AECOM

Submitted to
Miami Fort Power Station
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CCR Rule Report: Initial Inflow Design Flood Control System Plan

For

Basin A

At Miami Fort Power Station

1 Introduction

This Coal Combustion Residual (CCR) Rule Report documents that the initial inflow design flood control system plan for Basin A at the Miami Fort Power Station meets the requirements specified in 40 Code of Federal Regulations (CFR) §257.82. Basin A is located near North Bend, Ohio in Hamilton County, approximately 0.2 miles west of the Miami Fort Power Station. Basin A serves as a wet impoundment basin for CCRs produced by the Miami Fort Power Station.

Basin A is an existing CCR surface impoundment as defined by 40 CFR §257.53. The CCR Rule requires that the initial inflow design flood control system plan for an existing CCR surface impoundment be prepared by October 17, 2016. The plan must document how the inflow design flood control system has been designed and constructed to meet the requirements of 40 CFR §257.82 and be supported by appropriate engineering calculations.

The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the inflow design flood control system meets the requirements of 40 CFR §257.82. The owner or operator must prepare an inflow design flood control system plan every five years.

2 Initial Inflow Design Flood Control System Plan

40 CFR §257.82
(a) The owner or operator of an existing … CCR surface impoundment … must design, construct, operate, and maintain an inflow design flood control system as specified in paragraphs (a)(1) and (2) of this section.

(1) The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in paragraph (a)(3) of this section.

(2) The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in paragraph (a)(3) of this section.

(3) The inflow design flood is:

(i) For a high hazard potential CCR surface impoundment, …, the probable maximum flood;

(ii) For a significant hazard potential CCR surface impoundment, …, the 1,000-year flood;

(iii) For a low hazard potential CCR surface impoundment, …, the 100-year flood; or

(iv) For an incised CCR surface impoundment, the 25-year flood.

(b) Discharge from the CCR unit must be handled in accordance with the surface water requirements under §257.3-3.

Analyses completed for the initial inflow design flood control system plan of Basin A are described in the following subsections. Data and analysis results in the following subsection are based on spillway design information shown on design drawings, construction information, topographic surveys, information about operational and maintenance procedures provided by the Miami Fort Power Station, and field measurements collected by AECOM. The analysis approach and results of the hydrologic and hydraulic analyses are presented in the following subsections.

Basin A has a significant hazard potential based on the initial hazard potential classification assessment performed by Stantec in 2016 in accordance with §257.73(a)(2).

2.1 Initial Inflow Design Flood Control Systems (§257.82(a))

An initial inflow design flood control system plan, supported by a hydraulic and hydrologic analysis, was developed for Basin A by evaluating the effects of a 24-hour duration design storm for the 1,000-year Inflow Design Flood (IDF) using a hydrologic HydroCAD (Version 10) computer model and a starting water surface elevation of 501.5 feet. The computer model evaluated Basin A's ability to collect and control the 1,000-year IDF under existing operational and maintenance procedures. Rainfall data for the 1,000-year IDF was obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14. The NOAA Atlas 14 rainfall depth is 7.81 inches.

The HydroCAD model results for Basin A indicate that the CCR unit has sufficient storage capacity and spillway structures to adequately manage (1) flow into the CCR unit during and following the peak discharge of the 1,000-year IDF and (2) flow from the CCR unit to collect and control the peak discharge resulting from the 1,000-year IDF. The peak water surcharge elevation is 502.6 feet during the IDF, and the minimum crest elevation of Basin A dike is 507 feet. Therefore, overtopping is not expected.

Based on this evaluation, Basin A meets the requirements in §257.82(a).

2.2 Discharge from the CCR Unit (§257.82(b))

40 CFR §257.82(b) provides that the discharge from the CCR unit must be handled in accordance with the surface water requirements under 40 CFR §257.3-3, which states the following:

(a) For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under section 402 of the Clean Water Act, as amended.

(b) For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under section 404 of the Clean Water Act, as amended.

(c) A facility or practice shall not cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an areawide or Statewide water quality management plan that has been approved by the Administrator under section 208 of the Clean Water Act, as amended.

(d) Definitions of the terms Discharge of dredged material, Point source, Pollutant, Waters of the United States, and Wetlands can be found in the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., and implementing regulations, specifically 33 CFR part 323 (42 FR 37122, July 19, 1977).

The handling of discharge was evaluated by reviewing design drawings, operational and maintenance procedures, conditions observed in the field by AECOM, and the inflow design flood control system plan developed per §257.82(a).

Based on this evaluation, outflow from Basin A is ultimately routed through a NPDES-permitted discharge into the Ohio River by way of Basin B. Hydrologic and hydraulic analyses performed as part of the initial inflow design flood control system plan found that Basin A adequately manages outflow during the 1,000-year IDF, as overtopping of the Basin A embankments is not expected.

Therefore, discharge of pollutants in violation of the NPDES permit is not expected as all discharge is routed and controlled through the existing spillway system and NPDES-permitted outfall during both normal and IDF conditions. Based on this evaluation, Basin A meets the requirements in §257.82(b).

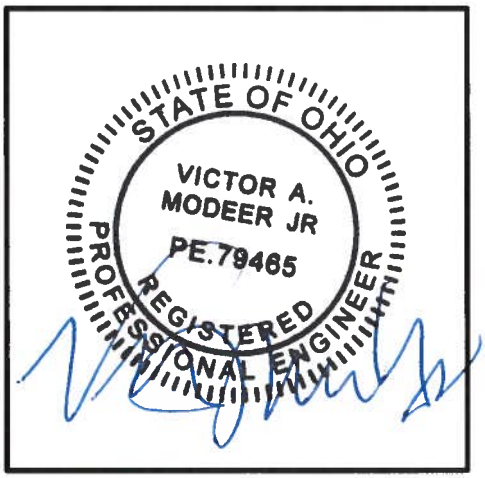
3 Certification Statement

CCR Unit: Miami Fort Power Station; Basin A

I, Victor A. Modeer, 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 CCR Rule Report, and the underlying data in the operating record, has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the initial inflow design flood control system plan dated October 13, 2016 meets the requirements of 40 CFR §257.82.

VICTOR A MODEER JR.
Printed Name

10/13/16
Date



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