Indianapolis Power & Light Company
Petersburg Generating Station

Structural Stability Assessment of CCR Surface Impoundments

Prepared by

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1 PURPOSE

This document provides the initial structural stability assessment for the coal combustion residual (CCR) surface impoundments at Indianapolis Power & Light Company's (IPL) Petersburg Generating Station for compliance with 40 CFR 257.73(d). Based on the applicability criteria presented in 40 CFR 257.73(b), the following existing CCR surface impoundments are addressed herein:

- Pond A,
- Pond A', and
- Pond C.

2 STRUCTURAL STABILITY ASSESSMENT RESULTS

To develop the assessment presented herein, a review of the available construction documents, soil borings through the dikes, the annual inspection by a third party professional engineer, and IPL's observations of the dikes has been completed. Pursuant to 40 CFR 257.73(d)(1), the standard for this evaluation is consistent with recognized and generally accepted good engineering practices.

2.1 STABLE FOUNDATIONS & ABUTMENTS

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(i)

Calculations performed indicate the soils supporting the exterior dikes of Ponds A, A', and C will liquefy and are not considered stable under the design seismic load.

2.2 ADEQUATE SLOPE PROTECTION

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(ii)

The slopes are adequately protected against surface erosion, wave action, and adverse effects of sudden drawdown.

2.3 COMPACTED DIKES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(iii)

As documented by the Station's Safety Factor Assessment [40 CFR 257.73(e)], the dikes are not adequately compacted to provide the required stability safety factors for the seismic loading conditions.

2.4 VEGETATED SLOPES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(iv)

The existing vegetation is considered to be appropriate slope protection against erosion.

2.5 SPILLWAY

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(v)

The dikes for Pond C, which are perched, do not incorporate spillways. The Station's Inflow Design Flood Control System Plan [40 CFR 257.82(c)] indicates that spillways are not required for Pond C.

Ponds A and A' have passive spillway systems that are suitable for the inflow design floods based on the Station's Inflow Design Flood Control System Plan [40 CFR 257.82(c)].

2.6 HYDRAULIC STRUCTURES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(vi)

Based on the annual inspection by a third party professional engineer, the hydraulic structures that pass through and beneath the dikes are in sound condition to the extent they are accessible.

2.7 ADJACENT WATER BODIES

Federal CCR Rule Reference: 40 CFR 257.73(d)(1)(vii)

The downstream slopes of the exterior dikes are appropriate for the flooding risks of the adjacent White River.

3 CORRECTIVE MEASURES

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

As previously mentioned, the soils supporting the exterior dikes of Ponds A, A', and C will, under the design seismic load, liquefy. As required by the 40 CFR 257.73(d)(2), corrective measures shall be implemented as soon as feasible. IPL has chosen to close these ponds in accordance with 40 CFR 257.102(d), and the required preparatory steps have been implemented to facilitate this closure. This action is considered to be an appropriate corrective measure.

4 CONCLUSION

This structural stability assessment concludes that the three existing CCR surface impoundments at the Petersburg Generating Station – Pond A, Pond A', and Pond C – do not have stable foundation conditions under the design seismic event as a result of liquefaction. IPL has initiated the steps required to close these ponds in accordance with 40 CFR 257.102(d), which is considered an appropriate corrective measure for the conditions noted.

5 CERTIFICATION

Federal CCR Rule Reference: 40 CFR 257.73(d)(3)

This initial structural stability assessment was conducted in accordance with the requirements of 40 CFR 257.73(d).

I certify that this document was prepared by me or under my direct supervision and that I am a registered professional engineer under the laws of the State of Indiana.

Certified By: _____ Date: 10-14-2016

Seal: