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Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402

Reference: Closure Plan
East Ash Disposal Area
EPA Final CCR Rule (40 CFR §257.102)
TVA Allen Fossil Plant
Memphis, Tennessee

1.0 PURPOSE

This letter documents Stantec's certification of the EPA Final CCR Rule revised closure plan for the TVA Allen Fossil Plant's East Ash Disposal Area.

2.0 CLOSURE PLAN

The closure plan describes the steps necessary to close the CCR unit at any time during the life of the unit and is subject to the requirements described in 40 CFR 257.102(b). The EPA Final CCR Rule closure plan is conceptual and subject to the completion of all necessary environmental reviews. It is therefore subject to change at any time. The attached closure plan demonstrates compliance with the requirements set forth in 40 CFR 257.102(b).

3.0 QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION

I, Stephen H. Bickel, being a Professional Engineer in good standing in the State of Tennessee, 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 closure plan for the TVA Allen Fossil Plant's East Ash Disposal Area meets the requirements described in 40 CFR 257.102(b).

SIGNATURE Stephen H. Bickel

DATE 23 APRIL, 2019

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ATTACHMENT: Closure Plan





Closure Plan

Allen Fossil Plant
East Ash Disposal Area
Memphis, Tennessee

April 23, 2019

Revision 1

Prepared for:

Tennessee Valley Authority
Chattanooga, Tennessee

Prepared by:

Stantec Consulting Services Inc.
Louisville, Kentucky



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CLOSURE PLAN

Introduction
April 23, 2019

1.0 INTRODUCTION

This Coal Combustion Residuals (CCR) Rule closure plan is conceptual and is subject to the completion of all necessary environmental reviews. It describes the CCR closure activities at the TVA Allen Fossil Plant to ensure that the East Ash Disposal Area will be closed and maintained in accordance with the CCR closure requirements of 40 CFR § 257.102. TVA has determined that the East Ash Disposal Area is a CCR surface impoundment and therefore subject to the EPA Final CCR Rule.

The closure of the East Ash Disposal Area is subject to the completion of all necessary environmental reviews. TVA is currently reviewing the closure of the East Ash Disposal Area and intends to prepare an Environmental Impact Statement (EIS) that will address the alternatives of closure by removal of the East Ash Disposal Area to an offsite landfill and/or to a beneficial re-use facility in accordance with applicable state and federal laws. As reflected in this closure plan, and subject to the completion of the EIS, the method of closure for the East Ash Disposal Area is intended to be in accordance with 40 CFR § 257.102(c). Consequently, the East Ash Disposal Area is not subject to any post-closure care requirements as provided in 40 CFR § 257.104(a)(2)



CLOSURE PLAN

Written Closure Plan
April 23, 2019

2.0 WRITTEN CLOSURE PLAN

40 CFR § 257.102(b). *Written Closure Plan – (1) Content of the Plan. 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.*

- (i) *A narrative description of how the CCR unit will be closed in accordance with this section.*
- (ii) *If closure of the CCR unit will be accomplished through the 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.*
- (iii) *If closure of the CCR 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.*
- (iv) *An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.*
- (v) *An 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.*
- (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 and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phase 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 extensions sought under paragraph (f)(2) of this section.*



CLOSURE PLAN

Written Closure Plan
April 23, 2019

2.1 CLOSURE ACTIVITIES

Based on conceptual plans, and subject to the completion of all necessary environmental reviews, TVA intends to close the East Ash Disposal Area by removal of CCR following the requirements of 40 CFR § 257.102(c). It will undergo pond drawdown, CCR dewatering, and waste stabilization. The CCR will be excavated and removed, potentially affected underlying materials will be addressed, the remaining surface following CCR removal will be graded to promote positive drainage (with borrow fill as needed), and permanent vegetation or permanent stabilization will be established.

CCR will either be transported to a beneficial re-use facility, and/or transported and disposed of at an existing off-site permitted landfill. Details of the CCR disposal options will be completed during detailed closure design, which will begin in spring 2019, and is subject to the completion of all necessary environmental reviews.

The details of the pond drawdown, CCR dewatering, construction sequencing and management of stormwater during construction will be determined during the NEPA process and closure design.

2.2 CLOSURE BY REMOVAL

40 CFR § 257.102(c). Closure by removal of CCR. 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 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.

Closure by removal will be performed at the East Ash Disposal Area in line with the aforementioned CCR closure by removal standards.

2.3 MAXIMUM CCR INVENTORY

Based on available records, it is assumed that the maximum inventory of material on-site is consistent with the current volumes, which are estimated to be 3,000,000 cubic yards. This estimate is based on topographical drawings and existing subsurface exploration data.

2.4 LARGEST AREA REQUIRING FINAL COVER

Because the East Ash Disposal Area will be closed by removal of CCR, no final cover is required.



CLOSURE PLAN

Written Closure Plan
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2.5 SCHEDULE OF CLOSURE ACTIVITIES

The following closure schedule for completing the activities stipulated by 40 CFR §257.102 is based on the time required to dewater and remove the CCR and the time required for coordination and concurrence on the closure plan with state regulatory agencies. The completion timeframes are subject to change based on regulatory permitting approvals, EPA Final CCR Rule standards, marketing, and other factors. Table 1 provides the estimated schedule of closure activities.

Table 1. Estimated Schedule of Closure Activities

	Closure Activity	Timeframe for Completion
1.	Commence closure design	2019
2.	Coordinating with and obtaining necessary approvals and permits from regulatory agencies.	2020
3.	Pond Drawdown, CCR Dewatering, and CCR stabilization	2020
4.	Removal of CCR	2028
5.	Regrade remaining surface	2028
6.	Completion of closure	2028

2.6 ESTIMATED YEAR OF CLOSURE COMPLETION

The estimated year for completion of closure activities is 2028 based on the time required to dewater and remove the CCR and the time required for coordination and concurrence on the closure plan with state regulatory agencies. The estimated year of closure is subject to change based on regulatory permitting approvals, EPA Final CCR Rule standards, marketing, and any other factors.

2.7 REQUEST FOR TIME EXTENSION

The EPA Final CCR Rule allows five years to complete the closure of a surface impoundment upon commencing closure activities. However, extensions of the closure timeframe are allowed by the rule. The current closure schedule for the East Ash Disposal Area assumes that closure completion will take approximately nine years based on the time required to dewater and remove the CCR and the time required for coordination and concurrence on the closure plan with state regulatory agencies. Because of this, closure timeframe extensions will be requested following the requirements of 40 CFR §257.102(f)(2)(iii).



CLOSURE PLAN

Post-Closure Care Requirements
April 23, 2019

3.0 POST-CLOSURE CARE REQUIREMENTS

40 CFR 257.104(a)(2). An owner or operator of a CCR unit that elects to close a CCR unit by removing CCR as provided by 40 CFR 257.102(c) is not subject to the post-closure care criteria under this section.

Because the East Ash Disposal Area will be closed by removing CCR, there is no requirement for post-closure care per 257.104(a)(2). Other requirements per the rule will be followed following closure, if applicable.

