GRU
More than Energy

GAINESVILLE REGIONAL UTILITIES

General Manager

June 27, 2014

Via email

Mr. Stephen Hoffman
U.S. Environmental Protection Agency (5304P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Response to "Request for Action Plan Regarding Gainesville Regional Utilities – Deerhaven Power Plant"

Dear Mr. Hoffman,

Please find the "Recommendations" section copied to this letter from the above referenced correspondence, followed by GRU's responses in blue, as requested.

RECOMMENDATIONS
Based on CDM Smith visual assessment of the Process Water Ponds and a review of documentation provided by GRU, the following recommendations are provided.

Recommendations Regarding the Hydrologic/Hydraulic Safety
It is recommended that a qualified professional engineer assist GRU in evaluating the hydrologic and hydraulic capacity of the CCW impoundments to withstand design storm events, without overtopping.

GRU provided, on January 30, 2014 via email, Burns & McDonnell construction drawings of the process ponds which receive sluiced bottom ash. The Deerhaven process ponds system contains two cells that receive sluicing water with bottom ash from the boiler furnace. Decanted water from the ponds is recycled back to the power generation process for re-use. Deerhaven is a zero-discharge facility. The system is designed to allow for one pond/cell to be de-watered, and ash removed, (historically every 5 years or so); while the other pond/cell is available to receive water containing sluiced ash. Water passes through these ponds for reuse at the facility and the ponds are not permanent disposal units for ash. Facility ponds are surveilled daily as part of normal facility operations. The daily inspection program allows for routine monitoring of the structural stability. An example of the inspection checklist was provided on January 30, 2014 via email. These ponds have operated for 30 years through numerous major rainfall events. Recently, on June 24, 2012, Tropical Storm Debby, dropped 6.95 inches of rain at Deerhaven in a 24-hour period, with no overtopping of the ponds. This is only second to the highest amount of rain on record which occurred on October 24, 1938, at 7.42 inches. The drawings provided contain dimensions of the ponds which receive sluiced bottom ash showing relatively low profiles and gentle side slopes. They are not dams. GRU believes that the ponds' satisfactory performance over the past 30 + years is evidence that they were adequately designed for the subsurface conditions in place locally and the civil topographic grades. GRU agrees with the CDM inspectors findings stated in "Enclosure 1", "Conclusions" section of the CDM report, "CCW impoundments appear to be structurally sound based on visual observations of the structural element components (i.e. inlet structures, earth embankments, and outlet structures)".

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Recommendations Regarding the Technical Documentation for Structural Stability

A complete set of record drawings and/or as-built drawings should be developed or made readily available for future reference. It is recommended that a qualified professional engineer assist GRU in the evaluation of the Process Water Ponds embankment stability, including liquefaction analyses.

GRU has as-built drawings from Burns & McDonnell and has provided same to EPA in previous correspondence. Therefore, we feel we have fulfilled EPA's request for providing all available drawings and information regarding these structures.

Recommendations Regarding Field Observations

Erosion rills and scarps were observed on the interior and exterior slopes of the Ash Cell #1 and Ash Cell #2 embankments, primarily on the northwest embankment. These areas should be repaired with compacted structural fill and regraded to match adjacent existing contours. After slope restoration, it is recommended that the exposed surface of the interior embankment slopes be stabilized with riprap consisting of a heterogeneous mixture of irregular-shaped rocks placed over the compacted fill and a geotextile fabric to match existing riprap stabilization.

The erosion rills observed on 28 and 29 August 2012 have been repaired. Large rain events are common and, despite the design slopes of Cell 1 and 2 being at a standard 3:1 slope consistent with landfill and other engineering standard configurations, large rain events that are common in North-Central Florida in the active part of hurricane season can cause unavoidable, minor erosion and rills on some slopes. These areas are repaired as part of routine operations following cessation of major rain events.

Animal burrows were observed on the southeast and northwest embankments exterior slopes. Although not seen in other areas, high vegetation cover on the embankments may have hidden other animal burrows. CDM Smith recommends documenting areas disturbed by animal activity, removing the animals and backfilling the burrows with compacted structural fill to protect the integrity of the embankments. Vegetation should be maintained at a height that potential animal burrows can be readily observed.

As a site located among fairly heavy vegetation, the presence of numerous types of animals (e.g., wild hogs, deer, and others) that may burrow is unavoidable. Routine visual observation of all on-site structures, (including process ponds receiving sluiced bottom ash), is conducted and any observed issues are remedied in a timely manner.

Recommendations Regarding Surveillance and Monitoring Program

CDM Smith recommends an instrumentation monitoring program to monitor potential areas of seepage along the southeast, southwest, and northwest embankments of Ash Cell #1 and Ash Cell #2 and Pump Back Cell #1.

GRU has existing procedures that involve at least daily inspections of all ponds and structures

at the Deerhaven site, which includes evaluating water levels, visually inspecting mechanical components, and evaluating areas of disturbance (including assessing the presence of seepage). This applies to all sides of the referenced structures. Thus, current GRU procedures not only meet but substantially exceed the recommendation provided.

Recommendations Regarding Continued Safe and Reliable Operation
Inspections should be made following periods of heavy and/or prolonged rainfall, and the occurrence of these events should be documented. Inspection records should be retained at the facility for a minimum of three years.
Major repairs and slope restoration should be designed by a registered professional engineer experienced with earthen dam design. None of the conditions observed requires immediate attention or remediation. However, the above recommendations should be implemented during a reasonable time frame to maintain continued safe and reliable operation of the CCW impoundments.

As described above, GRU conducts a daily inspection of key structures including those that hold water, which not only meets but exceeds the recommended frequency provided. Inspection checklists are completed and available onsite. Pond levels are closely monitored during rainfall/storm events to determine, pump back volume adjustments from the ponds for reuse, as well available freeboard.

GRU appreciates EPA's responses and recommendations for the Deerhaven Facility ponds.

Sincerely,

Kathy E. Viehe
Interim General Manager

cc (by email): Craig Dufficy (EPA)
Patrick M. Kelly (EPA)
Jana Englander (EPA)
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