

US EPA ARCHIVE DOCUMENT



February 21, 2011

Mr. Stephen Hoffman  
US Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

**Re: Response to January 7, 2011, Final Report of Assessment of  
Dam Safety of Coal Combustion Surface Impoundments  
Indianapolis Power & Light Company  
Harding Street Generating Station**

Dear Mr. Hoffman:

On behalf of Indianapolis Power & Light Company ("IPL"), this letter provides response on the above-referenced final report. The Final Report was transmitted to IPL on January 7, 2011 from Mr. James Kohler, Environmental Engineer. It is our understanding that the final report was prepared in conjunction with the April 29-30, 2010 site assessment, our comments that were submitted to your office regarding the draft report on August 19, 2010, and subsequent following discussions.

IPL supports EPA's objective to ensure dam safety and appreciates EPA and CDM efforts related to review of our comments regarding the draft report. IPL remains committed to operating and maintaining all of our coal combustion surface impoundments safely.

As requested, IPL responds to EPA's request of addressing each of the recommendations found in the final report. Please find the attached final IPL Harding Street Generating Station action plan developed by BT SQUARED which includes specific plans and schedules for implementing each of the final report recommendations.

Please feel free to contact me at 317-261-5473 if you have any questions related to this submittal.

Sincerely,

Nysa L. Hogue  
Senior Environmental Coordinator  
Indianapolis Power & Light Company

Enclosure

Cc: Gregory J. Daeger – IPL Harding Street Generating Station  
Jennifer Hatfield - IPL Harding Street Generating Station  
Thom O'Leary - IPL Harding Street Generating Station  
Tony Sullivan – Barnes & Thornburg  
Dave Hendron – BT SQUARED

February 18, 2011

Ms. Nysa Hogue  
Indianapolis Power and Light Company  
One Monument Circle  
P. O. Box 1595  
Indianapolis, IN 46206-1595

**SUBJECT:     Action Plan for Coal Combustion Waste (CCW) Surface  
                 Impoundments  
                 Harding Street Generating Station  
                 Indianapolis Power & Light Company  
                 BT Squared Project #4128D**

Dear Ms. Hogue:

At the request of Indianapolis and Light Company (IP&L), BT Squared, Inc., prepared this Action Plan (AP) for the coal combustion waste (CCW) surface impoundments (hereinafter ponds) located at the Harding Street Generation Station (HSS) in Indianapolis, Indiana. **Figure 1** shows the layout and the identification of the CCW ponds at HSS.

On behalf of the U.S. Environmental Protection Agency (USEPA), Camp Dresser & McKee (CDM) performed site assessments of the CCW ponds at the HSS on April 28 and 29, 2010 and prepared a report entitled "Assessment of Dam Safety of Coal Combustion Impoundments" prepared by CDM and dated November 15, 2010. This AP is prepared to address the findings presented in the assessment report prepared by CDM.

The assessment report contained seven general findings. These findings include:

1. There is a lack of documentation of the design and construction of the CCW ponds.
2. There is no formal maintenance plan for maintenance of vegetation growth (including mowing, clearing and grubbing, and revegetation) on the slopes of the CCW ponds.
3. There is no corrective action plan to remediate erosion, animal activity, or other such problems on the CCW ponds.
4. There is no information related to monitoring equipment such as piezometers and staff gauges.

5. There are no hydraulic and stability analyses for the CCW ponds.
6. The periodic inspection program that consists of inspection procedures and inspections of the CCW ponds are not adequate and need more specific details.
7. There are no emergency action plans for the CCW ponds.

## **I. Scope of Work for Action Plan Tasks**

We have divided the above seven findings into the following three work tasks. The proposed Scope of Work (SOW) for each of the three work tasks follows.

### **Task 1 – Preparation of a Set of “As-Built” Plans for the CCW Ponds**

The objective of Task 1 is to address Finding 1 as outlined in the CDM report and as denoted above. A set of “as built” plans (Plans) will be developed for the CCW ponds from both existing and new data. The Plans will include cross-sections and details of the ponds, as necessary, to understand the layout and physical dimensions of all major components of the CCW ponds from the discharge point of fresh ash slurry at the plant to the discharge point of sedimented fluid to the receiving point.

As the first step of Task 1, all existing information and data will be compiled and used to prepare a set of initial Plans for the CCW facilities. Existing data include available topographic maps, aerial photos, cross sections, existing plans, reports, and details that may be located in the files of IP&L. As a second step of Task 1, the initial Plans will be reviewed and an assessment will be made to determine where existing data must be supplemented with new data to complete the Plans. New data may include field surveys, topographic maps, aerial photographs, and cross sections. Following completion of step 2, a set of Plans will be prepared that show the layout and physical dimensions of the principal elements of the CCW ponds. These Plans will serve as a document adequate for use in Tasks 2 and 3 that follow and for all present and future plant use of the CCW ponds. These plans will be reviewed and updated after completion of Tasks 2 and 3 and on an annual basis or when a significant change occurs at the CCW ponds.

### **Task 2 – Perform Hydraulic and Stability Analyses of Each CCW Pond**

The objective of Task 2 is to address Finding 5 as detailed in the CDM report and as denoted above. Task 2 will be divided into two sub-tasks; Task 2a includes the hydraulic analyses and Task 2b includes the stability analyses. The SOW for each follows.

### *Task 2a – Hydraulic Analyses*

Task 2a will include performance of hydraulic analyses of each of the CCW ponds and of all of the hydraulic structures between the connection at the plant and the discharge point from the CCW ponds to the downstream receiving point. The hydraulic evaluation includes development of the runoff hydrograph, reservoir routing, and computation of elevation-discharge data for the outlet structure. The recommendations contained in the "General Guidelines for New Dams and Improvements to Existing Dams in Indiana" by the Indiana Department of Natural Resources (IDNR) will be used as guidance for this task. A report will be prepared presenting the results of the hydraulic analyses. The report will present our analyses, conclusions, and recommendations for modifications to the CCW ponds deemed necessary based on our analyses.

### *Task 2b – Stability Analyses*

Task 2b will include the performance of static and seismic stability analyses of typical cross sections for each of the CCW ponds consistent with the findings in the CDM report. The stability analyses will include the following work scope:

1. Twenty-two borings will be drilled on the perimeter of the CCW ponds to determine the material of construction of each pond including the foundation material to a sufficient depth for the analyses. Samples will be taken in each of the borings at 4-foot intervals. Sampling will primarily consist of Standard Penetration Test samples. A limited number of 3-inch diameter Shelby tube samples may be taken if unusually soft or loose materials are found. The location of the proposed borings is shown on **Figure 1**.
2. Soil samples will be sent to a geotechnical laboratory and the samples analyzed for gradation, water content, Atterberg limits, and shear strength properties of pond dike and foundation materials.
3. Piezometers will be installed in a sufficient number of the borings to measure hydrostatic pressure within the dikes for the ponds and the foundation soils beneath the pond dikes. Piezometer readings will be made after stabilization in all piezometers.

4. Using the information and data from the borings and the topographic information from Task 1, a sufficient number of cross sections will be drawn for each CCW pond for use in determination of the critical cross section for each CCW pond.
5. Slope stability analyses will be performed using available software such as WinStabl or XSTABL to analyze the Factor of Safety (FS) for each of the cross sections drawn in item 4 above. The FS will be determined for the following conditions as applicable: steady state conditions at normal pool elevation, rapid drawdown, flood condition, seismic conditions, and liquefaction. Any of these conditions deemed not to be applicable would be discussed in detail.
6. A report will be prepared presenting results of our stability analyses. The report will present our analyses, conclusions, and recommendations for modifications to the CCW pond deemed advisable based on our analyses.

### Task 3 – Prepare Operation and Maintenance , Monitoring, and Emergency Action Plans for the CCW Ponds

The objective of Task 3 is to address Findings 2, 3, 4, 6, and 7 above. Task 3 will be divided into three sub-tasks as follows:

- Task 3a – Operation and Maintenance Plan
- Task 3b – Instrumentation and Monitoring Plan
- Task 3c – Emergency Action Plan

#### *Task 3a – Operation and Maintenance Plan*

The Operation and Maintenance Plan (O&M Plan) will be prepared in accordance with the general guidelines presented in the IDNR Indiana Dam Safety Inspection Manual – Part 2 Dam Inspection and Maintenance.

#### *Task 3b – Instrumentation and Monitoring Plan*

The Instrumentation and Monitoring Plan will describe procedures for measuring and recording data from staff gauges and piezometers.

### *Task 3c – Emergency Action Plan*

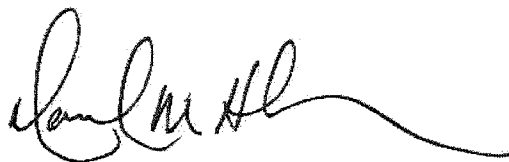
The Emergency Action Plan (EAP) will be prepared in accordance with the general guidelines contained in the IDNR Indiana Dam Safety Inspection Manual – Part 4 Emergency Preparedness. The EAP will contain details on event detection, notification and communication, expected actions, termination, and follow-up.

Some of the activities that will be covered in the above plans have been in progress at the HSP for the past several years. The activity will continue, as the plans described in this section are prepared. All of the plans will be implemented at the HSS upon completion of the SOW described herein and review and approval of the individual plans by HSS and IP&L management.

## **II. Proposed Schedule for Completion of Tasks 1 Through 3**

Figure 2 shows the proposed possible schedule for completion of the SOW described for Tasks 1 through 3 as described in this report. It is proposed that all work be completed within 12 months of approval of this Action Plan via e-mail notification to IP&L by the USEPA. Once Task 3 is complete, a copy of the "As-Built" drawing set, the hydraulic analysis, the stability analysis, and the O&M Plan, the I&M Plan and the EAP will be submitted to the USEPA. We understand that these work products will be entered on the USEPA website as part of the information available for the Harding Street Station.

Sincerely,  
BT Squared, Inc.



David M. Hendron, PE  
Senior Project Manager

Enclosures: Figure 1 - Proposed Location of Soil Borings and Piezometers  
Figure 2 - Proposed Schedule

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## LEGEND

- PROPOSED BORING  
 PROPOSED LOCATION OF STABILITY ANALYSIS CROSS SECTION

## NOTES:

1. BORING LOCATIONS ARE APPROXIMATE AND FINAL LOCATIONS MAY VARY SLIGHTLY TO ACCOMMODATE FIELD CONDITIONS.

NOT TO SCALE





CLIENT		INDIANAPOLIS POWER & LIGHT COMPANY	SITE	HARDING STREET GENERATING STATION 3700 SOUTH HARDIGN STREET INDIANAPOLIS, INDIANA	PROPOSED SOIL BORINGS	
PROJECT NO.	4128D	DRAWN BY:	KG	ENGINEER	 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN:	02/07/11	CHECKED BY:				
REVISED:		APPROVED BY:				1



Figure 2

**Proposed Schedule  
Harding Street Generating Station**

Task	Mar-11 (1)	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12
1. Develop "As-Built" Drawing Set												
2A. Hydraulic Analysis												
2B. Stability Analysis												
3A. Operation and Maintenance Plan												
3B. Instrumentation and Monitoring Plan												
3C. Emergency Action Plan												

1. Completion schedule date will begin upon approval of this Action Plan via e-mail notification to IPL by the USEPA.

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I:\4128\Figure 2 - Harding Street Schedule.xls]Sheet1