aes Indiana

Eagle Valley Generating Station

2021 CCR Surface Impoundment Inflow Design Flood Control System Plan

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. In accordance with 40 CFR 257.82(c)(1), this report documents the 2021 inflow design flood control system plan for Ponds A, B, and C at Eagle Valley. Pursuant to 40 CFR 257.82(c)(4), this inflow design flood control system plan was prepared within five years of the previous plan.

2.0 HYDROLOGIC & HYDRAULIC ASSESSMENT

Federal CCR Rule Reference: 40 CFR 257.82(c)(1)

Per the 2021 hazard potential classification assessment completed in accordance with 40 CFR 257.73(a)(2), Ponds A, B, and C are all classified as significant hazard potential CCR surface impoundments. Pursuant to 40 CFR 257.82(a)(3), the inflow design flood event for these CCR surface impoundments is the based on the 1,000-year storm. Per the National Oceanic and Atmospheric Administration's Atlas 14, the precipitation value for the 1,000-year, 24-hour storm event at the Eagle Valley site is 8.52 inches.

In April 2019, AES Indiana initiated closure of Ponds A, B, and C, and, therefore, no longer uses these three CCR surface impoundments to manage any of Eagle Valley's wastestreams and indirect stormwater flows. As of the 2020 annual inspection performed in accordance with 40 CFR 257.83(b), no impounded water was present in any of the three CCR surface impoundments. Accordingly, this periodic inflow design flood control system plan evaluates the hydrologic and hydraulic capacities of Ponds A, B, and C by verifying the empty ponds can adequately manage direct precipitation during the design storm event and any corresponding storm water run-on into the ponds.

Ponds A, B, and C are interconnected with a network of discharge pipes. Water from Pond A is discharged to Pond B via two 24-inch-diameter corrugated metal pipes with an upstream invert elevation of 625 feet NAVD88 and a downstream invert elevation of 624 feet NAVD88. Similarly, water from Pond B is discharged to Pond C via two 24-inch-diameter corrugated metal pipes with an upstream invert elevation of 616 feet NAVD88 and a downstream invert elevation of 615 feet NAVD88. Meanwhile, Pond C has a concrete outfall structure that has a 2.7-foot-wide weir with an invert elevation of 613 feet NAVD88 and a 30-inch-diameter reinforced concrete pipe culvert that ultimately discharges to the Station's Discharge Canal. The reinforced concrete pipe has an upstream invert elevation of 612 feet NAVD88 and a downstream invert elevation of 608 feet NAVD88. Finally, it is noted that stormwater run-off from Former Pond D is conveyed to Pond C

through a 30-inch-diameter pipe between Former Pond D and Former Pond E and then through a 24-inch-diameter pipe between Former Pond E and Pond C.

The inflow design flood control system for each CCR surface impoundment was analyzed to evaluate how the inflow design flood would be collected and managed in Ponds A, B, and C. The results from this hydrologic and hydraulic assessment are summarized in Table 1. Per these results, water will not be discharged from any of the CCR surface impoundments during the design storm event because the estimated maximum surface water elevations are all below the invert elevations of the ponds' discharge structures. In addition, water will not overtop the dikes of any of the CCR surface impoundments during the design storm event since the estimated maximum surface water elevations are all below the minimum crest elevations for Ponds A, B, and C. Therefore, all three CCR surface impoundments at Eagle Valley are able to collect and control the inflow design flood event specified in 40 CFR 257.82(a)(3).

TABLE 1: SUMMARY OF HYDROLOGIC & HYDRAULIC ASSESSMENT FOR PONDS A, B, & C

CCR Unit	Hazard Potential Classification	Inflow Design Flood	Total Storm Water Inflow	Maximum Surface Water Elevation	Discharge Structure Invert Elevation	CCR Unit Minimum Crest Elevation
			acre-feet	feet NAVD88	feet NAVD88	feet NAVD88
Pond A	Significant	1,000 Year	14.06	623.39	625.00	626.00
Pond B	Significant	1,000 Year	10.06	609.26	616.00	618.00
Pond C	Significant	1,000 Year	18.94	609.93	613.00	617.00

3.0 CERTIFICATION

Federal CCR Rule Reference: 40 CFR 257.82(c)(5)

I certify that:

- This periodic inflow design flood control system plan was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 40 CFR 257.82.
- I am a registered professional engineer under the laws of the State of Indiana.

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

Seal: