Closure Plan for Water Recycle Ponds

Entergy Arkansas, Inc.
Independence Steam Electric Station
Newark, Independence County, Arkansas

October 2018

Prepared For
Entergy Arkansas, Inc.

10/24/18

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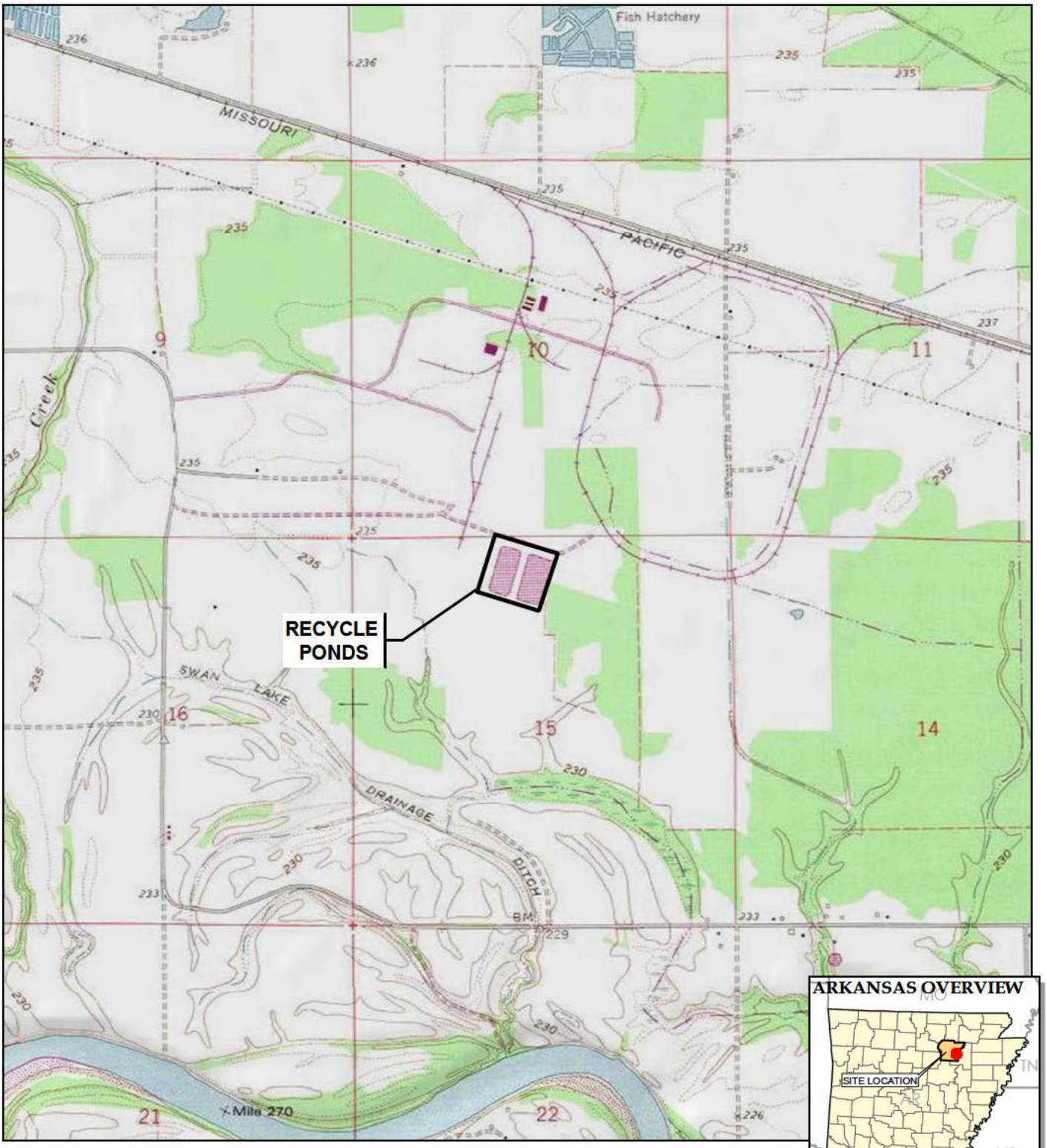
Section 1
Introduction

Entergy Arkansas, Inc. (Entergy) operates the Entergy Independence Steam Electric Station (Plant), located at 555 Point Ferry Road, Newark, AR 72562. This Plant operates two Water Recycle Ponds: East and West (Ponds), as part of its process water system for bottom ash transport. Pursuant to United States Environmental Protection Agency (USEPA) Disposal of Coal Combustion Residuals (CCR) From Electric Utilities Final Rule (CCR Rule) Section 40 Code of Federal Regulations (CFR) § 257.102, this Closure Plan (Plan) describes the steps to close the Ponds through removal of CCR per 40 CFR § 257.102(c). Section 40 CFR § 257.102(b) identifies the content of written closure plans, which must include for closure by removal of CCR the following information:

- A description of how the CCR unit will be closed;
- A description of procedures to remove the CCR and decontaminate the CCR unit;
- An estimate of the maximum inventory of CCR ever onsite over the active life of the CCR unit;
- An estimate of the largest area of the CCR unit ever requiring a final cover; and
- A general schedule for closure

1.1 Site Information

The Plant is located near Newark, Independence County, Arkansas (Figure 1). The Plant is located at approximate latitude 35°40'39" N, longitude 91°24'42" W (front gate). The area surrounding the Ponds is approximately 19 acres.



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000 FEET

TRC

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TRC - GIS

PROJECT:

ENTERGY INDEPENDENCE STEAM ELECTRIC STATION
RECYCLE PONDS
NEWARK, INDEPENDENCE COUNTY, ARKANSAS

TITLE:

SITE LOCATION MAP

DRAWN BY:	R. WIXON
CHECKED BY:	N. ADDISON
APPROVED BY:	J. HOUSE
DATE:	SEPTEMBER 2018
PROJ. NO.:	302969
FILE:	Fig01_302969-001slm.mxd

FIGURE 1

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Section 2
Closure Plan

2.1 Closure Description

The Ponds will be closed in accordance with 40 CFR § 257.102(c) through the removal of CCR such that no residual materials remain visible plus over-excavation of approximately 6-inches of subsoils. Certification of the closure will be provided by an Arkansas registered professional engineer.

Water flows to the Ponds will be discontinued. The Ponds will be dewatered of surface and pore water and closed through the removal of CCR materials. The procedure proposed to remove the CCR and decontaminate the CCR Unit as required by 257.102(c) will consist of excavation and removal by mechanical dredging and/or excavation. Consistent with the existing permit for the on-site solid waste landfill and previous sediment removal efforts, CCR sediments will be placed in the on-site CCR landfill.

The Ponds will be over-excavated by six inches (beyond visible CCR) to ensure removal of residual CCR material. The Ponds will be backfilled with clean on-site borrow source material to surrounding ground elevations. The final grade will be designed to promote positive drainage. Groundwater monitoring will be performed in accordance with 40 CFR § 257, Subpart D to demonstrate that the monitored groundwater concentrations will not exceed the groundwater protection standards for constituents listed in Appendix IV of 40 CFR § 257, in accordance with 40 CFR § 257.102(c). Upon completion of the groundwater monitoring program specified, the groundwater monitoring system will be decommissioned.

2.2 Closure Timeframe

At this time, there is no timeline for closure of the Ponds. CCR will continue to periodically be excavated from the Ponds and placed in the on-site CCR landfill. Closure will begin within 30 days of receiving the known final receipt of waste or removing the known final volume of CCR from the unit for beneficial reuse. The table below provides estimated major milestone timeframes of closure activities.

Table 1
Closure Construction Summary West Pond

MILESTONE	APPROXIMATE ANTICIPATED START DATE	APPROXIMATE ANTICIPATED END DATE
Verify permanent diversion of flows away from the Ponds	Month 1	Month 6
Consultation/coordination with ADEQ	Month 1	Month 1
Engineering/Procurement	Month 6	Month 9
Dewater West Pond	Month 10	Month 11
Remove CCR from West Pond	Month 12	Month 13
Backfill West Pond and implement stabilization and site grading	Month 14	Month 22
Completion of construction activities	N/A	Month 23

Table 2
Closure Construction Summary East Pond

MILESTONE	APPROXIMATE ANTICIPATED START DATE	APPROXIMATE ANTICIPATED END DATE
Verify permanent diversion of flows away from the Ponds	Month 1	Month 6
Consultation/coordination with ADEQ	Month 1	Month 1
Engineering/Procurement	Month 6	Month 9
Dewater East Pond	Month 10	Month 11
Remove CCR from East Pond	Month 12	Month 18
Backfill East Pond and implement stabilization and site grading	Month 18	Month 26
Completion of construction activities	N/A	Month 27

2.3 CCR Removal Volume and Area Estimate

West Pond is approximately 6.5 acres (745′ X 385′) and has a capacity (volume) of 124,500 cubic yards (CY). East Pond is identical in size and capacity to West Pond. The total combined volume for the Ponds is 249,000 CY and is the maximum potential volume on site at any time. Approximately 19 acres, including the pump station, is the largest area that will be affected by the closure operation.

2.4 Notifications

In accordance with 40 CFR § 257.102(g) and § 257.105(i), Entergy will post to the Plant's Facility Operating Record (FOR) the Closure Plan and an Intent to Initiate Closure notice. The Intent to Initiate Closure notice will be posted prior to initiating closure activities. A Notification of Completion of Closure with an Arkansas registered professional engineer certification will be posted to the FOR within 30 days of completion of closure activities (40 CFR § 257.102(h)). In addition, the Director of the Arkansas Department of Environmental Quality (ADEQ) will be notified of closure-related actions and documents as per 40 CFR § 257.106(i). Notices and documents will be placed on Entergy's CCR website consistent with 40 CFR § 257.107(i).

2.5 Amendment of the Closure Plan

In accordance with 40 CFR § 257.102(b)(3), Entergy may amend this closure plan at any time. Specifically, Entergy will amend the written closure plan whenever there is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect or after closure activities have commenced, if unanticipated events necessitate a revision of the written closure plan. If unanticipated events during implementation of closure activities necessitate modification of this Plan, applicable Recordkeeping, Notification and Posting requirements of 40 CFR § 257.105, 257.106 and 257.107 will be followed.

Section 3
Certification

I, the undersigned Arkansas Professional Engineer, hereby certify that I am familiar with the technical requirements of 40 CFR § 257.102. I also certify that it is my professional opinion that, to the best of my knowledge, information, and belief, that the activities outlined in this closure plan are in accordance with current good and accepted engineering practice(s) and standard(s) appropriate to the nature of the project and the technical requirements of 40 CFR § 257.102(c).

For the purpose of this document, "certify" and "certification" shall be interpreted and construed to be a "statement of professional opinion". The certification is understood and intended to be an expression of my professional opinion as an Arkansas Licensed Professional Engineer, based upon knowledge, information, and belief. The statement(s) of professional opinion are not and shall not be interpreted or construed to be a guarantee or a warranty of the closure activities.

R. Kent Nilsson	9136
Printed Name of Professional Engineer	State of Arkansas License Number
	10/24/18
Signature of Professional Engineer	Date