

**STRUCTURAL STABILITY AND FACTOR OF SAFETY ASSESSMENT
ASH POND 1N, 1S, 2S, AND 3S - WILL COUNTY STATION
SEPTEMBER 2024**

This Structural Stability and Factor of Safety Assessment report has been prepared pursuant to the coal combustion residuals (CCR) rule codified in Title 35 of the Illinois Administrative Code, Section 845.450 and 845.460 for North Ash Pond 1, South Ash Pond 1, South Ash Pond 2, and South Ash Pond 3 (herein referred to as Pond(s) 1N, 1S, 2S, and 3S) at Will County Station in Romeoville, Illinois (Station). The purpose of this project is to perform the annual structural stability and factor of safety assessments for the ponds by a licensed professional engineer. Civil & Environmental Consultants, Inc. (CEC) completed this structural stability and factor of safety assessment as described in the following sections.

1.0 REGULATION REQUIREMENTS - SECTIONS 845.450 AND 845.460

In accordance with Sections 845.450 and 845.460, owners or operators of a CCR impoundment are required to conduct annual structural stability assessments to document whether the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded; and to conduct an initial and annual safety factor assessment for each CCR surface impoundment and document whether the calculated factors of safety for each CCR surface impoundment achieve the minimum safety factors specified for the critical cross section of the embankment.

2.0 SITE CONDITIONS

Ponds 1N, 1S, 2S, and 3S are located at Will County Station, 529 East 135th Street in Romeoville, Will County, Illinois and situated south of 135th Street between the Des Plaines River and the Chicago Sanitary and Ship Canal, see Figure 1. Basic information for each of the ponds are provided in Table 1. The ponds are of similar construction, size, and age. Each pond is constructed with a concrete weir spillway along the west half. Gravel access roads are located along the sides of the ponds.

Table 1 - Ash Pond Construction

Pond ID	Year of Original Construction	Dimension (ft x ft)	Depth (ft)	Capacity (ft³)	Status
Pond 1N	1977	167 x 333	7	520,000	Inactive
Pond 1S	1977	300 x 195	7	460,000	Inactive
Pond 2S	1977	350 x 178	7	510,000	Inactive
Pond 3S	1977	234 x 322	7	530,000	Inactive

Based on information provided by Station personnel, the ponds were originally constructed in 1977, and have not undergone significant changes in the geometry. The original operation was designed to receive bottom ash via sluicing with wastewater treated in the wastewater treatment plant and discharged to the Chicago Sanitary and Ship Canal through the permitted National Pollutant Discharge Elimination System Outfall 002.

Ponds 1N and 1S were closed after the shutdown of Unit 1 and Unit 2, respectively. The Station is no longer operational and both Pond 2S and 3S are inactive and no longer accept CCR or wastewater. The ponds are inspected weekly by station personnel including checking the water level in ponds 2S and 3S.

3.0 STRUCTURAL STABILITY ASSESSMENT - SECTION 845.450

In accordance with Sections 845.450, the annual structural stability assessment was conducted to document whether the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded. The annual inspection showed no physical modifications to the pond or to the surrounding area. Additionally, the Station is no longer operational and Ponds 1N, 1S, 2S, and 3S no longer accept CCR or wastewater. The basis for this annual structural stability assessment is that there have been no physical modifications or operational concerns that would change the results of the initial stability assessment.

Based on the results of the annual inspections, previous structural stability analysis, and the analysis provided in this report, the design, construction, operation, and maintenance of the Ponds 1N, 1S, 2S, and 3S is consistent with recognized and generally accepted engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded.

4.0 SAFETY FACTOR ASSESSMENT - SECTION 845.460

In accordance with Section 845.460, the annual safety factor assessments were conducted for Ponds 1N, 1S, 2S, and 3S to document whether the calculated factors of safety for the ponds achieve the minimum safety factors specified for the critical cross section of the embankment. The basis for this annual safety factor assessment is that there have been no physical modifications or operational concerns that would change the results of the previous safety factor assessment. Results of the previous safety factor assessment reported that the minimum safety factors specified for the critical cross section of the embankments for both the static and seismic conditions meet the factor of safety requirements presented in 845.460(a)(2) through (4).

