

**2015 DAM & DIKE INSPECTION REPORT  
Rockport Plant  
Bottom Ash Pond Complex**

**GERS-15-013**

**ROCKPORT POWER PLANT**

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**INDIANA MICHIGAN POWER COMPANY  
ROCKPORT, INDIANA**

**PREPARED BY  
GEOTECHNICAL ENGINEERING  
AEP SERVICE CORPORATION  
1 RIVERSIDE PLAZA  
COLUMBUS, OHIO**

**August 13, 2015**

# DAM & DIKE INSPECTION REPORT

**GERS-15-013**

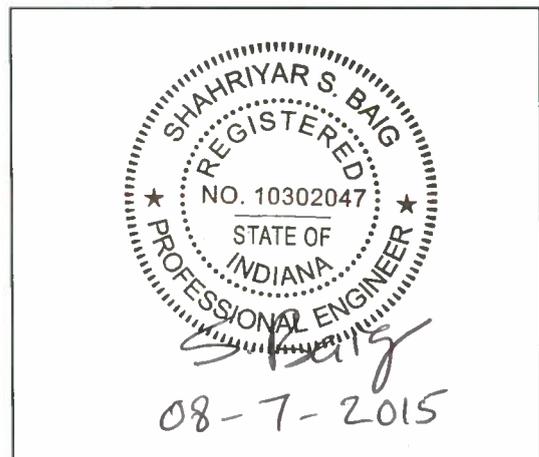
**Rockport Plant  
Rockport, Indiana**

**INSPECTION DATE** July 14, 2015

**PREPARED BY** J. T. Massey-Norton **DATE** 8-7-2015  
J.T. Massey-Norton

**REVIEWED BY** Shahriyar S. Baig **DATE** 8-7-15  
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**APPROVED BY** Gary Zych **DATE** 8-11-15  
Gary Zych, P.E.  
Manager - Geotechnical Engineering



**PROFESSIONAL ENGINEER  
SEAL & SIGNATURE**



**ANNUAL DAM AND DIKE INSPECTION REPORT  
ROCKPORT PLANT  
BOTTOM ASH PONDS  
YEAR 2016 Rev 1  
Document ID # GERS-16-002**

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Note: Revision 1 Supplemental data added on February 29, 2016

## **1.0 INTRODUCTION**

AEPSC Civil Engineering administers the Dam and Dike Inspection and Maintenance Program (DIMP) at American Electric Power (AEP) facilities. As part of the DIMP, staff from the Geotechnical Engineering Section conducts dam and dike inspections annually. This report has been prepared under the direction of Mr. Shahriyar S. Baig, P.E. A summary of the inspection and assessment of the condition of the facilities is included herein.

Mr. Frank Ingram and Mr. Mitch Montgomery at the Rockport Plant, served as the project facility contacts and participated in the inspection. Mr. Kevin Ernst and Ms. Alma Barratta of Terracon also participated in the inspection. The inspection was performed on July 14, 2015. Weather conditions were partly sunny to partly cloudy with temperatures in the 70s° F. Appendix A provides figures of the areas that were inspected and Appendix B provides the inspection photos.

The Bottom Ash Pond Complex consists of East Bottom Ash Pond (EBAP) and West Bottom Ash Ponds (WBAP), (Figure 1 of Appendix A). The Bottom Ash Complex is generally a below ground facility with only the west dike of the WBAP extending above grade such that the normal pool elevation is maintained above ground level. The exterior slope is 2.5 Horizontal to 1 Vertical (2.5H:1V) with interior slopes of 2 H:1V.

## **2.0 SUMMARY OF VISUAL OBSERVATIONS**

The summary of visual observations uses terms to describe the general appearance or condition of an observed item, activity or structure. The meanings of these terms are as follows:

Good:	A condition or activity that is generally better or slightly better than what is minimally expected or anticipated from a design or maintenance point of view.
Fair or Satisfactory:	A condition or activity that generally meets what is minimally expected or anticipated from a design or maintenance point of view.
Poor:	A condition or activity that is generally below what is minimally expected or anticipated from a design or maintenance point of view.
Minor:	A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is below

what is normal or desired, but which is not currently causing concern from a structure safety or stability point of view.

**Significant:** A reference to an observed item (e.g. erosion, seepage, vegetation, etc.) where the current maintenance program has neglected to improve the condition. Usually, conditions that have been previously identified in the previous inspections, but have not been corrected.

**Excessive:** A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is above or worse than what is normal or desired, and which may have affected the ability of the observer to properly evaluate the structure or particular area being observed or which may be a concern from a structure safety or stability point of view.

## **2.1 Bottom Ash Complex (Figure 1)**

Results of the visual inspection of the Bottom Ash Complex are summarized below (Photographs are in Appendix B).

1. The diverter structure controlling the flow of bottom ash into the pond complex was observed to be functioning properly and in good condition (Photograph No. 1).
2. The west bottom ash pond discharge structures into the pond show significant deterioration of the wing walls. No undermining of the structure or erosion of adjacent embankments was observed (Photograph No. 2).
3. The channel between the diverter valve / energy dissipater and the discharge chute appeared to be in good condition (Photograph No.3).
4. The crest and interior slopes of the west bottom ash pond dike were observed to be in good condition with no evidence of significant settlement, misalignment or erosion. Typical conditions of the crest and interior slopes are shown in Photograph Nos. 4 and 5.
5. The southwest pond's storm water discharge pipe into the bottom ash pond shows good conditions with no erosion of the embankment or scouring of the bottom of the pond (Photograph No. 6).
6. The exterior dike for the west bottom ash pond appeared to be in good and stable condition with vegetative growth established and controlled (Photograph No. 7).

7. The low water discharge structure # 13 appeared to be fully functional and in good condition (Photograph No.8).
8. The rock gabion wall appeared to be in good condition with no observable signs of settlement or misalignment or erosion. No embankment erosion was observed from the coal yard storm water discharge pipe (Photograph No. 9).
9. The discharge of coal fines (entrained within the coal yard storm water collection basins) is now contained to the southeast corner of the west bottom ash pond thru the construction of the gabion basket wall (Photograph No. 10).
10. The skimmer structure # 5 appeared to be in good condition (Photograph No. 11).
11. The splitter dike between the east and west bottom ash ponds was observed to be in good condition with no visible signs of seepage through the embankment, no misalignment or erosion (Photograph No. 12).
12. The east bottom ash pond was operational and appeared to be in good condition. No visible embankment erosion, sloughing or other indications of instability were observed. Geese were entering into the pond (Photograph No. 13).
13. The east bottom ash pond low water discharge structure # 3 appeared to be in good condition and the skimmer structure # 5 appeared to be fully functional (Photograph No. 14).
14. The splitter dike between the east bottom ash pond and the metal cleaning waste tank basin appeared to be in good condition. No seepage through the embankment was observed, nor any erosion, slumping or misalignment of the dike (Photograph No. 15).

## **2.2 POND COMPLEX CAPACITY AND DEPTH DATA**

Based on the previous measurements and estimates and operational variation in the pond system, the capacity and volume estimates for the East & West bottom ash ponds are provided below:

Pond	Media	Maximum	Minimum	Present
		Depth/Elevation ( feet)		
East Bottom Ash	Water	578.4	5/576.1	5/577
	Solid	Na*/396.0	na/391.0	na/na
West Bottom Ash**	Water	na/na	na/na	na/na
	Solid	na/na	na/na	na/na

Pond	Capacity (acre-feet)		
	Water	Solid	Total
East Bottom Ash	316.3	316.4	632.7
West Bottom Ash	0	0	0

\* NA Not Available

\*\* West Pond out of service and bottom ash was excavated from the pond.

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the visual inspection, the general condition of the Bottom Ash Complex, Treatment Pond, is good. The plant is performing maintenance and inspection activities on a regular basis. An itemized summary is presented below.

#### 3.1 Bottom Ash Complex

1. The upstream, crest and downstream slopes of the west bottom ash pond and the splitter dike between the bottom ash ponds were observed to be in good condition and well maintained. The riprap quality and in-place condition were good with no significant deterioration due to weathering or fragmentation. Grass areas were generally well controlled. No erosion gullies or significant animal holes were noted.
2. The dike crest and roads were in good condition with no evidence of rutting, settlement or misalignment.
3. The rock gabion structures within the west bottom ash pond appeared to be stable with no visible signs of settlement or misalignment.

Based on the inspection performed and our review of relevant documents for the Rockport Plant, Civil Engineering believes that the Bottom Ash Complex should be characterized as exhibiting good and functional condition.



**APPENDIX A:  
ROCKPORT PLANT  
BOTTOM ASH POND COMPLEX  
INSPECTION LOCATION PLAN  
(Figure 1)**

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SCALE: 1" = 400'  
 SURVEY DATE: 05/11/2012

FIGURE 1

INDIANA MICHIGAN POWER  
**ROCKPORT POWER STATION**  
**BOTTOM ASH COMPLEX**  
 AEP SERVICE CORP.  
 17000 W. STATE ST.  
 COLUMBUS, OH 43216  
**AEP AMERICAN ELECTRIC POWER**



**APPENDIX B:  
ROCKPORT  
DIKE INSPECTION  
PHOTOGRAPHS**

<p><u>Photo # 1</u></p> <p>View of bottom ash being discharged into diverter structure.</p>	
<p><u>Photo # 2</u></p> <p>Typical view of interior embankment showing good condition of embankment slopes and discharge chutes into the pond. The west bottom ash pond was out of service that allowed a good inspection of the pond's structures.</p>	
<p><u>Photo # 3</u></p> <p>View of discharge chute between the dissipater and the discharge structure into the bottom ash pond showing good conditions.</p>	

Photo # 4

View of the interior slope for the west bottom ash pond.

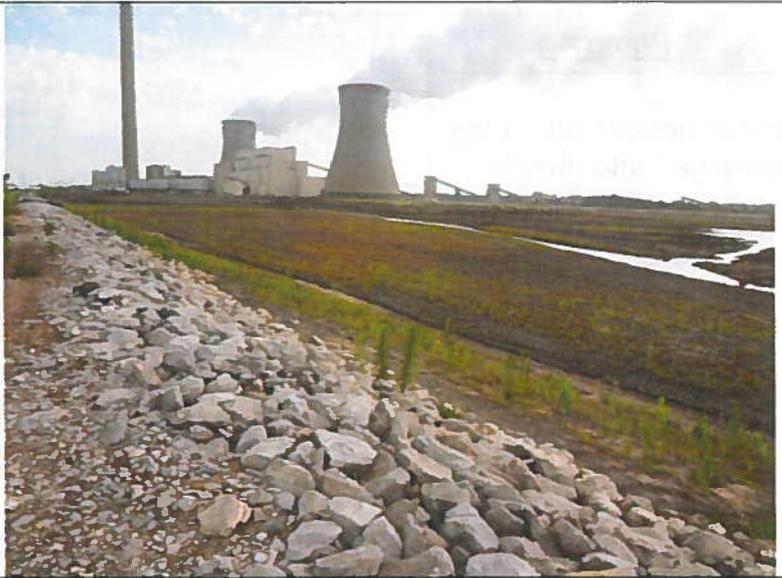


Photo # 5

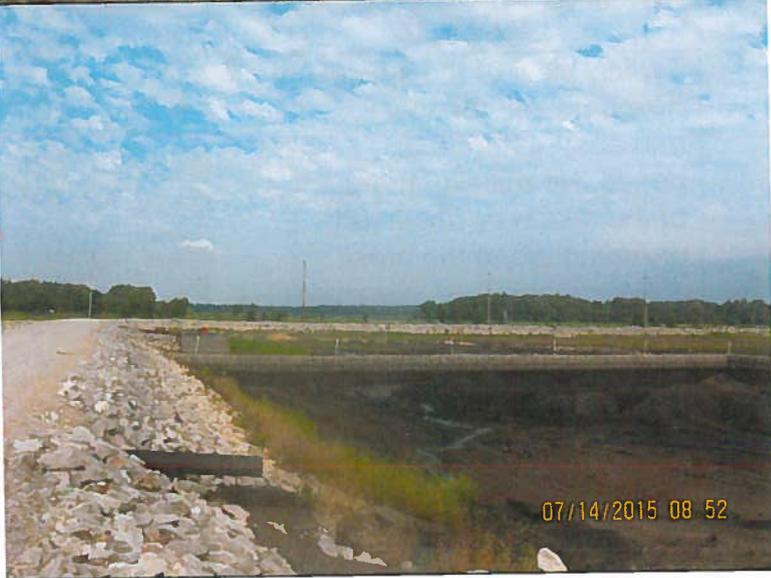
Typical view of west bottom ash pond showing the crest and the southwest storm water discharge line.



Photo # 6

View of the rip rap along the west bottom ash pond showing good conditions where the storm water discharge enters the pond.



<p><u>Photo # 7</u></p> <p>Typical view of the exterior slope for the west bottom ash pond. No bulges, slumping or other defects were observed. Vegetative growth was established and regularly controlled with periodic mowing.</p>	 <p>A photograph showing a grassy exterior slope of an ash pond. In the background, a power plant with several cooling towers and a tall smokestack is visible under a blue sky with scattered clouds. A timestamp in the bottom right corner reads "07/14/2015 07 50".</p>
<p><u>Photo # 8</u></p> <p>View of west bottom ash pond showing drainage to low water discharge to Structure No. 13.</p>	 <p>A photograph of a concrete drainage structure, likely a culvert or pipe, situated on a rocky embankment. The structure is surrounded by a large pile of grey rocks. In the background, a body of water is visible. A timestamp in the bottom right corner reads "07/14/2015 08 52".</p>
<p><u>Photo # 9</u></p> <p>Typical view of the storm water discharge pipe from the coal yard collection ponds and the rock gabion wall used to contain the entrained coal fines. No scouring, slumping or bulging along the embankment was observed.</p>	 <p>A photograph showing a long, narrow rock gabion wall extending along the edge of a dark, flat area, possibly a coal yard or pond. The wall is constructed from large, light-colored rocks. A concrete pipe is visible at the base of the wall. The background shows a flat landscape under a blue sky with clouds. A timestamp in the bottom right corner reads "07/14/2015 08 52".</p>

<p><u>Photo # 10</u></p> <p>View of rock gabion wall within the west bottom ash pond showing uniform alignment or deterioration of the gabion baskets.</p>	
<p><u>Photo # 11</u></p> <p>View of skimmer Structure No 5 for the west bottom ash pond.</p>	
<p><u>Photo # 12</u></p> <p>Typical view of the splitter dike between the west and east bottom ash ponds. No misalignment, of the dike was observed or rutting along the crest.</p>	

<p><u>Photo # 13</u></p> <p>Typical view showing good condition of the east bottom ash pond embankments (and geese entering into the pond).</p>	 A wide-angle photograph of a large, calm body of water, likely an ash pond. The water is a greyish-brown color. In the background, there are two tall, thin structures, possibly cranes or towers, and a line of trees. The sky is overcast.
<p><u>Photo # 14</u></p> <p>Typical view showing the low water discharge structure No 3 in the east bottom ash pond.</p>	 A photograph showing a low water discharge structure, a concrete wall with a gate, extending into the water. The water is dark and calm. The sky is blue with scattered white clouds. The foreground shows a rocky embankment.
<p><u>Photo # 15</u></p> <p>Typical view of splitter dike between the east bottom ash pond and the metal cleaning waste tank basin. Mr. Massey-Norton and Mr. Ingram are standing along the road.</p>	 A photograph showing a wide, flat, gravelly area, likely a splitter dike or road, extending towards the water. Two people, Mr. Massey-Norton and Mr. Ingram, are standing on the right side of the road, looking towards the water. The sky is blue with some clouds. A timestamp "07/14/2015 08 39" is visible in the bottom right corner of the photo.