

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 13, 2013

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

VIA E-MAIL

Ms. Marie Joe Roth, Environmental Affairs
Great River Energy
12300 Elm Creek Blvd
Maple Grove, MN 55369-4718

Re: Request for Action Plan regarding Great River Energy's – Coal Creek Power Station

Dear Ms. Roth,

On May 17, 2011 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Great River Energy's – Coal Creek Power Station facility. The purpose of this visit was to assess the structural stability of the impoundments or other similar management units that contain "wet" handled CCRs. We thank you and your staff for your cooperation during the site visit. Subsequent to the site visit, EPA sent you a copy of the draft report evaluating the structural stability of the units at the Great River Energy's – Coal Creek Power Station facility and requested that you submit comments on the factual accuracy of the draft report to EPA. Your comments were considered in the preparation of the final report.

The final report for the Great River Energy's – Coal Creek Power Station facility can be accessed at the secured link below. The secured link will expire in 60 days.

Here is the link: <http://www.yousendit.com/download/UVJqV281Y3I0Ni9MYnRVag>

This report includes a specific condition rating for each CCR management unit and recommendations and actions that our engineering contractors believe should be undertaken to ensure the stability of the CCR impoundment(s) located at the Great River Energy's – Coal Creek Power Station facility. These recommendations are listed in Enclosure 1.

Since these recommendations relate to actions which could affect the structural stability of the CCR management unit(s) and, therefore, protection of human health and the environment, EPA believes their implementation should receive the highest priority. Therefore, we request that you inform us on how you intend to address each of the recommendations found in the final report. Your response should include specific plans and schedules for implementing each of the recommendations. If you will not implement a recommendation, please provide a rationale. Please provide a response to this request by **April 15, 2013**. Please send your response to:

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

If you are using overnight or hand delivery mail, please use the following address:

Mr. Stephen Hoffman
U.S. Environmental Protection Agency
Two Potomac Yard
2733 S. Crystal Drive
5th Floor, N-5838
Arlington, VA 22202-2733

You may also provide a response by e-mail to hoffman.stephen@epa.gov,
dufficy.craig@epa.gov, kelly.patrickm@epa.gov and englander.jana@epa.gov.

You may assert a business confidentiality claim covering all or part of the information requested, in the manner described by 40 C. F. R. Part 2, Subpart B. Information covered by such a claim will be disclosed by EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when EPA receives it, the information may be made available to the public by EPA without further notice to you. If you wish EPA to treat any of your response as “confidential” you must so advise EPA when you submit your response.

EPA will be closely monitoring your progress in implementing the recommendations from these reports and could decide to take additional action if the circumstances warrant.

You should be aware that EPA will be posting the report for this facility on the Agency website shortly.

Given that the site visit related solely to structural stability of the management units, this report and its conclusions in no way relate to compliance with RCRA, CWA, or any other environmental law and are not intended to convey any position related to statutory or regulatory compliance.

Please be advised that providing false, fictitious, or fraudulent statements of representation may subject you to criminal penalties under 18 U.S.C. § 1001.

If you have any questions concerning this matter, please contact Mr. Hoffman in the Office of Resource Conservation and Recovery at (703) 308-8413. Thank you for your continued efforts to ensure protection of human health and the environment.

Sincerely,
/Suzanne Rudzinski/, Director
Office of Resource Conservation and Recovery

Enclosure

Enclosure 1
Great River Energy's – Coal Creek Power Station Recommendations (from the final assessment report)

CONCLUSIONS

Structural Stability

Both Ash Pond 91 and the Upstream Raise/Ash Pond 92 embankments were evaluated by Golder for static and seismic stability. Ash Pond 91 was evaluated for a single scenario assuming the water level at the crest of the embankment. The computed factor of safety (FOS) of 2.3 exceeds the minimum desired FOS of 1.5 for permanent structures. Seven scenarios were evaluated for the Upstream Raise/Ash Pond 92 structural stability, with five of those scenarios representing a permanent structure condition and two representing a temporary condition. All of the permanent condition scenarios had a computed FOS greater than 1.5. Both scenarios for a temporary structure condition had a computed FOS of 1.3 or greater, which meets the desired minimum FOS of 1.3 for temporary structures. All seismic loading scenarios for both ponds had FOS greater than 1.0, which meets criteria.

Safety of the Impoundments including Maintenance and Methods of Operation

We understand that the impoundments have a history of safe performance. However, the future performance of these impoundments will depend on a variety of factors that may change over time, including surface water hydrology, changes in groundwater levels, changes in embankment integrity, etc. In light of this situation, we have noted several items as follows that present some minor concern in this regard:

- A few small trees exist at the toe of slope of both Ash Pond 91 and the Upstream Raise/Ash Pond 92. When trees die and the stumps remain, those can decompose over time and eventually create preferential paths for uncontrolled seepage. This is likely not problematic for the Upstream Raise because the fly ash material in the embankment creates a very hard material for the embankment that is unlikely to have significant root penetration. This condition would be considered more serious for Ash Pond 91 since it is an earth and clay embankment.
- The Ash Pond 91 west embankment toe appears to have a permanent slough feature adjacent to the downstream toe. The toe along the west slough was observed to have small scarps along the slough water line likely caused by wave action and saturated conditions. Erosion at the toe can shorten seepage paths and decrease stability of the embankment. Since the slough likely keeps the toe in a saturated condition, a seepage and stability analysis should be performed on the west embankment. The west embankment toe should be repaired and armored based on results of the analysis.
- An Emergency Action Plan (EAP) is not currently in place at the site to mitigate damage in the event of an emergency related to failure of the impoundment(s). While a failure of an embankment would not likely constitute a life threatening situation, a document should be prepared to formally outline the procedures to undertake in the event of such a failure.

Changes in Design or Operation of the Impoundments following Initial Construction

We are not aware of significant changes in the design or operation of the impoundments that have been implemented. According to GRE staff and Golder Associates, the Upstream Raise is being raised in accordance with the design of the facility and it is performing as expected. It is estimated that the Upstream Raise has at least five more years of service remaining before a new FGD disposal facility is needed. Ash Pond 91 is at its full size, continues operating as expected, and is performing well.

Adequacy of Program for Monitoring Performance of the Impoundments

The present monitoring program primarily involves visual inspections by plant personnel and by the Great River Energy and Golder technical staff. These visual inspections seem to be adequate to address issues such as surface erosion and general condition of the impoundments, as well as obtaining periodic piezometer readings and interpreting that data. However, a more detailed monitoring program is recommended to be established to quantify various important factors associated with embankment stability. Those factors include, but are not limited to seepage quantities through the embankment, the amount of sediments carried by the seepage water, and any fluctuations of ground water levels.

RECOMMENDATIONS

PRIORITY 1 RECOMMENDATIONS

1. Prepare an Emergency Action Plan (EAP) for the facility by July 31, 2013. An EAP should be prepared for both Ash Pond 91 and the Upstream Raise. The EAP could be a very short and straightforward document that basically documents that sufficient volume exists in Samuelson Slough to contain releases, and outlines procedures to undertake in the event of an unplanned release, including gate closure and phone calls to interested and potentially impacted parties.
2. Control vegetation on the downstream slopes. Remove the isolated trees and woody brush, including roots/stumps, at the toe of the embankments by July 31, 2013. Refer to FEMA Manual 534 (Impact of Plants on Earthen Impoundments) for guidance on vegetation removal. This manual is available on the FEMA website.

PRIORITY 2 RECOMMENDATIONS

1. Repair erosion of Upstream Raise / Ash Pond 92 embankment by July 31, 2013. Minor surface erosion was noted at the Upstream Raise. Areas where erosion has occurred should be filled in and revegetated to prevent erosion from cutting further into the embankments. This action is only necessary on areas that have been topsoiled and vegetated, as it is recognized that parts of the Upstream Raise are under construction and will be dressed and vegetated at the appropriate time.
2. Evaluate and repair erosion at the toe on west embankment of Ash Pond 91 by July 31, 2013. Ash Pond 91 west embankment toe appears to have a permanent slough feature adjacent to the downstream toe and was observed to have scarps along the slough water line. Erosion at the toe can shorten seepage paths and decrease stability of the embankment. Since the slough likely keeps the toe in a saturated condition a seepage and stability analysis should be performed on the west embankment and the toe should be repaired and armored based on results of the analysis.
3. Maintain a log of maintenance and other activities at Ash Pond 91 and the Upstream Raise impoundments and supporting facilities by July 31, 2013. We have seen examples of Work Orders documenting inspection of the facilities by plant staff. Other Work Orders may exist that document routine maintenance and repair activities, and if so, those should be collected and bound in a notebook in a secure location if that practice is not being followed currently. We believe that this log will provide continuity during periods of staff change.
4. Perform video assessments of culvert piping by July 31, 2013. This would include only the permanent culvert piping used for the outlet works of the impoundments, and specifically the cross connection pipes between Ash Pond 91 and the Drains Pond. The video survey should determine the type of pipe material, the condition of the pipes, and the condition of the valves. In addition, the valves should be exercised to assess functionality. Because most of the other piping is moved around or replaced as it loses capacity due to scale deposition, video survey of those pipes in the pond do not appear to be necessary.