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Ramboll Americas Engineering Solutions, Inc.

COAL COMBUSTION RESIDUALS ANNUAL INSPECTION REPORT

AES PUERTO RICO, LP

KM 142.0, STATE ROAD PR-3, GUAYAMA, PR 00784

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1. INTRODUCTION

Ramboll Americas Engineering Solutions, Inc. (Ramboll) was retained by AES Puerto Rico, LP (AES) to conduct an annual inspection of AES' on-site Coal Combustion Residuals (CCR) unit located at Km 142.0, State Road PR-3 in Guayama, Puerto Rico (the "site" or the "facility").

The objective of this annual inspection was to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards in conformance with the CCR Rule Title 40 Part § 257.84(b) of the Code of Federal Regulations.

1.1 Scope

The scope of this annual inspection included:

- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record, and
- A visual inspection of the CCR unit (AES Agremax™ Stockpile Area) to identify signs of distress or malfunction of the CCR unit.

2. FACILITY INFORMATION

The facility, a coal-fueled generation plant, is located in the south coast of Puerto Rico, approximately 3.4 miles southwest of downtown Guayama, at Km 142.0, State Road PR-3 in the municipality of Guayama, Puerto Rico.

The facility is a bituminous coal power plant with a total power generation capacity of 520 Megawatts that generates and sells electricity to LUMA Energy (the power company responsible for power distribution and power transmission in Puerto Rico).

2.1 CCR unit description

Fly ash and bottom ash are produced by the coal combustion process and stored in two elevated silos south of the facility's Power Block building. Agremax™ is a manufactured aggregate produced by AES using its own CCRs. Dry ashes (bottom ash and fly ash) are mixed in a pug mill that conditions this CCR to produce Agremax™ with enough moisture to prevent wind dispersal without producing free liquids, before feeding an enclosed belt conveyor that is used to transfer the mixture to an open Stockpile Area at the facility where it is also kept wet by the application of water sufficient to prevent dispersal by wind (without producing free liquids). A stockpile to store the inventory of Agremax™ is formed by a bulldozer or by dump trucks that are loaded with Agremax™ by an excavator or front-end loader, and the trucks then place the Agremax™ onto a stockpile. The Stockpile Area is located in the southeast quadrant of the facility, south of the power plant and east-southeast of the site's limestone storage dome.

For final off-site disposal of Agremax™, the Agremax™ is fed by a bulldozer into a crusher located in the southwest side of the Stockpile Area. Subsequently, the crusher feeds an enclosed belt conveyor to transfer the Agremax™ to marine vessels in the AES dock area (approximately 0.7 miles southwest of the Stockpile Area) for shipment overseas.

2.1.1 Components of the CCR unit

Equipment and vehicles present and/or used within and around the Stockpile Area include: a front-end loader, a bulldozer, a backhoe, a water truck with rear spray nozzles and front water cannon, a broom sweeper, mobile water sprinkler guns, large water hoses, and a feeder / crusher / breaker mill. It also includes a physical containment system to prevent run-on or migration of sediments and runoff from the stockpile. The physical containment system is composed of: a leachate collection system; drainage channels made of reinforced concrete; a concrete low wall along the facility's southern property boundary, south side of the Stockpile Area; and a no-discharge runoff pond (which collects storm water runoff mixed with any potential particulates of Agremax™ and/or coal).

3. CCR UNIT SITE RECONNAISANCE

3.1 Date of CCR unit inspection

Ramboll visited the site and visually inspected AES' CCR unit on the afternoon of November 7, 2023.

3.2 Weather at time of CCR unit inspection

Local weather at the time of the CCR unit inspection consisted of sunny, clear sky, calm winds, and a temperature of 83 degrees Fahrenheit (ºF).

3.3 Methodology and Limiting Conditions

Ramboll confirmed the Stockpile Area boundaries and performed a reconnaissance around its accessible perimeter and terraces but did not look at areas where gaining access may have presented a health and/or safety hazard. The Stockpile Area was observed for visual evidence of signs of distress or malfunction.

3.4 Escort

The following AES employees provided escort during the CCR unit site reconnaissance:

- José Manautou, AES Coal Combustion Product (CCP) Coordinator
- Gil Rosario, CCP Operator
- Luis Cruz, Senior Environmental Coordinator

3.5 General Observations

The northern portion of the Stockpile Area, around the conveyor belt discharge point from the pugmill, had been removed to allow the completion of the Agremax™ Staging Area Liner Project.

The eastern and western portions of the Stockpile Area were operational at the time of the visual inspection with trucks moving up and down the access road.

3.6 Access Road

The Stockpile Area access road was observed to be well graded with Agremax™ berms on the edges, and wetted.

3.7 Stockpile Surface / Slopes

Berm on the eastern edge of the Stockpile Area was clear, without any obstructions. Berm on the southern edge of the Stockpile Area was covered with Agremax™, but the concrete drainage channel south of this berm was cleared and clean. The surface of the Stockpile was wetted (which is done automatically each night and manually during the day) and with some rills created by over watering. No animal burrows were observed in the Stockpile. Slopes appeared stable and adequate.

3.8 Erosion

No significant erosion was observed on the slopes of the Stockpile Area.

3.9 Dust

Operational dust controls, including the water truck, large water hoses, and mobile water sprinkler guns were observed. The broom sweeper was at the facility's Heavy Equipment Shop undergoing maintenance at the time of the inspection. Stockpile surfaces appeared wet or crusted, therefore, the water hoses and mobile water sprinkler guns were not operational at the time of the inspection.

No fugitive dust plumes were observed on the Stockpile Area at the time of the inspection.

3.10 Sediment

No sediment accumulations were observed in the concrete drainage channels that border the Stockpile Area. Minor sediment accumulation was observed in the northern portion of the Stockpile Area, where the Agremax™ Staging Area Liner Project was ongoing.

3.11 Drainage

The concrete drainage channels surrounding the Stockpile Area were observed clean and without any debris.

3.12 Containment Structures

The leachate collection system, the concrete drainage channels, the concrete low wall along the facility's southern property boundary, and the no-discharge runoff pond appeared to be structurally sound.

4. REVIEW OF AVAILABLE INFORMATION

The available inspection records (i.e., the daily Dust Control Inspection Checklist, the weekly Stockpile Inspection form) did not identify significant issues during said inspections; only minor findings (e.g., some dust on the roads around the Stockpile Area), which according to facility personnel were addressed during the same days of the observations. Maintenance was ongoing and controls were operational.

5. CONCLUSIONS

5.1 Changes in Geometry of CCR unit

Both the eastern and western portions of the Stockpile Area were observed to be filled with Agremax™. The Agremax™ present in the Stockpile Area was stored as a single stockpile with a height of approximately 75 feet above ground surface.

5.2 Approximate volume of CCR contained in the unit

Approximately 6.04 million cubic feet of Agremax™ were present in the Stockpile Area at the time of the inspection.

5.3 Potential structural weaknesses of CCR unit

Based on the visual inspection, no apparent or potential structural weaknesses of the stockpile and its ancillary structures were observed.

6. CERTIFICATION

I hereby certify that I visually inspected and prepared this Report for the Agremax™ Stockpile Area, owned and operated by AES in accordance with the Coal Combustion Residuals Rule 40 CFR § 257.84(b). I am a dully licensed Professional Engineer under the laws of Puerto Rico.

Juan Díaz-Robles, P.E.

01/29/2024
Date

27420
P.E. License Number

February 5, 2025
P.E. License Renewal Date

P.E. Seal