

2022 Recycle Pond A Inspection Report

**Entergy Arkansas, LLC White Bluff Plant
Recycle Pond A**

**January 2023
Promus Project No. 220197**

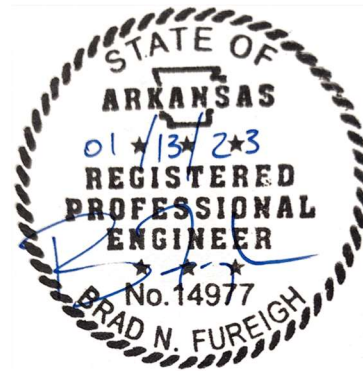
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PROFESSIONAL ENGINEER'S CERTIFICATION

This report on the annual engineering inspection of the Entergy Arkansas, LLC White Bluff Plant Recycle Pond A and supporting documentation was prepared under the direction and supervision of a qualified, State of Arkansas-registered Professional Engineer. Mr. Brad Fureigh, PE, of Promus Engineering, LLC. (Promus), was responsible for the overall preparation of this report. The report has been prepared to fulfill the requirements of §257.84(b). Based on the inspection of the recycle pond facility and review of available recycle pond documents, the design, construction, operation, and maintenance of Recycle Pond A is consistent with recognized and generally accepted good engineering standards.



Brad N. Fureigh, PE
AR Registered Professional Engineer No.: 14977

January 13, 2022

Date

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2022 Recycle Pond A Inspection Report

Entergy Arkansas, LLC White Bluff Plant Recycle Pond A Redfield, Arkansas

1.0 INTRODUCTION

1.1 Purpose of Report

The purpose of this report is to document the annual inspection of the Entergy Arkansas, LLC White Bluff Plant's Recycle Pond A (South Pond) in accordance with 40 CFR §257, *Subpart D - Disposal of Coal Combustion Residuals From Electric Utilities* (the CCR Rule). In particular, the report has been prepared to comply with §257.83(b), which requires an inspection to be conducted by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the recycle pond is consistent with recognized and generally accepted good engineering standards.

The report includes:

- Changes in geometry of the pond,
- Location and type of existing instrumentation and the maximum recorded readings of each instrument,
- Approximate minimum, maximum and present depth and elevation of impounded water and CCR,
- Storage capacity of the recycle pond at the time of inspection,
- Approximate volume of impounded water and CCR at time of inspection,
- Any appearance of an actual or potential structural weakness of the pond; and
- Other changes which may affect stability or operation of the pond.

1.2 White Bluff Power Plant Recycle Pond A Information

Entergy Arkansas, LLC (Entergy) operates the White Bluff Steam Electric Station, located on the west bank of the Arkansas River, near Redfield in Jefferson County, Arkansas, as shown on Figure 1. This plant previously operated two Water Recycle Ponds: A and B, as part of its process water system for bottom ash transport system. The Water Recycle Ponds were replaced by a submerged flight conveyor and were not operational during 2022. Further, the Water Recycle Ponds were closed by removal pursuant to 40 C.F.R. 257.102(c), with ash removal completed in 2022. Since pond closure commenced, the bottom ash from the boilers is sluiced to a remote submerged flight conveyor for removal of bottom ash from the bottom ash transport water, which is recycled. The bottom ash is deposited into the bottom ash bunker from which it is removed and bottom ash is transported from the bottom ash bunker for disposal in the landfill. The water drained during the process is returned to the bottom ash transport system for reuse in the sluicing operations.



2.0 DESCRIPTION OF RECYCLE POND A LAYOUT

The recycle pond system consists of 2 ponds, Recycle Pond A (South Pond) and Recycle Pond B (North Pond). Recycle Pond A is not incised and is unlined. This report will cover Recycle Pond A only. The recycle pond area is approximately 19 acres. Pond A is approximately 7.1 acres (768' x 403') with a bottom elevation of approximately 256.5 ft msl and has a capacity of 190,600 cubic yards. Pond A has a rim elevation at approximately 280.0 ft msl with interior slopes constructed at roughly 2.5:1. The facility ceased placement of CCR and non-CCR waste streams in the pond, and commenced closure of Pond A on October 5, 2018. Recycle Pond A was drained and CCR materials were removed. After removal, the southeast corner of Recycle Pond A was breached and reinforced with rip rap armoring to allow water from the Clear Water Holding Pond to flow into the ponds and enable water elevations to equalize. The facility completed excavation of all ash from Recycle Pond A in May of 2022.



3.0 REVIEW OF AVAILABLE INFORMATION

A review was performed of available information regarding the status and condition of Recycle Pond A including files available in the operating record, such as pond design and construction information, previous structural stability assessments, weekly inspection reports, and any previous annual inspections which have been conducted. Based on review of this information, no signs of actual or potential structural weakness were noted. As previously noted, Recycle Pond A completed removal of CCR material in the first half of 2022.



4.0 ASSESSMENT OF RECYCLE POND A

This section of the report provides a summary of the inspection of the Entergy Arkansas, LLC White Bluff Plant's Recycle Pond A that was conducted on December 1, 2022. Charah Solutions, Inc. (Charah) was Entergy's ash management contactor in 2022. The assessment included an onsite inspection of the pond area, discussions with Entergy personnel, review of inspection reports of the facility, and review of documents pertaining to the closure of the recycle pond. Photographs of the site at the time of the inspection are included in Appendix B.

4.1. Changes in Geometry

During the reporting period, slight changes were made to the geometry of Recycle Pond A, including lowering the center dike between Pond A and Pond B by roughly six feet to an approximate elevation of 274 ft msl, and breaching the southeast corner of Recycle Pond A to allow equalization with the Clear Water Holding Pond. At the time of inspection, Pond A contained stormwater that was maintained at an elevation of about three feet below top of bank.

4.2. Instrumentation

Two (2) piezometers and ten (10) monitoring wells are in operation around the Recycle Pond area. No new monitoring wells or piezometers were installed during the reporting period. Table 4.1 shows the max readings of each piezometer and monitoring well during the reporting period.

Table 4.1: 2021 Recycle Pond Instrumentation Data

Name	Northing	Easting	Type	Maximum Reading	Date of Reading
PZ-1	1,949,513.90	1,272,146.80	Piezometer	n/a	n/a
PZ-5	1,949,067.50	1,272,460.60	Piezometer	n/a	n/a
RP-1	1,949,807.10	1,273,086.50	Monitoring Well	276.92	6/13/2022
RP-2	1,950,042.00	1,274,004.00	Monitoring Well	277.02	6/13/2022
RP-3	1,949,486.50	1,273,729.90	Monitoring Well	276.45	6/13/2022
RP-4	1,949,249.30	1,272,808.40	Monitoring Well	275.17	6/13/2022
RP-5	1,948,586.20	1,272,475.80	Monitoring Well	275.57	6/13/2022
RP-6	1,948,590.90	1,271,958.90	Monitoring Well	273.21	12/05/2022
RP-7	1,949,766.80	1,271,839.40	Monitoring Well	272.66	12/05/2022
RP-8	1,949,162.50	1,271,875.30	Monitoring Well	274.90	6/13/2022
RP-9	1,948,797.00	1,272,803.30	Monitoring Well	275.58	6/13/2022
RP-10	1,949,510.50	1,272,499.00	Monitoring Well	275.46	6/13/2022

Note: Water elevations from PZ-1 and PZ-5 were not taken during the reporting period.



4.3. Pond Characteristics

Shown below in Table 4.2 is a summary of the minimum, maximum, and present depth and elevation of impounded water and CCR, storage capacity of the recycle pond at the time of inspection, and the approximate volume of impounded water and CCR at the time of inspection. During the inspection, Pond A contained stormwater that was maintained at an elevation of approximately three feet below the top of bank.

Table 4.2: Recycle Pond Characteristics

	Water	CCR
Minimum Depth (ft)	0	0
Maximum Depth (ft)	< 23.5	0
Present Depth (ft)	< 23.5	0
Storage Capacity (cy)	190,600	
Volume of Media (cy)	< 190,600	0

4.4. Appearance of Structural Weakness

A visual inspection of Pond A was conducted to observe signs of actual or potential structural weakness or any conditions that are or may disrupt the operations. Removal of CCR material from Recycle Pond A was completed in the first half of 2022. The interior of the pond was regraded, and the southeast corner of the pond was breached to allow equalization with the Clear Water Holding Pond. The slopes of the breached area were stabilized with rip rap armoring. There were no signs of potential structural weakness noted during the inspection. Also, the piezometers and monitoring wells appeared to be in good condition.

4.5. Other Changes That May Affect Stability or Operation

Based on discussions with Entergy personnel, Charah personnel, and field observations, there were no other changes made to Recycle Pond A in this reporting period that would affect the stability. Recycle Pond A is out of operation and removal of CCR material was completed.



APPENDIX A

FIGURES



ORTHO IMAGERY OBTAINED FROM GOOGLE EARTH, DATED SEPTEMBER 6, 2021.



ORTHO IMAGERY OBTAINED FROM GOOGLE EARTH, DATED SEPTEMBER 6, 2021.

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APPENDIX B

PHOTOS OF ANNUAL ENGINEERING INSPECTION



PHOTOGRAPHIC LOG



Photo No. 1

Looking at the southeast corner of Recycle Pond A where the south dike was breached during closure construction to the Clear Water Holding Pond.

Photo No. 2
Looking across Recycle Pond A from the southwest corner to the northeast corner.



Photo No. 3

Looking across Recycle Pond A from the northwest corner to the southeast corner.