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November 2,2009

Mr. **Stephen** Hoffman
U.S. Environmental Protection **Agency** (53 **04P)**
1**200** Pennsylvania **Avenue,** NW
Washington, **DC** 20460

Dear Mr. Hoffman:

Re: **Indiana-Kentucky** Electric **Corporation**
Clifty **Creek Station**
Response to U.S. EPA' s **Recommendations**
Coal Ash Impoundments

Per an e-mail from Jim Kohler dated October 26,2009, please find attached the **Indiana-Kentucky Electric Corporation's (IKEC's) amended response regarding the implementation** of **U.S. EPA's** recommendations to **ensure** the stability of **the** coal ash impoundments **located at *the* Clifty Creek** Station. **The recommendations were originally received in a report and a cover letter from the U.S. EPA on September** 21,2009. This **amended response is specific to recommendation #11** for **the Bottom Ash Impoundment.**

If you have any questions, please contact Matthew Smith **at (740)** 289-7249 or **msmith@ovec.com.**

Sincerely,

Donald T. Fulkerson

Donald **T.** Fulkerson
Environmental Affairs Director

DTF:men

Attachment

Indiana-Kentucky Electric Corporation
Clifty Creek Station
Fly Ash Impoundment

. Based on our **review** of **existing** information, it does not appear that a **recent** hydrologic **and** hydraulic **analysis** has been conducted, under current engineering standards, to adequately assess spillway **capacity under** design **flood** conditions. IKEC/AEP should **contact** IDNR and formerly establish the magnitude of the **spillway** design flood for this dam. Previous studies allude to possibility that the spillway does not have **adequate capacity.** Modification to the **existing spillway** and 72-inch outlet, including addition of **a separate** emergency spillway should, if necessary, be carried out **based** on the results of this detailed hydrologic and hydraulic analysis.

IKEC has contacted IDNR in an effort to fulfill the required recommendations.

2. **A seepage** and stability analysis should **be** conducted for the up **and** downstream slopes based on **the existing** geotechnical information developed during the dam **raising feasibility project and** supplemented with more recent **piezometric water** level **readings** at the **dam.** This should include **a** seismic stability and liquefaction analysis of the **upstream and** downstream embankment **slopes and** foundation.

A Consulting Engineer has been contacted and is scheduled to complete this recommendation by March 1,2010.

3. It has been about 25 **years** since the **last** visual inspection of the interior of the 72-inch diameter RCP. A follow-up study, **executed** under confined **space** entry conditions, should be carried out to evaluate the current condition of pipe section alignment, joints, concrete **surfaces, and support struts.**

IKEC is currently seeking a contractor and plans to complete this recommendation by the end of 2010 unless conditions won't allow for safe entrance into the pipe.

4. Develop **a** formal, written Emergency Action Plan.

The Emergency Action Plan has been completed.

5. Enact the proposed inspection program which is to include routine **drive** by inspections, quarterly checklist completion by IKEC engineering **staff.**

The inspection program has been implemented and is ongoing.

6. Install a staff gage at **the** spillway **decant** intake in order to easily **and** regularly record pond **level.**

This recommendation has been completed by plant personnel.

7. Monitor repaired sinkhole near the end of the outlet pipe on a **monthly basis,** at **a** minimum.

This will be implemented as part of routine inspections conducted by plant personnel.

8. **Repair** minor **eroded** areas on downstream **slope near** outfall **headwall.**

   IKEC will seek a contractor to complete this work during 2010, weather permitting.

Indiana-Kentucky Electric Corporation
Clifty Creek Station
Bottom Ash Impoundment

Based on our review of existing information, it does not appear that the darn safety section of the IDNR has taken jurisdiction of the WBAP Dam. However, they do have jurisdiction, and periodically inspect, IKEC's South Fly Pond Dam also located at the Clifty Creek facility. As both dams are similar in size, volume and hazard classification, this appears to be an inconsistency, in our opinion. GZA recommends that IKEC contact IDNR to formally include this impoundment in their dam safety inventory.

IKEC has contacted IDNR in an effort to fulfill the required recommendations.

2. Based on the above recommendation, the hazard class and magnitude of the spillway design flood (SDF) should be formally established under IDNR rules and regulations. The adequacy of the dam's existing spillway should be confirmed under the regulatory SDF, as may be necessary.

IKEC has contacted IDNR in an effort to fulfill the required recommendations.

3. A subsurface exploration program should be developed and executed to include a limited number of borings and installation of piezometers and other instrumentation to analyze and regularly monitor embankment seepage and stability. A seismic stability analysis of the upstream and downstream embankment slopes should be conducted after surveying the actual configuration of the slopes.

A Consulting Engineer has been contacted and is scheduled to complete this recommendation by March 1,2010.

4. Based on the results of the subsurface program noted in no. 3 above, a seepage and stability analysis should be conducted for the up and downstream slopes. This should include a seismic stability and liquefaction analysis of the upstream and downstream embankment slopes foundation.

AEPSC Geotechnical, with the assistance of a contractor, will complete this recommendation by June 1,2010.

5. Develop a formal, written Emergency Action Plan.

The Emergency Action Plan has been completed.

6. Enact the proposed inspection program which is to include routine drive by inspections, quarterly checklist completion by IKEC engineering staff.

The inspection program has been implemented and is ongoing.

7. Install a staff gage at the spillway decant intake in order to easily and regularly record pond level.

This recommendation has been completed by plant personnel.

8. Monitor repaired sinkhole near the end of the outlet pipe on a monthly basis, at a minimum.

   This will be implemented as part of routine inspections conducted by plant personnel.

9. Repair of grading including minor depressions found on the crest to insure a consistent top of dam at about elevation 470 MSL.

   This recommendation has been completed.

10. Investigate seeps at the downstream slope in dry weather, with repairs designed by a professional engineer and construction by a contractor experienced in dam repair.

    The inspection program at the facility is ongoing and repair work will be completed as needed.

11. The dense vegetation on the upstream slope should be removed; this includes removal of stumps and backfilling and compaction with well draining material, supplemented with loam and seeding in the upper portions of the embankment and riprap placement at the normal fluctuation of the water level.

    IKEC is currently seeking a contractor and plans to complete this recommendation by the end of 2010. The stumps and associated root systems will be removed to the extent practicable. Additionally, riprap will be placed along portions of the upstream normal operating pool interface as recommended in the assessment report unless the results of the recommended and upcoming seepage and stability analyses warrant a more comprehensive plan. Should those analyses dictate enhancements to the dike, the riprap placement will be incorporated into that comprehensive plan.