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## MEMORANDUM

17 April 2020  
File No. 129342-031

SUBJECT: Written Closure Plan – Version #2  
Associated Electric Cooperative, Inc.  
New Madrid Power Plant – Pond 004  
New Madrid, MO

Associated Electric Cooperative, Inc. (AECI) operates the existing coal combustion residuals (CCR) surface impoundment referred to as Pond 004 (Unit) at the New Madrid Power Plant (NMPP) located in New Madrid, Missouri. This CCR surface impoundment is currently active but has ceased directly receiving CCR and non-CCR waste streams generated by the NMPP; however, CCR material is currently being removed for the purpose of beneficial use. This Written Closure Plan (Plan) addresses the requirements of §257.102 *Criteria for conducting the closure or retrofit of CCR units*, specifically section §257.102(b) for written closure plans, of the US Environmental Protection Agency's (EPA's) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257 (CCR Rule) effective 19 October 2015, including subsequent revisions. The information required for the Plan for Pond 004 is presented in the following sections in accordance with §257.102(b) of the CCR Rule.

This Plan has been developed based upon information provided by AECI and describes the Unit, closure elements, a general schedule for closure, and steps required to amend the Plan in the future if necessary. AECI has determined the impoundment will be closed through closure by removal of CCR in accordance with the allowable closure methods in the CCR Rule.

*§257.102(b)(1): The owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The written closure plan must include, at a minimum, the information specified in paragraphs (b)(1)(i) through (vi) of this section.*

At any point during the active life of the impoundment closure may be necessary. Regardless of when the impoundment is closed the following steps will be necessary for closure of the Unit:

### Closure by Removal

1. Finalize detailed construction plans for closure.
2. No later than the date closure is initiated, prepare a notification of intent to close a CCR unit and place notification in the facility operating record.
3. Obtain regulatory permits, as determined necessary at that time.

4. Cease placing CCR in the Unit/ removing the known final volume of CCR from the CCR unit for the purpose of beneficial use.
5. Commence closure no later than 30-days after known final receipt/ removal of CCR.
6. Complete removal of CCR within 5-years of commencing closure activities unless allowable extensions are determined appropriate and certified.
7. Complete evaluation of groundwater concentrations in support of closure.
8. Obtain PE certification verifying closure has been completed in accordance with this Closure Plan.
9. Within 30-days of completion of closure of the Unit, prepare a notification of closure of a CCR unit and place notification in the facility operating record. The notification of closure must include the PE certification from step 7.

§257.102(b)(1)(i): *A narrative description of how the CCR unit will be closed in accordance with this section.*

After final receipt of CCR (or final removal of CCR for beneficial use) and any necessary unwatering is completed, the remaining CCR materials will be removed from Pond 004 and areas that have been affected by releases from the CCR unit will be decontaminated. Once CCR have been removed, some portion of the subgrade soils may be removed as determined necessary. The footprint of the impoundment may be repurposed for other use. Finally, groundwater monitoring concentrations will be evaluated to determine if the established groundwater protection standards are met pursuant to §257.95(h).

§257.102(b)(1)(ii): *If closure of the unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with paragraph (c) of this section.*

§257.102(c): *An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and the groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to §257.95(h) for constituents listed in appendix IV to this part.*

Removal of CCR materials will be completed by excavation and use of the CCR either as beneficial use or disposal in a landfill. Once the CCR unit completes removal of CCR materials, groundwater concentrations will be evaluated by comparing to the determined Groundwater Protection Standards and either the CCR unit will meet those standards and be certified as closed. In the event that the statistically significant increases above the Groundwater Protection Standards exist, the groundwater program would be managed in accordance with the requirements of the CCR Rule to meet the protection standards.

*§257.102(b)(1)(iii): If closure of the unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with paragraph (d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.*

The Unit is planned to be closed by removal; however, AECl reserves the right to amend this Plan to account for design changes if any or all CCR requires closure-in-place.

*§257.102(b)(1)(iv): An estimate of the maximum inventory ever on-site over the active life of the CCR unit.*

The approximated maximum volume of CCR expected to be stored in the Unit over the active life is approximately 125 acre-feet, if the impoundment is filled to its design total capacity, per the Annual Inspection report.

*§257.102(b)(1)(v): Estimate of the largest area of the CCR unit ever requiring a final cover as required by paragraph (d) of this section at any time during the CCR unit's active life.*

The Unit is planned to be closed by removal; however, AECl reserves the right to amend this Plan to account for design changes if any or all CCR requires closure-in-place.

*§257.102(b)(1)(vi): A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in paragraph (f) (1) of this section, the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under paragraph (f)(2) of this section.*

An estimated schedule for completing the activities necessary to satisfy the closure by removal criteria of the CCR Rule is provided below (maximum allowable time is shown for reference). The schedule lists the sequential steps that need to be taken to close the Unit.

AECl anticipates initiating closure of Pond 004 in 2020; all closure activities for the Unit are therefore anticipated to be completed in 2020, but AECl reserves the right to extend the closure through 2025.

**AECI – NMPP Pond 004  
Closure by Removal Schedule**

| Item # | Task Item   | Completion Timeframe                                     |    |    |    |    |    |    |    |  |   |   |   |   |   |   |   |
|--------|---|--|----|----|----|----|----|----|----|--|---|---|---|---|---|---|---|
|        |   | Design and Permitting (months)                           |    |    |    |    |    |    |    |  |   |   |   |   |   |   |   |
|        |   | -8   | -7 | -6 | -5 | -4 | -3 | -2 | -1 |  |   |   |   |   |   |   |   |
| 1      | Prepare Construction Plans  | █  | █  | █  | █  | █  | █  | █  |    |  |   |   |   |   |   |   |   |
| 2      | Notice of Intent to Close Impoundment                                 |  |    |    |    |    |    | █  |    |  |   |   |   |   |   |   |   |
| 3      | Obtain Regulatory Permits   |  |    | █  | █  | █  | █  | █  |    |  |   |   |   |   |   |   |   |
| 4      | Cease placing CCR in/Removing CCR for Beneficial Use from impoundment |  |    |    |    |    | █  | █  | █  |  |   |   |   |   |   |   |   |
|        |   | Closure (years)  |    |    |    |    |    |    |    |  |   |   |   |   |   |   |   |
|        |   |  |    |    |    |    |    |    |    |  |   | 1 | 2 | 3 | 4 | 5 | 6 |
| 5      | Commence Closure  |  |    |    |    |    |    |    |    |  | █ |   |   |   |   |   |   |
| 6      | CCR Removal   |  |    |    |    |    |    |    |    |  |   | █ | █ | █ | █ | █ |   |
| 7      | Groundwater Protection Standards                                      | Timeframe TBD – Dependent on Data Evaluation and Results |    |    |    |    |    |    |    |  |   |   |   |   |   |   |   |
| 8      | PE Closure Certification  |  |    |    |    |    |    |    |    |  |   |   |   |   |   | █ |   |
| 9      | Notification of Closure   |  |    |    |    |    |    |    |    |  |   |   |   |   |   |   | █ |

AECI will need to initiate some activities prior to commencing closure. As indicated on the schedule, AECI will need to take action on Steps 1-4 as early as 8 months prior to the anticipated final receipt or removal for beneficial use of CCR at the impoundment. The schedule as shown above should be considered a preferred timing path and that the order and ability to perform the upfront work prior to AECI ceasing placing CCR in the CCR unit (or removing CCR for beneficial use from the CCR unit) is subject to circumstances at the time of closure and will be altered accordingly.

Per §257.102(e)(3), closure of the impoundment has commenced when AECI has ceased placing CCR in the CCR unit and completes any of the following actions or activities: (i) Taken any steps necessary to implement the written closure plan; (ii) Submitted a completed application for any required state or agency permit or permit modification; (iii) Taken any steps necessary to comply with state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of the CCR unit.

Closure activities for the CCR impoundment will occur in accordance with the allowable timeframes when either the impoundment ceases receiving CCRs, reaches capacity, or is triggered for closure. AECI will complete closure in the allowable timeframes including any closure time extensions in accordance with §257.102(f).

*§257.102(b)(3)(i): The owner or operator may amend the initial or any subsequent written closure plan developed pursuant to paragraph (b)(1) of this section at any time.*

AECI will assess the Plan and amend the Plan whenever there is a change in operation of the CCR unit that would substantially affect the Closure Plan or when unanticipated events necessitate a revision of the Plan either before or after closure activities have commenced.

The Plan will be amended at least 60 days prior to a planned change in the operation of the facility or the CCR impoundment, or no later than 60 days after an unanticipated event requires the need to revise the Plan. If the Plan needs to be revised after closure activities have commenced, the Plan will be revised no later than 30 days following the triggering event.


The amended Closure Plan will be placed in the facility operating record as required by the CCR Rule.

A record of amendments to the Plan will be tracked below. The latest version of the Closure Plan will be noted on the front cover of the Plan.

| <b>Version</b> | <b>Date</b>     | <b>Description of Changes Made</b>  |
|----------------|-----------------|-------------------------------------|
| 1              | 16 October 2016 | Initial Issuance                    |
| 2              | 17 April 2020   | Revised Closure Method and Schedule |
|                |                 |                                     |
|                |                 |                                     |
|                |                 |                                     |
|                |                 |                                     |

§257.102(b)(4): *The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the initial and any amendment of the written closure plan meets the requirements of this section.*

I certify that this amendment of the written closure plan meets the requirements of §257.102(b).

Signed:   
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Certifying Engineer

Print Name: Steven F. Putrich  
Missouri License No.: 2014035813  
Title: Project Principal  
Company: Haley & Aldrich, Inc.

Professional Engineer's Seal:



Cc: Jenny Jones-AECI; Jason Pokorny-Haley & Aldrich