifications, *etc*.); no significant modifications to the topography adjacent to the CCR surface impoundments; and no significant residential, commercial, or industrial developments that have been constructed in the areas downstream of the CCR surface impoundments that would be impacted by a hypothetical dike breach. Therefore, the 2016 hazard potential classifications assigned to Ponds 1, 2A/2B, and 3 and the bases for these assignments remain valid for 2021.

3.3 2021 HAZARD POTENTIAL CLASSIFICATION ASSIGNMENTS

Hypothetical failures or mis-operations at Ponds 1, 2A/2B, and 3 result in no probable loss of human life. However, hypothetical failures or mis-operations at Ponds 1 and 3 could result in environmental damages to the White River and other areas immediately downstream that are beyond AES Indiana's property. A hypothetical failure or mis-operation at Pond 2A/2B would result in low economic and/or environmental losses that are principally limited to AES Indiana's property. Therefore, the following hazard potential classifications are assigned to the existing CCR surface impoundments at Harding Street in accordance with 40 CFR 257.73(a)(2):

- Pond 1: Significant Hazard Potential
- Pond 2A/2B: Low Hazard Potential
- Pond 3: Significant Hazard Potential

4.0 CERTIFICATION

I certify that:

- This periodic hazard potential classification assessment was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 40 CFR 257.73(a)(2).
- I am a registered professional engineer under the laws of the State of Indiana.

Certified By: David E. Nielson Date: October 5, 2021

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