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Morrisville
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19 July, 2019

Tennessee Valley Authority
1101 Market Street
Chattanooga
Tennessee, 37402-2801

Subject: Closure Plan Certification – 40 CFR § 257.102(b)(4)
Gallatin Fossil Plant – Ash Pond Complex
Sumner County, Tennessee

1. Purpose

This letter documents AECOM's certification of the revised Closure Plan for the Tennessee Valley Authority's (TVA) Gallatin Fossil Plant (GAF) coal combustion residuals (CCR) surface impoundments in general accordance with the United States Environmental Protection Agency's (USEPA) Disposal of Coal Combustion Residuals from Electric Utilities Rule (CCR Rule). The CCR surface impoundments at GAF consist of the Ash Pond Complex (APC) which is comprised of Ash Pond A, Ash Pond E, Middle Pond A, and the Bottom Ash Pond.

2. Closure Plan

This Closure Plan describes the steps necessary to close the APC at any time during the life of the APC and is subject to the requirements set forth in 40 CFR § 257.102(b). This Closure Plan is conceptual and is subject to the completion of all necessary environmental reviews.

3. Qualified Professional Engineer Certification

Pursuant to 40 CFR § 257.102(b)(4), a written certification is provided below.

I, Gabriel W. Lang, 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 Gallatin Fossil Plant's Ash Pond Complex meets the requirements described in 40 CFR 257.102(b).

SIGNATURE: _____ **DATE:** 07/19/19

Gabriel W. Lang, PE

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ATTACHMENTS Closure Plan
Tennessee Valley Authority
Gallatin Fossil Plant – Ash Pond Complex
Sumner County, Tennessee

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Closure Plan

Tennessee Valley Authority
Gallatin Fossil Plant – Ash Pond Complex
Sumner County, Tennessee

Revision 1
July 19, 2019

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Revision or Change Number	Date Placed into Operating Record	Affected Page Numbers	Description of Revision/Change
0	10/12/16	All	Initial Plan
1	7/19/19	All	Updated Plan reflecting closure-by-removal

Table of Contents

1. Introduction

The United States Environmental Protection Agency's (USEPA) Disposal of Coal Combustion Residuals from Electric Utilities Rule (CCR Rule) sets forth criteria for conducting the closure of CCR surface impoundments in 40 CFR § 257.102, including the requirement for a written Closure Plan outlined in 40 CFR § 257.102(b).

AECOM has prepared this Closure Plan, consistent with 40 CFR § 257.102(b), for the CCR surface impoundments at the Tennessee Valley Authority's (TVA) Gallatin Fossil Plant (GAF), located near Gallatin, Tennessee. The CCR surface impoundments at GAF consist of the Ash Pond Complex (APC) which is comprised of Ash Pond A, Ash Pond E, Middle Pond A, and the Bottom Ash Pond. This Closure Plan is conceptual and is subject to the completion of all necessary environmental reviews. It describes the CCR closure activities at the GAF to ensure that the APC will be closed and maintained in accordance with the CCR closure requirements of 40 CFR § 257.102.

TVA is currently reviewing the closure of the APC and will prepare an Environmental Impact Statement (EIS) that will address the alternatives of closure-by-removal of the APC to an on-site landfill and/or to a beneficial re-use facility with the potential for some unusable CCR to be disposed of in an on-site or off-site landfill 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 proposed for the APC is closure-by-removal pursuant to 40 CFR § 257.102(c). Therefore, the APC is not subject to the post-closure care requirements consistent with 40 CFR § 257.104(a)(2)

This Closure Plan may be amended consistent with 40 CFR § 257.102(b)(3).

2. 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 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 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.*

2.1 Narrative Description – § 257.102(b)(i)

Based on conceptual plans, and subject to the completion of all necessary environmental reviews, TVA intends to close the APC by following a closure-by-removal approach pursuant to 40 CFR § 257.102(c). Closure activities are anticipated to include pond drawdown, CCR dewatering, and CCR excavation and removal. CCR will either be transported to a beneficial re-use facility with the potential for some unusable CCR to be disposed of in an on-site or off-site landfill, and/or transported and disposed of in an on-site permitted landfill. Details of the CCR disposal options will be completed during detailed closure design, which will begin in 2019, and is subject to the completion of all necessary environmental reviews.

Consistent with the requirements of 40 CFR § 257.102(c), potentially impacted underlying material will be addressed. Post-excavation surfaces will be graded to promote positive drainage, and permanent vegetation or permanent stabilization will be established. Where needed, the APC perimeter berms may be excavated to allow the adjacent Cumberland River and/or Stilling Ponds to combine with the existing ponds.

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

2.2 Closure Approach – § 257.102(b)(ii) & § 257.102(b)(iii)

As described in Section 2.1, TVA has elected to close the APC following a closure-by-removal approach. The closure will be conducted in general accordance with 40 CFR § 257.102(c), which is provided below:

> **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-in-place has not been selected. Therefore, the requirements of 40 CFR § 257.102(b)(iii) do not apply.

2.3 Maximum CCR Inventory – § 257.102(b)(iv)

The estimated maximum inventory of CCR ever on-site over the active life of the APC is estimated to be approximately 11.4 million cubic yards (CY). Site boring records, historical topography, and aerial imagery were compiled to estimate the approximate bottom of CCR for the APC. Calculations for the maximum inventory of CCR represent the volume between the estimated bottom of CCR and current aerial survey topography. **Table 1** presents a summary of the estimated volumes.

Table 1. Summary of APC Volumes

CCR Surface Impoundment	Approximate Volume (CY)
Ash Pond A	5,260,000
Ash Pond E	4,638,000
Middle Pond A	1,128,000
Bottom Ash Pond	414,000
TOTAL:	**11,440,000**

2.4 Largest Area Requiring Final Cover – § 257.102(b)(v)

As described in Section 2.2, the APC will be closed following a closure-by-removal approach consistent with 40 CFR § 257.102(c). Therefore, no final cover is required.

2.5 Schedule of Closure Activities – § 257.102(b)(vi)

2.5.1 Schedule

Table 2 provides the preliminary estimated schedule of activities necessary for completing closure of the APC in general accordance with 40 CFR § 257.102. The estimated schedule is subject to change pending regulatory agency approval and other factors.

Table 2. Estimated Schedule of Closure Activities

Activity	Completion Timeframe
Initiation of closure design	2019
Coordination with regulatory agencies and permit approval: - Removal Plan; - Monitoring Plan; - Corrective Action/Risk Assessment Plan; and - New Landfill Solid Waste Permit	2020
New Landfill Construction	2020-2022
Pond drawdown and CCR dewatering	2021
CCR excavation	2023-2038
Finishing of post-excavation surfaces	2040
Closure completion	2040

2.5.2 Estimated Year of Closure Completion

As shown in **Table 2**, the estimated year of closure completion is 2040. The estimated year of completion is subject to change pending regulatory agency approval and other factors.

2.5.3 Request for Time Extension.

The 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 CCR rule. TVA expects to seek extensions due to the anticipated time required to dewater and remove the approximately 11.4 million CY of CCR from the four surface impoundments that comprise the APC and the time required for coordination and concurrence on the Closure Plan and new landfill with State regulatory agencies. Should the closure activities extend beyond the extensions allowed under the rule, TVA will take appropriate action for compliance with rule requirements.

3. Post-Closure Care Requirements

Post-closure care is not required if closure-by-removal is elected per 40 CFR § 257.104(a)(2), which is provided below:

> **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 § 257.102(c) is not subject to the post-closure care criteria under this section.*

As described in Section 2.2, the APC will be closed following a closure-by-removal approach consistent with 40 CFR § 257.102(c). Therefore, the post-closure care requirements set forth in 40 CFR § 257.104 do not apply.

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