CORPORATE EHS SERVICES

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Via E-Mail and Overnight Courier

July 27, 2011

Mr. Stephen Hoffman
US Environmental Protection Agency (5304P)
Two Potomac Yard
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Response to EPA letter regarding Dam Safety Assessment Report
Cayuga Generating Station, Cayuga, Indiana

Dear Mr. Hoffman:

Duke Energy Indiana (DEI) received the letter from Suzanne Rudzinski, Director for the Office of RCRA of the United States Environmental Protection Agency (EPA), dated June 27, 2011 and the final report from GEI Consultants (GEI) titled "Specific Site Assessment for Coal Combustion Waste Impoundments at Duke Energy Indiana Cayuga Generating Station." The site assessment was conducted on the Lined Ash Disposal Pond – Cell#1, Ash Disposal Area #1, Primary Ash Settling Basin and Secondary Ash Settling Basin by EPA's engineering contractors on August 10, 2010.

DEI supports the EPA's objective to ensure the safe operation and maintenance of coal combustion residue impoundments and is committed to meeting all state and federal requirements. Based on ongoing monitoring, maintenance and inspections, DEI is confident that the CCR impoundments have the structural integrity necessary to protect the public and the environment.

Today's submittal is in response to above referenced letter from EPA dated June 27, 2011. As outlined in EPA's letter the contractor made several recommendations addressing deficiencies and secondary studies/investigations. The DEI response to each of these recommendations can be found in the attachment. If you have any questions regarding these responses, comments, or need additional information please contact Owen Schwartz at 317-838-6027.

Sincerely,
Duke Energy Indiana

John B. Hayes
General Manager II Regulated Fossil Station
Cayuga Generating Station

Attachment – DEI Responses to EPA Recommendations

Attachment – DEI responses to EPA Recommendations

11.1 Corrective Measures and Analyses for the Structures

1. A thick growth of trees, many up to 2 feet in diameter, was observed on the Original Ash Pond north perimeter dike downstream slope. The trees should be removed to prevent root systems from creating seepage paths through the embankment slopes. A minimum of about 25 feet of clear space should be provided between the downstream toe and the tree line. Removal of root balls of large trees can cause additional damage to a dike and is not recommended without proper engineering planning and consideration.

DEI Response

The recommended tree removal is planned to be completed by March 2012.

2. Trees were observed near the downstream slope of the Secondary Ash Settling Basin east dike and the Original Ash Pond/Ash Disposal Area #1 northeast dike. A minimum of about 25 feet of clear space should be provided between the downstream toe and the tree line. The trees within these areas should be removed within the next year. Removal of root balls of large trees can cause additional damage to a dike and is not recommended without proper engineering planning and consideration.

DEI Response

The recommended tree removal is planned to be completed by March 2012.

3. Former animal holes at the toe of the Primary Ash Settling Basin east dike downstream slope have been filled with riprap. The riprap should be further filled with low strength cement fill to prevent erosion and seepage through these areas.

DEI Response

The recommended addition of low strength cement to the rip rap fill has been completed.

4. Seepage observed along the downstream toe of the Secondary Ash Settling Pond should be measured and monitored for changes. Piezometers should be installed in the east dike to monitor the phreatic surface through the embankment.

DEI Response

One piezometer was installed in the east dike in April 2011 and measurements are being recorded. Visual monitoring of seepage is ongoing and measurable flow is being recorded. This recommendation is considered complete.

5. Seepage should continue to be monitored at the Original Ash Pond / Ash Disposal Area #1 northeast dike. Piezometers should be installed in the dike to monitor the phreatic surface through the embankment.

DEI Response

Piezometers were installed in the original ash pond northeast dike in April 2011 and measurements are being recorded. Visual monitoring for seepage is ongoing. This recommendation is considered complete.

6. Video inspect the Primary Ash Settling Basin and Secondary Ash Settling Basin CMP outlets for corrosion and damage. Based on the results of the video inspection, additional corrective measures may be required. Seepage through the dike at the outlet locations should be closely monitored. Piezometers should be installed in the dike to monitor the phreatic surface through the embankment.

DEI Response

Video inspection of the CMP outlet pipes at both settling basin was completed in January 2011. No defects, structural deficiencies, or adverse conditions were found in any of the pipes. Visual monitoring of seepage is ongoing. Piezometers were installed in each dike in April 2011 and measurements are being recorded. This recommendation is considered complete.

7. Slope stability analyses for the Original Ash Pond, Ash Disposal Area #1 and Primary Ash Settling Basin and Secondary Ash Settling Basin should analyze the appropriate maximum, or critical, sections. Evaluation of maximum, or critical, sections should include the divider dike between the Primary and Secondary Ash Settling Ponds with a phreatic surface representative of steady seepage at normal water surface conditions. For the Lined Ash Disposal Pond – Cell #1 section, the stability analyses should include a phreatic surface representative of steady seepage at normal water surface conditions without a geomembrane liner, weaker layers of foundation fly ash in the foundation, and evaluate the influence of the perimeter dam.

DEI Response

Dike geotechnical soil samples were obtained in April 2011, lab analysis of the samples has been completed, and slope stability analyses is presently being performed by Sargent & Lundy LLC (S&L). The report will be completed by December 31, 2011.

8. A liquefaction potential analysis should be conducted for the Lined Ash Disposal Pond – Cell #1 impoundment. Based on the results of this analysis, additional corrective measures may be required.

DEI Response

Dike geotechnical soil samples were obtained in April 2011, lab analysis of the samples has been completed, and liquefaction potential analysis is presently being performed by S&L. The report will be completed by December 31, 2011.

9. A slope stability and liquefaction analysis should be performed for the divider dike between the Ash Disposal Area #1 and Primary Ash Settling Basin if it is possible that CCW (Coal Combustion Waste) is a foundation material.

DEI Response

Dike geotechnical soil samples were obtained in 2010. Results of the boring samples show the foundation material consists of virgin soils and does not contain CCW. The boring report shows that the dam was constructed of compacted local soils. No additional analysis will be performed on this dike. This recommendation is considered complete.

10. Based on the simplified evaluation performed for this inspection, and lacking any prior hydrologic studies of the facilities, it appears the Ash Disposal Area #1 would not meet the requirement to safely store or pass the regulatory design flood for a Significant Hazard Structure. The storage capacity and water level of the ash pond units can vary depending on operations. Due to this variability, we recommend Duke Energy maintain the four CCW impoundments at a level that ensures sufficient storage capacity within the units to accept the inflow design storm volume without overtopping the dam. A hydrology and hydraulics study should be completed to ensure adequate freeboard in the ponds, and in particular for Ash Disposal Area #1.

DEI Response

A hydrology and hydraulics study is currently in progress by S&L. DEI will comply with the results and all operating level and freeboard recommendations resulting from the study. The report will be completed by December 31, 2011.

11.2 Corrective Measures Required for Instrumentation and Monitoring Procedures

Daily water levels are not measured and there are no staff gages for reference in any of the ponds or basins. No piezometers or settlement monuments are installed at the ash pond or settling basin dams. We recommend an instrumentation and monitoring program be developed and implemented that would include, at a minimum, piezometers and settlement monuments installed along the dikes of any impoundments that will continue to receive wet coal combustion waste or any dikes currently experiencing seepage. Seepage should be measured and monitored at the observed seepage locations.

DEI Response

Piezometers have been installed in the ash pond dikes. DEI will have the existing control equipment for the ash basins evaluated by an independent engineering firm to determine if additional piezometers or settlement monuments need to be installed for monitoring

purposes. This review will be completed as soon as practical but no later than December 31, 2011. Upon completion of the review and after consultation with the engineering firm on any recommendations, DEI will take appropriate measures to revise the system.

Seepage will be observed for visual changes and measurable flow.

11.3 Corrective Measures Required for Maintenance and Surveillance Procedures

Currently, the four CCW impoundments are visually inspected quarterly by Duke Energy staff. We recommend Duke Energy develop and document formal inspections of the ash ponds and settling basins, and include an inspection at a minimum of every 5 years by a third-party professional engineer with experience in dam safety evaluations. We also recommend a brief daily check inspection of the facilities and seepage areas be conducted by DEI personnel.

Duke Energy has developed a formal ash pond dike inspection program. DEI will perform internal and third party inspections as required by our program, which envelopes the recommendations above. Written records of the formal inspections are being created and maintained. This recommendation is considered complete.

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