



Electric Energy, Inc
1500 Eastport Plaza Dr.
Collinsville, IL 62234

January 28, 2023

Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Joppa East Ash Pond (IEPA ID: W127010004-02) 2022 Annual Consolidated Report

Dear Mr. LeCrone:

In accordance with 35 IAC § 845.550, Electric Energy, Inc (EEI) is submitting the annual consolidated report for the Joppa East Ash Pond (IEPA ID: W12701000004-02), as enclosed.

Sincerely,

A handwritten signature in blue ink that reads "Dianna Tickner".

Dianna Tickner
Sr. Director Decommissioning & Demolition

Enclosures

Annual Consolidated Report
Electric Energy, Inc
Joppa Power Plant
Ash Pond; IEPA ID: **W127010004-02**

In accordance with 35 IAC § 845.550, Electric Energy, Inc (EEI) has prepared the annual consolidated report. The report is provided in three sections as follows:

Section 1

1) Annual CCR fugitive dust control report (Section 845.500(c))

Section 2

2) Annual inspection report (Section 845.540(b)), including:

- A) Annual hazard potential classification certification
- B) Annual structural stability assessment certification
- C) Annual safety factor assessment certification
- D) Inflow design flood control system plan certification

Section 3

3) Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Section 1

Annual CCR Fugitive Dust Control Report

Annual CCR Fugitive Dust Control Report
for
Joppa Power Plant

Prepared for:

Electric Energy, Inc.

**Joppa Power Plant
2100 Portland Road
Joppa, IL 62953**

November 2022

**Joppa Power Plant
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

Reporting Year: 4th Quarter 2021 through 3rd Quarter 2022

Signed by:  _____ Plant Manager
 Name Title

This Annual CCR Fugitive Dust Control Report has been prepared for the Joppa Power Plant in accordance with 40 CFR 257.80(c) and 35 IAC 845.500. Section 1 provides a description of the actions taken to control CCR fugitive dust at the facility during the reporting year, including a summary of any corrective measures taken. Section 2 provides a record of citizen complaints received concerning CCR fugitive dust at the facility during the reporting year, including a summary of any corrective measures taken.

Section 1 Actions Taken to Control CCR Fugitive Dust

In accordance with the Joppa Power Plant CCR Fugitive Dust Control Plan (Plan), the following measures were used to control CCR fugitive dust from becoming airborne at the facility during the reporting year:

CCR Activity	Actions Taken to Control CCR Fugitive Dust
Management of CCR in the facility's CCR units	CCR to be emplaced in the landfill will be conditioned before loading into vehicles for transport to the landfill.
	Wet management of CCR in CCR surface impoundments.
	Water areas of exposed CCR in CCR units, as necessary.
	Naturally occurring grass vegetation in areas of exposed CCR in CCR surface impoundments.
	Apply chemical dust suppressant on areas of exposed CCR in CCR units, as necessary.
Handling of CCR at the facility	Wet sluice CCR bottom ash to CCR surface impoundments.
	CCR bottom ash removed from CCR surface impoundments and loaded into trucks for transport remains conditioned during handling.
	Pneumatically convey dry CCR fly ash to storage silos in an enclosed system.
	CCR fly ash to be emplaced in the landfill will be conditioned before loading into trucks for transport to the landfill.

**Joppa Power Plant
ANNUAL CCR FUGITIVE DUST CONTROL REPORT**

CCR Activity	Actions Taken to Control CCR Fugitive Dust
Handling of CCR at the facility	CCR fly ash to be placed in the surface impoundments is conditioned before loading into trucks for transport to the surface impoundments.
	Load CCR dry fly ash to transport trucks from the CCR fly ash silos using a telescoping chute.
	Perform housekeeping, as necessary, in the fly ash loading area.
	Operate fly ash handling system in accordance with good operating practices.
	Maintain and repair as necessary dust controls on the fly ash handling system.
Transportation of CCR at the facility	CCR to be emplaced in the landfill will be conditioned before loaded into vehicles for transport to the landfill.
	CCR fly ash to be placed in the surface impoundments is conditioned before loading into trucks for transport to the surface impoundments
	Cover or enclose trucks used to transport CCR onsite, as necessary.
	Limit the speed of vehicles to no more than 15 mph on facility roads.
	Sweep or rinse off the outside of the trucks transporting CCR, as necessary.
	Cover or enclose trucks used to transport CCR offsite.
	Water CCR haul roads, as necessary.
	Remove CCR deposited on facility road surfaces during transport as necessary.

Based on a review of the Plan and inspections associated with CCR fugitive dust control performed in the reporting year, the control measures identified in the Plan as implemented at the facility effectively minimized CCR from becoming airborne at the facility. No revisions or additions to control measures identified in the Plan were needed.

No material changes occurred in the reporting year in site conditions potentially resulting in CCR fugitive dust becoming airborne at the facility that warrant an amendment of the Plan.

Section 2 Record of Citizen Complaints

No citizen complaints were received regarding CCR fugitive dust at Joppa Power Plant in the reporting year.

Section 2

Annual inspection report (Section 845.540(b)), including:

A) Annual hazard potential classification certification, if applicable (Section 845.440)

B) Annual structural stability assessment certification, if applicable (Section 845.450)

C) Annual safety factor assessment certification, if applicable (Section 845.460)

D) Inflow design flood control system plan certification (Section 845.510(c))

ANNUAL INSPECTION BY A QUALIFIED PROFESSIONAL ENGINEER
35 IAC § 845.540

(b)(1) The CCR surface impoundment must be inspected on an annual basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering standards. The inspection must, at a minimum, include:

A) A review of available information regarding the status and condition of the CCR surface impoundment, including files available in the operating record (e.g., CCR surface impoundment design and construction information required by Sections 845.220(a)(1) and 845.230(d)(2)(A), previous structural stability assessments required under Section 845.450, the results of inspections by a qualified person, and results of previous annual inspections);

B) A visual inspection of the CCR surface impoundment to identify signs of distress or malfunction of the CCR surface impoundment and appurtenant structures;

C) A visual inspection of any hydraulic structures underlying the base of the CCR surface impoundment or passing through the dike of the CCR surface impoundment for structural integrity and continued safe and reliable operation;

D) The annual hazard potential classification certification, if applicable (see Section 845.440);

E) The annual structural stability assessment certification, if applicable (see Section 845.450);

F) The annual safety factor assessment certification, if applicable (see Section 845.460); and

G) The inflow design flood control system plan certification (see Section 845.510(c)).

SITE INFORMATION

Site Name / Address / Date of Inspection	Electric Energy, Inc. Massac County, Illinois 62017 9/16/2022
Operator Name / Address	Luminant Generation Company LLC 6555 Sierra Drive, Irving, TX 75039
CCR unit	East Ash Pond

INSPECTION REPORT 35 IAC § 845.540

(b)(1)(D) The annual hazard potential classification certification, if applicable (see Section 845.440).	Based on a review of the CCR unit's annual hazard potential classification, the unit is classified as a Class I CCR surface impoundment.
(b)(2)(A) Any changes in geometry of the structure since the previous annual inspection.	Based on a review of the CCR unit's records and visual observation during the on-site inspection, no changes in geometry of the structure have taken place since the previous annual inspection.
(b)(2)(B) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection	See the attached.
b)(2)(C) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;	See the attached.
b)(2)(D) The storage capacity of the impounding structure at the time of the inspection	Approximately 6400 acre-feet
(b)(2)(E) The approximate volume of the impounded water and CCR contained in the unit at the time of the inspection.	Approximately 4015 acre-feet
(b)(2)(F) 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	Based on a review of the CCR unit's records and visual observation during the on-site inspection, there was no appearance of an actual or potential structural weakness of the CCR unit, nor an existing condition that is disrupting or would disrupt the operation and safety of the unit.

INSPECTION REPORT 35 IAC § 845.540

(b)(2)(G) Any other changes that may have affected the stability or operation of the impounding structure since the previous annual inspection.	Based on a review of the CCR unit's records and visual observation during the on-site inspection, no other changes which may have affected the stability or operation of the CCR unit have taken place since the previous annual inspection.
(b)(1)(G) The inflow design flood control system plan certification (see Section 845.510(c))	Based on a review of the CCR unit's records, the CCR unit is designed, operated, and maintained to adequately manage the flow from the CCR impoundment and control the peak discharge from the inflow design flood.

35 IAC § 845.540 - Annual inspection by a qualified professional engineer.

I, James Knutelski, P.E., certify under penalty of law that the information submitted in this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Illinois. The information submitted, is to the best of my knowledge and belief, true, accurate and complete. Based on the annual inspection, the design, construction, operation, and maintenance of the CCR Unit is consistent with recognized and generally accepted good engineering standards. Based on a review of the records for the CCR unit and a visual inspection of the unit to document no material changes to the unit, the hazard potential classification was conducted in accordance with the requirements of Section 845.440, the structural stability assessment was conducted in accordance with the requirements of Section 845.450, the safety factor assessment was conducted in accordance with the requirements of Section 845.460, and the inflow design flood control system plan assessment was conducted in accordance with the requirements of Section 845.510.



James Knutelski, PE
 Illinois PE No. 062-054206, Expires: 11/30/2023
 Date: 12/20/2022

Site Name: Electric Energy, Inc.

CCR Unit: East Ash Pond

35 IAC § 845.540 (b)(2)(B)		
Instrument ID #	Type	Maximum recorded reading since previous annual inspection (ft)
JOP-P004	Piezometer	349.9'
JOP-P005	Piezometer	356.7'
JOP-P007	Piezometer	323.6'
JOP-P008	Piezometer	353.0'
JOP-P009	Piezometer	360.1'
JOP-P011	Piezometer	333.5'
JOP-P012	Piezometer	347.1'
JOP-P014	Piezometer	328.8'
JOP-P015	Piezometer	abandoned
JOP-P016	Piezometer	350.7'
JOP-P020	Piezometer	353.4'
JOP-P023	Piezometer	364.3'

35 IAC § 845.540 (b)(2)(C)						
Approximate Depth / Elevation						
Since previous inspection:	Elevation (ft)			Depth (ft)		
	Minimum	Present	Maximum	Minimum	Present	Maximum
Impounded Water		374.6			29	
CCR	375		385	66		76

Section 3

Annual Groundwater Monitoring and Corrective Action Report (Section 845.610(e))

Prepared for
Electric Energy, Inc.

Date
January 31, 2023

Project No.
1940102203-012

**2022 35 I.A.C. § 845 ANNUAL
GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
EAST ASH POND
JOPPA POWER PLANT
JOPPA, ILLINOIS
IEPA ID NO. W1270100004-02**

**2022 35 I.A.C. § 845 ANNUAL GROUNDWATER
MONITORING AND CORRECTIVE ACTION REPORT**
JOPPA POWER PLANT EAST ASH POND

Project name **Joppa Power Plant East Ash Pond**
Project no. **1940102203-012**
Recipient **Electric Energy, Inc.**
Document type **Annual Groundwater Monitoring and Corrective Action Report**
Version **FINAL**
Date **January 31, 2023**
Prepared by **Melanie K. Conklin**
Checked by **Lauren D. Cook**
Approved by **Brian G. Hennings, PG**
Description **Annual Report in Support of 35 I.A.C. § 845**

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FIGURES

Figure 1 Proposed Part 845 Groundwater Monitoring Well Network

ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
CCA	compliance commitment agreement
CCR	coal combustion residuals
EAP	East Ash Pond
EEI	Electric Energy, Inc.
GMP	Groundwater Monitoring Plan
GWPS	groundwater protection standard
ID	identification
IEPA	Illinois Environmental Protection Agency
JPP	Joppa Power Plant
NID	National Inventory of Dams
No.	number
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SI	surface impoundment
SSI	statistically significant increase

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 35 of the Illinois Administrative Code (35 I.A.C.) Section (§) 845.610(e) (*Annual Groundwater Monitoring and Corrective Action Report*) for East Ash Pond (EAP) located at Joppa Power Plant (JPP) near Joppa, Illinois. The EAP is recognized by coal combustion residuals (CCR) unit identification (ID) number (No.) 401, Illinois Environmental Protection Agency (IEPA) ID No. W1270100004-02, and National Inventory of Dams (NID) No. IL50714.

As required by 35 I.A.C. § 845: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments, an operating permit application for the EAP was submitted by Electric Energy, Inc. (EEI) to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d), and is pending approval. Therefore, the 35 I.A.C. § 845 compliance groundwater monitoring program at the EAP has not been initiated. Groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the EAP is scheduled to commence no later than the second quarter of 2023. Following initiation of quarterly groundwater monitoring and identification of exceedances of the groundwater protection standards (GWPS) established in accordance with 35 I.A.C § 845.600(a), EEI will conduct a confirmatory resample consistent with 35 I.A.C § 845.600(d). When the confirmatory resample suggests an exceedance of a GWPS, EEI will commence with the other steps required under 35 I.A.C § 845.650(d), 845.650(e), 845.660, 845.670, and 845.680(a)(3), as necessary.

After the EAP has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. Groundwater sampling requirements that apply to the CCR surface impoundment (SI) under other existing state permit programs will be requested to be discontinued upon issuance of an approved operating permit pursuant to 35 I.A.C § 845.

This report summarizes the information collected in 2022 for the EAP, and includes the following:

- A map showing the CCR SI and all proposed background (or upgradient) and downgradient monitoring wells, including their identification numbers, that are part of the proposed groundwater monitoring program for the EAP (**Figure 1**).

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of EEI, to provide the information required by 35 I.A.C. § 845.610(e) for the EAP located at JPP near Joppa, Illinois. The owner or operator of a CCR SI must prepare and submit to IEPA by January 31st of each year an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year as part of the Annual Consolidated Report required by 35 I.A.C. § 845.550. The Annual Groundwater Monitoring and Corrective Action Report shall document the status of the groundwater monitoring and corrective action plan for the CCR SI, summarize key actions completed, including the status of permit applications and Agency approvals, describe any problems encountered and actions to resolve the problems, and project key activities for the upcoming year.

At a minimum, the annual report must contain the following information, to the extent available:

- A. A map, aerial image, or diagram showing the CCR SI and all background (or upgradient) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the CCR SI, and a visual delineation of any exceedances of the GWPS.
- B. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.
- C. A potentiometric surface map for each groundwater elevation sampling event required by 35 I.A.C. § 845.650(b)(2).
- D. In addition to all the monitoring data obtained under 35 I.A.C. §§ 845.600-680, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, and the dates the samples were collected.
- E. A narrative discussion of any statistically significant increases (SSIs) over background levels for the constituents listed in 35 I.A.C. § 845.600.
- F. Other information required to be included in the annual report as specified in 35 I.A.C. §§ 845.600-680.

A section at the beginning of the annual report that provides an overview of the current status of the groundwater monitoring program and corrective action plan for the CCR SI. At a minimum, the summary must:

- A. Specify whether groundwater monitoring data shows an SSI over background concentrations for one or more constituents listed in 35 I.A.C. § 845.600.
- B. Identify those constituents having an SSI over background concentrations and the names of the monitoring wells associated with the SSI(s).
- C. Specify whether there have been any exceedances of the GWPS for one or more constituents listed in 35 I.A.C. § 845.600.
- D. Identify those constituents with exceedances of the GWPS in 35 I.A.C. § 845.600 and the names of the monitoring wells associated with the exceedance.
- E. Provide the date when the assessment of corrective measures was initiated for the CCR SI.

- F. Provide the date when the assessment of corrective measures was completed for the CCR SI.
- G. Specify whether a remedy was selected under 35 I.A.C. § 845.670 during the current annual reporting period, and if so, the date of remedy selection.
- H. Specify whether remedial activities were initiated or are ongoing under 35 I.A.C. § 845.780 during the current annual reporting period.

This report summarizes the information collected in 2022 for the EAP, and includes the following:

- A map showing the CCR SI and all proposed background (or upgradient) and downgradient monitoring wells, including their identification numbers, that are part of the proposed groundwater monitoring program for the EAP (**Figure 1**).

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

An operating permit application for the EAP was submitted by EEI to IEPA by October 31, 2021 in accordance with the requirements specified in 35 I.A.C. § 845.230(d), and is pending approval. Therefore, the 35 I.A.C. § 845 groundwater monitoring program at the EAP has not been initiated. Groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the EAP is scheduled to commence no later than the second quarter of 2023. Following initiation of quarterly groundwater monitoring and identification of exceedances of the GWPS established in accordance with 35 I.A.C § 845.600(a), EEI will conduct a confirmatory resample consistent with 35 I.A.C § 845.600(d). When the confirmatory resample suggests an exceedance of a GWPS, EEI will commence with the other steps required under 35 I.A.C § 845.650(d), 845.650(e), 845.660, 845.670, and 845.680(a)(3), as necessary.

After the EAP has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. Groundwater sampling requirements that apply to the CCR surface impoundment (SI) under other existing state permit programs will be requested to be discontinued upon issuance of an approved operating permit pursuant to 35 I.A.C § 845.

3. KEY ACTIONS COMPLETED IN 2022

The proposed 35 I.A.C. § 845 monitoring well network is presented in **Figure 1**. Groundwater monitoring activities as required by other State and Federal programs are summarized in the groundwater monitoring plan (GMP; Ramboll, 2021), and were completed in 2022. Investigation work was completed in 2022 in support of 35 I.A.C § 620 regulations and additional data will be forthcoming in 2023.

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

Groundwater monitoring in accordance with the proposed groundwater monitoring plan using sampling methodologies provided in the operating permit application for the EAP is scheduled to commence no later than the second quarter of 2023. After the EAP has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit.

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Groundwater monitoring in accordance with the proposed groundwater monitoring plan and sampling methodologies provided in the operating permit application for the EAP is scheduled to commence no later than the second quarter of 2023. After the EAP has been issued an approved operating permit, groundwater monitoring shall be conducted in accordance with that operating permit. Groundwater sampling requirements that apply to the CCR surface impoundment (SI) under other existing state permit programs will become void upon issuance of an approved operating permit pursuant to 35 I.A.C § 845. Groundwater monitoring will include:
 - Monthly groundwater elevations
 - Quarterly groundwater sampling
- Pressure transducers equipped with data loggers are being purchased for measurement of monthly water level elevations. Deployment of the transducers, monitoring well inspections, and redevelopment of the monitoring wells will be completed prior to initiating groundwater monitoring in the second quarter of 2023.
- Investigation work was completed in 2022 in support of 35 I.A.C § 620 regulations and additional data will be forthcoming in 2023.

6. REFERENCES

Illinois Environmental Protection Agency (IEPA), 2021. *In the Matter of: Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments: Title 35 Illinois Administration Code 845, Addendum*. April 15, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. *Groundwater Monitoring Plan*. Joppa Power Plant, East Ash Pond, Joppa, Illinois. Electric Energy, Inc. October 25, 2021.

FIGURES



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- COMPLIANCE WELL
- BACKGROUND WELL
- STAFF GAUGE
- PART 845 REGULATED UNIT (SUBJECT UNIT)
- PROPERTY BOUNDARY

0 200 400 Feet

PROPOSED GROUNDWATER MONITORING WELL NETWORK

FIGURE 1

ANNUAL GROUNDWATER MONITORING AND
 CORRECTIVE ACTION REPORT
 EAST ASH POND
 JOPPA POWER PLANT
 JOPPA, ILLINOIS

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

