40 CFR Parts 257

2023 Checklist for P.E. Annual Inspection for CCR Surface Impoundments, §257.83(b) **Sikeston BMU**
Sikeston Power Station Bottom Ash Surface Impoundment Annual Inspection
NOTE – THE BOTTOM ASH POND CEASED RECEIVING WASTE ON JUNE 5, 2023

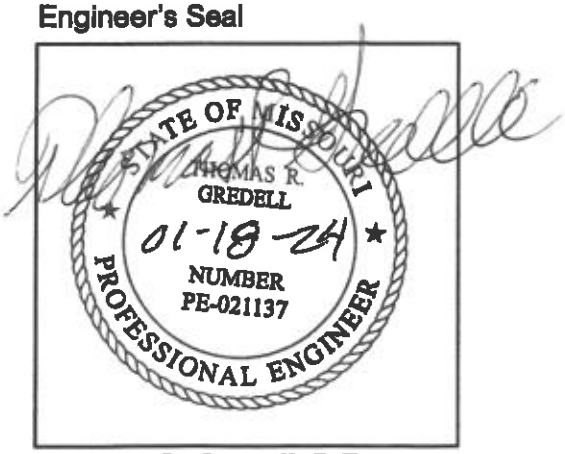
Requirements	Signs of actual or potential structural weakness	Disruptions or potential disruption to the operation and safety of the unit (257.83(b)(vi))
CCR Unit and appurtenant structures 257.83(b)(ii)	None Observed. Continue to monitor.	None Observed. However, potential seepage along northern embankment west of the Fly Ash Pond and on the southwestern embankment. No evidence of erosion or slope instability. Seepage is minor and vegetation is in very good condition. Continue to monitor.
Hydraulic structures underlying the base of the CCR unit 257.83(b)(iii)	None Observed. Continue to monitor.	Visual observation indicates sediment in stormwater box culverts continues to self-clean during heavy rains. The discharge sediment basin was nearing capacity at time of inspection. Cleaning in 2024 is recommended to allow continued self-cleaning of the twin stormwater box culverts, followed by ongoing observation. Separated corrugated metal pipe seams in the south culvert should be observed monthly.

The 2023 Annual Inspection included onsite observations and a review of available weekly and monthly plant inspection reports regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record in general accordance with 257.83(b)(i).

Minor maintenance items associated with routine upkeep and items that require further investigation and/or corrective action observed during the 2023 Annual Inspection presently do not impact the structural integrity of the embankment. SBMU agrees to monitor and address these items in a timely manner through normal maintenance.

GREDELL Engineering Resources, Inc.

Engineer's Seal



Thomas R. Gredell, P.E.
Missouri License: PE-021137
Date: January 18, 2024

SIKESTON POWER STATION – BOTTOM ASH POND
2023 ANNUAL INSPECTION CHECK SHEET
NOTE – BAP IS INACTIVE SINCE JUNE 5, 2023

SIKESTON POWER STATION
Bottom Ash Pond
Annual Inspection Check Sheet

Date	October 13, 2023
Inspector	Thomas R. Gredell, P.E.
Pool Level	Approximately el. 314.8
Temperature	Mid 60°s
Weather	Cloudy; Clearing later; dry

1. Date of Previous Annual Inspection:
    a. October 20, 2022
2. Date of Previous Periodic Inspection:
    a. The date of the most recent monthly inspection report reviewed for this Annual Inspection report was December 18, 2023. Weekly and monthly inspection reports by plant personnel were reviewed for this Annual report. Three weekly reports for the month of October are not available at this time (10-1-23; 10-8-23; and 10-15-23). Some report data that could not be verified were not utilized in preparing this report.
3. Description of Emergency (EC), Immediate Maintenance (IM)conditions observed since the last annual inspection:
    a. No EC conditions were not noted for of the Bottom Ash Pond during the 2023 Annual Inspection on October 13, 2023. One IM condition was noted on August 6, 2023 related to access road on the east ramp. Subsequent weekly reports did not mention this condition, indicating that it had been repaired or maintained. Roadways were overall in good condition during our annual onsite inspection. Short-term rutting of the ramps or on top of the berms is not significant if remedied by routine maintenance (i.e., grading the road and adding gravel). Rutting on the access ramps appears to have been repaired promptly after being identified.
4. Describe any action taken to restore or improve safety and integrity of impounding structure:
    a. The rutting of the East ramp was corrected by grading the road and adding gravel on one or more occasions in 2023. The East ramp requires periodic maintenance due to short, steep slopes. Potholes and depressions located in the perimeter roads on top of the berms should also be corrected by grading and adding gravel, as required throughout the year.
    b. In response to the observations of potential berm seepage, a field investigation and office evaluation of the north berm was completed in mid-2018 by Reitz & Jens, Inc. as a subconsultant to GREDELL Engineering Resources, Inc. (GER). The conclusion of that evaluation is that the possible seepage did not have a negative impact on the stability of the embankment. Field conditions on the north berm have not changed in 2023. Potential seepage on the west and southwest berms is less prominent with no evidence of slumping, flow, or erosion. No investigations or office evaluations have been made for these areas. Continued monitoring is recommended.
5. Describe any modifications to the geometry of the impounding structure since the previous annual inspection:
    a. The bottom ash reclamation stockpile in northwest corner of the Bottom Ash Pond no longer exists. It is noted that the Bottom Ash Pond ceased accepting CCR materials on June 5, 2023. The overall volume of the material in the Bottom Ash Pond was observed to remain nearly the same, or slightly decreased, in 2023.
6. Describe any modifications to the operation of the impounding structure since the previous annual inspection:
    a. As noted above, the Bottom Ash Pond ceased accepting CCR materials on June 5, 2023, and the bottom ash reclamation stockpile in the northwest corner had been removed, resulting in a

net zero change, or slight decrease, in CCR volume stored in the pond. Process water and rainwater storage volume was not impacted. Actual volume increases or decreases in the Bottom Ash Pond were visually quantified.

7. List the approximate remaining storage capacity (Cubic Yards) of the impounding structure:
    a. Estimated available storage is ~ 380,000 CY below el. 320 (allowing 2+ feet of freeboard). This has not significantly changed in 2023 and has not been impacted by SBMU's ongoing successful bottom ash reclamation efforts.
8. List the approximate maximum, minimum and present depth, and elevation of the impounded water since the previous annual inspection:
    a. Estimated from inspection reports for 2023: Max. Elev. 316.5 (Depth ~ 14.5); Min. Elev. 315.9 (Depth ~ 13.9); Depth on 10-13-23 = Elev. 314.8 (Depth ~ 12.8).
9. List the approximate maximum, minimum and present depth, and elevation of the impounded CCR since the previous annual inspection:
    a. Estimated from 2016 aerial survey: CCR occupies approximately 60 acres at an approx. Max. Elev. 318.8 (Depth 16.8'). Min. depth is estimated to be less than 5' or Elev. 307 located beneath the surface of the impounded water. Elevation and Depth of impounded CCR do not change rapidly from year to year due to SBMU's ongoing, successful ash reclamation/beneficial use efforts.
10. Approximate volume of impounded water and CCR at the time of the inspection:
    a. Estimated Volume of water 75,000 CY (15 Million Gallons, or MG). Estimated CCR volume was 1,164,000 CY (235 MG). This has not significantly changed in 2023 due to SBMU's ongoing, successful bottom ash reclamation/beneficial use efforts. The Bottom Ash Pond ceased receiving waste on June 5, 2023.
11. Describe any changes to the downstream watershed since the last annual inspection:
    a. No changes to the downstream watershed have occurred in 2023.

SIKESTON POWER STATION – BOTTOM ASH POND
2023 ANNUAL INSPECTION CHECK SHEET

Inlet and Outlet Works - **NOTE – BAP IS INACTIVE SINCE JUNE 5, 2023**		
Item	Condition Code	Comments
Outlet Condition	GC	BAP is inactive. Concrete intake with stop logs, discharges into buried 10-inch carbon fiber pipe that runs north and then west to Process Waste Pond. (Water Recirculation Structure is no longer operational and the emergency overflow to the Fly Ash Pond has been blocked for several years by impounding fly ash at the emergency overflow outlet.) No change since inspections began in 2016.
Gate Condition/ Operability	GC	BAP Stop logs originally controlled water level but are not present at the structure and are no longer used. A control valve north of the discharge is utilized for flow control. No change since 2016.
Leakage	NE	According to the weekly inspection reports, no leakage was observed in 2023. No Change since 2016.
Outfall Condition	GC	Discharge pipe is at Process Waste Pond. Approximately 1.5' of the discharge pipe is damaged along the east side of the pipe at the outfall but does not compromise the operation of the discharge pipe. No change since 2016.
Discharge (color and/or sediment)	NE	No discharge was observed at the time of inspection.
Obstructions	NE	Flow to outlet structure can become obstructed by weeds and dead vegetation. Routinely trim weeds at the outlet during warm weather months. However, the water level in the pond on October 13, 2023, was at or below the flow line of the discharge pipe.
Instrumentation	GC	Water level is measured by staff gauge at the inactive Recycle Water Recirculation Structure. Staff gauge markings were repainted in 2019 and remain clear. The maximum recorded reading of the staff gauge between January 1, 2023, and December 18, 2023, was 7.9 feet or elevation 316.5 feet. There are two (2) piezometers (installed ~ 2011) constructed within the Bottom Ash Pond perimeter berms that serve to monitor water or saturation within the pond berms. These are identified as P-8 and P-10. Total depths are approximately 25 feet and 19 feet, respectively. P-8 water levels ranged from 24.37 to 24.85 feet below the top of casing in 2023. P-10 water levels fluctuated between 9.35 and 15.35 feet below casing in 2023.
Inlet Piping Condition	GC	Inlet pipe for bottom ash (estimated 8 to 10-inch iron pipe) is inactive as of June 5, 2023. In addition, the pipe trench sump discharge pipe (4-inch PVC pipe) and plant operations wastewater inlet (12-inch iron pipe) are also inactive. No discharge was observed during the site visit.

		Inlet and Outlet Works - **NOTE – BAP IS INACTIVE SINCE JUNE 5, 2023**
Item	Condition Code	Comments
Emergency Spillway	Not Operational	A buried 30-inch pipe was designed to convey excess water from the Bottom Ash Pond to the Fly Ash Pond, as needed. The discharge end of the structure in the Fly Ash Pond is blocked by impounded CCR. The swing gate on the Bottom Ash Pond inlet side of the structure is closed (bolted shut). As a result of earlier hydraulic reports completed by GER related to CCR compliance, it was recommended that SBMU construct an emergency spillway. However, the emergency spillway was never constructed. Due to the current INACTIVE operating status, the planned closure of the Bottom Ash Pond, the net zero CCR quantity increase and the approximate 5+ feet of freeboard in the Bottom Ash Pond, the construction of an emergency discharge structure is not considered necessary at this time.
Other: Buried Storm Water Box Culvert	OB (overall)	Dual buried box culverts convey offsite stormwater from the east side of the Bottom Ash Pond (west end of Compress Road) to the west side of the Pond. The inlet was observed to be dry and in good condition. The culverts discharge through corrugated metal culverts into an open channel on the west side. In 2017, a sediment basin was dug out below the pipe discharges, increasing the sediment capacity below discharges. This apparently has increased the flow velocity and flushed out the sediment build up in the culverts during heavy rainfall events. In 2023, the sediment basin was observed to be partially filled with sediment. Therefore, it is recommended to continue to monitor the sediment basin and to clean out solids/debris before it has the potential to restrict discharge flow. It has been previously noted that the southern corrugated metal culvert has two small areas where the seams were damaged and separated. The bituminous lining in both culverts is degraded in the area of the damage. Ongoing observation has indicated that the damaged areas are currently stable and do not impact the stability of the Bottom Ash Pond. In addition, the damaged areas are not located beneath the Bottom Ash Pond or the pond berm. Therefore, it is recommended that these two damaged areas continue to be observed and scheduled for repair in the future.

Earth Embankment - **NOTE – BAP IS INACTIVE SINCE JUNE 5, 2023**		
Item	Condition Code	Comments
Vertical & Horizontal Alignment of Crest	MM	Two low spots less than 1 foot in depth were observed in the roadway surface on top of the Fly Ash Pond berms during the October 13, 2023, site visit for the 2023 Annual Inspection. One spot was located on the north berm near the southwest corner of the Fly Ash Pond along the common berm with the Bottom Ash Pond, and a second spot was located near the northeast corner of the Bottom Ash Pond just south of the perimeter road intersection. Repair by filling with gravel and grading to restore the minimum vertical elevation and berm alignment is recommended along with continued monitoring.
Seepage/Wetness / Ponding Areas	OB (Ponding). OB (Northern Berm Seepage) OB (Southwest Berm Seepage)	Past inspections note ponding in the perimeter flat bottom ditch inside rail loop. This appears to be caused by the flat grade of the railroad bed and does not appear to be seepage. The ponding restricts mowing of the ditch during wet periods, but otherwise is not a concern. No ponding was observed in 2023 An area along the northern berm of the Bottom Ash Pond, west of the Fly Ash Pond has previously been identified as an area of potential seepage from the Bottom Ash Pond. No visual observation of erosion of the outer berm soils were observed in 2016 through 2023. 2023 observation indicates the area was able to be maintained. In mid-2018, GER subcontracted to Reitz & Jens, Inc. (St. Louis) to complete an evaluation of the area of the northern embankment of the Bottom Ash Pond. The report stated that the possible seepage did not have a negative impact on the stability of the embankments. Therefore, it is recommended that this area continue to be visually monitored to note any change in conditions. Future remediation of the wet area may be appropriate at a future date based on regulatory or other considerations. A saturated area along the southwestern berm of the Bottom Ash Pond was observed during the 2021 annual inspection. The surficial soil in this area was identified to be soft and appeared wet in this area. Green vegetation was observed at this location in 2022 during a regional drought condition No visual signs of erosion of the outer berm soils were observed in 2022 or 2023 during prior inspections. The area has been routinely maintained (i.e., mowed) and there was no evidence of rutting or other distress from mowing equipment observed in the area. Therefore, it is recommended that this area continue to be visually monitored to note any change in conditions. Future investigation of the wet area may be appropriate at a future date based on regulatory or other considerations.

SIKESTON POWER STATION – BOTTOM ASH POND
2023 ANNUAL INSPECTION CHECK SHEET

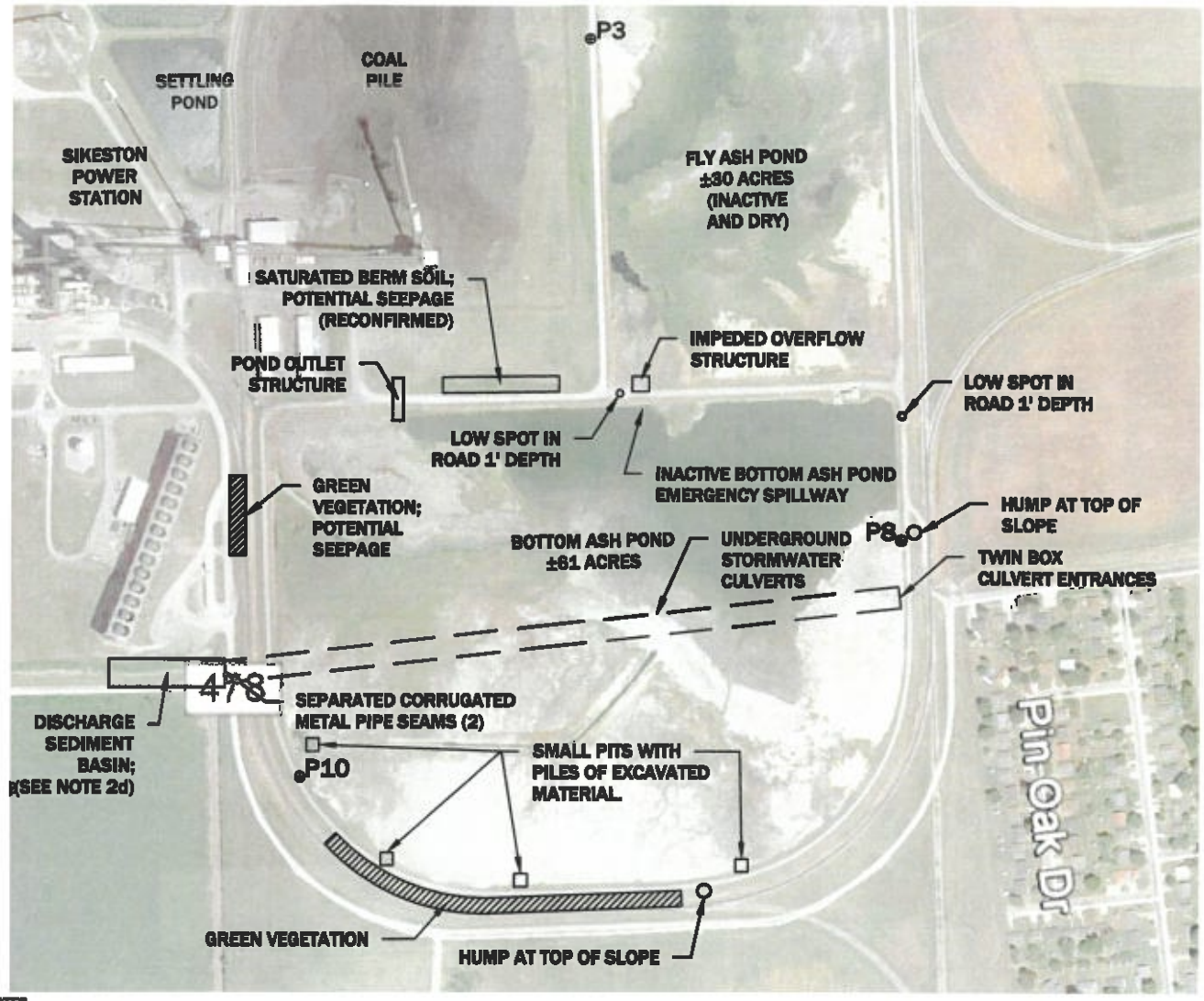
Erosion/Rutting	IM/MM	Two cases of erosion or rutting of the ramps were documented in the 2023 weekly inspection reports. Rutting was identified in the January 15, 2023, report with Condition Code MM and in the August 6, 2023, weekly report with Condition Code IM. This condition was corrected and was not observed during the October 13, 2023, visual inspection. Continued monitoring of the BAP ramps for rutting and erosion is recommended.
Fencing	NI	No fencing is adjacent to the Bottom Ash Pond. Plant fencing is intact.
Vegetation	GC	Vegetation on exterior slopes is generally maintained at less than 12 inches, however this federal CCR rule criteria has been remanded and, therefore, is not currently applicable.
Sloughs/Slides/ Cracks	GC	No evidence was observed in 2023. Two small 'humps' have been noted at the top of the outer berm slope since 2016 and have not been considered structural problems.
Animal Control	GC	No evidence of animal burrows or holes were observed in 2023.
Other	NA	No other items were observed that are applicable to the federal CCR rules.

Condition Codes:
- EC Emergency Condition – a serious safety condition exists that requires immediate action.
- IM Immediate Maintenance – an item that requires maintenance within about 30 days to ensure safety or operation.
- MM Minor Maintenance – item needing minor maintenance or repair within 6 months.
- OB Observation – condition requires regular observation to ensure that the condition does not become worse.
- GC Good Condition.
- NE No Evidence of a problem.
- NI Not Inspected. State reason in comments.

Note location of observations on attached plan sheet (Figure 1).

Additional Notes:

1. **NOTE – BAP IS INACTIVE SINCE JUNE 5, 2023**



NOTES

1. MINOR MAINTENANCE ITEMS INCLUDE:
   a. ONE LOW SPOT IN THE NORTH NEAR THE SOUTHWEST CORNER BERM ROAD EAST OF THE FLY ASH POND AND ONE LOW SPOT NEAR THE NORTHEAST CORNER OF THE BERM ROAD.
2. ITEMS REQUIRING FURTHER OBSERVATION INCLUDE:
   a. SATURATED BERM SOIL ALONG NORTHERN BERM, WEST OF THE FLY ASH POND. (CONDITIONS ARE UNCHANGED SINCE 2018)
   b. GREEN VEGETATION ON WESTERN AND SOUTHWESTERN BERM SLOPES INDICATE POSSIBLE SEEPAGE. CONTINUED OBSERVATION AND MONITORING RECOMMENDED.
   c. SEPARATED CORRUGATED METAL PIPE SEAMS AT THE DISCHARGE END OF THE SOUTHERN STORMWATER CULVERT PASSING BENEATH THE BOTTOM ASH POND. (CONDITIONS ARE UNCHANGED SINCE 2018)
   d. GRASS LINED CHANNEL AT THE OUTLET OF THE STORMWATER CULVERTS PASSING BENEATH THE BOTTOM ASH POND FROM EAST TO WEST REMAINS CLEAR OF BRUSH. THE SEDIMENT BASIN IS MOSTLY FILLED WITH SEDIMENT AND DEBRIS. RE-EXCAVATION OF THE SEDIMENT BASIN IS RECOMMENDED IN 2024.
   e. TWIN BOX CULVERT VIDEO INSPECTION WAS COMPLETED IN 2021 TO VERIFY STRUCTURAL STABILITY.
3. ITEMS IDENTIFIED DURING THE ANNUAL INSPECTION WHICH DO NOT REQUIRE MAINTENANCE:
   a. THE HISTORICALLY IMPEDED OVERFLOW STRUCTURE BETWEEN THE BOTTOM ASH POND AND THE FLY ASH POND.

LEGEND:

PIEZOMETER P8

GREEN VEGETATION

N

SCALE: 1" = 500'

0 250 500

FIGURE 1
2023 ANNUAL INSPECTION
BOTTOM ASH POND

SIKESTON POWER STATION

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DATE	SCALE	PROJECT NAME	REVISION
01/2024	1" = 500'	SIKESTON	N/A
DRAWN	APPROVED	FILE NAME	SHEET #
KW	TG	2023 ANNUAL INSPECTION BAP	1 OF 1