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MEMORANDUM

18 May 2021
File No. 129638-007

TO: Associated Electric Cooperative, Inc.
Jenny Jones – Senior Environmental Analyst

FROM: Haley & Aldrich, Inc.
Jason M. Pokorny, P.E. (OH) -
Senior Project Manager
Steve F. Putrich, P.E. – Principal
Consultant

SUBJECT: Thomas Hill Energy Center
Cell 004 CCR Surface Impoundment
Annual Inspection and Stability Assessments Documentation of Corrective Measures

Mrs. Jones:

Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this documentation on behalf of Associated Electric Cooperative, Inc. (AECI) related to deficiencies identified during annual impoundment inspections or periodic stability assessments (SSA) for the coal combustion residuals (CCR) impoundment referred to as Cell 004 at the Thomas Hill Energy Center located in Clifton Hill, Missouri. The attached table provides a summary of the completed inspection or SSA, the identified deficiencies, and the corrective measures completed by AECI to address the identified deficiency. This documentation has been completed in accordance with the US Environmental Protection Agency's (EPA's) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257 effective 19 October 2015 including subsequent revisions, specifically related to §257.73(d) and §257.83(b).

Haley & Aldrich has provided a summary of the remedies based on correspondence with AECI regarding the noted deficiencies in the attached Table I.

Document	CCR Rule Reference	Deficiency	Remedy
2019 Annual Inspection	§257.83	Standing water observed in seepage approximately 250 feet north of the primary spillway, along the south approximate 1/3 of the east embankment, and along the east approximate 1 /4 of the south embankment.	AECI THEC routinely notes these locations in the weekly inspection reports.
		A minor crack in the concrete armored flume immediately downstream of the reinforced concrete discharge structure.	AECI is monitoring, and will repair if determined necessary.
		The downstream face of the embankment steepens in the vicinity of the southeast corner of Cell 4.	A portion of the steep embankment has concrete pillows in the ditch at the toe of slope. The portion of the steep embankment that was not altered by the reconfiguration projects will continue to be monitored in the weekly inspections.
		Cell 4 currently has no instrumentation for determining water elevation.	AECI has recently purchased a staff gauge for monitoring the water elevation and anticipate the instrumentation will be installed soon.
2019 Annual Inspection	§257.83	Standing water observed in seepage approximately 250 feet north of the primary spillway, along the south approximate 1/3 of the east embankment, and along the east approximate 1 /4 of the south embankment.	AECI THEC routinely notes these locations in the weekly inspection reports.
		A minor crack in the concrete armored flume immediately downstream of the reinforced concrete discharge structure.	AECI is monitoring, and will repair if determined necessary.
		The downstream face of the embankment steepens in the vicinity of the southeast corner of Cell 4.	The southeastern face of the embankment is planned to be partially armored as part of a channel lining project in 2020. Stability of the embankment will continue to be monitored.
		Cell 4 currently has no instrumentation for determining water elevation.	AECI has ordered depth gages and will be installed in 2020.
2018 Annual Inspection	§257.83	Standing water observed in seepage along the south approximate 1/3 of the east embankment, and along the east approximate 1 /4 of the south embankment.	AECI THEC routinely notes these locations in the weekly inspection reports.
		A minor crack in the concrete armored flume immediately downstream of the reinforced concrete discharge structure.	AECI is monitoring, and will repair if determined necessary.
		The downstream face of the embankment steepens in the vicinity of the southeast corner of Cell 4.	The southeastern face of the embankment is planned to be partially armored as part of a channel lining project in 2020. Stability of the embankment will continue to be monitored.
		A small seepage area was observed about 250 feet north of the discharge structure and just below the toe of the southwest embankment in this cleared area, but there was no evidence of erosion or soil piping.	AECI THEC routinely notes this location in the weekly inspection reports.
		Cell 4 currently has no instrumentation for determining water elevation.	AECI has ordered depth gages and will be installed in 2020.
2017 Annual Inspection	§257.83	Standing water observed in seepage along the south approximate 1/3 of the east embankment, and along the east approximate 1 /4 of the south embankment.	AECI THEC routinely notes these locations in the weekly inspection reports.
		The downstream face of the embankment steepens in the vicinity of the southeast corner of Cell 4.	The southeastern face of the embankment is planned to be partially armored as part of a channel lining project in 2020. Stability of the embankment will continue to be monitored.
		The tree and brush line along the south toe of the embankment appears to encroach on the embankment as the toe-line approaches the principal spillway discharge structure.	Trees and brush within about 15 feet (or more) of the south toe of the embankment had been cleared.
2016 Structural Stability Assessment	§257.73	The vegetation on the interior and exterior slopes of Cell 004 was generally 6 to 12 inches in height	As part of the AECI THEC's operation and maintenance plan, vegetation is controlled through mowing and other mitigating measures on an as-needed basis to limit vegetation and woody growth.