

Coal Combustion Residuals (CCR) Surface Impoundments

CLOSURE AND POST-CLOSURE PLAN

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION
R.D. Morrow, Sr. Generating Station
Purvis, Lamar County, Mississippi
(601) 235-2700

Prepared by:



104 Avalon Court, F
Brandon, MS 39047
(601) 992-8233

7350 Highway 98
Hattiesburg, Mississippi
(601) 544-3674

Revision Record

Original Plan: October 12, 2016

Table of Contents

1.0	Introduction.....	3
2.0	Existing Site Conditions	4
3.0	Closure Plan	5
3.1	Selected Closure Method	5
3.2	Maximum Inventory of CCR Onsite.....	5
3.3	Final Cover System	6
4.0	Closure Schedule	7
5.0	Notifications.....	8
6.0	Post-Closure Plan.....	9
7.0	Qualified Professional Engineer’s Certification	10

Figure 1 – Site Location Map

Figure 2 – CCR Surface Impoundments Plan – Sections

1.0 Introduction

The South Mississippi Electric Power Association (SMEPA) R.D. Morrow, Sr. Generating Station has determined that it operates two existing unlined coal combustion residual (CCR) surface impoundments as defined in 40 CFR 257.53 and 40 CFR 257.71. The two CCR impoundments include the Emergency Scrubber Surge Pond and the Scrubber Supply Pond. At such time as SMEPA may decide to close the impoundments, SMEPA will complete closure by removing all CCR from the impoundments.

Environmental Management Services, Inc. (EMS) prepared this Closure/Post-Closure Plan to provide technical information in support of SMEPA's compliance with the federal CCR rule. Specifically, this report has been prepared to comply with 40 CFR 257, Section 101, 102, 103, and 104 as they relate to existing active CCR Surface Impoundments.

2.0 Existing Site Conditions

The Emergency Scrubber Surge Pond and the Scrubber Supply Pond were designed and constructed in the 1970's with design and construction procedures typical at that time, using primarily native underlying clay soils. As-built construction documents are not available to document that the existing soils meet the requirements set forth in §257.71. Therefore, the existing CCR surface impoundments are being classified as existing, unlined CCR surface impoundments pursuant to §257.71(a)(3)(i). A plant location map is presented as **Figure 1**. Details of the current impoundment configurations are shown along with plan and profile details in **Figure 2**. The Emergency Scrubber Surge Pond occupies a footprint of approximately 0.5 acre, while the Scrubber Supply Pond occupies a footprint of approximately 1.4 acres.

The subject surface impoundments are located just south of the main power block and are located such that discharges or overflows would be conveyed by overflow piping to the Coal Pile Runoff Collection Area immediately down gradient (to the south) from the subject surface impoundments. Discharge or overflow from the Coal Pile Runoff Collection Area is conveyed via culvert to Pond 4A which is separated from the Coal Pile Runoff Collection Area by a large railroad spur embankment. The railroad spur is owned by SMEPA and serves to allow storage/routing of rail cars used to deliver coal to the facility. Downstream of Pond 4A is Old Okahola Road which is a county-maintained paved public road. Excess water from Pond 4A is routed via culvert underneath Old Okahola Road to the Blowdown Pond, from where it is eventually discharged under the provisions of a NPDES permit.

CCR materials accumulate in the Emergency Scrubber Surge Pond and are periodically removed from the impoundment and placed in the onsite CCR landfill. The cleanout procedure involves draining the water from the impoundment and then excavating the CCR with track excavator, and loading in trucks for hauling the CCR to the landfill. Because this process is repeated periodically especially when the plant is not operating, large quantities of CCR are not typically allowed to accumulate in the Emergency Scrubber Surge Pond.

Because most of the CCR materials settle out in the Emergency Scrubber Surge Pond, and generally little CCR reaches the Scrubber Supply Pond, the Scrubber Supply Pond is not cleaned out on a regular basis.

3.0 Closure Plan

CCR units can be closed in one of two ways based on the closure criteria in 40 CFR 257.102. Clean closure involves removal of CCR solids and decontamination of the CCR unit by eliminating constituent concentrations in the impoundment and the groundwater. In the second closure alternative the CCR unit can be closed with CCR material in place, which requires drainage and stabilization of wastes in surface impoundments and installation of final cover over CCR material to minimize erosion and infiltration. The federal minimum standards for cover include a permeability less than or equal to that of the bottom liner or 1×10^{-5} cm/sec, whichever is less, and could require a synthetic liner if native soils are not suitable to meet the permeability requirement. In this alternative, the rule also requires an 18-inch thick infiltration layer above the liner and 6 inches of topsoil to establish a grassy vegetative cover.

3.1 Selected Closure Method

At such time as SMEPA decides to close the surface impoundments, SMEPA intends to remove all CCR from the impoundments and decontaminate all areas that may have been affected by releases from the impoundments. The closure process will involve draining the ponds and allowing the remaining CCR to dewater by a combination of exposure to sun and wind, along with the gravitational effects of the sloping land surface at the impoundments. Once the CCR has dewatered sufficiently for hauling, the CCR will be loaded with a track excavator into trucks and hauled to the onsite CCR landfill for disposal. This process has been used routinely to clean out the impoundments.

Once all CCR has been removed the impoundments will be filled with native soil placed in maximum 12-inch loose lifts and compacted to at least 90 percent of maximum dry density as determined from Standard Proctor compaction tests. Existing soils comprising the impoundment berms may be used for fill soil in addition to other suitable native soil excavated from an onsite or off-site borrow area.

3.2 Maximum Inventory of CCR Onsite

The Emergency Scrubber Surge Pond has a footprint of slightly less than 0.5 acre, and a maximum operating depth of about 7 feet (see profiles on Figure 2). If we conservatively assume that the entire depth were to be full of CCR at the time that closure begins, the maximum potential inventory of CCR onsite in the Emergency Scrubber Surge Pond is calculated to be 5,650 cubic yards.

The Scrubber Supply Pond has a footprint of slightly less than 1.4 acres. If we conservatively assume that the a 5 foot thick deposit of CCR (out of a 9 foot total working depth) were in the bottom of the pond at the time that closure begins, the maximum potential inventory of CCR onsite in the Scrubber Supply Pond is calculated to be 11,300 cubic yards.

3.3 Final Cover System

Given that the intended closure method includes removing all CCR and performing closure by removal of all CCR, an engineered final cover system is not required, as specified under the 40 CFR 257.102(c). The cleaned impoundments will be filled with compacted soil and graded to match the approximate surrounding grade and shed storm water.

In the event that closure of the unlined CCR impoundments is triggered by the groundwater monitoring data indicating an exceedance of the groundwater protection standards in 40 CFR 257.95(h), the owner must cease placing CCR in the units within 6 months and must either retrofit or close the CCR unit in accordance with 40 CFR 257.102, including the final cover system criteria specified in 40 CFR 257.202(d)(3). In such a case, this closure plan will be modified accordingly before the closure, or a retrofit plan will be prepared, if applicable.

4.0 Closure Schedule

When SMEPA decides to close either or both of its existing CCR impoundments, it will prepare a notice of intent to close a CCR unit. This notice will be placed in the operating record in accordance with 40 CFR 257.102(g).

CCR Impoundments Closure Schedule

<u>Activity</u>	<u>Day</u>
Stop placing CCR flows into the impoundments	0
Drain impoundments by decanting water from above the settled CCR	0-30
Stabilization of CCR – (Not Applicable)	N/A
Excavate and haul CCR to onsite CCR landfill	31-60
Grade existing subsoil to a fairly uniform surface	61-62
Survey bottom grade to document empty configuration	63-64
Fill and compact soil in lifts	65-100
Survey final grade and boundaries; survey report	101-110
Prepare closure certification report	101-130

Based on the project schedule, the completion of closure for the two CCR impoundments is technically feasible within the timeframes shown above using existing equipment and resources available to SMEPA. This closure schedule complies with and is achievable under the requirements of 40 CFR 257.102 and 103.

5.0 Notifications

CCR rule recordkeeping, notification, and internet posting requirements are codified in 40 CFR 257.105. SMEPA must prepare a notification of intent to close a CCR unit as required by 257.102(g). Within 30 days after completion of closure of a CCR unit, the owner must prepare a notification of closure of CCR unit certified by a qualified professional engineer in accordance with 40 CFR 257.102(h).

When all CCR is removed from an impoundment and it is closed in accordance with 40 CFR 257.102(c), then no notation on the deed of the property is required in accordance with 40 CFR 257.102(i).

6.0 Post-Closure Plan

Based on SMEPA's intent to close its CCR impoundments by removal of all CCR in accordance with 40 CFR 257.102(c), no post-closure care requirements are applicable to the closed impoundments.

7.0 Qualified Professional Engineer's Certification

This CCR Closure Plan for the CCR surface impoundments at the South Mississippi Electric Power Association, R.D. Morrow, Sr. Generating Station located in Purvis, Mississippi, was prepared by Environmental Management Services, Inc. (EMS) pursuant to the Scope of Services dated March 17, 2016, agreed to and authorized by SMEPA. This Statement of Professional Opinion is based on information available to EMS at the time the CCR Closure Plan was prepared and EMS's technical understanding of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 (CCR Rule) and associated public guidance and/or interpretation provided by the U.S. EPA and obtained by EMS as of the date of the CCR Closure and Post-Closure Plan.

On the basis of and subject to the foregoing it is my professional opinion as a Professional Engineer licensed in the State of Mississippi that the CCR Closure and Post-Closure Plan has been prepared in accordance with good and accepted engineering practices exercised by other engineers practicing in the same discipline(s) under similar circumstances and at the time and locale the CCR Closure and Post-Closure Plan was prepared, and with the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments", published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015. It is my professional opinion based on my understanding of the technical requirements of the CCR Rule and good and accepted engineering practices that the Closure and Post-Closure Plan meets the technical requirements and/or intent of the CCR Rule (40 CFR 257.100 through 104). This Statement of Professional Opinion is not and shall not be interpreted or construed as a guarantee, warranty or legal opinion.

Environmental Management Services, Inc.



Christopher T. Johnson, P.E., P.S.
Engineering Manager/Vice President



Seal

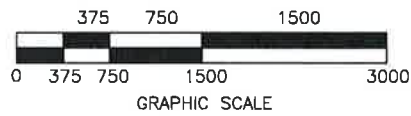
Date: 10/12/2016

Figures



LEGEND

- — — — — SMEPA PROPERTY BOUNDARY
- — — — — CAP BOUNDARY



REFERENCE: 7.5 MIN. SERIES TOPOGRAPHIC MAP
PURVIS, MISSISSIPPI

SITE LOCATION		
SOUTH MISSISSIPPI POWER ASSOCIATION		
R.D. MORROW SR. GENERATING PLANT PURVIS, MISSISSIPPI		
DATE: 10-10-2016	APPROVED: BY: _____ DATE: _____	DRAWN BY: KRK
SCALE: AS SHOWN		CAD NO. SOU2-16-002
		FIGURE 1

