

**2021 USEPA CCR RULE OPERATING  
RECORD PERIODIC CERTIFICATION  
REPORT  
§257.82  
GYPSUM RECYCLE POND  
Miami Fort Power Company, LLC  
North Bend, Ohio**

*Submitted to*

**Miami Fort Power Plant**

**11080 Brower Road  
North Bend, Ohio 45052**

*Submitted by*

**Geosyntec**   
consultants

engineers | scientists | innovators

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

October 11, 2021

## TABLE OF CONTENTS

Executive Summary .....	1
SECTION 1 Introduction and Background.....	3
1.1 GRP Description .....	4
1.2 Report Objectives .....	5
SECTION 2 Comparison of Initial and Periodic Site Conditions .....	6
2.1 Overview.....	6
2.2 Comparison of Initial to Periodic Site Visits .....	6
2.3 Interview with Power Plant Staff.....	6
SECTION 3 Inflow Design Flood Control System Plan - §257.82.....	8
3.1 Overview of Initial IDF .....	8
3.2 Review of Initial IDF.....	8
3.3 Summary of Site Changes Affecting the Initial IDF .....	9
SECTION 4 Conclusions.....	10
SECTION 5 Certification Statement .....	11
SECTION 6 References.....	12

## LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan

## LIST OF TABLES

Table 1	Periodic Certification Summary
---------	--------------------------------

## LIST OF ATTACHMENTS

Attachment A	GRP Site Visit Photolog
--------------	-------------------------

## EXECUTIVE SUMMARY

This Periodic United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule [1] certification report (Periodic Certification Report) for the Gypsum Recycle Pond (GRP) at the Miami Fort Power Plant (MIA) (also known as Miami Fort Power Station) has been prepared in accordance with Rule 40, Code of Federal Regulations (CFR) §257. herein referred to as the “CCR Rule” [1]. The CCR Rule requires that initial certifications for existing CCR surface impoundment, completed in 2016 and subsequently posted on Miami Fort Power Company, LLC (MFPC) CCR Website ([3], [4]) be updated on a five-year basis.

The GRP is an incised CCR surface impoundment, as defined by 40 CFR §257.53. Per §257.73(b), the requirements of §257.73(a)(2) (hazard potential classification), §257.73(a)(3) (emergency action plan), §257.73(2) (structural stability assessment) and §257.73(e) (safety factor assessment) are not applicable to incised CCR surface impoundments.

The initial certification reports developed in 2016 and 2017 were independently reviewed by Geosyntec ([3], [4]). Additionally, field observations, interviews with plant staff, updated engineering analyses, and evaluations were performed to compare conditions in 2021 at the GRP relative to the 2016 and 2017 initial certifications. These tasks determined that the GRP meets all requirements for the Inflow Design Flood Control System Plan. **Table 1** provides a summary of the initial 2016 certifications and the updated 2021 periodic certifications.

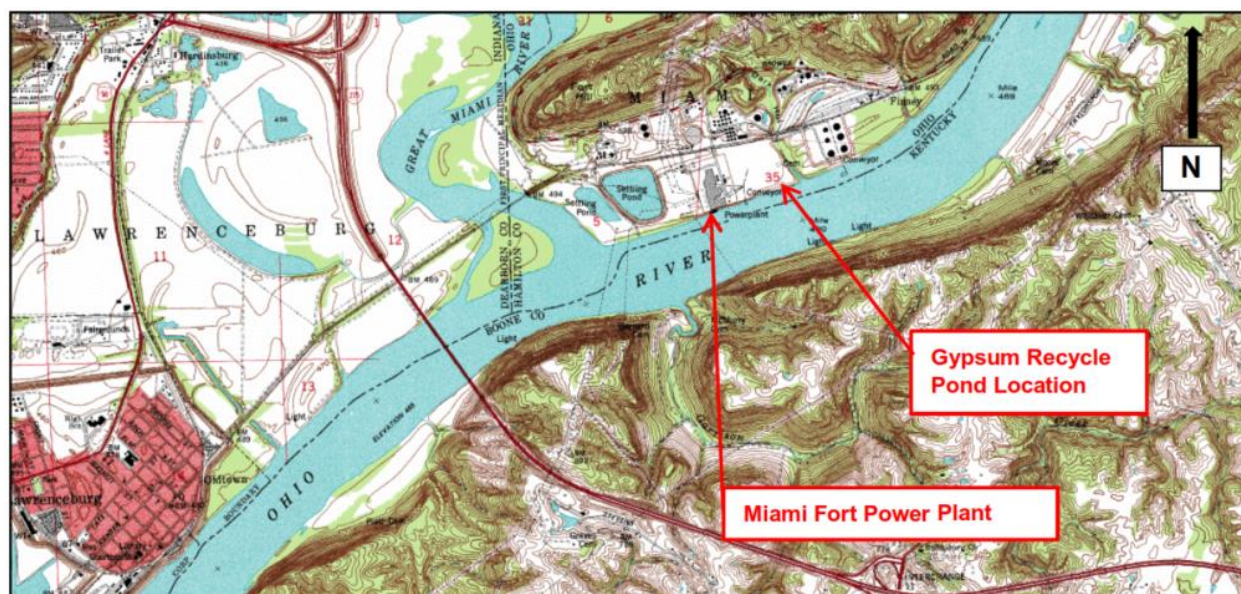
**Table 1 – Periodic Certification Summary**

	CCR Rule Reference	Requirement Summary	2016 Initial Certification		2021 Periodic Certification	
			Requirement Met?	Comments	Requirement Met?	Comments
<b>Hazard Potential Classification</b>						
3	§257.73(a)(2)	Document hazard potential classification	Not Applicable	The GRP is an incised CCR surface impoundment [1] and does not meet the criteria of §257.73(a)(2); therefore, the requirement to perform a hazard potential classification does not apply.		
<b>Emergency Action Plan</b>						
4	§257.73(a)(3)(iv)	Prepare written Emergency Action Plan	Not Applicable	The GRP is an incised CCR surface impoundment [1] and does not meet the criteria of §257.73(a)(3); therefore, the requirement to prepare an emergency action plan does not apply.		
<b>History of Construction</b>						
5	§257.73(c)(1)	Compile a history of construction	Not Applicable	The GRP is an incised CCR surface impoundment [1] and does not meet the criteria of §257.73(c); therefore, the requirement to prepare a history of construction does not apply.		
<b>Structural Stability Assessment</b>						
6	§257.73(d)(1)(i)	Stable foundations and abutments	Not Applicable	The GRP is an incised CCR surface impoundment [1] and does not meet the criteria of §257.73(d); therefore, the requirement to prepare a structural stability assessment does not apply.		
	§257.73(d)(1)(ii)	Adequate slope protection				
	§257.73(d)(1)(iii)	Sufficiency of dike compaction				
	§257.73(d)(1)(iv)	Presence and condition of slope vegetation				
	§257.73(d)(1)(v)(A) and (B)	Adequacy of spillway design and management				
	§257.73(d)(1)(vi)	Structural integrity of hydraulic structures				
	§257.73(d)(1)(vii)	Stability of downstream slopes inundated by water body.				
<b>Safety Factor Assessment</b>						
7	§257.73(e)(1)(i)	Maximum storage pool safety factor must be at least 1.50	Not Applicable	The GRP is an incised CCR surface impoundment [1] and does not meet the criteria of §257.73(e); therefore, the requirement to prepare a safety factor assessment does not apply.		
	§257.73(e)(1)(ii)	Maximum surcharge pool safety factor must be at least 1.40				
	§257.73(e)(1)(iii)	Seismic safety factor must be at least 1.00				
	§257.73(e)(1)(iv)	For dike construction of soils that have susceptible to liquefaction, safety factor must be at least 1.20				
<b>Inflow Design Flood Control System Plan</b>						
8	§257.82(a)(1), (2), (3)	Adequacy of inflow design control system plan.	Yes	Flood control system adequately managed inflow and peak discharge during the 25-year, 24-hour, Inflow Design Flood [3]	Yes	No changes were identified that may affect this requirement.
	§257.82(b)	Discharge from CCR Unit	Yes	Discharge from the CCR Unit is routed through a NPDES-permitted outfall during both normal and 25-year, 24-hour Inflow Design Flood conditions [3].	Yes	No changes were identified that may affect this requirement.

## SECTION 1

### INTRODUCTION AND BACKGROUND

This Periodic United States Environmental Protection Agency (USEPA) Coal Combustion Residual (CCR) Rule [1] Certification Report was prepared by Geosyntec Consultants (Geosyntec) for Miami Fort Power Company, LLC (MFPC) (plant operating entity) to document the periodic certification of the Gypsum Recycle Pond (GRP) at the Miami Fort Power Plant (MIA), located at 11021 Brower road, North Bend, Ohio 45052. The location of MIA is provided in **Figure 1**, and a site plan showing the location of the GRP, among other open CCR units and non-CCR surface impoundments, is provided in **Figure 2**.



**Figure 1 – Site Location Map (from AECOM, 2016 [4])**



**Figure 2 – Site Plan (background aerial from Google Earth)**

### **1.1 GRP Description**

The GRP serves as a stormwater collection and storage pond for the plant. It does not directly receive process water or plant outflow. The GRP is an incised oval-shaped basin. Periodically, sediment is cleaned out mechanically.

The GRP has an emergency outlet control structure consisting of an 18-inch diameter high-density polyethylene (HDPE) culvert, which leads to the south coal pile ditch. The emergency outlet control structure is activated when water in the pond extends above the invert of the structure, set at El 490.25 ft<sup>1</sup>, which is 15.25 ft above the bottom of the pond. The primary outfall from the GRP is a pump station that houses two 250 gallon per minute (gpm) submersible pumps. The first pump is activated when the water surface reaches El. 475.75 ft, and the second pump is activated when the water surface reaches El. 477.75 ft. These pumps discharge to Miami Fort Pond System through an 18-inch HDPE pipe and then ultimately through a NPDES-permitted outfall that discharges into the Ohio River [4].

The GRP is lined with, from bottom to top, 3-ft of compacted clay and 8-inches of reinforced concrete. The interior slopes are graded at a 3H:1V (horizontal to vertical) slope and were

<sup>1</sup> All elevations are in the North American Vertical Datum of 1988 (NAVD88), unless otherwise noted.

constructed with a sidewall height of approximately 17 ft (basin sidewalls are below current surrounding grade) ([4]).

As currently operated, there is minimal water within the GRP between rainfall events. During rainfall events, the pool level is typically maintained at or below El. 475.75 ft. The GRP has an approximate surface area of 0.7 acres and the perimeter (crest) length is approximately 700 ft. The minimum crest elevation of the GRP is El. 492 ft. Additional details about the geometry and configuration of the basin is provided in the Hydrologic and Hydraulic Report [4].

The initial certification for the GRP for the Inflow Design Flood Control System Plan (§257.82) was completed by AECOM in 2016 and subsequently posted to MFPC’s CCR Website ( [3]). Additional documentation for the initial certification included a detailed operating record report containing calculations and other information prepared for the inflow design flood control system plan by AECOM [4]. These operating record reports were not posted to MFPC’s CCR Website.

## 1.2 **Report Objectives**

These following objectives are associated with this report:

- Compare site conditions from 2015/2016, when the initial certifications were developed, to site conditions in 2020/2021, when data for the periodic certification was obtained, and evaluate if updates are required to the §257.82 Inflow Design Flood Control System Plan [3].
- Independently review the Inflow Design Flood Control System Plan ( [3], [4]) reports to determine if updates may be required based on technical considerations.
- If updates are required, they will be performed and documented within this report.
- Confirm that the GRP meets all of the requirements associated with §257.82, or, if the GRP does not meet all requirements, provide recommendations for compliance with these sections of the CCR Rule [1].



## SECTION 2

### COMPARISON OF INITIAL AND PERIODIC SITE CONDITIONS

#### 2.1 Overview

This section describes the comparison of conditions at the GRP between the start of the initial CCR certification program in 2015 and 2016 (initial conditions) and subsequent collection of periodic certification site data in 2020 and 2021 (periodic conditions).

#### 2.2 Comparison of Initial to Periodic Site Visits

An initial site visit to the GRP was conducted by AECOM in 2015 and documented with a Site Visit Summary and corresponding photographs [4]. A periodic site visit was conducted by Geosyntec on June 03, 2021, with Panos Andonyadis conducting the site visit. The site visit was intended to evaluate potential changes at the site since the initial certifications were prepared (i.e., modification to the outlet structures or other appurtenances, limits of CCR, maintenance programs, repairs). The site visit included walking the perimeter of the GRP, visually observing conditions, recording filed notes, and collecting photographs. The site visit is documented in a photographic log provided in **Appendix A**. A summary of significant findings from the periodic site visit is provided below:

- The perimeter incised slopes appear to be structurally stable as no signs of structural or foundation instability were observed.
- No significant changes were observed since the previous certification.

#### 2.3 Interview with Power Plant Staff

An interview with Trevor Tallent of the MIA power plant and Desiree Loveless of Vistra was conducted by Panos Andonyadis of Geosyntec on June 03, 2021. Mr. Tallent was employed at MIA between 2020 and 2021 and Ms. Loveless was employed with Vistra between 2015 and 2021, and were asked the following questions and provided the following answers regarding changes that that may have occurred at the GRP since development of the initial certifications ([3]).

- Were any construction projects completed for the GRP since 2015, and, if so, are design drawings and/or details available?
  - In 2015 the GRP was clean-closed and all sediment was removed from the pond. No construction projects were completed since 2015.
- Were there any changes to the purpose of the GRP since 2015?



- No changes in the purpose of the pond since 2015.
- Were there any changes to the instrumentation program and/or physical instruments for the GRP since 2015?
  - No.
- Have area-capacity curves for the GRP been prepared since 2015?
  - No area-capacity curves have been developed.
- Were there any changes to spillways and/or diversion features for the GRP completed since 2015?
  - No.
- Were there any changes to construction specifications, surveillance, maintenance, and repair procedures for the GRP since 2015?
  - No.

## SECTION 3

### INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN - §257.82

#### 3.1 Overview of Initial IDF

The Initial Inflow Design Flood Control System Plan (Initial IDF) was prepared by AECOM in 2016 ( [3], [4]), following the requirements of §257.82. The Initial IDF included the following information:

- A hydraulic and hydrologic analysis, performed for the 25-year, 24-hour duration design flood event, which corresponded to 4.87 inches of rainfall over a 24-hour period.
- The Initial IDF utilized a HydroCAD Version 10 model to evaluate spillway flows and pool level increases during the design flood, with a SWSE of 475 ft.

The Initial IDF concluded that the GRP met the requirements of §257.82, as the peak water surface estimated by the HydroCAD model was El. 482.8 ft, relative to a minimum GRP crest elevation of 492.0 ft. Therefore, overtopping was not expected. The Initial IDF also concluded that all on-site and off-site drainage areas are able to contain or pass the design flood within the GRP and would not affect the water surface elevation.

#### 3.2 Review of Initial IDF

Geosyntec performed a review of the Initial IDF ( [3], [4]) in terms of technical approach, calculation input parameters and methodology, recommendations, and completeness. The review included the following tasks:

- Reviewing the return interval used vs. the hazard potential classification;
- Reviewing the rainfall depth and distribution for appropriateness;
- Performing a high-level review of the inputs to the hydrological modeling;
- Reviewing the hydrologic model parameters for spillway parameters, starting pool elevation, and storage vs. the reference data; and
- Reviewing the overall Initial IDF vs. the applicable requirements of the CCR Rule [1].

No significant technical issues were noted within the technical review, although a detailed review (e.g., check) of the calculations was not performed.

### **3.3 Summary of Site Changes Affecting the Initial IDF**

No changes since development of the Initial IDF were identified that would require updates to the Initial IDF ( [3], [4]).

## **SECTION 4**

### **CONCLUSIONS**

The GRP at MIA was evaluated relative to the USEPA CCR Rule periodic assessment requirements for Inflow design flood control system planning (§257.82). The GRP is an incised CCR surface impoundment [1] and does not meet the criteria of §257.73(a)(2); therefore, the requirement to perform a hazard potential classification, history of construction, structural stability assessment, and safety factor assessment does not apply.

Based on the evaluations presented herein, the referenced requirements are satisfied for inflow design flood control system planning (IDF).

**SECTION 5**

**CERTIFICATION STATEMENT**

CCR Unit: Miami Fort Power Company, LLC, Miami Fort Power Plant, Gypsum Recycle Pond

I, Panos Andonyadis, being a Registered Professional Engineer in good standing in the State of Ohio, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this 2021 USEPA CCR Rule Periodic Certification Report, has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the periodic assessment of the inflow design flood control system planning, dated October 2021, was conducted in accordance with the requirements of 40 CFR §257.82.

\_\_\_\_\_  
*Panos Andonyadis*

\_\_\_\_\_  
October 11, 2021  
*Date*



Exp. 11/30/2021

## **SECTION 6**

### **REFERENCES**

- [1] United States Environmental Protection Agency, 40 CFR Parts 257 and 261; Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, 2015.
- [2] AECOM, "CCR Rule Report: Initial Inflow Design Flood Control System Plan For Gypsum Recycle Pond At Miami Fort Power Station," St. Louis, MO, October 2016.
- [3] AECOM, "CCR Certification Report: Initial Structural Stability Assessment, Initial Safety Factor Assessment, and Initial Inflow Design Flood Control System Plan for Gypsum Recycle Pond at Miami Fort Power Station," St. Louis, MO, October 2016.
- [4] AECOM, "Draft CCR Unit Initial Site Visit Summary, Dynegy CCR Compliance Program," June 09, 2015.

# ATTACHMENTS



**Attachment A**

**GRP Site Visit Photolog**

**GEOSYNTEC CONSULTANTS**  
**Photographic Record**



**Site Owner:** Miami Fort Power Company, LLC

**Project Number:** GLP8027

**CCR Unit:** Gypsum Recycle Pond

**Site:** Miami Fort Power Plant

**Photo: 01**

**Date:** 06/03/2021

**Direction Facing:**  
S

**Comments:**  
Photo of the GRP.  
Low water level.



**Photo: 02**

**Date:** 06/03/2021

**Direction Facing:**  
N

**Comments:**  
Photo of the GRP.  
Low water level,  
appears to be rising  
because of rainfall.

