MWG

Midwest Generation, LLC

Joliet 29 Generating Station

2025 Hazard Potential Classification Assessment for Ash Pond 2

Revision 0

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

Sargent & Lundy

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EXECUTIVE SUMMARY

This report presents the 2025 hazard potential classification assessment for Ash Pond 2 at Midwest Generation, LLC's (MWG) Joliet 29 Generating Station ("Joliet 29" or the "Station"). Pursuant to 35 Ill. Adm. Code 845.440(a)(1), this annual assessment, prepared by Sargent & Lundy (S&L) on behalf of MWG, documents the hazard potential classification for the pond in accordance with the hazard potential classifications defined in 35 Ill. Adm. Code 845.120.

Per last year's hazard potential classification assessment, Ash Pond 2 was designated as a Class 2 CCR surface impoundment pursuant to 35 Ill. Adm. Code 845.440(a)(1), which is the equivalent of a significant hazard potential CCR surface impoundment under 40 CFR 257.53, after it was determined that the bases for the initial federal hazard potential classification assigned to the pond in 2016 in accordance with 40 CFR 257.73(a)(2) were still valid. Accordingly, to complete this assessment, S&L re-evaluated the bases of the initial federal hazard potential classification assigned to the pond to determine (1) if any changes have occurred since the initial assessment was completed and (2) whether identified changes warrant adjusting the pond's 2024 hazard potential classification.

Based on the evaluation of the key hazard potential classification criteria for Ash Pond 2, there have been significant operational changes made at the Station since the initial federal hazard potential classification assessment was completed in 2016. Since the conversion of Joliet 29's coal-fired units to natural gas, Ash Pond 2 has been out of service and has not been used to manage any process or wastewater streams. There is no CCR remaining in Ash Pond 2, and the only water entering Ash Pond 2 is direct precipitation (i.e., rain or snow) and run-off from the crests of the pond's dikes. Moreover, the Station actively removes stormwater from the pond to maintain relatively low operating levels. Finally, the Station's decommissioning efforts subsequent to the retirement of Units 7 and 8 in September 2023 have reduced the number of occupied buildings at the Station to three. No other significant changes to the other bases used to determine the pond's initial federal hazard potential classification were noted (topography, downstream developments, depth-velocity flood danger level relationships).

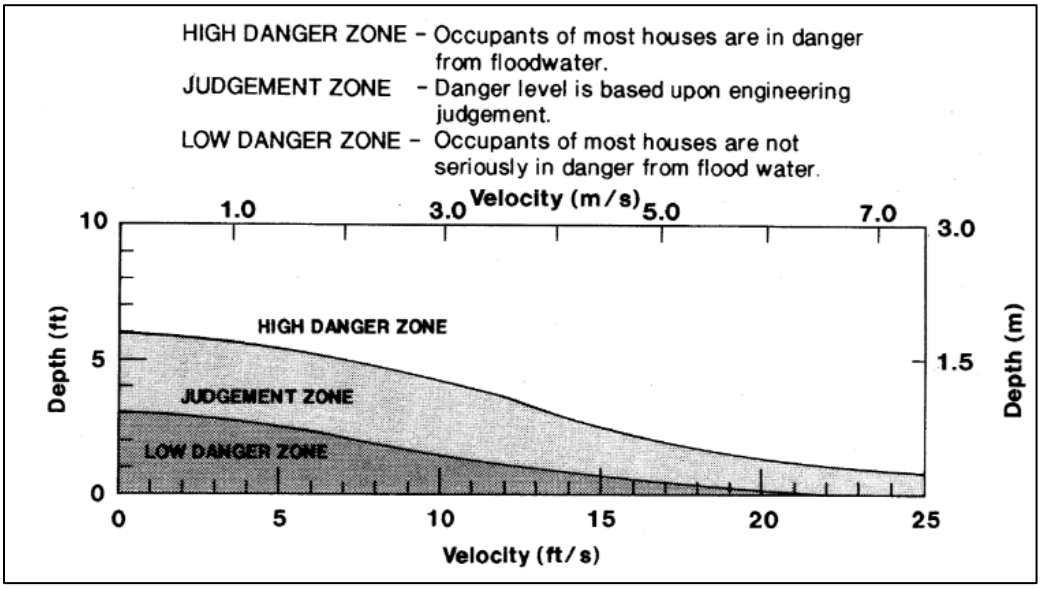
Consistent with the initial dike breach analyses conducted in 2016, a hypothetical dike breach at the pond's southern dike was evaluated under the pond's current operating conditions to assess potential impacts to the Station buildings downstream of the pond. This assessment was performed independent of potential causes and/or apparent dike stability. The water level in the pond at the hypothetical failure event was based on the average water levels observed in the pond in 2025 (2.6 feet) and the probable maximum precipitation (PMP) depth (19 inches). Therefore, the assumed water level in Ash Pond 2 at the time of a hypothetical failure was taken as 4.2 feet.

Based on the updated dike breach analysis for Ash Pond 2, water released from a hypothetical breach flow to the south and southwest, eventually flowing into the Station's Intake Canal. Released water flows near occupied Building 8 and unoccupied Buildings 9, 10, 11, 14, and 15. The estimated flow depth and velocity near Building 8 is 1 foot and 1.8 feet per second, respectively. The other two occupied buildings at the site, Buildings 4 and 5, would not be impacted.

Compared to the 2016 dike breach analysis results, there is a significant reduction in the inundation area and flow velocities. Under 2016 operating conditions, water released from Ash Pond 2's southern dike extended to the east, and the flow velocities near the Station buildings within the inundation area varied from 1.3 feet per second to 15.3 feet per second. Given the significant reduction in water normally present in Ash Pond 2, the updated dike breach analysis estimated flow velocities within the updated inundation area that vary from 0.2 feet per second to 4.5 feet per second.

Based on the U.S. Department of the Interior, Bureau of Reclamation's (USBR) depth-velocity flood danger level relationship presented in Figure 2 the bureau's "Downstream Hazard Classification Guidelines" (reproduced in Figure ES-1 below), the estimated maximum flow depth-velocity combination at Building 8 would plot within the "Low Danger Zone," which is the zone where "the number of lives-in-jeopardy associated with possible downstream hazards is assumed to be zero." Therefore, a failure at Ash Pond 2's southern dike would not result in a probable loss of human life.

Figure ES-1 – USBR Flood Depth-Velocity Danger Zones)



Per the updated dike breach analyses performed in support of this hazard potential classification assessment, a failure at the pond's southern dike would not result in a probable loss of human life under the pond's current operating conditions. This is the primary consideration for classifying the hazard potential for a CCR surface impoundment under the Illinois CCR Rule. If a loss of human life is likely to occur, then the CCR surface impoundment is a Class 1 hazard potential; otherwise, it is a Class 2 hazard potential. Because a hypothetical failure at the pond will not cause a probable loss of human life, Ash Pond 2 is classified as a Class 2 CCR surface impoundment in accordance with 35 Ill. Adm. Code 845.440(a)(1).

The classification of Ash Pond 2 as a Class 2 CCR surface impoundment is not a reflection of the potential for the impoundment to fail. The 2025 annual safety factor assessment conducted pursuant to 35 Ill. Adm. Code 845.460 shows that Ash Pond 2 is stable under design operating conditions. Moreover, no visual signs of distress that could be indicative of dike instability were observed during the August 26, 2025, condition assessment performed by S&L in support of the pond's 2025 annual structural stability assessment under 35 Ill. Adm. Code 845.450

Table ES-1 presents the 2025 hazard potential classification assigned to Joliet 29 Ash Pond 2 under its current operating conditions in accordance with 35 Ill. Adm. Code 845.440(a)(1).

Table ES-1 – 2025 Illinois Hazard Potential Classification for Ash Pond 2 at the Joliet 29 Generating Station

CCR Surface Impoundment	2025 Illinois Hazard Potential Classification
Ash Pond 2	Class 2

1.0 PURPOSE & SCOPE

1.1 PURPOSE

Ash Pond 2 at Midwest Generation, LLC's (MWG) Joliet 29 Generating Station ("Jolie 29" or the "Station") is an existing coal combustion residual (CCR) surface impoundment that is regulated by the Illinois Pollution Control Board's "Standards for the Disposal of Coal Combustion Residuals in CCR Surface Impoundments." These regulations are codified in Part 845 to Title 35 of the Illinois Administrative Code (35 Ill. Adm. Code 845, Ref. 1) and are also referred to herein as the "Illinois CCR Rule." Pursuant to 35 Ill. Adm. Code 845.440(a)(1), MWG must conduct and complete an annual hazard potential classification assessment that documents the hazard potential classification for Ash Pond 2 in accordance with the hazard potential classifications defined in 35 Ill. Adm. Code 845.120.

This report documents the 2025 hazard potential classification assessment conducted and completed in accordance with the Illinois CCR Rule by Sargent & Lundy (S&L) on behalf of MWG for Ash Pond 2 at Joliet 29. This report:

- Lists the inputs and assumptions used in the 2025 hazard potential classification assessment,
- Lists and compares the definitions for the hazard potential classifications for CCR surface impoundments promulgated by the Illinois CCR Rule and by the U.S. Environmental Protection Agency's regulations for CCR surface impoundments,
- Discusses the methodology used to conduct the 2025 hazard potential classification assessment,
- Provides the 2025 hazard potential classification Ash Pond 2 in accordance with 35 Ill. Adm. Code 845.440(a)(1).

1.2 SCOPE

In addition to being regulated under the Illinois CCR Rule, Ash Pond 2 at Joliet 29 is also regulated by the U.S. Environmental Protection Agency's (EPA) "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," 40 CFR Part 257 Subpart D (Ref. 2), also referred to herein as the "Federal CCR Rule." Per the 2016 Water Infrastructure Improvements for the Nation (WIIN) Act, Ash Pond 2 will continue to be subject to both the Illinois and Federal CCR Rules until the U.S. EPA approves the Illinois EPA's CCR permit program. However, the scope of this 2025 hazard potential classification assessment is strictly limited to demonstrating compliance with the Illinois CCR Rule. Pursuant to 40 CFR 257.73(f)(3), the next hazard potential classification assessment for demonstrating compliance with the Federal CCR Rule will be completed in 2026, five years after the last federal assessment was completed (2021).

2.0 INPUTS

Hazard Potential Classifications

The Illinois CCR Rule (Ref. 1, § 845.120) defines "hazard potential classification" as "the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances." The Illinois CCR Rule (Ref. 1, § 845.440(a)(1)) requires a CCR surface impoundment be designated as either a Class 1 CCR surface impoundment or a Class 2 CCR surface impoundment. Per 35 Ill. Adm. Code 845.120, the two Illinois hazard potential classifications are defined as follows:

- *Class 1 CCR surface impoundment* means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.
- *Class 2 CCR surface impoundment* means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

The Federal CCR Rule (Ref. 2, § 257.53) has the same definition for "hazard potential classification" as the Illinois CCR Rule. However, the Federal CCR Rule has three hazard potential classifications instead of the two designations promulgated by the Illinois CCR Rule. Per 40 CFR 257.53, the three federal hazard potential classifications are defined as follows:

- *High hazard potential CCR surface impoundment* means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.
- *Low hazard potential CCR surface impoundment* means a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.
- *Significant hazard potential CCR surface impoundment* means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

Per the preceding sets of definitions for the federal and Illinois hazard potential classifications, a high hazard potential CCR surface impoundment per the Federal CCR Rule is the same as a Class 1 CCR surface impoundment per the Illinois CCR Rule. Similarly, a CCR surface impoundment that is classified as a low or significant hazard potential per the Federal CCR Rule is considered to be a Class 2 CCR surface impoundment per the Illinois CCR Rule.

Table 2-1 summarizes the hazard potential classifications for CCR surface impoundments under the Illinois and Federal CCR Rules as defined by the preceding criteria. By comparison, a high hazard potential CCR surface impoundment per the Federal CCR Rule is the same as a Class 1 CCR surface impoundment per

the Illinois CCR Rule. Similarly, a CCR surface impoundment that is classified as a low or significant hazard potential per the Federal CCR Rule is considered to be a Class 2 CCR surface impoundment per the Illinois CCR Rule.

Table 2-1 – Federal and Illinois Hazard Potential Classifications and Classification Criteria

Illinois Hazard Potential Classification	Federal Hazard Potential Classification	Loss of Human Life	Economic, Environmental, Lifeline Losses and/or Disruptions
Class 2	Low	Not Probable	Low and Principally Limited to Owner
	Significant	Not Probable	Yes
Class 1	High	Probable	Not Necessary for This Classification

A CCR surface impoundment's hazard potential classification is not a reflection of the probability of a hypothetical failure event associated with the surface impoundment. Hazard potential classifications are not contingent upon a CCR surface impoundment's structural stability; they only classify the potential impacts should a hypothetical failure occur. For example, a well-maintained CCR surface impoundment with appropriate factors of safety may be classified as a Class 1 hazard potential solely because a loss of human life would be probable if a hypothetical failure event did occur. Instead, the structural integrity of a CCR surface impoundment and its potential for failure are evaluated and documented in the structural stability and safety factor assessments prepared pursuant to 35 Ill. Adm. Code 845.450 and 35 Ill. Adm. Code 845.460 (Refs. 3 and 4), respectively.

2016 Dike Breach Analysis & Initial Hazard Potential Classification Assessment

As documented in last year's hazard potential classification assessment, the 2024 hazard potential classification assigned to Ash Pond 2 was based on the initial federal hazard potential classification assigned in 2016 pursuant to the Federal CCR Rule (Ref. 5) after it was determined that the bases for the initial federal hazard potential classification were still valid. The inputs, assumptions, and methodology used to determine the pond's initial hazard potential classification, including the 2016 dike breach analysis and inundation map, were re-evaluated to determine whether any updates to this analysis were warranted.

Probable Maximum Precipitation Depth

Per the National Oceanic Atmospheric Administration's (NOAA) Hydrometeorological Report No. 51 (Ref. 6), *probable maximum precipitation (PMP)* means theoretically the greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographical location at certain time of the year. The Illinois State Water Survey has developed PMP depth estimates for dam safety

projects that are specific to the State of Illinois, smaller watersheds, and four storm distributions. Table 2-2 present the PMP depth estimates for the four storm durations (quartiles) over drainage areas less than one square mile in the Illinois Northwest Region. The PMP depths for the Illinois Northwest Region are slightly higher than those for the Illinois North Central Region, where the Joliet 29 site is located, and are therefore conservative to use a the basis for the PMP event at Ash Pond 2 (Ref. 7).

Table 2-2 – Probable Maximum Precipitation (PMP) Depths Used for Joliet 29 Site

Quartile	Storm Duration (hr)	PMP Depth (in.)
1st	6	14.8
2nd	12	16.3
3rd	24	17.8
4th	48	19.0

Site Topography

Two topographic datasets for Ash Pond 2 and the surrounding areas were reviewed: one from an aerial survey performed by Aero-Metric, Inc. in 2008 (Ref. 8) and one from the Illinois State Geological Survey's (ISGS) Illinois Geospatial Data Clearinghouse (Ref. 9). The 2008 Aero-Metric, Inc. survey was utilized in the initial federal hazard potential classification assessment for Ash Pond and the 2016 dike breach analysis that was the basis for the pond's initial federal hazard potential classification. Meanwhile, the ISGS topography reflects elevation data collected in 2021 at a 1-meter resolution and was utilized in this 2025 assessment. This topographic dataset is the most recent dataset collected by ISGS for Will County, Illinois.

Aerial Images

Historical and recent aerial images of the Station and surrounding areas were obtained from Google Earth Pro (Ref. 10).

Property Boundaries

Boundaries for the Station's property and adjacent properties were obtained from the geographic information system (GIS) for Will County, Illinois (Ref. 11).

Ash Pond Conditions

The operating and physical conditions for Ash Pond 2 were based on the following inputs:

- Observations made during a site visit by S&L on August 26, 2025.
- Discussions with MWG personnel.

- The annual inspection reports prepared for the CCR surface impoundment in accordance with 40 CFR 257.83(b) and 35 Ill. Adm. Code 845.540(b) (Refs. 12 through 21).
- The weekly inspection reports prepared in accordance with 35 Ill. Adm. Code 845.540(a) since the 2023 hazard potential classification assessment was issued (Ref. 22).

3.0 ASSUMPTIONS

There are no assumptions in this document that require verification.

4.0 METHODOLOGY

As documented in last year's hazard potential classification assessment, the 2024 hazard potential classification assigned to Ash Pond 2 was based on the initial federal hazard potential classification assigned in 2016 pursuant to the Federal CCR Rule after it was determined that the bases for the initial federal hazard potential classification had either not changed or were conservative under present operating conditions. Accordingly, for this 2025 assessment, the bases for the pond's initial federal hazard potential classification were re-evaluated to determine if any changes have occurred since the initial assessment was completed. Identified changes were then evaluated to determine if the 2016 dike breach analysis warrants re-evaluation.

5.0 ASSESSMENT

5.1 SUMMARY OF 2024 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

The previous hazard potential classification assessment for Ash Pond 2 was completed on October 13, 2024. Ultimately, the 2024 hazard potential classification for Ash Pond 2 was based on the initial federal hazard potential classification that was assigned to the pond in 2016 after it was determined that the bases for the initial federal hazard potential classification were still valid, albeit conservative for the pond's present operating conditions. Per the initial federal hazard potential classification assessment for Ash Pond 2, the pond was classified as a significant hazard potential CCR surface impoundments pursuant to 40 CFR 257.53. Based on the comparison between the Federal and Illinois CCR Rules' definitions for hazard potential classifications in Section 2.0, a significant hazard potential CCR surface impoundment under the Federal CCR Rule is the equivalent of a Class 2 CCR surface impoundment under the Illinois CCR Rule. Therefore, Ash Pond 2 was classified as a Class 2 CCR surface impoundment in the 2024 hazard potential classification assessment.

5.2 CHANGES IN BASES FOR INITIAL FEDERAL HAZARD POTENTIAL CLASSIFICATION

The 2016 federal hazard potential classification for Ash Pond 2 was based on a hypothetical dike breach analysis conducted for the pond's southern dike (Ref. 5), which was determined to pose the most risk to human life due to its height, its proximity to buildings occupied at that time, and the adjacent topography sloping towards the occupied buildings and the Des Plaines River. The 2016 dike breach analysis also assumed Ash Pond 2 was at capacity at the time of the hypothetical failure. These key criteria are re-evaluated under present-day conditions to determine if the 2016 dike breach analysis – and, by extension, the initial federal hazard potential classification for Ash Pond 2 – warrants re-evaluation.

5.2.1 CHANGES IN STATION OPERATIONS

Ash Pond 2 was originally designed to manage CCR and miscellaneous non-CCR wastestreams from the Station. Following the conversion of Joliet 29's coal-fired units to natural gas, the pond was no longer used to manage CCR wastestreams and was eventually taken out of service. Accordingly, the Station ceased sending all process and wastewater streams to Ash Pond 2, effectively isolating the pond. In accordance with the Station's ash pond maintenance practices, the Station then began dewatering and removing CCR from the pond. In April 2021, MWG filed a notice of intent to close Ash Pond 2 in accordance with the Federal CCR Rule's closure criteria (Ref. 2, § 257.102). In January 2022, MWG submitted a closure construction permit application to the Illinois EPA in accordance with Subpart B of the Illinois CCR Rule. Closure construction activities will commence at the pond upon receipt of a closure construction permit from the Illinois EPA.

As documented in the pond's 2025 annual inspection report (Ref. 21), there is no CCR remaining in Ash Pond 2. In addition, the Station is actively taking measures to limit the water level in the pond. Per the weekly inspection reports prepared in accordance with 35 Ill. Adm. Code 845.540(a) since the 2023 hazard potential classification assessment was issued (Ref. 22), the Station pumped water out of the pond in June 2024 to a depth of approximately 6 inches. Since then, the Station has continued to periodically dewater Ash Pond 2 to maintain relatively low operating levels. Since July 2024, the Station's dewatering efforts have limited the water level in Ash Pond 2 to a maximum depth of 3 feet. Indeed, during S&L's site visit on August 26, 2025, approximately 3 feet of water was observed in the pond (Ref. 3).

As previously stated, the 2016 federal hazard potential classification assessment for Ash Pond 2 examined a hypothetical breach scenario assuming the pond was operating and at its original design capacity. Currently, the only water entering Ash Pond 2 is direct precipitation (i.e., rain or snow) and run-off from the crests of the pond's dikes. Moreover, the Station is actively limiting the amount of stormwater that can accumulate in the pond. Therefore, the assumed operating conditions used for the initial assessment are very conservative for the pond's current operating condition.

5.2.2 CHANGES IN DOWNSTREAM PROPERTY DEVELOPMENTS

Appendix A provides a Building Occupancy Map for the site, updated from a similar map included in the initial 2016 federal hazard potential classification assessment. The numbers used to identify buildings at the Station are consistent with the 2016 map and are used for identification purposes only; they do not correspond to identification numbers assigned by the Station.

Table 5-1 presents a comparison of the building occupancy status at the Station since the initial federal hazard potential classification assessment was completed in 2016. Based on reviews of Google Earth aerial images (Ref. 10) and the Will County, Illinois GIS (Ref. 11), and on observations made during S&L's site visits, two new buildings were constructed within the dike breach impact areas identified in the initial federal hazard potential classification assessment. These buildings are identified as Buildings 14 and 15 in the Site Building Occupancy Map in Appendix A. These two buildings are unoccupied. In addition, Joliet 29's two electric generating units, Units 7 and 8, were retired in September 2023, so the main power building, identified as Building 10, is now classified as an unoccupied building. Finally, Buildings 7 and 12 have been demolished since the 2016 analysis.

Table 5-1 – Comparison of Station Building Occupancy Status Since 2016 Federal Hazard Potential Classification Assessment[1]

Building ID[2]	2016 Occupancy Status[3]	2025 Occupancy Status
Station Building 1	Unoccupied	Unoccupied
Station Building 2	Unoccupied	Unoccupied
Station Building 3	Unoccupied	Unoccupied
Station Building 4	Occupied	Occupied
Station Building 5	Occupied	Occupied
Station Building 6	Unoccupied	Unoccupied
Station Building 7	Unoccupied	Demolished

Building ID[2]	2016 Occupancy Status[3]	2025 Occupancy Status
Station Building 8	Occupied	Occupied
Station Building 9	Occupied	Unoccupied
Station Building 10 (Main Power Building)	Occupied	Unoccupied
Station Building 11	Unoccupied	Unoccupied
Station Building 12	Unoccupied	Demolished
Station Building 13	Unoccupied	Unoccupied
Station Building 14	Did Not Exist	Unoccupied
Station Building 15	Did Not Exist	Unoccupied

Notes:

1. Buildings are considered “occupied” if at least one human occupant is present in the building for at least 12 hours per day.
2. For Site Building Occupancy Map, see Appendix A.
3. 2016 building occupancy status is per Ash Pond 2’s initial federal hazard potential classification assessment (Ref. 5).

5.2.3 CHANGES IN ASH POND GEOMETRY

Based on reviews of Ash Pond 2’s annual inspection reports (Ref. 12 through 21) and Google Earth aerial images (Ref. 10), there have been no significant physical modifications to the pond (mass excavations, major embankment modifications, *etc*.) since the initial federal hazard potential classification assessment was completed.

5.2.4 CHANGES IN SITE TOPOGRAPHY

When comparing the 2008 USGS topography (Ref. 8) used in the initial federal hazard potential classification assessment and the 2021 ISGS elevation dataset for the area (Ref. 9), no significant differences in the

topography adjacent to the ash pond and within the dike breach impact areas were identified. Moreover, Google Earth aerial images (Ref. 10) indicated that there have been no significant modifications to the ground surfaces (mass excavations, mass fill placement, *etc*.) adjacent to Ash Pond 2 or within the dike breach impact areas since 2008.

5.2.5 CHANGES IN USBR DEPTH-VELOCITY FLOOD DANGER LEVELS

To determine whether a failure at Ash Pond 2 would cause a probable loss of human life, the 2016 dike breach analysis compared the combination of estimated flood velocity and depth at each occupied building to the U.S. Department of the Interior, Bureau of Reclamation's (USBR) depth-velocity flood danger level relationship presented in the bureau's "Downstream Hazard Classification Guidelines" (Ref. 23). The USBR states therein that if the depth-velocity combination of a hazard (*e.g.*, flood) for a given area plots within the "Low Danger Zone," "the number of lives-in-jeopardy associated with possible downstream hazards is assumed to be zero." In other words, floods plotting within the USBR's "Low Danger Zone" are unlikely to cause a probable loss of human life.

The USBR has not updated the depth-velocity flood danger level relationships presented in its "Downstream Hazard Classification Guidelines" (Ref. 23) since the initial federal hazard potential classification assessment for Ash Pond 2 was completed in 2016. Therefore, the depth-velocity danger level relationship used in the 2016 assessment remains valid for use in this 2025 assessment for determining the corresponding danger levels at occupied Station buildings within the inundation areas downstream of the Ash Pond 2's southern dike.

5.3 2025 HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

Per the evaluation of the key hazard potential classification criteria for Ash Pond 2 in Section 5.2, there have been significant operational changes made at the Station since the initial federal hazard potential classification assessment was completed in 2016. The Station's decommissioning efforts subsequent to the retirement of Units 7 and 8 in September 2023 have reduced the number of occupied buildings at the Station to three, and the Station has actively limited the accumulation of stormwater in Ash Pond 2 at a level substantially lower than the original design water elevation. Although no significant changes were noted to the other bases used to determine the pond's initial federal hazard potential classification (topography, depth-velocity flood danger level relationships), the Station's reduction in the pond's operating capacity consequently reduces the potential impacts to downstream areas during a hypothetical dike breach. This warrants updating the hypothetical dike breach analysis for the pond's southern dike.

5.3.1 UPDATED DIKE BREACH ANALYSIS METHODOLOGY

Consistent with the initial dike breach analysis conducted in 2016, a hypothetical dike breach at Ash Pond 2's southern dike was evaluated under the pond's current operating condition to assess potential impacts to the Station buildings downstream of the pond. This assessment was performed independent of potential causes and/or apparent dike stability. As noted in Section 5.2.1 the only water entering Ash Pond 2 is direct precipitation and run-off from the crests of the pond's dikes. Moreover, since the 2023 hazard potential classification assessment, the water level in Ash Pond 2 has not exceeded 3 feet. Therefore, the assumed water level in Ash Pond 2 at the time of a hypothetical failure was taken as 4.2 feet, respectively, which is the sum of the average water level observed in the pond in 2025 (2.6 feet) and the maximum PMP depth listed in Table 2-2 (19 inches).

HEC-HMS modeling software was used to compute the hypothetical breach hydrographs for Ash Pond 2, and the hydrograph producing the highest peak flow was subsequently used for downstream routing analysis and inundation mapping. To simulate flooded conditions that could be present during the PMP event, non-CCR ponds at the site were assumed to be full when routing a hypothetical release of water from the pond's southern dike. The corresponding inundation map for a hypothetical failure at Ash Pond 2's southern dike was developed using the HEC-RAS Version 6.4.1 software. Model terrain was based on the aforementioned 2021 ISGS topographic data (Ref. 9).

5.3.2 RESULTS FROM UPDATED ASH POND 2 DIKE BREACH ANALYSIS

Figure 5-1 and Figure 5-2 below show the maximum flow depth and maximum flow velocity, respectively, from a hypothetical breach at Ash Pond 2's southern dike. As shown in the figures, water released from a hypothetical breach flows to the south and southwest, eventually flowing into the Station's Intake Canal. Released water flows near occupied Building 8 and unoccupied Buildings 9, 10, 11, 14, and 15. The estimated flow depth and velocity near Building 8 is 1 foot and 1.8 feet per second, respectively. The other two occupied buildings at the site, Buildings 4 and 5, would not be impacted.

Compared to the 2016 dike breach analysis results (Ref. 5), there is a significant reduction in the inundation area and flow velocities. Under 2016 operating conditions, water released from Ash Pond 2's southern dike extended to the east, and the flow velocities near the Station buildings within the inundation area varied from 1.3 feet per second to 15.3 feet per second. Given the significant reduction in water normally present in Ash Pond 2, the updated dike breach analysis estimated flow velocities within the updated inundation area that vary from 0.2 feet per second to 4.5 feet per second.

Figure 5-1 – Maximum Flow Depth from Breach at Ash Pond 2 South Dike

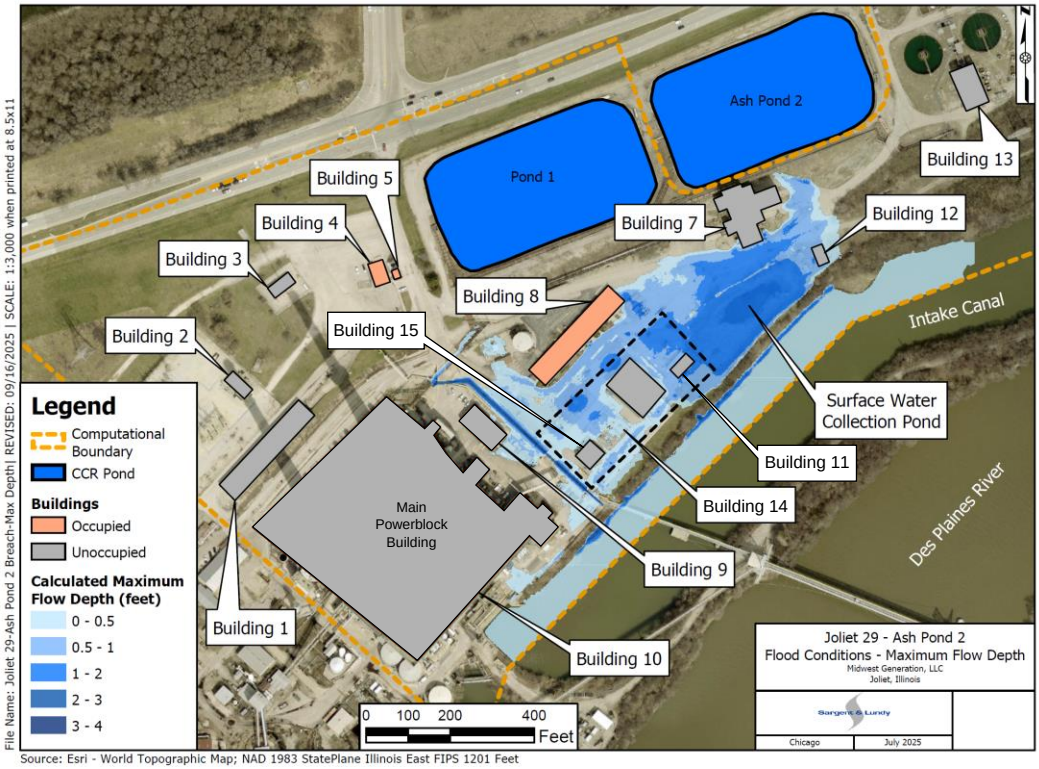
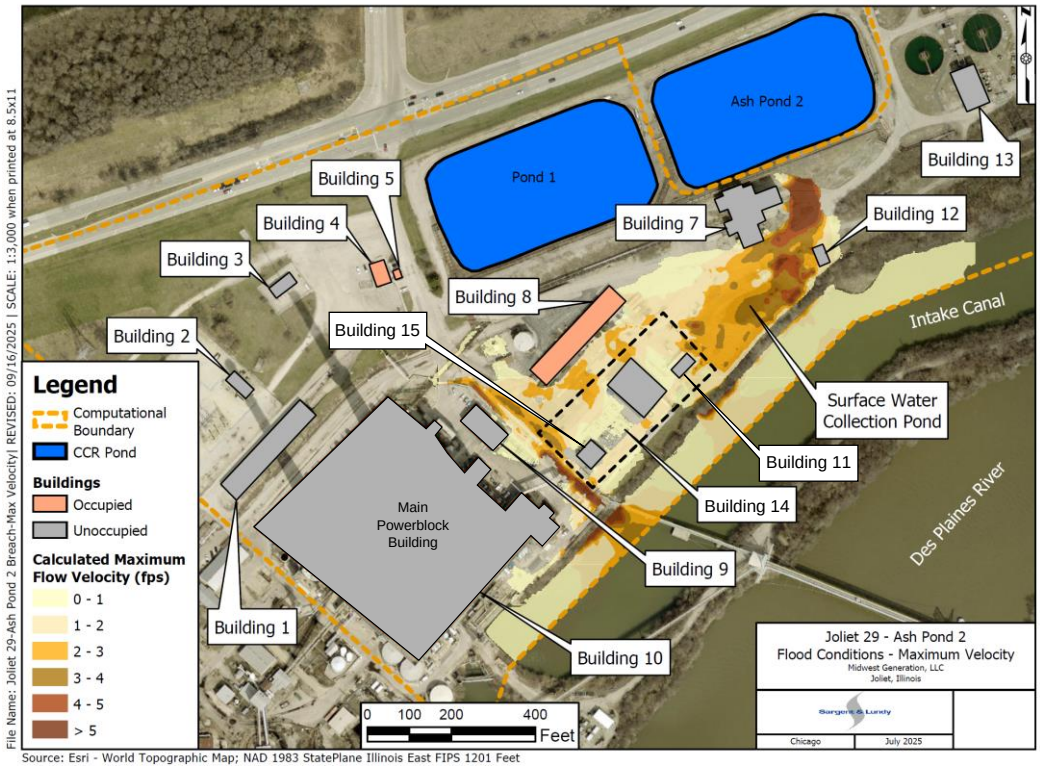


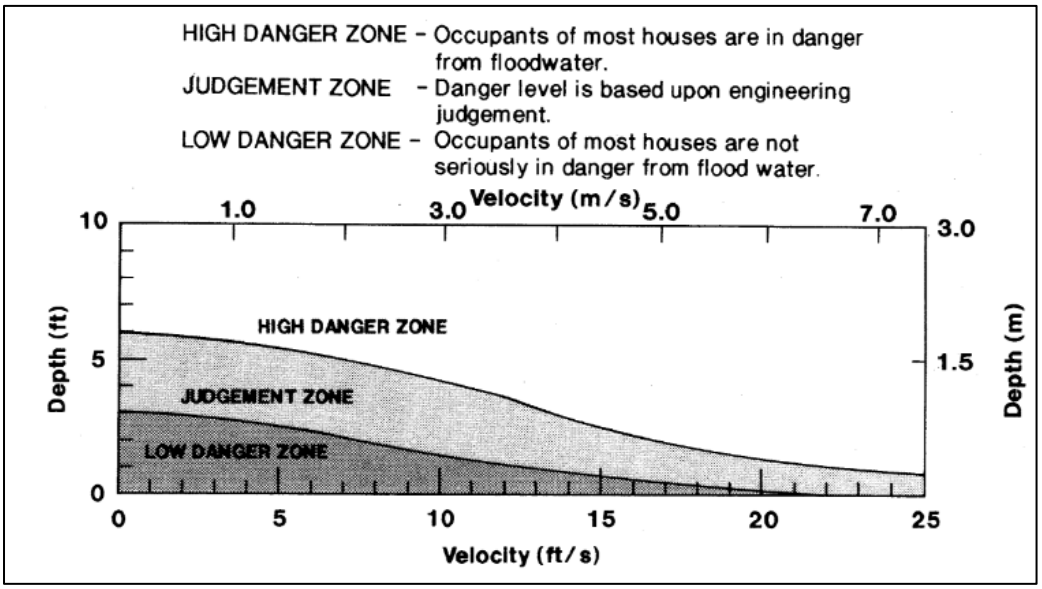
Figure 5-2 – Maximum Flow Velocity from Breach at Ash Pond 2 South Dike



5.3.3 FLOOD DEPTH-VELOCITY DANGER ZONE

Per the results from the updated dike breach analysis presented in Section 5.3.2, the maximum flood depth is not expected to exceed 1 foot at the only occupied Station building within the inundation area (Building 8) downstream of a hypothetical release from Ash Pond 2. The corresponding maximum flow velocity is not expected to exceed 1.8 feet per second. Based on the USBR's flood depth-velocity danger zones reproduced in Figure 5-3, this flood depth-velocity combination plots within the "Low Danger Zone." Therefore, a failure at the pond's southern dike would not result in a probable loss of human life.

Figure 5-3 – USBR Flood Depth-Velocity Danger Zones (from Ref. 23, Figure 2)



In addition to the USBR criteria above, the Federal Energy Regulatory Commission's *Engineering Guidelines for the Evaluation of Hydropower Projects* (Ref. 24), which references FEMA's *Federal Guidelines for Dam Safety* (Ref. 25), states, "[T]he consequences of failure are not expected to cause a probable loss of human life when incremental effects on downstream structure are approximately two feet or less." FEMA's *Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures* (Ref. 26) also states that an incremental rise in flood depth of two feet or less caused by a dike breach is not considered to be a concern to human life. These two federal guidelines further support the conclusion that the loss of human life at the one occupied Station building within Ash Pond 2's inundation area is not probable given the estimated flood depth is one foot.

5.3.4 HAZARD POTENTIAL CLASSIFICATION

Under the Illinois CCR Rule, the primary consideration for classifying the hazard potential for a CCR surface impoundment is whether the downstream impacts from a hypothetical breach at the impoundment would

cause a probable loss of human life. Per Table 2-1, loss of human life is the critical aspect of the Class 1 hazard potential classification. If a loss of human life is unlikely to occur, then the CCR surface impoundment is not a Class 1 hazard potential; instead, it is a Class 2 hazard potential.

Per the results from the updated dike breach analysis presented in Sections 5.3.2 and 5.3.3, Station Building 8 is only expected to see floodwater at a depth of 1 foot following the hypothetical release at Ash Pond 2's southern dike during a PMP event, and the other two occupied buildings at the Station (Buildings 4 and 5) are not expected to be impacted by the hypothetical event. Therefore, a failure at the pond's southern dike would not result in a probable loss of human life at the occupied Station buildings. Thus, Ash Pond 2 is classified as a Class 2 CCR surface impoundment under its current operating conditions pursuant to 35 Ill. Adm. Code 845.440(a)(1).

The classification of Ash Pond 2 as a Class 2 CCR surface impoundment is not a reflection of the potential for the impoundment to fail. The 2025 annual safety factor assessment conducted pursuant to 35 Ill. Adm. Code 845.460 shows that Ash Pond 2 is stable under design operating conditions (Ref. 4). Moreover, no visual signs of distress that could be indicative of dike instability were observed during the August 26, 2025, condition assessment performed by S&L in support of the pond's 2025 annual structural stability assessment under 35 Ill. Adm. Code 845.450 (Ref. 3).

6.0 CONCLUSIONS

This assessment re-evaluated the factors and design inputs used as the bases for the initial federal hazard potential classification assessment completed in 2016 in accordance with the Federal CCR Rule for Joliet 29's Ash Pond 2. It was determined that no significant physical changes to the CCR surface impoundment and no new downstream developments within the dike breach inundation areas have occurred within the last nine years that would necessitate changing the pond's initial federal hazard potential classification. However, the Station has been actively controlling the water level in Ash Pond 2 since the summer of 2024, reducing the pond's operating capacity to a volume substantially less than its original design capacity. This operational change warranted a re-evaluation of the potential impacts to downstream areas during hypothetical dike breaches at the pond's southern dike.

Based on the results from dike breach analysis for Ash Pond 2, a loss of human life is unlikely to result from a hypothetical failure at the pond under the pond's current operating condition. Under the Illinois CCR Rule, the primary consideration for classifying the hazard potential for a CCR surface impoundment is whether the downstream impacts from a hypothetical breach at the impoundment would cause a probable loss of human life. If a loss of human life is likely to occur, then the CCR surface impoundment is a Class 1 hazard potential; otherwise, it is a Class 2 hazard potential. Because a hypothetical failure at the pond will not cause

a probable loss of human life, Ash Pond 2 is classified as a Class 2 CCR surface impoundment under its current operating condition pursuant to 35 Ill. Adm. Code 845.440(a)(1).

Table 6-1 presents the 2025 hazard potential classification assigned to Joliet 29 Ash Pond 2 under its current operating condition in accordance with 35 Ill. Adm. Code 845.440(a)(1).

Table 6-1 – 2025 Illinois Hazard Potential Classification for Ash Pond 2 at the Joliet 29 Generating Station

CCR Surface Impoundment	2025 Illinois Hazard Potential Classification
Ash Pond 2	Class 2

However, as noted above, the 2025 hazard potential classification for Ash Pond 2 does not reflect the probability of a hypothetical failure event associated with the pond and is not contingent upon the pond's structural stability. Indeed, the 2025 annual safety factor assessment conducted pursuant to 35 Ill. Adm. Code 845.460 (Ref. 4) shows that Ash Pond 2 is structurally stable under design operating conditions. Moreover, no visual signs of distress that could be indicative of dike instability were observed during S&L's August 26, 2025, condition assessment performed in support of the pond's 2025 annual structural stability assessment under 35 Ill. Adm. Code 845.450 (Ref. 3).

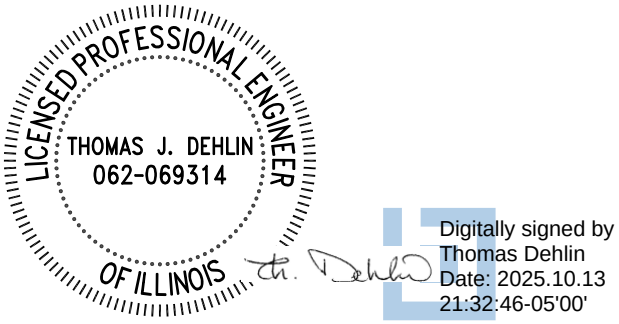
7.0 CERTIFICATION

I certify that:

- This hazard potential classification assessment was prepared by me or under my direct supervision.
- The work was conducted in accordance with the requirements of 35 Ill. Adm. Code 845.440.
- I am a registered professional engineer under the laws of the State of Illinois.

Certified By: Thomas Dehlin Date: October 13, 2025

Seal:



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APPENDIX A: SITE BUILDING OCCUPANCY MAP

HOLD INFORMATION	
NO.	DESCRIPTION

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.

RELEASE INFORMATION

REV.	DATE	DESCRIPTION
0	10-11-2024	FOR USE

ISSUE PURPOSE:	USE
SPECIFICATION:	N/A
PROJECT NO.:	12661-188

CAD FILE NAME:	JOL-CSK-03.DGN
PREPARED BY:	S. MORALES / J. CHAVEZ
REVIEWED BY:	T. DEHLIN
APPROVED BY:	--

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CHICAGO, ILLINOIS 60603-5780

MWG
Midwest Generation, LLC

PROJECT

JOLIET GENERATING
STATION 29
2024 HAZARD POTENTIAL
CLASSIFICATION ASSESSMENT

DRAWING TITLE

SITE BUILDING OCCUPANCY MAP

DRAWING NUMBER	REVISION
12661-188-JOL-CSK-001	0

SHEET 1 OF 1

LEGEND

- OCCUPIED BUILDING
- UNOCCUPIED BUILDING

NOTES

1. AERIAL IMAGE IS FROM GOOGLE EARTH PRO V7.3 AND MAY NOT BE REPRESENTATIVE OF CURRENT SITE CONDITIONS.
2. BUILDING NUMBERS ARE FOR REFERENCE PURPOSES ONLY AND MAY NOT CORRESPOND TO THE BUILDING NAMES OR NUMBERS ASSIGNED BY / USED AT THE STATION.
3. BUILDINGS ARE CONSIDERED TO BE OCCUPIED IF AT LEAST ONE HUMAN OCCUPANT IS PRESENT IN THE BUILDING FOR AT LEAST 12 HOURS PER DAY.

REFERENCE DRAWINGS

UNDERGROUND OR EMBEDDED UTILITIES MAY BE LOCATED WITHIN OR ADJACENT TO THE AREA IN WHICH EXCAVATION, DEMOLITION, FOUNDATION, OR MODIFICATION WORK IS TO BE PERFORMED.

REFERENCES RELATING TO THE UNDERGROUND OR EMBEDDED UTILITIES ARE PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING THOSE UTILITIES AND OTHER POSSIBLE UNDERGROUND OR EMBEDDED INTERFERENCES WITH THE WORK.

THE CONTRACTOR/INSTALLER SHALL EXERCISE DUE CAUTION DURING ALL EXCAVATION/FOUNDATION/DEMOLITION WORK.

PRELIMNARY
NOT FOR CONSTRUCTION

NORTH

80' 0' 80' 160'
GRAPHIC SCALE

HOLD INFORMATION	
NO.	DESCRIPTION

CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUB-CONTRACTOR(S)) PERFORMING THE WORK.

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55 EAST MONROE STREET
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DRAWING TITLE

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SHEET 1 OF 1

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