

ANNUAL HAZARD POTENTIAL CLASSIFICATION ASSESSMENT REPORT
POWERTON STATION - METAL CLEANING BASIN
AUGUST 2022

This annual hazard potential classification assessment report has been prepared pursuant to the coal combustion residuals (CCR) rule codified in Title 35 of the Illinois Administrative Code, Section 845.440(a) for the Metal Cleaning Basin (MCB) at Powerton Station in Pekin, Illinois (Station). The purpose of this project is to review the hazard potential classification assessment by a licensed professional engineer to document the hazard potential classification as either a Class 1 or a Class 2 surface impoundment including the basis for the determination. Civil & Environmental Consultants, Inc. (CEC) completed this hazard potential classification assessment by considering the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked section or mis-operation of the diked basin or its appurtenances. The hazardous potential classifications considered include either Class 1 or Class 2, 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 following sections provide a description of physical and operational features followed by an evaluation of potential failure scenarios that show the MCB is a Class 2 CCR surface impoundment.

1.0 SITE DESCRIPTION

The MCB is located at Powerton Station in Pekin, Illinois, situated northeast of the main power building, south of the Wastewater Building and between the Ash Surge Basin and former Cooling Water Intake Channel (see Figure 1). Measuring 422 feet long and 192 feet wide, the MCB is lined with a 60 mil high-density polyethylene liner. Gravel access roads are located along the north, east, and west sides.

The MCB is a partially incised impoundment with the north, south, and east boundary of the MCB at grade. The west boundary of the MCB is constructed with an earthen embankment. As shown in Figure 1, the former cooling water intake channel is located approximately 75 feet west of the MCB. Except for an above grade pipe rack and piping, the area between the MCB and former intake channel has no structures or buildings.

Based on information provided by station personnel, the MCB was approved for construction in 1977 and constructed shortly thereafter. Although relined in 2009, the MCB has not undergone significant changes in the geometry. The original operation of the Metal Cleaning Waste System was to collect wash water from the air heaters and boilers, transport the wash water to the metal cleaning waste basin and treat the basin discharge for the removal of dissolved metals and suspended solids to produce an acceptable effluent for discharge to the Ash Surge Basin under the Station's National Pollutant Discharge Elimination System (NPDES) permit. Solids that settle in the MCB are periodically hauled off-site.

Operation of the MCB has changed to also periodically receive dry bottom ash and fly ash from maintenance activities into the MCB for temporary storage. Wastewater is periodically pumped from the MCB, treated to remove dissolved metals and suspended solids, and discharged into the Ash Surge Basin under the Station's NPDES permit. Other than boiler wash, water spray from fugitive dust treatment, and precipitation falling on the MCB, the MCB has no inflow. The MCB is inspected weekly by the environmental specialist including checking the water level.

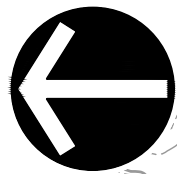
2.0 FAILURE EVALUATION

To evaluate the MCB hazard classification, impacts as a result of failure or mis-operation of the MCB were evaluated. The following features were considered in the determining the classification.

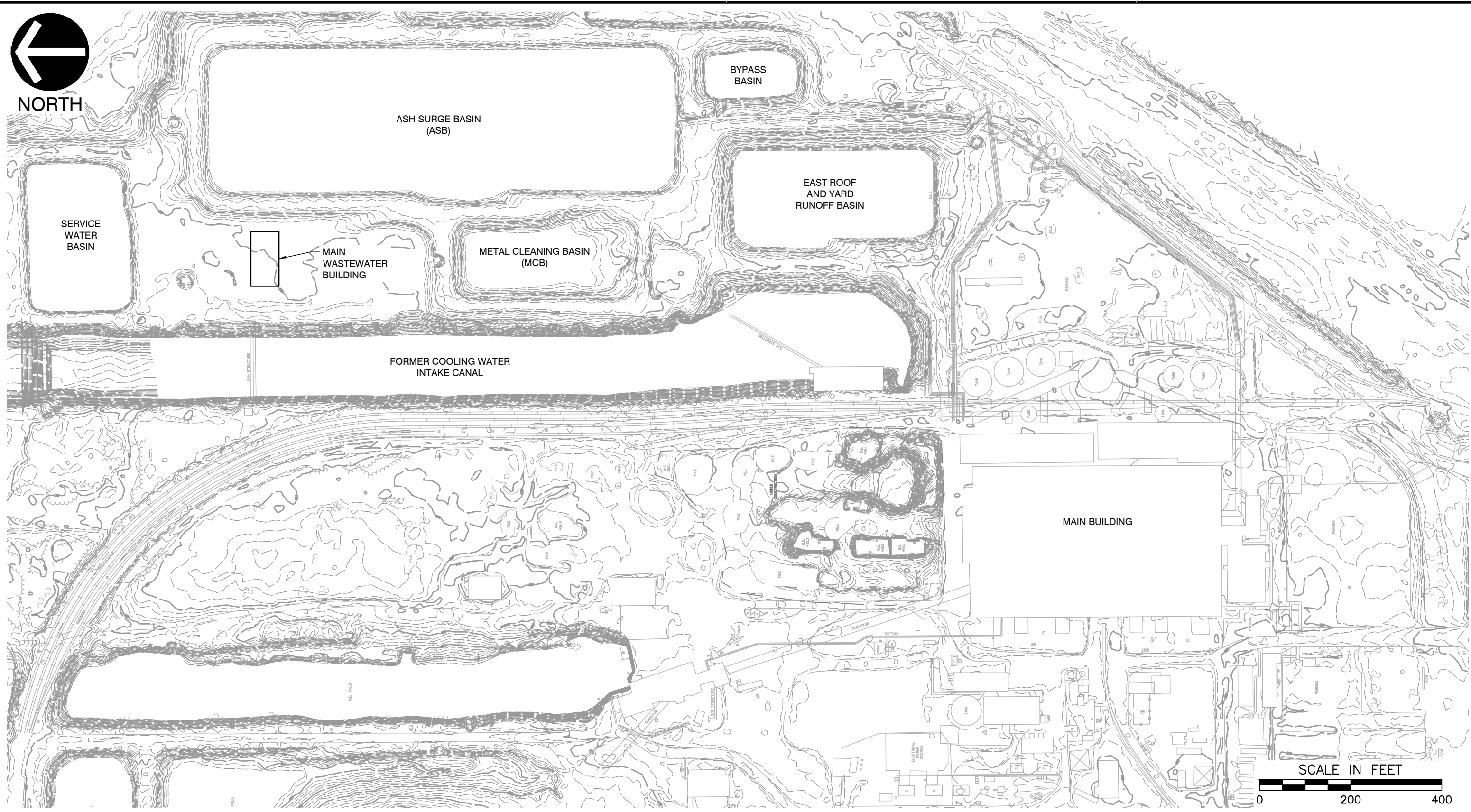
- Other than installation of water depth gauge, our July 2022 inspection shows no modifications to MCB or to the areas surrounding the MCB. The MCB has remained unchanged from the previous impoundment inspection and initial hazard potential classification assessment.
- Relatively small in size, the volume of water and ash is controlled at low levels through continued maintenance and inspection.
- Other than boiler wash, water spray from fugitive dust treatment, and precipitation falling on the MCB, the MCB has no inflow.
- A flexible membrane liner prevents water from seeping through the earthen embankment thereby preventing potential failure due to loss of embankment through piping.
- The north, south and east sides are incised and not susceptible to a release from the MCB due to catastrophic failure or mis-operation.
- The west side is constructed with an earthen embankment. In the event of catastrophic failure or mis-operation, the downstream inundation area between the MCB and former intake channel has no buildings and is infrequently entered.
- In the event of catastrophic failure or mis-operation, the downstream inundation area is within the former intake channel and fully contained on uninhabited areas on the Powerton Station property.

FIGURE 1

SITE PLAN



NORTH



P:\310-000\312-192\ -CAD\ Dwg\CV02 Powerton - MCB\312192-CV02-MCB Site Map.dwg[LAYOUT] LS:(9/27/2021 - ccase) - LP: 9/22/2021 12:10 PM

REFERENCE

1. TOPOGRAPHIC INFORMATION SOUTH OF SECONDARY ASH SETTLING BASIN AND FAB IS BASED ON AERIAL SURVEY PERFORMED BY AEROMETRIC, INC. DATED JUNE 19, 2008. TOPOGRAPHIC INFORMATION NORTH OF ASH SURGE BASIN IS BASED ON SURVEY BY RIDGELINE CONSULTANTS, PERFORMED IN FEBRUARY AND MARCH, 2016.

*HAND SIGNATURE ON FILE



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 POWERTON STATION
 METAL CLEANING BASIN HAZARD POTENTIAL
 PEKIN, TAZEWELL COUNTY, ILLINOIS

SITE PLAN

DRAWN BY:	CAC	CHECKED BY:	MDJ	APPROVED BY:	MDJ*	FIGURE NO.:	1
DATE:	SEPTEMBER 2021	DWG SCALE:	1"=200'	PROJECT NO:	312-192		