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**VIA ELECTRONIC  
AND U.S. MAIL**

May 13, 2013

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

**RE: Action Plan regarding EPA Coal Ash Impoundment Site Assessment Final Report for Great River Energy's Stanton Station, Stanton, North Dakota**

Dear Mr. Hoffman:

Great River Energy (GRE) received and has reviewed the Coal Ash Impoundment Site Assessment Final Report for Stanton Station dated October 26, 2012, and the accompanying United States Environmental Protection Agency's (EPA) letter dated March 13, 2013, requesting an action plan addressing recommendations in the Report. EPA's contractor, Kleinfelder, prepared the final report after performing a site assessment of the North, Center, and South Cells of the Bottom Ash Surface Impoundment on May 18, 2011. This letter provides GRE's comments and action plan in response to the final report, particularly regarding report recommendations.

**Management Unit Condition and Potential Hazard Rating**

We are pleased that the report concludes that the coal combustion product (CCP) management units at Stanton Station are in "Satisfactory" condition. We also agree with the report's recommended potential hazard rating as "Less Than Low" for the three impoundments.

**Comments on Conclusions**

Within the Analysis and Conclusions section relating to Structural Stability, the report states:

*As stated in Section 3.5, the dynamic factor of safety calculated for the saturated upstream berm with no water was erroneously reported and the calculated FOS of 2.5 appears to be calculated from an unsaturated scenario based on Golder's 2011 Stability Evaluation of Bottom Ash Surface*

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*Impoundment Report. The dynamic FOS should be calculated with the saturated berm case to ensure an adequate FOS.*

The dynamic stability analysis for the saturated upstream berm with no water was calculated using the pseudo-static approach described in EPA's "Resource Conservation and Recovery Act (RCRA) Subtitle D (258) Seismic Design Guidance for Municipal Landfill Facilities" (1995). This pseudo-static approach recommends using 80 percent of the undrained shear strength (i.e., total stress) parameters for the fine grain soils composing the impoundment berms and foundation materials. Water surfaces (i.e., piezometric surfaces and water tables) are not applicable to materials when using undrained shear strength parameters. The analysis done by Golder did model the saturated berm case with respect to using saturated unit weights for the material, but did not apply or show a water surface as this did not apply to the undrained shear strength parameters being used. Therefore, the factor of safety of 2.5 is representative of saturated, dynamic slope stability conditions.

### Report Recommendations

The final report included six recommendations; those recommendations are followed by GRE's responses below.

#### **Priority 1 Recommendations:**

1. ***Prepare an Emergency Action Plan (EAP) for the facility by July 1, 2013. An EAP should be prepared for the Ash Pond Facilities. The EAP could be a very short and straightforward document that basically documents that sufficient volume exists on GRE property to contain releases, and outlines procedures to undertake in the event of an unplanned release, including spill mitigation procedures and phone calls to key plant personnel and any interested and potentially impacted parties.***

**GRE Response** – Stanton Station has an Emergency Plan for the entire site that is regularly reviewed and updated (attached). This plan provides a site-wide uniform procedure for notification, response, and reporting of a chemical spill or release. This plan has been updated to explicitly include the release of material from the Bottom Ash Impoundments and defines the notification procedure for such a release. As stated in the report, sufficient volume exists on Stanton Station property to contain a release from the Bottom Ash Impoundments. This information has been added to the Contingency Plans section of the CCP management units Operation Plan, which also references the Site Emergency Plan (see attached operations plan addendum).

2. ***Control burrowing animals on the downstream slopes. Develop and implement an animal control program by July 1, 2013. Refer to FEMA publication 473, Technical Manual for Dam Owners, Impacts of Animals on Earthen Dams. That manual is available on the FEMA website.***

**GRE Response** – The control and repair of animal burrows on the embankments of the CCP management units is part of GRE’s ongoing maintenance practice. GRE has repaired the existing burrows identified by Kleinfelder, and has added information on animal burrowing control to the Bottom Ash Surface Impoundment Operations Plan (see attached operations plan addendum).

3. ***Perform a hydraulics and hydrology study for the facility by July 1, 2013. An analysis should be performed that compares the impoundment freeboard with the Probable Maximum Precipitation (PMP) to determine potential for overtopping.***

**GRE Response** – A PMP analysis is typically done for large dams with high hazard potential. The Bottom Ash Impoundments at Stanton Station have approximately 20-foot berms and have been classified by Barr Engineering and Kleinfelder as being “Less than Low Hazard” impoundments using EPA guidelines. Based on this information and the North Dakota Dam Design Handbook (North Dakota State Engineer 1985), the suggested freeboard design criteria is based on the 50-year, 24-hour precipitation event (approximately 4.25 inches at Stanton Station), instead of the PMP event (approximately 27 inches).

Although using the PMP may not be the most appropriate event for evaluating overtopping of the Bottom Ash Impoundments, a PMP analysis was performed to evaluate impoundment freeboard in relation to overtopping (see attached PMP analysis). The conclusion of the analysis is that the operation of the Bottom Ash Impoundments does provide adequate freeboard for the PMP event.

#### **Priority 2 Recommendations:**

1. ***Repair embankment scarps and sloughs by July 1, 2013. Minor surface scarps or sloughs were noted at the toe of the north outer embankment at the North Ash Pond and on the slope of the east outer embankment of all three ponds. These minor scarps should be repaired and revegetated to prevent progressive failures.***

**GRE Response** – The identification and correction of minor surface scarps or sloughs on the embankments of the CCP management units is part of GRE’s ongoing maintenance practice. GRE will repair the minor surface scarps or sloughs identified by Kleinfelder by July 1, 2013, and will continue to evaluate the facility during regular inspections and correct damage in a timely manner.

2. ***Maintain a log of maintenance and other activities at the impoundments and supporting facilities by July 1, 2013. We have seen examples of monthly walk around inspection reports of the ponds. Other documentation may exist that catalogs 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.***

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**GRE Response** – GRE does not plan to print out the electronic documents pertaining to maintenance, inspection and other activities. GRE currently maintains a record of inspections and maintenance Work Orders for the Bottom Ash Surface Impoundment facility on GRE's electronic workspace accessible to GRE employees. This system may not have been sufficiently described to the Kleinfelder engineers. The system automatically initiates work orders for scheduled inspections and maintenance, and is the method by which site personnel initiate maintenance and repair needs based on site operations and inspection observations. GRE's best management practice is to use the electronic document to assure that outdated documents do not exist. Stanton Station employs an Environmental Management System that is ISO 14001 registered and that utilizes this best management practice.

3. *Update the Operation and Maintenance (O&M) Manual for the impoundments and the facility by July 1, 2013. The O&M manual should include the EAP (discussed above) and a section on animal control.*

**GRE Response** – As stated above, GRE has updated the Bottom Ash Surface Impoundment Operations Plan to include specific information on the Emergency Action Plan and Emergency Response Safety Procedure as well as information on an animal burrowing control program (see attached operations plan addendum).

Thank you for this opportunity to comment. If you have any questions concerning our comments or the information we have provided, please contact Jennifer Charles at 701-442-7081.

Sincerely,



Mary Jo Roth  
Manager, Environmental Services

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Att: Stanton Station Site Emergency Plan 400-2 (Revision 06, 3/25/2013)  
Addendum 1 to June 10, 1994 Operations Plan (10/31/2012)  
Probable Maximum Precipitation Hydrology Analysis (4/11/2013)

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Ref: Environmental Protection Agency, 1995. Resource-Conservation and Recovery Act (RCRA) Subtitle D (258) Seismic Design Guidance for Municipal Solid Waste Landfill Facilities. April 1995.

FEMA. 2005. FEMA 473 Technical Manual for Dam Owners Impacts of Animals on Earthen Dams. September, 2005.

North Dakota State Engineer. 1985. North Dakota Dam Design Handbook. June 1985.

Stone & Webster, 1994. Plan of Operations Stanton Station Bottom Ash Surface Impoundment and Bottom Ash Landfill. Prepared for United Power Association, Project No. 4177. June 1994.