2019 ANNUAL
COAL COMBUSTION RESIDUALS (CCR)
SURFACE IMPOUNDMENT REPORT

GRAND TOWER ENERGY CENTER

Grand Tower, Illinois

Prepared For:

GRAND TOWER ENERGY
CENTER
1820 Power Plant Rd,
Grand Tower, IL 62942

Prepared By:

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COAL COMBUSTION RESIDUALS (CCR)
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GRAND TOWER ENERGY CENTER
Inactive Ash Basin Impoundment

Grand Tower Energy Center
1820 Power Plant Rd
Grand Tower, Illinois
62942

Inspection Date: December 9, 2019

Summary

Environmental Resources Management, Inc. (ERM) has prepared this 2019 Annual Surface Impoundment Report for the existing coal combustion residuals (CCR) Inactive Ash Basin in accordance with the inspection requirements of 40 C.F.R. § 257.83(b) for the CCR surface impoundment at Grand Tower Energy Center. This annual CCR Surface Impoundment Inspection Report meets the requirements of 40 C.F.R. § 257.83(b)(1) and (2). This annual inspection focused primarily on (i) the visual condition of the Inactive CCR Ash Basin and containment berm to identify signs of distress or malfunction and (ii) the operation and maintenance of the Inactive CCR Ash Basin to ensure it is being operated and maintained in accordance with recognized and generally accepted good engineering standards.

Chris Mettler P.E. and Brett Carney P.G. performed a field inspection on December 9, 2019. At the time of the field inspection, the Mississippi River was not in flood stage and was not near the containment berm. Vegetation appeared to be in good condition and mowing appeared to be performed in a timely fashion. No erosion rills were observed and it appeared that the recent flooding event had no effect on the Inactive Ash Basin containment berm.

In summary, no conditions were observed during the field inspection nor identified by existing engineering analyses that represent an unsafe structural stability concern requiring immediate attention. ERM concludes that the construction, design, operation, and maintenance of the Inactive Ash Basin have been sufficiently consistent with recognized and generally accepted engineering standards for protection of public safety and the environment.

Closure of the surface impoundment commenced on December 10, 2019. Contraction activities will remove portions of the containment berm after geosynthetic LLDPE has been placed over the ash. The material from the berm will be used as a protective cover layer for the cap of the Inactive Ash Basin.

In accordance with 40 C.F.R. § 257.83 b) 2), the annual inspection addresses the following

requirements defined in the referenced regulations:

- *Any changes in geometry of the impounding structure since the previous annual inspection* – There are no changes since the previous inspection. The basin is inactive and no longer receives discharges from the facility. Based on the visual inspection, no work or modifications to the geometry have been made to the basin berms.

	Inactive Ash Basin (IAB) Dam
Dam Length, feet.	2,085
Maximum Dam Height, feet.	14
Crest Elevation, feet above NAVD.	372
Crest Width, feet.	6
Area, acres	21.7

- *The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection* – There are no changes since the previous inspection. The basin is inactive and no longer receives discharges from the facility. Surveys document eight piezometers and 12 monitoring wells (total of 20) installed in and around the berms of the Inactive Ash Basin. Two piezometers will be abandoned during closure of the Inactive Ash Basin.

- *The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection* – The basin is inactive and no longer receives discharges from the facility. The Inactive Ash Basin impounds a small amount of storm water in the NW and SW corners of the basin. The water level at these locations was below the discharge elevation. Industrial wastewater discharged from GTEC to the Inactive Ash Basin was discontinued in 2017.

    - Present Elevation of Water: Approx. 360’
    - Minimum Depth of Water: 0’
    - Maximum Depth of Water: Approximately 10’
    - Present Depth of Water: Approximately 5’ locally

- *The storage capacity of the impounded water and CCR at the time of the inspection* –The Inactive Ash Basin has only collected small amounts of rainwater in the northwest corner and southwest section and has not collected sufficient quantities to discharge to Outfall 002 since 2017. The Inactive Ash Basin has periodically been completely dry since 2017, with the amount of water collected being solely dependent on the amount of rainfall received. At the time of the site inspection, there was approximately 1.0 acres of ponded water in the 21.7 acre footprint of the basin ranging in depth from about 1’-10’ feet deep, and an average depth of about 5 feet. Based on these assumptions, there is about 217,800 cubic feet of water in the basin. During construction of the closure of the Inactive Ash Basin, most of the water that collects in the Inactive Ash Basin will be used for dust control.

- *The approximate volume of the impounded water and CCR at the time of the inspection* – The basin is inactive and no longer receives discharges from the facility. Water present in the ash basin is due to precipitation, and is temporary. Ash has not been directed into the basin since about 2001.

  Approximate Volume: Ash: 649,000 cubic yards (cy)
  Stormwater: 217,800 cubic feet (cf)

- *Any appearance 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 and appurtenant structures* – Described above.

- *Any other changes which may have affected the stability or operation of the impounding structure since the previous annual inspection* – There have been no changes since the previous inspection. Grand Tower Energy Center operates and maintains the Inactive Ash Basin in a safe and regulatory-compliant manner such as meeting State and Federal laws along with company guidelines without interruption to the station's generation of electricity. Observations during this 2019 inspection indicate that GTEC is adequately maintaining the facility.

Sincerely,
ERM, Inc.

Chris Mettler, P.E.
Associate Engineer