

Indianapolis Power & Light Company Harding Street Generating Station

Safety Factor Assessment for Existing CCR Surface Impoundments

Prepared by

Sargent & Lundy

55 East Monroe Street Chicago, IL 60603-5780 USA 312-269-2000 www.sargentlundy.com

S&L Project No. 10572-085

Rev. 0 Issue Date: October 14, 2016 Issue Purpose: Use



1 PURPOSE

Pursuant to 40 CFR 257.73(e), this document serves as the initial safety factor assessment for the exterior dikes of the existing coal combustion residuals (CCR) surface impoundments at Indianapolis Power & Light Company's (IPL) Harding Street Generating Station. Based on the applicability criteria presented in 40 CFR 257.73(b), the following existing CCR surface impoundments are addressed herein:

- Pond 1,
- Pond 2A/2B, and
- Pond 3.

2 RESULTS AND CONCLUSIONS

Safety factor analyses were performed for the critical cross section stability for each CCR surface impoundment (CCR unit). The lowest factor of safety (FOS) corresponding to the potential failure surface is summarized in Table 1 for each CCR unit.

FOS Assessment	Pond 1	Pond 2A/2B	Pond 3	Minimum Allowable FOS
40 CFR 257.73(e)(1)(i) Calculated Static FOS for Long-Term, Maximum Storage Pool Loading Condition	1.53	Note 1	1.52	1.50
40 CFR 257.73(e)(1)(ii) Calculated Static FOS for Maximum Surcharge Pool Loading Condition	1.42	Note 1	1.50	1.40
40 CFR 257.73(e)(1)(iii) Calculated Seismic FOS Loading Condition	1.06	Note 1	1.24	1.00
40 CFR 257.73(e)(1)(iv) Calculated Liquefaction	Note 2	Note 2	Note 2	1.20
Does CCR Unit Satisfy the Requirements of 40 CFR 257.73(e)?	Yes	Yes	Yes	_

Table 1: Summary of Safety Factors for Each CCR Unit

Notes: 1) The southern perimeter of Pond 2A/2B was not evaluated since the pond is incised into the ground along this perimeter. The northern perimeter of Pond 2A/2B is an interior dike that is not considered critical for containing a release of CCR.

2) The site is not considered liquefiable (negligible degree of seismic settlement, liquefaction, or reduction in soil strength due to seismic motions); therefore, an analysis using liquefied soil strength is not required.

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 section of the embankment.

Harding Street Generating Station S&L Project No. 10572-085 Safety Factor Assessment for Existing CCR Surface Impoundments



Rev. 0 October 14, 2016 Page No. 2 of 2

3 CERTIFICATION

This initial safety factor assessment satisfies the requirements of 40 CFR 257.73(e).

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

h. Certified By:

Date: 10-14-2016

Seal:

