CLOSURE CERTIFICATION

MEREDOSIA ENERGY CENTER
BOTTOM ASH POND AND
EAST FLY ASH STOCKPILE
MEREDOISA, ILLINOIS

Prepared for

AmerenEnergy Medina Valley Cogen, LLC

Prepared by

Geosyntec consultants

engineers | scientists | innovators

1 McBride and Son Center Drive, Suite 202
Chesterfield, Missouri 63005

Project Number GLP8085

November 2024

INTRODUCTION

This Closure Certification ("Certification") has been prepared at the request of AmerenEnergy Medina Valley Cogen, LLC (Medina Valley) to meet the requirements of 40 CFR 257.100(g), revised May 2024. The revised CCR rule is the legacy coal combustion residuals (CCR) Rule ("Legacy Rule"). The purpose of the certification is to state that the potential legacy CCR surface impoundments were closed by removal of waste after the 19 October 2015 deadline, but prior to the 8 November 2024 start date of the Legacy Rule. This Report is due no later than 8 November 2024 and is submitted by Ameren Missouri, an affiliate of Medina Valley. Both Medina Valley and Ameren Missouri are subsidiaries of Ameren Corporation.

CERTIFICATION CONTENTS

The Certification includes the following in accordance with 40 CFR 257.100(g)(1) through (6):

(1) *The type and volume of CCR and all other materials in the unit prior to closure;*

Bottom Ash Pond [1] [2]

Type of CCR: Bottom Ash

Volume of CCR prior to Closure: Approximately 225,000 cubic yards

East Fly Ash Stockpile [1] [2]

Type of CCR: Fly Ash

Volume of CCR Prior to Closure within Fly Ash Pond: Approximately 100,000 cubic yards. This estimate was developed based on the approximate size and shape of the stockpile as indicated in the as-built drawings [3].

(2) *The methods used to verify complete removal of all CCR and other contaminated materials from the unit, including any post-removal sampling and analysis;*

Bottom Ash Pond

CCR was removed from the Bottom Ash Pond by excavation and hauling to the Fly Ash Pond, which was closed in place. The CCR berm of the Bottom Ash Pond was not excavated because the berm is critical infrastructure; it was left in place and covered with ClosureTurf®, consisting of an HDPE liner covered with synthetic grass and sand infilling for ballast. CCR removal at the Bottom Ash Pond occurred between March and May 2018. A Construction Quality Assurance (CQA) representative periodically visually observed the CCR removal activities to assess the extent of CCR removal. The CQA Certifications by the CQA Officer that the closure by removal activities met the CQA Plan are provided in the CQA Report. After CCR removal and CQA Officer approval, the areas were brought to final grade using non-CCR backfill, stormwater controls were installed, and the areas were vegetated

[1] [3]. The closure by removal documentation that was part of the CQA Report was approved by the Illinois Environmental Protection Agency (IEPA) as part of the closure construction approval.

East Fly Ash Stockpile

CCR was removed from the East Fly Ash Stockpile by excavation and hauling to the Fly Ash Pond, which was closed in place. CCR removal at the East Fly Ash Stockpile occurred between June and July 2018. A CQA representative periodically visually observed the CCR removal activities to assess the extent of CCR removal. The CQA Certifications by the CQA Officer that the closure by removal activities met the CQA Plan are provided in the CQA Report. After CCR removal and CQA Officer approval, the areas were brought to final grade using non-CCR backfill, stormwater controls were installed, and the areas were vegetated [1] [3]. The closure by removal documentation that was part of the CQA Report was approved by the IEPA as part of the closure construction approval.

(3) *Documentation that all CCR and other contaminated materials were removed from the unit, including, the results of any post-removal sampling and analysis that was conducted;*

Bottom Ash Pond

The CQA Officer completed certifications that the closure by removal activities met the CQA Plan are included in the CQA Report. No post-removal subgrade sampling or analysis was conducted [1]. Groundwater monitoring continues in accordance with the IEPA approved Groundwater Monitoring Plan (GMP) [4]. The closure by removal documentation that was part of the CQA Report was approved by the IEPA as part of the closure construction approval.

East Fly Ash Stockpile

The CQA Officer competed Certifications included in the CQA Report. No post-removal subgrade sampling or analysis was conducted [1]. Groundwater monitoring continues in accordance with the IEPA approved GMP [4]. The closure by removal documentation that was part of the CQA Report was approved by the IEPA as part of the closure construction approval.

(4) *The methods used to verify complete decontamination of all areas affected by releases from the unit, including but not limited to post-decontamination sampling and analysis;*

Bottom Ash Pond

No records of releases from the Bottom Ash Pond were discovered.

East Fly Ash Stockpile

No records of releases from the East Fly Ash Stockpile were discovered.

(5) *Documentation that all areas affected by releases from the unit were decontaminated and that all groundwater affected by releases has achieved groundwater protection standards; and*

Bottom Ash Pond

No records of releases from the Bottom Ash Pond were discovered.

East Fly Ash Stockpile

No records of releases from the East Fly Ash Stockpile were discovered.

(6) *Documentation that groundwater monitoring concentrations do not exceed the groundwater protection standards established pursuant to § 257.95(h) for constituents listed in appendix IV to this part.*

The groundwater monitoring system was designed and constructed in accordance with the Illinois Department of Public Health (IDPH) and Illinois Administrative Code (IAC). The monitoring program generally follows the IAC as stated in the GMP [4] and subsequent annual monitoring reports [5] [6] [7] [8] [9]. In addition, Medina Valley submitted a Groundwater Management Zone Plan [10] and a request to establish the Groundwater Management Zone (GMZ) pursuant to 35 IAC 620.250(a)(2): "Ash Ponds Closure, Groundwater Management Zone Application", dated 17 October 2017, which was approved by the IEPA on 1 November 2017.

The documentation must also include a demonstration that the groundwater monitoring system has met all of the following:

(i) Was capable of accurately representing background water quality unaffected by a CCR unit;

The GMP approved by the IEPA with the closure plan for the Fly Ash and Bottom Ash Ponds at Meredosia does not require development of a background concentration to compare downgradient concentrations. It only requires evaluation of monitored parameter trends over the previous two years to provide enough data for statistical analysis to determine if any have statistically significant increasing (SSI) trends via the Mann-Kendall trend test and concentrations that exceed 35 IAC 620 Class I groundwater standards. [10]

(ii) Was capable of accurately representing the quality of water passing the waste boundary of the unit;

The GMP for the site states that the groundwater monitoring well network adequately capture primary groundwater impacts, and they were installed to evaluate on-site and off-site groundwater quality [4].

(iii) Was capable of detecting contamination in the uppermost aquifer;

The GMP [4] states that the groundwater monitoring wells that make up the network are screened in the uppermost aquifer. Subsequent annual monitoring reports show the monitoring zone of the applicable monitoring wells are in the uppermost aquifer [5] [6] [7] [8] [9].

(iv) Monitored all potential contaminant pathways;

The GMP for the site states that monitoring wells are located within the stratigraphic unit(s) that may serve as potential contaminant migration pathways [4].

(v) Established groundwater background concentrations for appendix IV constituents and compared samples to those background concentrations;

The groundwater monitoring wells were constructed in accordance with the Illinois Department of Public Health (IDPH) and Illinois Administrative Code (IAC) and the monitored program generally follows the IAC as stated in the GMP [4] and subsequent annual monitoring reports [5] [6] [7] [8] [9]. In addition, Medina Valley submitted a Groundwater Management Zone Plan [10] and a request to establish the Groundwater Management Zone (GMZ) pursuant to 35 IAC 620.250(a)(2): Ash Ponds Closure, Groundwater Management Zone Application, dated October 17, 2017, which was approved by the Illinois Environmental Protection Agency (IEPA) on November 1, 2017.

(vi) Monitoring wells must have been cased in a manner that maintains the integrity of the monitoring well borehole. This casing must have been screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the borehole and well casing) above the sampling depth must have been sealed to prevent contamination of samples and the groundwater; and

Monitoring well installation diagrams provided in the GMP show the wells have been cased in a manner that maintains the integrity of the monitoring well borehole. The well diagrams indicate the casing is screened in the uppermost aquifer, the annular space is packed with filter sand, and that there is a bentonite seal above the sand pack [4] [9].

(vii) The last groundwater monitoring sample used to document that the standard in paragraph (g)(3) of this section has been met must have been collected no earlier than one year prior to the initiation of closure.

Analytical groundwater quality data was collected on 28 June 2017, 19 September 2017, 21 December 2017, and 21 March 2018 to develop a baseline for future post-closure monitoring [9] and in accordance with the approved GMZ requirements. Closure construction at the site began on 9 February 2018 [1].

REFERENCES

[1] Geotechnology, Inc., "Construction Quality Assurance Report Closure of Bottom Ash Pond and Fly Ash Pond Meredosia Power Station," 2019.

[2] Kleinfelder, "Coal Ash Impoundment Site Assessment Final Report - Meredosia Power Station," 2011.

[3] Geotechnology, Inc. and CDG Engineers, Inc., *Ash Pond Closure, As-Built Plans, Meredosia Power Station,* 2019.

[4] Geotechnology, Inc., "Groundwater Monitoring Plan Fly Ash Pond and Bottom Ash Pond Meredosia Power Station," 2016.

[5] Ramboll, "2020 Annual Report Meredosia Power Station," 2021.

[6] Ramboll, "2021 Annual Report Meredosia Power Station," 2022.

[7] Ramboll, "2022 Groundwater Monitoring Annual Report," 2023.

[8] Ramboll, "2023 Groundwater Monitoring Annual Report Closed Fly Ash & Bottom Ash Ponds Former Meredosia Power Station," 2024.

[9] OBG, *2018 Annual Report, Fly Ash Pond and Bottom Ash Pond, Meredosia Power Station,* 2018.

[10] Geotechnology, Inc., "Groundwater Management Zone Plan, Fly Ash and Bottom Ash Pond, Meredosia Power Station," 2016.