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

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Review of Alliant Energy June 1, 2011 Aether Report and Conclusion

TO: Belinda Holmes, USEPA Region 7

FROM: Stephen Hoffman, Craig Dufficy, ORCR, USEPA

DATE: June 6, 2011

The purpose of this memorandum is to summarize the June 1, 2011 geotechnical report entitled, Ash Pond Slope Stability and Seismic Analysis – Supplement Burlington Generating Station – Burlington, IA which assesses the static and seismic conditions at the Burlington Generating Station prepared by Alliant Energy's engineering consultant, Aether.

The Agency informed Alliant Energy that there were concerns regarding the static and seismic stability of coal combustion residual (CCR) impoundments at the Burlington Generating Station. Alliant and EPA began a series of discussions on how to resolve these concerns. Alliant decided to independently conduct geotechnical studies to address these concerns. A copy of the Aether report is attached (Attachment 1).
EPA has reviewed the June 1, 2011 Aether report. EPA also requested an independent engineering review of this report which was conducted by EPA's engineering consultant, Dewberry and Davis. A copy of the Dewberry and Davis review is also attached (Attachment 2). Based on EPA's review of the June 1, 2011 Aether report, we have reached the following conclusions:

1. Alliant has conducted a geotechnical report which included the use of cone pentrometers and soil borings to determine if the CCR impoundments at the site meet acceptable Factors of Safety. It is our opinion that this study was conducted using acceptable engineering practices.
2. The location and sampling of soil conditions at the site were adequate to determine static or seismic factors of safety.
3. Based on soil analyses and modeling, the Economizer Pond has an acceptable Factor of Safety for static conditions.
4. Aether conducted cyclic return analyses of the site and then used those results to determine the seismic Factor of Safety for all CCR units at the site. The assumptions and models used to conduct these analyses are based on sound engineering practice.
5. The results of the seismic analyses of the site indicate that all of the units meet acceptable Factor of Safety (>1.0) for projected seismic loadings.

6. Based on the data provided with the report, we conclude that all of the Burlington Generating Station CCR impoundment embankments meet the minimum stability factors of safety for pseudo-static earthquake scenarios.

Conclusion:
The main area of concern that EPA had initially identified at the Burlington Generating plant was that there was not enough geotechnical data to assure that CCR units met acceptable Factors of Safety. The June 1, 2011 Aether report adequately supplied the needed geotechnical data to determine if the CCR units at the site met acceptable Factors of Safety. Both we and Dewberry and Davis, the Agency's independent engineering contractor, have reviewed this report and we both have concluded that the CCR units at the Burlington Generating Plant now meet acceptable Factors of Safety.