EMERGENCY ACTION PLAN

HUTSONVILLE POND A

NATIONAL INVENTORY OF DAMS NUMBER IL50056

PREPARED BY:

AMEREN ENERGY GENERATING COMPANY

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1.0 PURPOSE

The purpose of this Emergency Action Plan (EAP) is three-fold:

A. to define the procedures which will be used to identify unusual conditions which may endanger Hutsonville Pond A and specify the actions to be taken to mitigate any such dangerous condition;

B. to define specific responsibilities and procedures which will be followed to notify appropriate Ameren personnel.; and

C. to safeguard lives and reduce property damage in the event of an emergency.

Pursuant to 35 Ill. Adm. Code 845.520(b) the EAP must:

1) Define the events or circumstances involving the CCR surface impoundment that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

2) Define responsible persons, their respective responsibilities, and notification procedures for a safety emergency involving the CCR surface impoundment;

3) Provide contact information of emergency responders;

4) Include a map that delineates the downstream area that would be affected if a CCR surface impoundment fails and a physical description of the CCR surface impoundment; and

5) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR surface impoundment and the local emergency responders.

2.0 DESCRIPTION

This EAP has been prepared for the AmerenEnergy Medina Valley Cogen, LLC (Ameren) former Hutsonville Power Station (Hutsonville) Pond A. Ameren completed closure activities for Pond D in 2013 in accordance with the site-specific closure requirements of 35 Illinois Administrative Code (IAC) 840. Closure activities for Pond D included placement of a 40-mil high density polyethylene (HDPE) cap covered with a three-foot thick vegetative soil layer, construction of surface water control structures, and construction of a groundwater collection system (i.e., Collection Trench). Operation of the Collection Trench began in April 2015. Pond B, Pond C, and the Bottom Ash Sluice Pond were clean-closed by relocating accumulated ash to Pond A in September 2015.

Pond A, originally constructed with an 80 mil HDPE liner, was in service between 1986-2011 to receive sluiced fly ash and provide subsequent treatment. Closure activities for

Pond A included placement of ash transferred from the other ash ponds and spoils from clean-up of the coal yard, grading according to the Ash Ponds Closure, Closure Plan, dated September 15, 2014 (Closure Plan) (Hanson, Natural Resource Technology [NRT], 2014a), and capping with a low permeability geosynthetic (40-mil HDPE) membrane covered with protective soil. Closure activities for Pond A were completed in June 2016 in accordance with the Closure Plan (Hanson, NRT, 2014a), and the site-specific Ash Pond D rule 35 IAC 840 to the extent feasible. The Pond A Closure Completion Report (Ameren, 2017) was approved by the Illinois Environmental Protection Agency (EPA) in March 2017.

In conjunction with Ameren's request for approval of the Closure Plan (Hanson, NRT, 2014a), Ameren submitted a request to establish a groundwater management zone (GMZ) pursuant to 35 IAC 620.250(a)(2): Ash Ponds Closure, Groundwater Management Zone Application, dated September 8, 2014 (GMZ Application) (Hanson, NRT, 2014c), which was approved along with the Closure Plan (Hanson, NRT, 2014a).

In accordance with the Agency approved Closure/Post-Closure Plan, inspections of the cover system are performed on a quarterly schedule. Routine maintenance activities are performed at Pond A, as needed and as soon as practicable after issues are identified, and include recontouring the ground surface, repairing drainage channels, repairing and replacing lining material, revegetating areas, and removing woody vegetation. Maintenance activities can be found in more detail in the Post-Closure Care Plan (Hanson, NRT, 2014d).

The Post-Closure Care Plan (Hanson, NRT, 2014d) requires quarterly inspection until completion of the post-closure period. Inspections are also required after storm events defined as a 25-year, 24-hour event, or approximately 5.37 inches of precipitation. Discontinuation of the site inspections will occur after Illinois EPA approval of the certified Post-Closure Care Report.

Site inspections include assessment of the condition and need for repair of final cover and vegetation, as wells as fencing, monitoring points, and surface water control features. The site inspections performed on March 4, 2020, July 7, 2020, September 22, 2020, and December 16, 2020, noted a small amount of vegetation and debris in the drainage channels and some vegetation that had been cut short and was being monitored for re-growth.

3.0 CLASSIFICATION OF EMERGENCY CONDITIONS

3.1 Failure Has Occurred or Is Imminent –CONDITION A

Failure shall be deemed imminent for any of the following conditions:

A. a breach in the earth embankment; or

B. sudden and severe sliding or cracking of the earth embankment; or

3.2 Potential Failure Situation Is Developing – CONDITION B

This is a situation where a failure may eventually occur but actions may be taken to moderate or alleviate failure. A failure situation shall be deemed to be developing for any of the following conditions:

A. unaccounted for seepage or any increase in the rate of flow of any existing seep;

B. muddy water discharge from any part of the earth embankment or concrete joints, cracks, or openings; or

C. “boils” forming in the embankment or downstream areas;

4.0 PROBLEMS - DETECTION, EVALUATION AND RESPONSE

The following problems are indicators of a potential or actual emergency.

4.1 Burrow Holes

Animal burrows should be backfilled as fully as possible with impervious material as soon as practicable upon their discovery. If rodents become a nuisance, an effective rodent control program, as approved by the Illinois Department of Natural Resources District Wildlife Biologist, should be implemented. Note: some animal holes (such as crayfish) will have soil pushed out around the hole in a circular fashion which may look like a 'boil' (see discussion below). These areas should be watched for the movement of water and soil particles from the holes to determine whether they are boils.

4.2 Cracks

A. Some cracking of the embankment's surface soils may occur when they become dry and is to be expected during prolonged periods of little or no rain. No action is required for this situation except to monitor the condition to ensure the detection of possible more serious problems as described below.

B. A longitudinal crack can indicate the beginning of a slide or an uneven settlement of the embankment and therefore must be periodically monitored. If appreciable growth in any dimension is noted, a qualified engineer should be contacted for assistance in the evaluation of the crack and recommended repairs.

C. A transverse (across from upstream to downstream) crack can indicate uneven settlement or the loss of support below the crack and therefore must be periodically monitored If appreciable growth in any dimension is noted, a qualified engineer should be contacted for evaluation of the crack and recommended action.

4.3 Seepage

A. Seepage areas on the downstream embankment slope, or in any other area downstream of the embankment, may exhibit little or no surface water or very minor seeps. This condition may be caused by infiltration of rain water and is typically not serious. No action is required for this situation except to note the location and monitor the condition to ensure the detection of possible more serious problems as described below.

B. If a wet area develops moderate seeps of clear or relatively clear water but the rate of flow <u>is not</u> increasing, the flow should be measured periodically

and observed for any changes in water clarity. No immediate action is required except to note and record the flow rate and clarity for future comparison.

C. If a wet area develops moderate seeps of clear or relatively clear water and the rate of flow is increasing, the flow must be measured periodically and any changes in water clarity must be noted and recorded. The downstream area should be inspected for any new seeps and **a qualified engineer should be contacted for an immediate inspection.** The condition should be observed and monitored constantly for any further changes in flow rate or clarity unless directed otherwise by the engineer.

4.4 Boils

Boils are deposits of soil particles in the form of a cone around a point of discharging water. Boils can vary from a few inches to several feet in diameter and may occur 2 to 3 feet apart or in isolated locations. Evaluation of and response to the problem is the same as noted under the **Seepage** discussions above for the various flow conditions, i.e., clear and constant, clear and increasing, and cloudy or muddy and increasing.

4.5 Slides

A slide is the movement of a portion of the embankment, either the upstream or downstream slope, toward the toe of the embankment. The following are three possible slide conditions, listed in order of severity.

A. The slide does not pass through the crest. **A qualified engineer should be consulted before any repairs are initiated to determine the cause of the slide and to recommend any modifications to prevent future slides**. The downstream side of the embankment should be watched for the emergence of any water either through the slide or opposite the slide. If discharging water is noted, the area of the slide should be treated as a seepage location and monitored as noted above.

B. The slide passes through the crest. This condition is critical. **A qualified engineer shall be retained immediately for an inspection, evaluation and recommended action.**

5.0 SPECIFIC RESPONSIBILITIES UNDER THE PLAN

5.1 Ameren Personnel Responsibilities

A. Onsite Personnel

The Hutsonville electric generating plant has not been operational since 2011. All buildings and structures have been removed from the site. Ameren does not have any employees at the site on a regular basis. Individuals enter the site for purposes of monitoring post-closure conditions as provided in the IEPA approved post-closure plan.

B. EAP Coordinator

The Ameren Manager of Environmental Services, Craig Giesmann, 314-315-3035. is the EAP coordinator and will be responsible for all EAP related activities, including preparing revisions to the EAP and conducting exercises related to the EAP. Mr. Giesmann will be the EAP contact if any involved parties have questions about the plan. Following termination of any emergency, the EAP coordinator will complete a follow-up evaluation with all responders during the emergency. The results of the evaluation and any recommended procedural changes to the Emergency Action Plan will be documented in a written report. The report will be provided to any emergency responders whose responsibilities may be affected by the changes.

C. Annual Meeting

The Hutsonville electric generating plant has not been operational since 2011. Pond A closed in 2016 and is being monitored under the terms of the IEPA approved post-closure care plan. Because of the low risk of any emergency impacting human health or the environment due to the site already being in post-closure, Ameren has not held annual face-to-face meetings or exercises with local emergency responders since post-closure began in 2016. Ameren will begin holding an annual meeting with local emergency responders in 2022 face-to-face, in person or electronically. Ameren will document the annual face-to-face meeting with local emergency responders as required by Section 845.520(b)(5) and will place this documentation in the facility's operating record as required by Section 845.800(d)(11).

5.2 Non-Ameren Personnel Notification Responsibilities

A. Crawford County 911 Communication Center

For **Emergency Condition A**, the Crawford County 911 Communication Center will:

a. contact the Crawford County ESDA Coordinator;
b. contact the IDOT operations office, and communication center concerning the emergency; and
c. contact the Crawford County Highway Department.

For **Emergency Condition B**, the Crawford County 911 Communication Center will contact the Crawford County ESDA Coordinator.

B. Crawford County Sheriff

As appropriate, the Crawford County Sheriff's Office will coordinate the closure of affected local roads with county and township personnel.

C. Crawford County ESDA Coordinator

As appropriate, the Crawford County, ESDA Coordinator will provide supporting services during and after the emergency.

6.0 INUNDATION AREA

6.1 Inundation Maps

In 2017, Ameren submitted Dam Abandonment Application documents for Pond A in accordance with guidelines issued by the Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR). In support of this application Ameren evaluated the liquefaction potential of the impounded material in Pond A. This evaluation consisted of site reconnaissance, performing Cone Penetrometer Test (CPT) soundings, direct push borings, engineering analyses, and preparation of a report.

Geotechnology Inc., on behalf of Ameren, analyzed the CPT data for seismic liquefaction potential and dynamic (post-liquefaction) settlement using the CLiq software. CLiq utilizes the analysis method published by Idriss and Boulanger in 2008 and updated in 2014. Based on ASCE 7-10, a design PGA of 0.26g and an earthquake magnitude of 7.5 where used in this analysis. The analysis incorporated the results of the laboratory tests to refine the fines content within the soundings. Based on the liquefaction results it appears the Pond A has some potentially liquefiable layers within the impounded ash at depths typically between 9 to 13 feet, with multiple zones where the calculated factor of safety (FS) is less than 1.0. The associated dynamic settlement is estimated to be typically less than 1.0 inch for these layers, but at locations A04 and A05 is estimated at approximately 1.5 inches. Liquefaction Potential Index (LPI1) values are all less than 5, which indicates a low risk of liquefaction. LPI attempts to predict the potential of liquefaction to cause damage to surface features and provides a measure of the severity of liquefaction and has a scale of 0 to 20. For reference an LPI of 0 indicates a very low liquefaction risk and a LPI of less than 5 indicates a low risk of liquefaction.

Based on the LPI values being less than 2.5, the thickness of the liquefiable layers, the total post-liquefaction settlement being approximately 0.4 to approximately 1.5 inches, and the seismic and static stability analysis performed by Hanson Professional Services, Inc., there is a low risk of surface manifestation of liquefaction or damage to the embankments during a seismic event.

On April 4, 2018, IDNR approved Ameren's request and revised the hazard classification for Pond A as a dam to Class III.

Since there is a low risk of surface manifestation of liquefaction or damage to the embankments during a seismic event, inundation maps are not appropriate relative to Pond A.

6.2 Potentially Impacted Structures List

Ameren has not identified any residential or other structures that could potentially be impacted in an emergency.

Licensed Professional Signature

I hereby affirm that all information and design contained in this Emergency Action Plan is true and accurate to the best of my knowledge and belief in accordance with good engineering practice.

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Signature: Michael J. Wagstaff Date: 10/27/2021