AECOM

# CCR Rule 2025 Annual Inspection Report

# Morrow Hydroelectric Project
# Morrow CCR Impoundment
# STS Hydropower, LLC

## 40 CFR 257.83 (b)

**February 6, 2026**

## Background and Site Description

An inactive coal combustion residuals (CCR) surface impoundment (the "Site") containing historical CCRs generated by the former coal-fired Morrow Power Plant electrical generating station is located on property owned by STS Hydropower, LLC (STS), adjacent to the operating 800 KW Morrow Hydroelectric Project, located on the Kalamazoo River in Comstock Township, Michigan. STS currently estimates the surface area of the impoundment is approximately 61 acres (ac) with approximately 56 ac on property owned by STS. Available historical publications and conversations with STS indicate that the Morrow Power Plant was constructed in the late 1930s and operated until the early 1980s by Consumers Power, historically sluicing CCR materials to the nearby impoundment. Approximately the southeastern third of the impoundment is open water/marsh with the balance forested with mature shrubs and trees (see **Figure 1**).


**Figure 1 – Morrow CCR Impoundment**

40 CFR 257.83(b) requires owners and operators of CCR surface impoundments to perform annual inspections by a qualified professional engineer. Below are applicable citations from the CCR Rule with responses to each to document how each requirement has been met. Due to the Morrow CCR Impoundment (hence referred to as the CCR Unit) being inactive with no construction activity and very minimal disturbance from human activity, responses to citations have remained largely the same from the previous annual inspection. For ease of reading this report, any updates or modifications from the previous inspection have been highlighted in red.

***§257.83(b) Annual inspections by a qualified professional engineer.***
***(1) If the existing or new CCR surface impoundment or any lateral expansion of the CCR surface impoundment or legacy CCR surface impoundments is subject to the periodic structural stability assessment requirements under § 257.73(d) or § 257.74(d), the CCR unit must additionally be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:***

> ***(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., CCR unit design and construction information required by §§ 257.73(c)(1) and 257.74(c)(1), previous periodic structural stability assessments required under §§ 257.73(d) and 257.74(d), the results of inspections by a qualified person, and results of previous annual inspections);***
>
> Due to the CCR Unit only very recently becoming a regulated impoundment as of November 8, 2024 under the Legacy CCR Rule, the documentation in the operating record has only begun to be developed. AECOM has continued efforts to gather available information pertaining to the design and construction history of the CCR Unit. AECOM is familiar with the available but limited documentation to date.
>
> ***(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and***
>
> ***(iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.***
>
> A visual inspection of the CCR Unit was performed by Mr. Jared E. Taylor, P.E., on November 10, 2025. An inspection form with photographs is included as an attachment to this report to document the observations made relative to the above requirements. This is the second annual inspection of the CCR Unit with the prior inspection occurring on December 10, 2024.

***§257.83(b)(2) Inspection report. The qualified professional engineer must prepare a report following each inspection that addresses the following:***

***(i) Any changes in geometry of the impounding structure since the previous annual inspection;***

There have been no changes to the geometry to the impounding structure since the previous annual inspection of the CCR Unit.

***(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;***

There is no known instrumentation. Limited available historical documentation of the impoundment do not indicate instrumentation present.

***(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;***

There are no ongoing operations that would vary the depths or elevations of water or CCR in the impoundment since the previous annual inspection. See response to ***(v)*** below for information regarding the present depth and elevation of the impounded water and CCR.

***(iv) The storage capacity of the impounding structure at the time of the inspection;***

See response to ***(v)*** below.

***(v) The approximate volume of the impounded water and CCR at the time of the inspection;***

Based on data collected through topographic and bathymetric surveys and subsurface sampling conducted during October through December of 2024, the following can be estimated:

- The depth of impounded water ranges from 0 to 5 feet (ft). The water surface elevation of impounded water is approximately 776 ft (NAVD88).
- The thickness of impounded CCR ranges from 0 to 20 ft. The thickness of the material is greatest in the northwest corner of the CCR Unit and generally decreases as you fan outward in a southeastern direction.
- The storage capacity of the impoundment is approximately 116,500 cubic yards (cy) or 72.2 ac-ft between the water surface and the low point of the perimeter berm.
- The volume of impounded water is approximately 20,000 cy or 12.4 ac-ft. This represents an estimate of the free water near the southeast corner of the CCR Unit and does not include interstitial water within CCR material nor shallow/marshy areas where bathymetric data could not be obtained.
- The volume of impounded CCR is estimated to be approximately 576,000 cy, of which approximately 479,000 is believed to be on STS property and the remaining 97,000 on property owned by others. Additionally, it is estimated that 112,000 cy of CCR was used

as fill material to construct the dike along the north, east, and a portion of the south perimeter of the CCR Unit and that another 270 cy of CCR is stockpiled in an area immediately to the west of the CCR Unit. The CCR volumes provided should be understood as rough estimates based on limited subsurface data. Actual vertical and horizontal limits of CCR between subsurface data points may fluctuate from the assumed interpolations/extrapolations. As such, a range of +/- 25% is recommended to be applied to the CCR volumes.

***(vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and***

Several minor issues are noted in the attached inspection form (**Attachment**) and are categorized as maintenance or monitoring issues; however, no indications were observed of structural weakness or existing conditions that could disrupt the safety or integrity of the CCR Unit. The CCR Unit is inactive and no longer operating.

***(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.***

There have been no changes to the CCR Unit impounding structure since the previous annual inspection report.

***§257.83(b)(3) Timeframes for conducting the initial inspection.***

***(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must complete the initial inspection required by paragraphs (b)(1) and (2) of this section no later than January 18, 2016. However, the Legacy CCR Rule at 40 CFR 257.100(f)(3)(iv) has an initial inspection completion date of February 10, 2025 for legacy CCR units.***

This document was originally dated February 6, 2025, ahead of the required deadline.

***§257.83(b)(4) Frequency of inspections.***

***(i) Except as provided for in paragraph (b)(4)(ii) of this section, the owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of this section, the owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by § 257.105(g)(6).***

This second annual inspection report was completed on February 6, 2026.

***(ii) In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial (occurring every five years) structural stability assessment by a qualified professional engineer required by §§ 257.73(d) and 257.74(d) are required to be completed, the annual inspection is not required, provided the structural stability assessment is completed during the calendar year. If the annual inspection is not conducted in a year as provided by this paragraph (b)(4)(ii), the deadline for completing the next annual inspection is one year from the date of completing the quinquennial structural stability assessment.***

The deadline to complete the first structural stability assessment per the Legacy CCR Rule at 40 CFR 257.100(f)(2)(iv) is May 8, 2026. Utilizing the provision above, that would create a 15 month gap between the first and second annual inspections. Therefore, this second annual inspection was performed prior to the required May 8, 2026 structural stability assessment as an interim inspection for conservatism. The deadline for completing the subsequent annual inspection is currently anticipated to be May 8, 2027 or one year after completing the structural stability assessment.

***§257.83(b)(5) If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.***

No deficiency or release has been identified needing attention as part of this inspection report.

I certify that this CCR Rule 2026 Annual Inspection Report meets the requirements of 40 CFR §257.83(b).

Signature: Jared Taylor

Name: Jared E. Taylor

Title: Civil Engineer

Certification Date: 2/6/2026

# Attachment:
# STS Morrow CCR Impoundment – Annual Inspection Form

# STS Morrow CCR Impoundment – Annual Inspection Form



| | | |
|---|---|---|
| Station/Owner: Morrow CCR Impoundment / STS Hydropower, LLC | | County, State: Kalamazoo, Michigan |
| Date of Last Inspection: 12/10/2024 | | Date of Current Inspection: 11/10/2025 |
| Inspected By (Name/Company):<br>Jared Taylor, PE (AECOM) | Signature: | Phone: (330) 360-3111<br>Email: jared.taylor@aecom.com |
| Weather ☐ Dry ☒ Wet ☒ Snow ☐ Other:<br>Overcast | Temperature:<br>27° F | Recent precipitation:<br>0.64" in past 7 days |

Perimeter Inspection

*§257.83 (b) (1) (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures.*

| Inspection Criteria (Condition Observations) | Outboard Slope (Y/N*) | Crest (Y/N*) | Inboard Slope (Y/N*) | *If yes, additional comment required and mark location on Figure 1. |
|---|---|---|---|---|
| Vegetation >2" Diameter | Y | N | Y | |
| Vegetation >6" Height | Y | N | Y | |
| Animal Burrows/Disturbance | N | Y | N | |
| Erosion Rill | N | N | N | |
| Wetness/Seepage | Y | Y | Y | |
| Slides/Scarps/Sloughing | N | N | N | |
| Depressions/Ruts | Y | Y | Y | |
| Unlevel Surfaces | N | Y | N | |
| Misalignment | N | N | N | |
| Sink Holes | N | N | N | |
| Bulges | N | N | N | |
| Cracks (Tension/Desiccation) | N | N | N | |
| Undermining (Wave Action) | N | N | N | |
| Vegetation or Sediment in Riprap | Y | N | N | Soil observed covering riprap on outboard slope located at NW corner of the (See Photo 1) |
| Displaced Riprap | N | N | N | |
| Additional Observations | N | N | Y | Deteriorating concrete along slope between outlet structure and perimeter road, see Comments/Action Items #4 below. |

Comments/Action Items:

1. A number of small trees and shrubs were observed on both the inboard and outboard slopes of the perimeter dike along the north and east sides of the CCR Unit bordering open water (see Photos 2-5). While not a significant concern at present, the trees should be cut down to prevent potential future issues caused by large/woody root systems and any grasses/reeds growing on slopes should continue to be maintained somewhat regularly to allow better inspection of the slopes.
2. Wetness observed throughout the site due to it being wet season and recent wet/snowy weather, however noted one specific location (see Figure 1 and Photo 11) where water was observed ponding on perimeter road. This implies the possibility of water to flow across the perimeter road from a swampy area (south) into the CCR Unit (north) under suitable conditions. Some channelization observed but no significant erosion otherwise. Continue to observe and consider future repair project, however no action recommended at this time.
3. Depressions/ruts (see Photos 11-12) caused by vehicle tire tracks in multiple locations around perimeter, particularly along south and west perimeter, and by water flowing across road as noted above, the latter may also be a result of animal activity. Periodic maintenance of roadway recommended.
4. Deteriorating/cracking concrete (see Figure 1 and Photo 7) along inboard slope adjacent to the outlet structure does not appear to pose any immediate issue, however this area should continue to be monitored.

Actions ☐ None/No New Action ☒ Monitoring ☒ Minor Repair ☐ Major Repair/Engineering

# STS Morrow CCR Impoundment – Annual Inspection Form



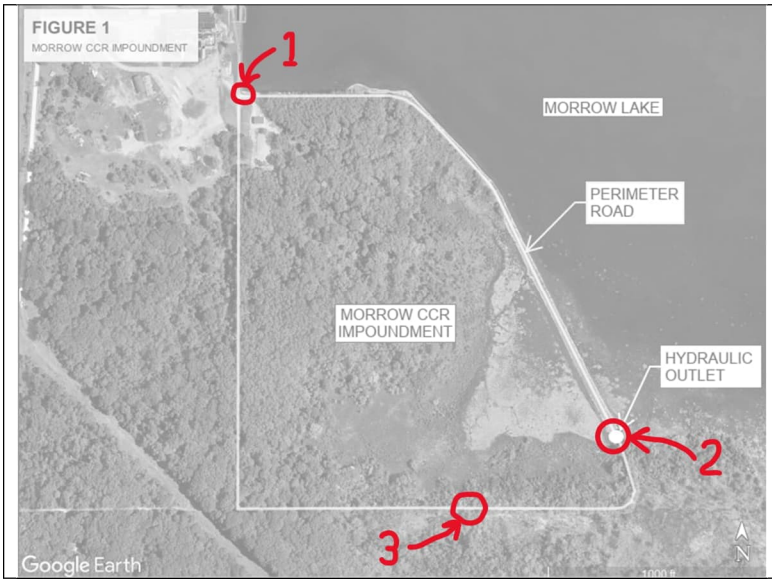
| *Outlet Structure*<br>*§257.83 (b) (1) (iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.* | | |
|---|---|---|
| Inspection Criteria (Condition Observations) | Issue Observed (Y/N*) | *If yes, additional comment required. |
| Differential Water Levels (>1 ft) Between Impoundment and Lake | N | see Comments/Action Items #1 below |
| Abnormal Discoloration of Lake Water at Outlet Discharge | N | |
| Abnormal Flow at Discharge | N | |
| Abnormal Debris/Obstruction or Sediment | Y | Buildup of vegetative debris around trash guard/riser structure and in outlet channel to lake, see Comments/Action Items #2 below |
| Trash Guard | Y | Corrosion and debris buildup observed |
| Riser Structure | Y | Corrosion and debris buildup observed |
| Conduit through Dike | N | |
| Additional Observations | N | |

Comments/Action Items:

1. Water levels between the CCR Unit and Morrow Lake are in relative equilibrium with little to no flow observed passing through the outlet structure. This is understood to be the normal condition.
2. Debris buildup (see Figure 1 and Photos 7, 8, and 9) at both the inlet and outlet ends of the outlet structure should be cleared regularly to remove obstructions to flow and allow for better inspections.

Actions ☐ None/No New Action ☒ Monitoring ☒ Minor Repair ☐ Major Repair/Engineering

Are there any other abnormal conditions at the Impoundment that could pose a risk to public health, safety or welfare, the environment or natural resources? ☐ Yes ☒ No




Additional Comments:

1. Soil covering riprap on outboard slope in NW corner
2. Hydraulic Outlet: buildup of vegetative debris around trash guard/riser structure and in outlet channel to lake and deteriorating concrete along slope between structure and perimeter road.
3. Water observed ponding on perimeter road. Condition implies possibility of flow across the perimeter road and into the CCR Unit under suitable conditions.

**Photo 1:** Soil covering riprap on outboard slope in NW corner.

**Photo 2:** Road and outboard slope along north perimeter looking east. Vegetation on outboard slope.

**Photo 3:** Patch of tall grasses/reeds along outboard slope of northern perimeter looking northeast.

**Photo 4:** Road along east perimeter looking Southeast. Tall tree/shrub on outboard slope.

**Photo 5:** Road along eastern perimeter looking SW. Tall shrub/tree on inboard slope.

**Photo 6:** Animal burrow located on crest of dike near hydraulic outlet.

**Photo 7:** Inlet end of hydraulic outlet looking NW. Buildup of vegetative debris around trash guard/riser structure and deteriorating concrete along slope between structure and perimeter road.

**Photo 8:** Outlet end of hydraulic outlet looking E towards Morrow Lake from perimeter road. Riprap and concrete protection in fair condition.

**Photo 9:** Outlet end of hydraulic outlet. No observable flow. Crown of pipe visible, submerged under lake water level. Debris buildup visible under water in channel from pipe to lake.

**Photo 10:** Channel from end of hydraulic outlet to Morrow Lake. No observable flow.

**Photo 11:** Road along southern perimeter looking W. Water ponding on road, indicative of flow from south (left) to north (right). Vehicular rutting visible.

**Photo 12:** Road along western perimeter looking N. Vehicular rutting visible.