

October 17, 2023
Revision 2

**Emergency Action Plan (EAP)
Ash Pond 2 (Main Ash Pond and Stilling Pond)
EPA Final Coal Combustion Residuals (CCR) Rule TVA
TVA Shawnee Fossil Plant
West Paducah, Kentucky**

1.0 Purpose

This letter documents TVA's certification of the Emergency Action Plan (EAP) for the TVA Shawnee Fossil Plant's Ash Pond 2 (Main Ash Pond and Stilling Pond). The EPA Final CCR Rule requires owners or operators of significant or high hazard potential CCR surface impoundments to prepare and maintain a written EAP. Additionally, the written EAP, and any subsequent amendment to the EAP, must be certified by a qualified professional engineer that the EAP meets the requirements specified in 40 CFR 257.73(a)(3) of the CCR Rule.

2.0 Qualified Professional Engineer Certification

I, Stephen H. Bickel, being a Professional Engineer in good standing in the Commonwealth of Kentucky, do hereby certify, to the best of my knowledge, information, and belief:

1. That the information contained in this certification is prepared in accordance with the accepted practice of engineering;
2. That the information contained herein is accurate as of the date of my signature below; and
3. That the EAP for Ash Pond 2 (Main Ash Pond and Stilling Pond) meets the requirements specified in 40 CFR 257.73(a)(3).

Signature

Stephen H. Bickel

Date

10/17/2023

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Attachments: Emergency Action Plan



CCR UNIT EMERGENCY ACTION PLAN (Rev. 2)

SHAWNEE FOSSIL PLANT WEST PADUCAH, KENTUCKY



TENNESSEE VALLEY AUTHORITY
1101 Market Street
Chattanooga, TN 37402-2801

Prepared by:

Tennessee Valley Authority

October 17, 2023 (Amended)

Revision or Change Number	Effective Date	Affected Page Numbers	Description of Revision/Change
0	04/17/2017	All	Initial Issue
1	10/17/2018	Multiple	Updated roles and responsibilities and contact information.
2	10/17/2023	Multiple	Five year evaluation per 40 CFR 257.73(a)(3)(ii)(B), updated roles and responsibilities, notification procedures and contact information.

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1.0 Purpose

This Emergency Action Plan (EAP) provides guidance for identifying and responding to safety emergencies at the Ash Pond 2 (Main Ash Pond/Stilling Pond) Coal Combustion Residuals (CCR) unit at the Shawnee Fossil Plant (SHF), herein referred to as Ash Pond 2 or CCR unit, which has been categorized as a significant hazard potential CCR surface impoundment as required by 40 CFR 257.73(a)(2) of the Final CCR Rule. The EAP has been prepared, and will be maintained, in accordance with 40 CFR 257.73(a)(3) of the Final CCR Rule and with TVA's CCR Structural Stability Program.

2.0 Map and Description of CCR Unit

In accordance with § 257.73(a)(3)(i)(D), the EAP must include a physical description of the CCR unit and a map which delineates the downstream area which would be affected in the event of a CCR unit failure.

The requisite map is attached as Appendix 1. The map was not revised from the 2018 EAP because there are no changes at the site that would result in greater downstream areas affected in the event of a CCR unit failure. Therefore, the map meets the requirements of the Final CCR Rule.

Ash Pond 2 is enclosed by an earthen perimeter dike system that consists of an upper and lower clay dike. The overall constructed height of the dike system is approximately 20 to 25 feet tall with slopes approximately 2.5H:1V to 3H:1V. In April 2021, TVA ceased placing CCR and waste streams into Ash Pond 2. Closure in place of the unit is currently in progress. Dewatering of the unit has been performed and fill is being placed within the pond to create positive drainage. The closure cap system has been installed in the southeastern portion of the Main Ash Pond. Stormwater drainage within the closed portion of Ash Pond 2 is being directed offsite through permitted stormwater outfalls. A portion of

the Stilling Pond continues to be used for stormwater management of contact water during construction. Stormwater runoff that accumulates in the Stilling Pond after a rain event is treated (if necessary) and pumped offsite via the spillway. The spillway, which is located in the Stilling Pond portion of the unit, consists of a concrete weir with six chambers. Stop logs are used on the upstream side of each chamber to control pool level. The concrete weir transitions into six 30-inch-diameter horizontal outlet pipes that penetrate the western dike and terminate at a concrete headwall at the dike toe. Four HDPE siphon pipes were also previously available for lowering the pool level within the unit. Since a permanent pool is no longer maintained, the siphon pipes are inoperable and are planned to be abandoned during closure construction.

The spillway and siphon outlets into the effluent drainage ditch, an excavated channel that runs parallel to the toe of the unit's northern dike. The effluent ditch conveys the pond discharge water to the main plant discharge channel to the east of the pond, and ultimately into the Ohio River.

Closure in place of Ash Pond 2 is expected to be completed by January 2025 based on the current construction schedule. Following completion of closure construction, Ash Pond 2 will no longer impound water and the hazard potential classification will be re-evaluated.

3.0 Safety Emergency Identification and Detection Procedures

In accordance with 40 CFR 257.73(a)(3)(i)(A), the EAP must define the events or circumstances involving the CCR unit that represent a safety emergency and describe the procedures that will be followed to detect a safety emergency in a timely manner.

The Construction Manager and the Contractor Site Superintendent conduct daily and weekly observations of the unit and are trained to detect a real or potential safety

emergency. In addition to the daily and weekly observations, TVA performs regularly-scheduled inspections of the unit described above per TVA's CCR Structural Stability Program. If the incident is discovered by plant personnel after hours of normal operations, the Plant Shift Operations Supervisor (Plant SOS) will coordinate directly with the Construction Manager. Upon detection of a condition that could result in a real or potential safety emergency, the Construction Manager is responsible for the immediate evaluation and classification of the condition into one of the following three classifications.

1. Potential Threat (Condition Yellow) – The potential for failure exists due to significant slope movement or stack subsidence without CCR material exposure or release. CCR material is contained within the unit, but the conditions are currently unstable. The Construction Manager will work with the Responsible Manager to further evaluate and determine the appropriate repairs and whether deployment of contingent containment measures or additional notifications is necessary. This condition **IS NOT** considered a safety emergency and will not require activation of this EAP.
2. On-Site Uncontained Condition (Condition Orange) - CCR material has been released from the CCR unit but can be contained on-site. Immediate remedial action is required to prevent further migration of CCR material. The Construction Manager and the Plant SOS will make the required TVA and appropriate external notifications identified in Section 4.2. The local responders will be notified of the condition, but no action will be required from the external agencies. This condition **IS NOT** considered a safety emergency and will not require activation of this EAP.
3. Off-Site Uncontained Condition (Condition Red) – A significant impoundment or slope failure occurs which has the potential to result, or has resulted, in the off-site migration of CCR material. The Construction Manager and the Plant SOS will

make the required TVA and appropriate external notifications identified in Section 4.2. This condition **IS** considered a safety emergency and requires activation of this EAP.

4.0 Roles and Responsibilities and Notification Procedures

According to § 257.73(a)(3)(i)(B), the EAP must define responsible persons, their respective responsibilities, and the notification procedures in the event of a safety emergency involving the CCR unit.

4.1 Responsible Persons and Their Responsibilities

The following section describes the responsible persons and their respective roles and responsibilities under the EAP.

- Plant Shift Operations Supervisor (Plant SOS) – Responsible for notifying the TVA corporate emergency response operations staff and external agencies as required by the Site Emergency Response Procedures (SERP) and as identified in Section 4.2 and Appendix 2. Coordinates with Construction Manager.
- Construction Manager – Responsible for on-site response including initial assessment, notifications as identified in Appendix 2, and Contractor oversight. Serves as the primary interface with the Plant SOS.
- Responsible Manager – Responsible for conducting field evaluations to verify containment, assess stability, and the potential for continued or future CCR discharges. Coordination of the engineering response to an incident and assisting the Construction Manager in notifications and emergency response resources.

- Contractor Site Superintendent – Responsible for on-site response and containment of a CCR material release.

4.2 Notification Procedures

In the event of a real or potential safety emergency condition being identified, the notification flow chart provided in Appendix 2 will be followed. Communication and coordination with outside agencies will be through the Plant SOS. The Plant SOS has plant specific site emergency response procedures for each of these notifications. Access to the unit, staging areas, and communications will be arranged and coordinated through this interface. Specific tasks that the Plant SOS will perform with coordination from the Construction Manager in the event of a safety emergency include:

- Activate internal alarms and hazard communication system to notify plant personnel.
- Notify required response personnel.
- Identify the character, source, amount, and extent of the release, as well as any other items needed for notification.
- Notify and provide necessary information to the appropriate Federal, State, and local authorities in accordance with TVA site specific emergency procedure SHF-EP-35.001.
- Assess the possible hazards to human health and the environment due to the release.
- Assess and implement prompt removal actions to contain the CCR material.

- Coordinate rescue and response actions previously arranged with all response personnel.
- Coordinate activities for setting up the incident command, if needed.

5.0 Contact Information of Emergency Responders

In accordance with § 257.73(a)(3)(i)(C), the EAP must provide the contact information of emergency responders.

The contact information for emergency responders is provided below:

- Plant SOS – (270) 575-8205/8206
- McCracken County EMA – (270) 816-1720

6.0 Meetings/Exercises

Per Rule § 257.73(a)(3)(i)(E), the EAP must include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

Annual face-to-face meetings shall be conducted between representatives of TVA responsible for safety emergency response for the unit and the local emergency responders.

Records of such meetings or exercises will be incorporated into the operating record as described in Section 7.0.

7.0 Records

TVA will comply with all recordkeeping and notification requirements specified in 40 CFR 257.105, 257.106, and 257.107. The following records are maintained in an electronic auditable database for the unit's operating record and made publicly available through the "CCR Rule Compliance Data and Information" website:

- EAP and any revisions to the EAP.
- Documentation recording the annual face-to-face meeting or exercise between representatives of the owner/operator of the CCR unit and local emergency responders.
- Any activations of the EAP.

Notification of additions to the operating record must be sent to the Kentucky Division of Waste Management within 30 days of being placed in the operating record.

8.0 Amendments/Modification

Per Rule § 257.73(a)(3)(ii), the owner or operator of a CCR unit may amend the written EAP at any time and must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect. The revised EAP must be placed in the facility's operating record as required by § 257.105(f)(6). The written EAP must be evaluated at a minimum every five years to ensure the information required in § 257.73(a)(3)(i) is accurate. Additionally, pursuant to § 257.73(a)(3)(iii), if the owner or operator determines that the CCR until is no longer classified as either a high hazard or significant hazard potential CCR surface impoundment, then the owner or operator is no longer required to maintain a written EAP beginning on the date when the periodic hazard

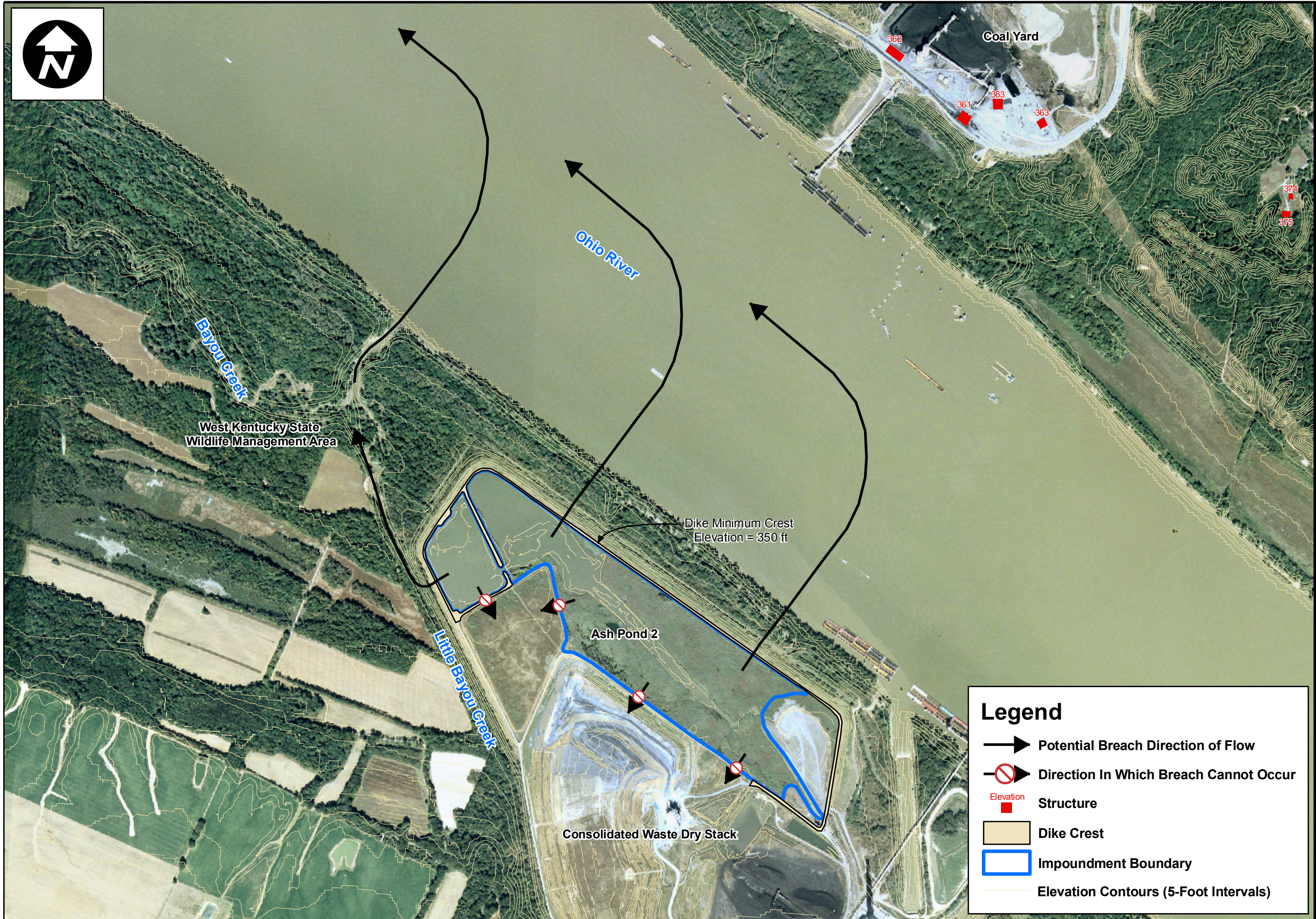
potential assessment documentation is placed in the facility's operating records as required by § 257.105(f)(5).

If it is concluded in a periodic hazard potential assessment that this unit is no longer classified as a significant or a high hazard potential CCR surface impoundment, then the unit is no longer subject to the EAP requirements.

This EAP must be evaluated every five years at a minimum but will be reviewed and evaluated annually as a matter of TVA policy. Additionally, the EAP will be amended in the event of a change of conditions that would substantially affect the EAP. As necessary, the EAP will be updated, and the revised EAP will be placed in the facility's operating record as required by 40 CFR 257.105(f)(6). Amendments and modifications to the EAP will be recorded as described in Section 7.0.

APPENDIX 1

POTENTIAL BREACH MAP



Legend

- Potential Breach Direction of Flow
- Direction In Which Breach Cannot Occur
- Elevation Structure
- Dike Crest
- Impoundment Boundary
- Elevation Contours (5-Foot Intervals)

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Ash Pond Breach Scenarios
TVA Hazard Classification
Shawnee Fossil Plant
Tennessee Valley Authority
McCracken County, Kentucky

PROJECT NO.	175630008
DATE	September 1, 2011
DRAWN BY	DEH
CHECKED BY	X
CHECKED BY	X
SCALE	1" = 1000'
REVISED	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

SHEET

Figure 2.2

APPENDIX 2

NOTIFICATION FLOW CHART

CCP Emergency Action Plan Flow Chart

