aes Indiana

Eagle Valley Generating Station

2021 CCR Surface Impoundment Safety Factor Assessment

Revision 0

October 5, 2021

Issue Purpose: Use

Project No.: 10572-142

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1.0 PURPOSE

AES Indiana's Eagle Valley Generating Station ("Eagle Valley" or the "Station") has three existing coal combustion residual (CCR) surface impoundments, Ponds A, B, and C, 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. Pursuant to 40 CFR 257.73(f), AES Indiana must conduct and complete a safety factor assessment in accordance with 40 CFR 257.73(e) for each of the three existing CCR surface impoundments at Eagle Valley every five years. The previous safety factor assessment for Ponds A, B, and C was completed on October 14, 2016. Therefore, the subsequent safety factor assessment for these three CCR surface impoundments must be conducted and completed by October 14, 2021.

In accordance with 40 CFR 257.73(e)(1) and (f), this report documents the 2021 safety factor assessment for the exterior dikes of Ponds A, B, and C at Eagle Valley.

2.0 RESULTS & CONCLUSIONS

Federal CCR Rule Reference: 40 CFR 257.73(e)(1)

Based on reviews of the technical slope stability analysis prepared for the initial safety factor assessment completed in 2016 for Ponds A, B, and C and of the current field conditions at Ponds A, B, and C, the existing technical analysis completed in 2016 remains valid for use in this periodic safety factor assessment, and therefore the minimum safety factors reported in the initial safety factor assessment for Ponds A, B, and C accurately represent the current conditions at the site. The lowest factors of safety (FOS) corresponding to the potential failure surfaces that could result in uncontrolled releases of CCR are summarized in Table 1 for each CCR unit.

Per Table 1, the factors of safety calculated for each required load case for each CCR unit satisfy the required minimum safety factors specified in 40 CFR 257.73(e)(1)(i) through (iv) for the critical cross sections of the exterior dikes for Ponds A, B, and C.

TABLE 1: SUMMARY OF SAFETY FACTORS FOR PONDS A, B, AND C

FOS Assessment	Pond A	Pond B	Pond C	Minimum Allowable FOS
40 CFR 257.73(e)(1)(i) Calculated Static FOS for Long-Term, Maximum Storage Pool Loading Condition	1.51	Note 1	Note 1	**1.50**
40 CFR 257.73(e)(1)(ii) Calculated Static FOS for Maximum Surcharge Pool Loading Condition	1.44	Note 1	Note 1	**1.40**
40 CFR 257.73(e)(1)(iii) Calculated Seismic FOS Loading Condition	1.05	Note 1	Note 1	**1.00**
40 CFR 257.73(e)(1)(iv) Calculated Liquefaction FOS Loading Condition	1.27	Note 1	Note 1	**1.20**
Does CCR Unit Satisfy the Requirements of 40 CFR 257.73(e)?	**Yes**	**Yes**	**Yes**	–

Notes: 1) Slope stability analyses were not performed for the exterior dikes of Ponds B and C. Borings indicated generally more competent ground conditions compared to the other borings used to analyze Pond A. In addition, the heights of the dikes around Ponds B and C do not exceed seven to eight feet. Thus, the critical cross section for these existing CCR surface impoundments was located in Pond A. An adequate safety factor is conservatively verified and bounded by the analysis performed for the exterior dikes of Pond A.

3.0 CERTIFICATION

Federal CCR Rule Reference: 40 CFR 257.73(e)(2)

I certify that:

- This structural stability assessment was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 40 CFR 257.73(e).
- 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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