FINAL REPORT
ROUND 10 DAM ASSESSMENT
WISCONSIN POWER AND LIGHT COMPANY - ROCK RIVER GENERATING STATION
WPDES POND 1, WPDES POND 2, SLAG POND, FINAL WPDES POND
BELOIT, WISCONSIN

PREPARED FOR:

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

PREPARED BY:

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, Ma 02062
GZA File No. 01.0170142.30

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GZA
GeoEnvironmental, Inc.

Engineers and
Scientists

January 31, 2013
GZA File No. 170142.30

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

RE: Assessment of Dam Safety of Coal Combustion Surface Impoundments at the Rock River Generating Station

Dear Mr. Hoffman,

One Edgewater Drive
Norwood,
Massachusetts 02062
Phone: 781-278-3700
Fax: 781-278-5701
http://www.gza.com

In accordance with our proposal 01.P0000177.11 dated March 28, 2011, and U.S. Environmental Protection Agency (EPA) Contract No. EP10W001313, Order No. EP-B115-00049, GZA GeoEnvironmental, Inc. (GZA) has completed our inspection of the Rock River Generating Station Coal Combustion Waste (CCW) Impoundments located in Beloit, Wisconsin. The site visit was conducted on June 8, 2011. The purpose of our efforts was to provide the EPA with a site specific inspection of the impoundments to assist EPA in assessing the structural stability of the impoundments under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104(e). We are submitting one hard copy and one CD-ROM copy of this Final Report directly to the EPA.

Based on our visual inspection, and in accordance with the EPA's criteria, the WPDES Pond 1, WPDES Pond 2, Slag Pond and Final WPDES Pond are currently in **POOR** condition in our opinion. Further discussion of our evaluation and recommended actions are presented in the Task 3 Dam Assessment Report. The report includes: (a) a completed Coal Combustion Dam Inspection Checklist Form for each Basin; (b) a field sketch; and (c) selected photographs with captions. Our services and report are subject to the Limitations found in **Appendix A** and the Terms and Conditions of our contract agreement.

We are happy to have been able to assist you with this inspection and appreciate the opportunity to continue to provide you with dam engineering consulting services. Please contact the undersigned if you have any questions or comments regarding the content of this Task 3 Dam Assessment Report.

Sincerely,
GZA GeoEnvironmental, Inc.

Doug P. Simon, P.E
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PREFACE

The assessment of the general condition of the dams/impoundment structures reported herein was based upon available data and visual inspections. Detailed investigations and analyses involving topographic mapping, subsurface investigations, testing and detailed computational evaluations were beyond the scope of this report.

In reviewing this report, it should be realized that the reported condition of the dams and/or impoundment structures was based on observations of field conditions at the time of inspection, along with data available to the inspection team. In cases where an impoundment is lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions, which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is critical to note that the condition of the dam and/or impoundment structures depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the reported condition of the dam will continue to represent the condition of the dam at some point in the future. Only through continued care and inspection can there be any chance that unsafe conditions be detected.

Prepared by:

GZA GeoEnvironmental, Inc.

Patrick Harrison, P.E.

License No.: 14164-6
Senior Geotechnical Consultant
GZA GeoEnvironmental, Inc.

EXECUTIVE SUMMARY

This Report presents the results of a visual evaluation of the Wisconsin Power and Light Company (WP&L) – Rock River Generating Station Coal Combustion Waste (CCW) Impoundments located at 827 Townline Road, Beloit, Wisconsin. These assessments were performed on June 8, 2011 by representatives of GZA GeoEnvironmental, Inc (GZA), accompanied by representatives of WP&L.

Rock River Generating Station contains four embankment CCW impoundments known as WPDES Pond 1, WPDES Pond 2, Slag Pond, and Final WPDES Pond. The impoundments were commissioned in 1978 for the purpose of settling CCW from the process streams of the facility and clarification of water prior to discharge. Currently no CCW discharge enters the impoundments due to the closure of the Station's coal burning facilities in 2000. In conjunction with the decommissioning of the facility, WP&L plans to permanently close the impoundments in accordance with Wisconsin Department of Natural Resources' (WDNR) regulations. At the time of GZA's assessment, WP&L was in the process of establishing closure requirements in cooperation with the WDNR. WP&L indicated they anticipate obtaining permanent closure status for the impoundments by 2014.

For the purposes of this assessment, the size of the impoundments was based on U. S. Army Corps of Engineers (USACE) criteria. Based on the maximum crest height of 16 feet and a storage volume of approximately 18 acre-feet, WPDES Pond 1 is classified as a **Small**-sized structure. Based on the maximum crest height of 16 feet and a storage volume of approximately 19 acre-feet, WPDES Pond 2 is classified as a **Small**-sized structure. Based on the maximum crest height of 5 feet and a storage volume of approximately 166 acre-feet, the Slag Pond is classified as a **Small**-sized structure. Based on the maximum crest height of 10 feet and a storage volume of approximately 24 acre-feet, the Final WPDES Pond is classified as a **Small**-sized structure. According to guidelines established by the USACE, dams with a storage volume less than 1,000 acre-feet and/or a height less than 40 feet are classified as Small-sized structures. Note the Wisconsin Department of Natural Resources does not recognize these impoundments as dam structures.

In GZA's opinion, the WPDES Pond 1, WPDES Pond 2 and the Final WPDES Pond are **Low** Hazard structures as classified under the Environmental Protection Agency (EPA) hazard rating criteria due to their small size, the fact that no loss of life would be expected if there was a failure and damage due to failure, environmental or economical, would be minimal. It is our opinion that the upstream water elevations are maintained at a sufficiently low elevation such that breach of the impoundment would not likely result in the release of CCW. In GZA's opinion, the Slag Pond would be considered as having a **Less-than-Low** hazard potential. The hazard potential rating is based on no probable loss of human life due to failure and no probable environmental or property damage.

Based on the results of the visual assessment and a review of available design documentation, the impoundments were judged to be in **POOR** condition.

In GZA's professional opinion, the embankment(s) visually appear to be sound and no immediate remedial action appears to be necessary. However, based on EPA's criteria, the impoundment has been assigned a POOR Condition Rating, because geotechnical computations were not provided by WP&L for GZA's review. Thus, the stability of the embankment(s) could not be independently verified. The impoundments were observed to have the following deficiencies:

1. No stability or hydraulic analysis of the impoundments.

2. Overgrown vegetation and trees up to 24-inches in diameter on the crests, downstream and upstream embankments.

3. Potholes along the crests of the embankments.

4. Deterioration of the inlet pipes associated with WPDES Pond 1 and WPDES Pond 2.

Studies and Analyses:

1. Perform a detailed hydrologic and hydraulic study using current methodology to evaluate each impoundment's ability to safely pass the standard design flood.

2. Develop an emergency action plan.

3. Perform a stability analysis of the impoundment embankments including static, seismic and liquefaction loading.

Recurrent Operations and Maintenance Activities:

1. Clear inappropriate woody vegetation, including trees and brush and maintain grass cover on the crest, upstream and downstream slope and approximately 15 feet beyond the toe area. USACE recommends vegetation be kept less than 12 inches in height on embankments.
2. Fill potholes, depressions, and animal burrows and reseed as necessary.
3. Record and maintain monthly measurements of the pond water surface elevation and observation wells and establish response action protocols for various elevation levels for each impoundment as appropriate. It is recommended that the water elevation within any impoundment not be allowed to rise beyond the level that which was observed during our site evaluation (about elevation 750 feet). The frequency of monitoring should be adjusted based on results of the hydrologic and hydraulic analysis.
4. Monitor decant outflow structures and clear silt or debris which may block or impede outflow.
5. Take measures as necessary so as to maintain operability and function of the various impoundment water level control mechanisms. Set said control mechanisms so as to minimize the build-up of water within the impoundments.
6. Exercise water control mechanisms to verify proper operating condition.

Minor Repairs:

1. Remove trees, stumps, and their associated root systems from the embankments

2. Repair deteriorated decant structures and other water level control mechanisms as appropriate.

Remedial Measures:

1. In conjunction with the results of the updated hydrologic and hydraulic analyses, make provisions for an emergency overflow spillway(s) if appropriate.

It is our understanding that permanent closure of the impoundments in accordance with applicable State of Wisconsin Department of Natural Resource regulations is to be completed in 2014 based on conversations with WP&L personnel during the on-site assessment. It is GZA's opinion that the slopes

appeared to be stable based on observed conditions at the time of assessment , and no imminent signs of distress were observed. WP&L should maintain and monitor the embankment structures until permanent closure status has been obtained. In the interim, GZA is of the opinion it would be prudent for WP&L to at least implement the above recommended operations and maintenance and minor repair activities due to the anticipated two- to three-year time frame until permanent closure status is achieved. This includes at a minimum that all water level control mechanisms be arranged so as to limit maximum pool elevation to about elevation 750 feet. However, these recommendations should be evaluated for consistency with the conditions of the current and anticipated steps of the planned closure. If closure of the Site does not occur, it is GZA's opinion that all of the repair, maintenance, and analysis recommended in this report should be performed.

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1.0 DESCRIPTION OF PROJECT

1.1 General

1.1.1 Authority

The United States Environmental Protection Agency (EPA) has retained GZA GeoEnvironmental, Inc. (GZA) to perform a visual assessment and develop a report of conditions for the Wisconsin Power and Light Company (WPL, Owner) Rock River Generating Station (RRGS, Site) Coal Combustion Waste (CCW) Impoundments in Rock County, Wisconsin. This assessment was authorized by the EPA under the authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Section 104(e). This assessment and report were performed in accordance with Request for Quote (RFQ) RFQ-DC-16, dated March 16, 2011, and EPA Contract No. EP10W001313, Order No. EP-B11S-00049. The assessment generally conformed to the requirements of the Federal Guidelines for Dam Safety[1] and this report is subject to the limitations provided in **Appendix A** and the Terms and Conditions of our Contract Agreement.

1.1.2 Purpose of Work

The purpose of this investigation was to visually assess and evaluate the present condition of the impoundments and appurtenant structures (the management unit) to attempt to identify conditions that may adversely affect their structural stability and functionality, to note the extent of any deterioration that may be observed, review the status of maintenance and needed repairs and to evaluate the conformity with current design and construction standards of care.

The investigation was divided into five parts: 1) obtain and review available reports, investigations and data from the Owner pertaining to the impoundment and appurtenant structures; 2) perform a review with the Owner of available design, assessment and maintenance data and procedures for the management unit; 3) perform a visual assessment of the Site; 4) prepare and submit a field assessment checklist; and 5) prepare and submit a draft and final report presenting the evaluation of the structure, including recommendations and proposed remedial actions.

1.1.3 Definitions

To provide the reader with a better understanding of the report, definitions of commonly used terms associated with dams are provided in **Appendix B**. Many of these terms may be included in this report. The terms are presented under common categories associated with dams, which include: 1) orientation; 2) dam components; 3) size classification; 4) hazard classification; 5) general; and 6) condition rating.

1.2 Description of Project

1.2.1 Location

The RRGS is located about 2 miles north of Beloit in Rock County, Wisconsin. The entrance to the Site is on WBR Townline Road. The RRGS CCW impoundments are

[1] FEMA/ICODS, April 2004: http://www.ferc.gov/industries/hydropower/safety/guidelines/fema-93.pdf.

located about ¼-mile southwest of the former power plant at approximately latitude 42˚ 34' 40" North and longitude 89˚ 01' 53" West. A Site locus of the impoundments and surrounding area is shown on **Figure 1**. An aerial photograph of the impoundments and surrounding area is provided as **Figure 2**. The impoundments can be accessed by vehicles from an earthen access road from the former power plant.

1.2.2 Owner/Caretaker

The CCW impoundments are owned by WP&L and were formerly operated by the RRGS.

	Dam Owner/Caretaker
Name	Wisconsin Power and Light Company, Rock River Generating Station
Mailing Address	827 Townline Road
City, State, Zip	Beloit, Wisconsin 53511
Contact	Joe Ell
Title	Plant Manager
E-Mail	joeell@alliantenergy.com
Daytime Phone	608-458-6311
Emergency Phone	608-575-7881

1.2.3 Purpose of the Impoundments

The RRGS power plant had two coal-fired units and three combustion units with a maximum generating capacity of approximately 700 Megawatts. The combustion units were capable of generating power from natural gas, #2 fuel oil and tire-derived fuel. Commercial operation of the facility began in the 1950s, and coal was last burned in 2000. Unlined, filled embankment settling ponds (WPDES Pond 1, WPDES Pond 2 and Final WPDES Pond) were constructed in conjunction with the RRGS facility for the purpose of settling CCW from the process streams of the RRGS facility and clarification of water prior to discharge.

The WPDES Pond 1 received fly/economizer ash, slag, boiler water wash, air heater wash, steam grade production wastewaters, regeneration water from the water plant and plant floor drains. The WPDES Pond 2 received fly/economizer ash, slag, boiler water wash, air heater wash and steam grade production wastewaters. Solids were allowed to settle and water was discharged from the WPDES Pond 1 and WPDES Pond 2 into the Slag Pond. In addition to historically receiving water and unsettled solids from WPDES Pond 1, WPDES Pond 2 and the facility, the Slag Pond has and continues to receive water from the Coal Pile Runoff Pond and stormwater runoff from the closed Landfill. Water and unsettled solids discharged from the Slag Pond into the Final WPDES Pond and then into the Rock River.

The impoundments have been inactive since 2007. WP&L is working toward permanent closure of the impoundments under Wisconsin Department of Natural Resources' (WDNR) regulations. Based on information provided to GZA, the impoundments are expected to be closed in 2014.

During our assessment, GZA observed the condition of the Coal Pile Runoff Pond and the Landfill, which is closed, and subsequently completed the EPA checklists for the structures. However, after further discussion with the EPA, analysis of these structures does not fall within our scope of work as neither meets the criteria set forth by the U.S. EPA for coal ash impoundments. A few pictures of the Coal Pile Runoff Pond and Landfill are provided in **Appendix F** for reference, but the structures are not further analyzed in this report.

1.2.4 Description of the WPDES Pond 1 and Appurtenances

The WPDES Pond 1 was designed by Sargent & Lundy. The following description of the impoundment is based on information provided in the Sargent & Lundy Design Drawings,[2] information received from WP&L and observations made by GZA during our Site visit.

The WPDES Pond 1 is located southwest of the former RRGS. The impoundment was commissioned in 1978, and served as a settling pond for CCW generated by the RRGS. Fly/economizer ash, slag, boiler water wash, air heater wash, steam grade production wastewaters, regeneration water from the water plant and plant floor drains discharged into the impoundment through an 8-inch diameter pipe located along the east embankment. Water and unsettled solids were discharged from the WPDES Pond 1 to the Slag Pond through a 24-inch diameter CMP located near the southwest corner of pond. The location of the former discharge pipes are shown on **Figures 3 and 4**. Water transported in the 24-inch diameter CMP mixed with water from WPDES Pond 2 in the Discharge Flume prior to being discharged into the Slag Pond. Details of the Discharge Flume construction are shown on **Figure 5**.

The WPDES Pond 1 consists of a filled embankment with a crest length of approximately 1,200 feet and a general height (from the lowest downstream toe elevation to the top of impoundment) of approximately 16 feet and a crest elevation of 759.0 feet. The embankments were constructed with 3 foot horizontal to one foot vertical (3H:1V) upstream and downstream slopes consisting of compacted bottom ash. The downstream slope and the upstream slope below elevation 754.0 feet were covered with 4 inches of topsoil and seeded. The upstream slope was armored with 12 inches of riprap from elevation 754.0 feet to 759.0 feet. The riprap armoring was underlain by 8 inches of bedding material. A compacted clay core was present along the centerline of the embankments to an elevation of 757.0 feet and was constructed with 2H:1V side slopes. Eight inches of crushed stone were placed on the embankments to facilitate an access road. A typical section of the embankments is provided on **Figure 6.**

Instrumentation near the impoundment includes one monitoring well (W-14) near the northeast corner, as shown on **Figure 7**.

1.2.5 Description of the WPDES Pond 2 and Appurtenances

The WPDES Pond 2 was designed by Sargent & Lundy. The following description of the impoundment is based on information provided in the Sargent & Lundy Design Drawings, information received from WP&L and observations made by GZA during our Site visit.

The WPDES Pond 2 Impoundment is located southwest of the former RRGS and is south of the WPDES Pond 1. The impoundment was commissioned in 1978, and served as a

[2] Several Sargent & Lundy drawings from the original impoundment design were available. A complete list of the drawings reviewed is provided in **Appendix D**.

settling pond for CCW generated by the RRGS. Fly/economizer ash, slag, boiler water wash, air heater wash and steam grade production wastewaters discharged into the impoundment through an 8-inch diameter pipe located along the east embankment. Water and unsettled solids were discharged from the WPDES Pond 2 to the Slag Pond through a 24-inch diameter CMP located near the northwest corner of the pond. The location of the former discharge pipes are shown on **Figures 3 and 4**. Water transported in the 24-inch diameter CMP mixed with water from WPDES Pond 1 in the Discharge Flume prior to being discharged into the Slag Pond. Details of the Discharge Flume construction are shown on **Figure 5**.

The WPDES Pond 2 consists of a filled embankment with a crest length of approximately 1,200 feet and a general height (from the lowest downstream toe elevation to the top of impoundment) of approximately 16 feet and a crest elevation of 759.0 feet. Similar to the WPDES Pond 1, the embankments were constructed with 3H:1V upstream and downstream slopes consisting of compacted bottom ash. The downstream slope and the upstream slope below elevation 754.0 feet were covered with 4 inches of topsoil and seeded. The upstream slope was armored with 12 inches of riprap from elevation 754.0 feet to 759.0 feet. The riprap armoring was underlain by 8 inches of bedding material. A compacted clay core was present along the centerline of the embankments to an elevation of 757.0 feet and was constructed with 2H:1V side slopes. Eight inches of crushed stone were placed on the embankments to facilitate an access road. A typical section of the embankments is provided on **Figure 6.**

Instrumentation near the impoundment includes one monitoring well (B-7RR) near the southeast corner, as shown on **Figure 7**.

1.2.6 Description of the Slag Pond Impoundment and Appurtenances

The Slag Pond was reportedly designed by Sargent & Lundy. However, no design or construction drawings were available from WP&L and the following description of the impoundment is based on observations made by GZA during our Site visit.

The Slag Pond is located southwest of the former RRGS and west of WPDES Ponds 1 and 2. The impoundment was commissioned in 1978, and served as a settling pond for CCW generated by the RRGS. The Slag Pond received fly/economizer ash, slag, boiler water wash, air heater wash, steam grade production wastewaters, regeneration water from the water plant and plant floor drains via a 10-inch diameter discharge pipe from the plant as well as decant waters that were discharged from the WPDES Ponds 1 and 2 discharge flume. Water and unsettled solids were discharged from the Slag Pond to the Final WPDES Pond through a flume structure located near the northwest corner of the pond. The Slag Pond continues to receive stormwater runoff from the Landfill via overland flow and the Coal Pile Runoff Pond through a 24-inch diameter pipe along the northern portion of the pond. The location of the former discharge pipe and flume structure is shown on **Figure 8**.

The Slag Pond appeared to be incised along the western portion of the impoundment. However, the embankment along the west side of the impoundment could have been created through landfilling with CCW products. The eastern and southern portions of the roughly triangular impoundment are shared with the adjacent ponds and consist of a filled embankment with a crest length of approximately 1,200 feet and a general height (from the lowest downstream toe elevation to the top of impoundment) of approximately 9 feet and a crest elevation of 759.0 feet. Based on visual estimation, the embankments were constructed with approximately 3H:1V upstream and downstream slopes consisting of compacted bottom ash.

Based on the similar timeframe of construction, it was assumed that the Slag Pond embankments were constructed similar to those of WPDES Ponds 1 and 2 with a compacted clay core and bottom ash embankments.

Instrumentation near the impoundment includes one staff gauge (SG-4), as shown on **Figure 8**.

1.2.7 Description of the Final WPDES Pond Impoundment and Appurtenances

The Final WPDES Pond was reportedly designed by Sargent & Lundy. However, no design or construction drawings were available from WP&L and the following description of the impoundment is based on observations made by GZA during our Site visit.

The Final WPDES Pond is located southwest of the former RRGS. The impoundment was commissioned in 1978, and served as a settling pond for CCW generated by the RRGS. Fly/economizer ash, slag, boiler water wash, air heater wash, steam grade production wastewaters, regeneration water from the water plant and plant floor drains discharged into the impoundment through a flume structure from the Slag Pond. Water and unsettled solids were discharged from the Final WPDES Pond through a decant structure located on the southern portion of the impoundment. The locations of the inlet and outlet structures are shown on **Figure 9**.

The Final WPDES Pond appeared to consist of a filled embankment with a crest length of approximately 1,900 feet and a general height (from the lowest downstream toe elevation to the top of impoundment) of approximately 5 feet and a crest elevation of 759.0 feet. Based on visual estimates, the embankments were constructed with approximately 3H:1V upstream and downstream slopes consisting of compacted bottom ash. Based on the similar timeframe of construction, it was assumed that the embankments were constructed similar to those of WPDES Ponds 1 and 2 with a compacted clay core and compacted bottom ash embankments.

Instrumentation near the impoundment includes two wells (W-3, and B-7RR) and two staff gauges (SG-2, SG-3), as shown on **Figure 9**.

1.2.8 Operations and Maintenance

The RRGS is currently inactive and the impoundments are maintained by WP&L Energy personnel. Maintenance of the RRGS facility, including the impoundments, is regulated by the EPA under the National Pollutant Discharge Elimination System (NPDES) Permit No. WI-0002402-05-0. RRGS personnel perform visual assessments of the impoundments on an annual basis and the assessment results from June 22, 2010 and March 24, 2011 were provided to GZA.

1.2.9 Size Classification

For the purposes of this EPA-mandated assessment, the size of the impoundments was based on U. S. Army Corps of Engineers (USACE) criteria. Based on the maximum crest height of 16 feet and a storage volume of approximately 18 acre-feet, WPDES Pond 1 is classified as a **Small**-sized structure. Based on the maximum crest height of 16 feet and a storage volume of approximately 19 acre-feet, WPDES Pond 2 is classified as a **Small**-sized structure. Based on the maximum crest height of 5 feet and a storage volume of approximately 166 acre-feet, the Slag Pond is classified as a **Small**-sized structure. Based on the maximum crest height of

10 feet and a storage volume of approximately 24 acre-feet, the Final WPDES Pond is classified as a **Small**-sized structure. According to guidelines established by the USACE, dams with a storage volume less than 1,000 acre-feet and/or a height less than 40 feet are classified as Small-sized structures.

1.2.10 Hazard Potential Classification

Under the EPA classification system, as presented on page 2 of the EPA check list (**Appendix C**) and Definitions section (**Appendix B**), it is GZA's opinion that the WPDES Pond 1, WPDES Pond 2 and Final WPDES Pond would be considered as having a **Low** hazard potential. It is our opinion that the upstream water elevations are maintained at a sufficiently low elevation such that breach of the impoundment would not likely result in the release of CCW. The hazard potential rating is based on no probable loss of human life due to failure and the low potential for environmental impacts outside of Utility-owned property.

Under the EPA classification system, as presented on page 2 of the EPA check list (**Appendix C**) and Definitions section (**Appendix B**), it is GZA's opinion that the Slag Pond would be considered as having a **Less-than-Low** hazard potential. The hazard potential rating is based on no probable loss of human life due to failure and no probable environmental or property damage. The estimated areas downstream of the impoundments are shown on **Figure 2**.

1.3 Pertinent Engineering Data

1.3.1 Drainage Area

Based on the design documents and visual observations by GZA, the WPDES Pond 1, WPDES Pond 2 and the Final WPDES Pond do not receive drainage from the surrounding areas. Based on estimates of the drainage area from topographic contours on drawing Figure 3 "Water Table Map, October 2009," drawn by RMT and provided to GZA by WP&L, approximately 23 acres drain into the Slag Pond. The estimated drainage area for the Slag Pond is shown on **Figure 8**.

1.3.2 Reservoir

Based on information provided in a report by Simon Hydro-Search,[3] the WPDES Pond 1, WPDES Pond 2, Slag Pond and Final WPDES Pond had surface areas of 1.4, 1.5, 11.8 and 3.5 acres and storage volumes of approximately 18, 19, 166 and 25 acre-feet, respectively, at the operating levels referenced in the Simon Hydro-Search report. Approximately 0.4, 0.3 and 1 acre of pool area were observed in the WPDES Pond 1, WPDES Pond 2 and the Slag Pond respectively during the June 2011 Site visit by GZA. No pool was visible within approximately 100 feet of the toe of the upstream slope in the Final WPDES Pond. The pool areas observed on GZA's June 2011 Site visit were lower than those reported in the Simon Hydro-Search study and reflect the inactive status of the RRGS.

[3] "Chapter NR213 Lagoon Compliance Assessment Wisconsin Power & Light Rock River Generating Station Rock County, Wisconsin" by Simon Hydro-Search. Dated June 30, 1992.

1.3.3 Discharges at the Impoundment Sites

The RRGS is inactive and has not discharged water since 2007. Precipitation and storm water runoff that enters the impoundments infiltrates into the ground or evaporates.

1.3.4 General Elevations (feet – MSL)

Elevations were taken from design drawings, reports and data provided by WP&L. Unless otherwise noted, elevations were based on the United States Geological Survey (USGS) topographic map MSL vertical datum. The downstream water elevation of the Final WPDES Pond was considered to be the Rock River water elevation at the time of the assessment.

<u>WPDES Pond 1</u>	
A. Top of Embankment (Minimum)	± 759 feet
B. Upstream Water at Time of Assessment	± 750 feet
C. Downstream Water at Time of Assessment	± 750 feet[4] (Slag Pond)
D. Maximum Pond Water Elevation	Unknown
<u>WPDES Pond 2</u>	
A. Top of Embankment (Minimum)	± 759 feet
B. Upstream Water at Time of Assessment	± 750 feet
C. Downstream Water at Time of Assessment	± 750 feet (Slag Pond)
D. Maximum Pond Water Elevation	Unknown
<u>Slag Pond</u>	
A. Top of Embankment (Minimum)	± 759 feet
B. Upstream Water at Time of Assessment	± 750 feet
C. Downstream Water at Time of Assessment	None Observed
D. Maximum Pond Water Elevation	Unknown
<u>Final WPDES Pond</u>	
A. Top of Embankment (Minimum)	± 759 feet
B. Upstream Water at Time of Assessment	None Observed
C. Downstream Water at Time of Assessment	± 748 feet[5]
D. Maximum Pond Water Elevation	Unknown

1.3.5 Design and Construction Records and History

Limited design information was available regarding WPDES Ponds 1 and 2. No design information was available with regards to the Slag Pond and the Final WPDES Pond. No construction documentation was available from WP&L with regards to the ash impoundments. A list of the documents provided to GZA by WP&L is provided in **Appendix D**.

1.3.6 Operating Records

No operating records were available for the impoundments.

[4] The water elevation for WPDES Pond 1, WPDES Pond 2 and Slag Pond were based on visual estimates made by GZA during the assessment.

[5] Downstream water at the time of the assessment is based on the Rock River water levels, as measured at the USGS gauging station #05430500, located near Afton, Wisconsin, on June 2, 2011. The gauging station is located approximately 4 miles upstream of the impoundments.

1.3.7 Previous Assessment Reports

The impoundments were visually assessed by a WP&L engineer on June 22, 2010 and March 24, 2011, in accordance with company policies. Copies of the assessment reports and company policy were reviewed by GZA and are included as **Appendix E**. The presence of trees and woody-type shrubs were observed during the assessments and no other deficiencies were noted. Based on the inactive status of the RRGS, the remedial action was to continue monitoring the embankments.

2.0 ASSESSMENT

2.1 Visual Assessment

The RRGS impoundments were assessed on June 8, 2011, by Patrick J. Harrison, P.E., and Douglas P. Simon, P.E., of GZA, and accompanied by Bill Skalinsky of WP&L. The weather was cloudy with occasional rain with temperatures in the 70°s to 80°s Fahrenheit. Photographs to document the current conditions of the impoundments were taken during the assessment and are provided in **Appendix F**. The water levels in the impoundments at the time of the assessment were as provided in Section 1.3.4. Underwater areas were not accessed, as this level of investigation was beyond GZA's scope of services. Copies of the EPA Checklists are provided in **Appendix C**.

With respect to our visual assessment, there was no evidence of prior releases, failures, or patchwork observed by GZA.

2.1.1 WPDES Pond 1 General Findings

In general, the WPDES Pond 1 was found to be in **POOR** condition. An overall Site plan showing the impoundments is provided as **Figure 2**. The location and orientation of photographs provided in **Appendix F** is shown on **Figure 3**.

2.1.2 WPDES Pond 1 Upstream Slope (Photos 7 through 13)

The water surface elevation at the time of assessment was approximately at elevation 750 feet MSL. Therefore, the lower portion of the upstream slope was underwater and not visible. The upstream slope above the water was generally in fair condition. However, thick vegetation was present along much of the slope making it difficult to access the slope. No unusual movement or sloughing was observed on the slope.

2.1.3 WPDES Pond 1 Top of Impoundment (Photos 14 through 16)

The top of the WPDES Pond 1 generally had a gravel access road that had overgrown with tree, brush and grass. The top of impoundment had occasional pot holes along the entire length. The alignment of the top of impoundment appeared generally level with no large depressions or irregularities observed. Based on the design information, the top of impoundment elevation is approximately elevation 759 feet MSL. No significant settlement was observed at the time of our assessment. There was approximately 9 feet of free board at the time of our assessment.

2.1.4 WPDES Pond 1 Downstream Slope (Photo 15)

The downstream slope of the impoundment was generally covered in thick vegetation making it difficult to observe during our assessments, as shown in Photo 15. In addition, the Rock River was present at the toe of the eastern embankment making it a potential personal safety issue to walk along the downstream slope. Based on observations made from the top of the impoundment, no seepage or sloughing were present on the downstream slope.

2.1.5 WPDES Pond 1 Discharge Pipes (Photos 11, 17 through 19)

Water and CCW from the former plant was discharged into the WPDES Pond 1 through an 8-inch diameter pipe along the eastern embankment of the pond. GZA was not able to locate the discharge pipe during our Site investigation due to thick vegetation. GZA observed the condition of the 24-inch diameter CMP inlet pipe that transmits water from the WPDES Pond 1 to the Slag Pond. The bottom half of the inlet pipe had corroded and was not present, as shown on Photo 11. The inlet pipe discharges into a concrete flume located near the southwest corner of the pond, as shown in Photos 17 through 19.

2.1.6 WPDES Pond 2 General Findings

In general, WPDES Pond 2 was found to be in **POOR** condition. An overall Site plan showing the impoundments is provided as **Figure 2**. The location and orientation of photographs provided in **Appendix F** are shown on the Photo Plan in **Figure 3**.

2.1.7 WPDES Pond 2 Upstream Slope (Photos 20 through 26)

The water surface elevation at the time of assessment was approximately at elevation 750 feet MSL. Therefore, the lower portion of the upstream slope was underwater and not visible. The upstream slope above the water was generally in fair condition. However, thick vegetation was present along much of the slope making it difficult to assess. No unusual movement or sloughing was observed on the slope.

2.1.8 WPDES Pond 2 Top of Impoundment (Photos 27 through 29)

The top of WPDES Pond 2 generally had a gravel access road that had overgrown with tree, brush and grass. The top of impoundment had occasional pot holes along the entire length. The alignment of the top of impoundment appeared generally level with no large depressions or irregularities observed. Based on the design information, the top of impoundment elevation was approximately elevation 759 feet MSL. No significant settlement was observed at the time of our assessment. There was approximately 9 feet of free board at the time of our assessment.

2.1.9 WPDES Pond 2 Downstream Slope (Photo 27 and 29)

The downstream slope of the impoundment was generally covered in thick vegetation making it difficult to observe during our assessments, as shown in Photos 27 and 29. In addition, the Rock River was present at the toe of the east embankment making it a potential personal safety issue to walk along the downstream slope. Based on observations made from the top of the impoundment, no seepage or sloughing were present on the downstream slope.

2.1.10 WPDES Pond 2 Discharge Pipes (Photos 17 through 19)

Water and CCW from the former plant were discharged into WPDES Pond 2 through an 8-inch diameter pipe along the eastern embankment of the pond. GZA was not able to locate the discharge pipe during our Site investigation due to thick vegetation. GZA observed the condition of the 24-inch diameter CMP inlet pipe that transmits water from the WPDES Pond 2 to the Slag Pond. The pipe was corroded similar to the pipe for WPDES Pond 1. The inlet pipe discharged into a concrete flume located near the northwest corner of the pond, as shown in Photos 17 through 19.

2.1.11 Slag Pond General Findings

In general, the Slag Pond was found to be in **POOR** condition. An overall Site plan showing the impoundments is provided as **Figure 2**. The location and orientation of photographs provided in **Appendix F** is shown on the Photo Plan on **Figure 8**.

2.1.12 Slag Pond Upstream Slope (Photos 46 through 50)

The water surface elevation at the time of assessment was approximately at elevation 750 feet MSL. Therefore, the lower portion of the upstream slope was underwater and not visible. The upstream slope above the water was generally in fair condition. However, thick vegetation and trees were present along much of the slope making it difficult to assess. No unusual movement or sloughing were observed on the slope.

2.1.13 Slag Pond Top of Impoundment (Photos 14, 16, and 47)

The top of the Slag Pond generally had a gravel access road that had overgrown with tree, brush and grass. The top of the impoundment had occasional pot holes along the entire length. The alignment of the top of the impoundment appeared generally level with no large depressions or irregularities observed. Based on the design information, the top of impoundment elevation was approximately elevation 759 feet MSL. No significant settlement was observed at the time of our assessment. There was approximately 9 feet of free board at the time of our assessment.

2.1.14 Slag Pond Downstream Slope

Thick vegetation and trees were present along portions of the downstream slope along the Final WPDES Pond, making it difficult to assess. No unusual movement or sloughing were observed on the visible portions of the slope.

2.1.15 Slag Pond Ash Discharge Pipes (Photos 51 through 54)

The discharge pipes and concrete flumes that transported water into the concrete flume were observed by GZA. A 10-inch diameter pipe transported water and CCW from the facility and discharged in the northern portion of the pond. A 24-inch diameter pipe transports water from the Coal Pile Runoff Pond and discharges in the northern portion the pond. The concrete flume from WPDES Pond 1 and WPDES Pond 2 discharged along the eastern portion of the pond. The decant structure for the Slag Pond consisting of a stop-log weir, was located along the southern portion of the pond and is shown in Photo 54. The decant structure appeared to be

in fair condition at the time of our assessment. However, no water was flowing through the structure at the time of our assessment and thus its functionality could not be evaluated.

2.1.16 Final WPDES Pond General Findings

In general, the Final WPDES Pond was found to be in **POOR** condition. An overall Site plan showing the impoundments is provided as **Figure 2**. The location and orientation of photographs provided in **Appendix F** is shown on the Photo Plan in **Figure 9**.

2.1.17 Final WPDES Pond Upstream Slope (Photos 31, 33, 34, 36 and 37)

The water surface elevation in the Final WPDES Pond was not visible within 100 feet of the embankment at the time of assessment. Thick vegetation prevented GZA from evaluating whether the water surface was present farther from the embankment. The upstream slopes were vegetated with grass, shrubs and trees that made assessment difficult. No unusual movement or sloughing were observed on the visible slope.

2.1.18 Final WPDES Pond Top of Impoundment (Photos 35, 38 though 41)

The top of the Final WPDES Pond generally had a gravel access road that had been overgrown by trees, shrubs and grass. The alignment of the top of the impoundment appeared generally level, with no large depressions or irregularities observed at approximately Elevation 759 feet MSL.

2.1.19 Final WPDES Pond Downstream Slope (Photos 30, 32, 42, and 43)

The water surface elevation of the Rock River on the downstream slope at the time of assessment was at elevation 748 feet MSL. Therefore, the lower portion of the downstream slope was underwater and not visible. Thick vegetation, shrubs and trees were present along portions of the downstream slope above the water, as shown on Photos 42 and 43, making it difficult to assess. No unusual movement or sloughing were observed on the visible portions of the slope.

2.1.20 Final WPDES Pond Ash Discharge Pipes (Photos 44 and 45)

The Final WPDES pond received water from the Slag Pond through the decant structure described in Section 2.3.5. The decant structure that discharged water from the Final WPDES Pond to the Rock River is located along the southern portion of the impoundment. The decant structure and discharge pipes for the Final WPDES Pond appeared to be in fair condition at the time of our Site visit. However, no water was flowing through the structures at the time of our assessment and thus its functionality could not be evaluated.

2.2 Caretaker Interview

Maintenance of the impoundments is the responsibility of RRGS personnel. GZA met with RRGS personnel and discussed the operations and maintenance procedures, regulatory requirements and the history of the impoundments since their construction. The observations, descriptions and findings presented herein this report reference these discussions.

2.3 Operation and Maintenance Procedures

As discussed in Section 1.2.5, RRGS personnel are responsible for maintenance of the impoundments. No formal maintenance plan has been developed for the impoundments. Based on our discussions with RRGS personnel, the impoundments are monitored annually in preparation of permanent facility closure. Limited maintenance work is conducted at the facility.

2.4 Emergency Action Plan

An Emergency Action Plan (EAP) has not been developed for the impoundments. Note that the hazard potential classification for the impoundments is discussed in Section 1.2.8.

2.5 Hydrologic/Hydraulic Data

No hydrologic/hydraulic data is available for the impoundments. GZA did not perform an independent assessment of the hydraulics and hydrology for the impoundments as this was beyond our scope of services.

2.6 Structural and Seepage Stability

No engineering design information is available for the impoundments. GZA did not perform an independent assessment of the structural and seepage stability for the impoundments as this was beyond our scope of services.

3.0 ASSESSMENTS AND RECOMMENDATIONS

3.1 Assessments

In general, the overall condition of WPDES Pond 1, WPDES Pond 2, Slag Pond and Final WPDES Pond was judged to be **POOR.** In GZA's professional opinion, the embankment(s) appear to be sound and no immediate remedial action appears to be necessary. However, based on EPA's inspection criteria, the impoundment has been given a POOR Condition Rating, because no geotechnical computations were made available to GZA for review. Thus, the stability of the embankment(s) could not be independently verified. The impoundments were observed to have the following deficiencies:

1. No stability or hydraulic analysis of the impoundments.

2. Overgrown vegetation and trees up to 24-inches in diameter on the crests, downstream and upstream embankments.

3. Potholes along the crests of the embankments.

4. Deterioration of the inlet pipes associated with WPDES Pond 1 and WPDES Pond 2.

The presence of tall grasses, shrubs and trees limited GZA's access to the embankments and therefore precluded close visual observation of these areas. In addition, the water levels in the impoundments were below the decant elevations at the time of assessment and no water was

observed flowing through the decant structures. Additional deficiencies may become apparent if the vegetation height were to be reduced, allowing better access and visibility of the embankments. Re-activation of the impoundments could also disclose additional deficiencies which were not apparent at the time of assessment.

The following sections describe the recommended approach to address current deficiencies. The recommendations should be evaluated for consistency with the conditions of the current and anticipated steps of the planned closure. Prior to undertaking recommended maintenance, repairs, or remedial measures, the applicability of permits needs to be determined for activities that may occur within the jurisdiction of the appropriate regulatory agencies.

3.2 Studies and Analyses

GZA recommends the following studies and analyses:

1. Perform a detailed hydrologic and hydraulic study using current methodology to evaluate each impoundment's ability to safely pass the standard design flood.

2. Perform a stability analysis of the impoundment embankments including static, seismic and liquefaction loading.

3. Develop an emergency action plan.

3.3 Recurrent Operation & Maintenance Recommendations

GZA recommends the following operation and maintenance level activities:

1. Clear inappropriate woody vegetation, including trees and brush and maintain grass cover on the crest, upstream and downstream slope and approximately 15 feet beyond the toe area. USACE recommends vegetation be kept less than 12 inches in height on embankments.
2. Fill potholes, depressions, and animal burrows and reseed as necessary.
3. Record and maintain monthly measurements of the pond water surface elevation and observation wells and establish response action protocols for various elevation levels for each impoundment as appropriate. It is recommended that the water elevation within any impoundment not be allowed to rise beyond the level that which was observed during our site assessment (about elevation 750 feet). The frequency of monitoring should be adjusted based on results of the hydrologic and hydraulic analysis.
4. Monitor decant outflow structures and clear silt or debris which may block or impede outflow.
5. Take measures as necessary so as to maintain operability and function of the various impoundment water level control mechanisms. Set said control mechanisms so as to minimize the build-up of water within the impoundments.
6. Exercise water control mechanisms to verify proper operating condition.

3.4 Minor Repair Recommendations

GZA recommends the following minor repairs which may improve the overall condition of the impoundments, but do not alter their current design. The recommendations may require design by a professional engineer and construction contractor experienced in dam construction.

1. Remove trees, stumps, and their associated root systems from the embankments.

2. Repair deteriorated decant structures and other water level control mechanisms as appropriate.

3.5 Remedial Measures Recommendations

1. In conjunction with the results of the updated hydrologic and hydraulic analyses, make provisions for an emergency overflow spillway(s) if appropriate.

It is our understanding that permanent closure of the impoundments in accordance with applicable State of Wisconsin Department of Natural Resource regulations is to be completed in 2014 based on conversations with WP&L personnel during the on-site assessment. It is GZA's opinion that the slopes appeared to be stable based on observed conditions at the time of assessment, and no imminent signs of distress were observed. WP&L should maintain and monitor the embankment structures until permanent closure status has been obtained. In the interim, GZA is of the opinion it would be prudent for WP&L to at least implement the above recommended operations and maintenance and minor repair activities due to the anticipated two- to three-year time frame until permanent closure status is achieved. This includes at a minimum that all water level control mechanisms be arranged so as to limit maximum pool elevation to about elevation 750 feet. However, these recommendations should be evaluated for consistency with the conditions of the current and anticipated steps of the planned closure. . If closure of the Site does not occur, it is GZA's opinion that all of the repair, maintenance, and analysis recommended in this report should be performed.

3.6 Alternatives

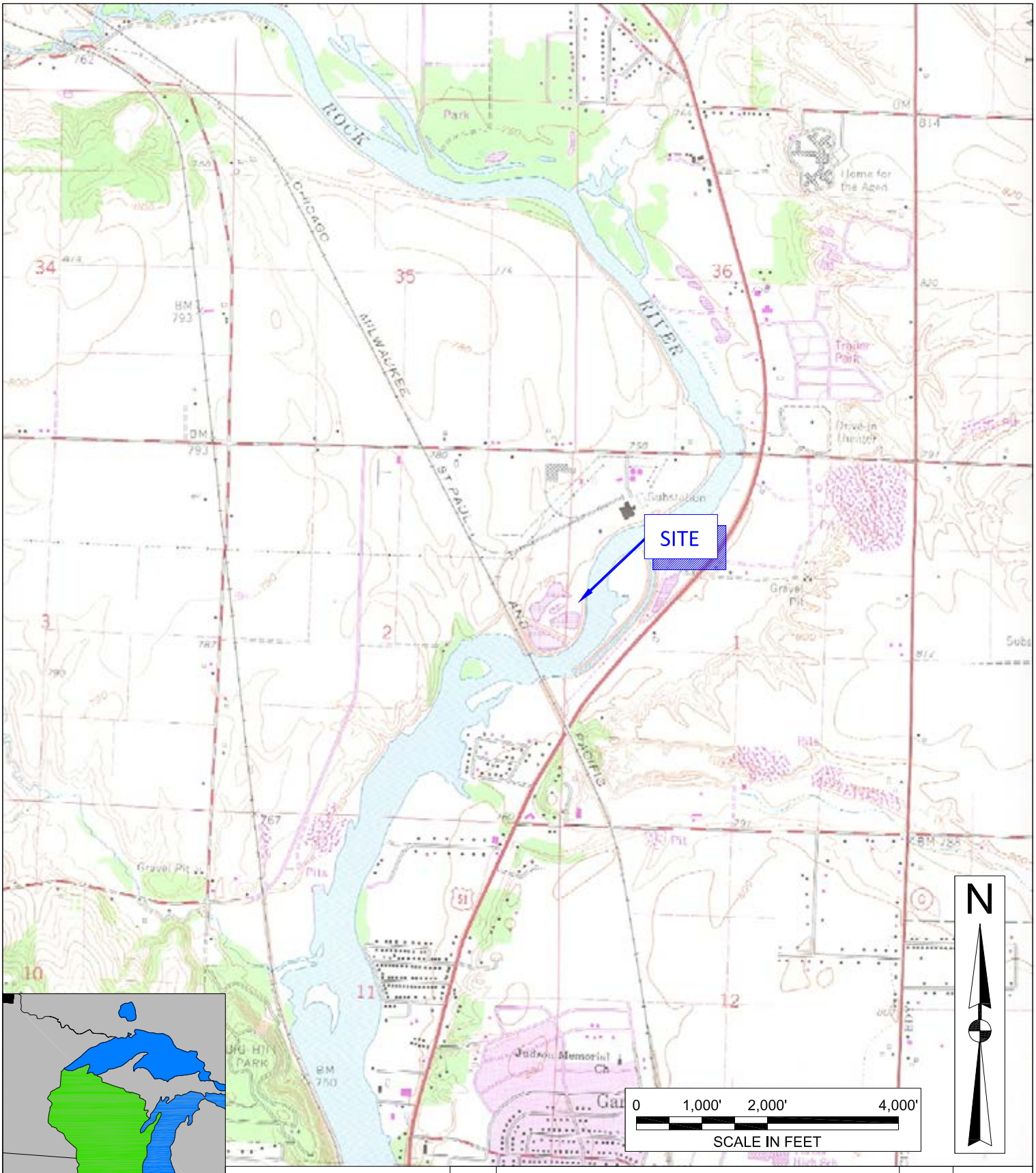
There are no alternatives currently recommended. It must be noted however that full implementation of all of our recommendations should be undertaken if the time to obtain permanent closure status for the impoundments (in accordance with applicable engineering and regulatory requirements) is extended beyond WP&L's expected two- to three-year time frame.

4.0 ENGINEER'S CERTIFICATION

I acknowledge that the management unit referenced herein, WPDES Pond 1, WPDES Pond 2, Slag Pond and Final WPDES Pond have been assessed to be in **POOR** condition on June 8, 2011.

Patrick J. Harrison, P.E.
Senior Consultant

FIGURES



SOURCE: U.S.G.S. QUADRANGLE MAP
BELOIT, WI (1962)
PHOTOREVISED 1971 AND 1976

NO.	ISSUE/DESCRIPTION	BY	DATE

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
20900 SWENSON DRIVE, SUITE 150
WAUKESHA, WISCONSIN 53186
(262) 754-2560

PREPARED FOR:

SITE LOCATION MAP

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

FIGURE 1

SHEET NO.

PROJ MGR:	DPS	REVIEWED BY:	PJH	CHECKED BY:	DPS	DATE	PROJECT NO.	REVISION NO.
DESIGNED BY:	DPS	DRAWN BY:	CLK	SCALE:	1 : 24000	7/7/11	01.0170142.30	

GZA GeoEnvironmental, Inc.
20900 Swenson Drive, Suite 150
Waukesha, Wisconsin 53186
Phone: (262) 754-2560 Fax: (262) 754-9711

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

OVERALL ASH BASIN PLAN

PROJ. MGR.: DPS DESIGNED BY: DPS REVIEWED BY: PJH OPERATOR: CLK	DWG. Date: 09-21-2011 Job NO.: 01.0170142.30	FIGURE NO.: 2

SOURCE: DIGITAL ORTHOPHOTO/AERIAL IMAGERY PRODUCED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) AND RETRIEVED THROUGH USE OF A PROFESSIONAL LICENSE OF THE GOOGLE EARTH MAPPING PROGRAM.
DATA ACCESSED JULY 2011

N
W E
S

100 50 0 100 Feet

W-14

APPROXIMATE LOCATION OF DISCHARGE PIPE

WPDES POND 1

ROCK RIVER

APPROXIMATE LOCATION OF CONCRETE FLUME

WPDES POND 2

APPROXIMATE LOCATION OF DISCHARGE PIPE

B-7RR

LEGEND

- APPROXIMATE IMPOUNDMENT BOUNDARY
- 12 GZA PHOTO LOCATION / DIRECTION
- W-14 WELL LOCATION AND NUMBER

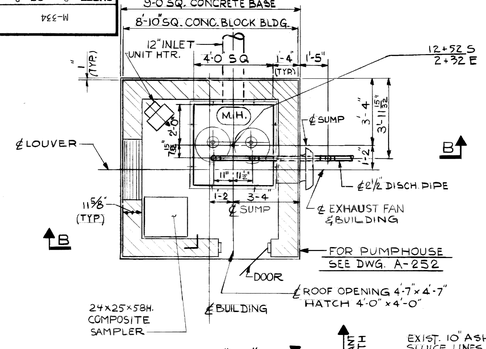
GZA GeoEnvironmental, Inc.
20900 Swenson Drive, Suite 150
Waukesha, Wisconsin 53186
Phone: (262) 754-2560 Fax: (262) 754-9711

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

WPDES PONDS 1 AND 2

PROJ. MGR.: DPS DESIGNED BY: DPS REVIEWED BY: PJH OPERATOR: CLK	DWG. Date: 09-21-2011 Job NO.: 01.0170142.30	FIGURE NO.: 3

SHEET 2 OF 2
M-334



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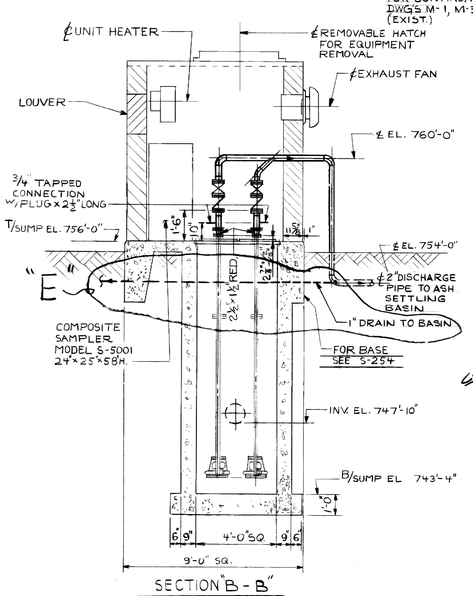

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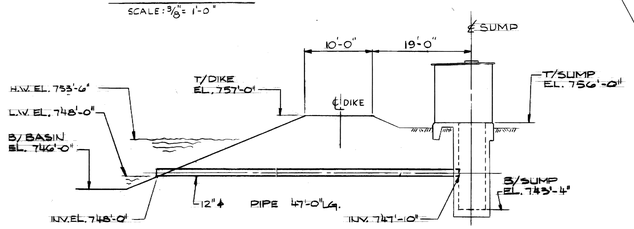

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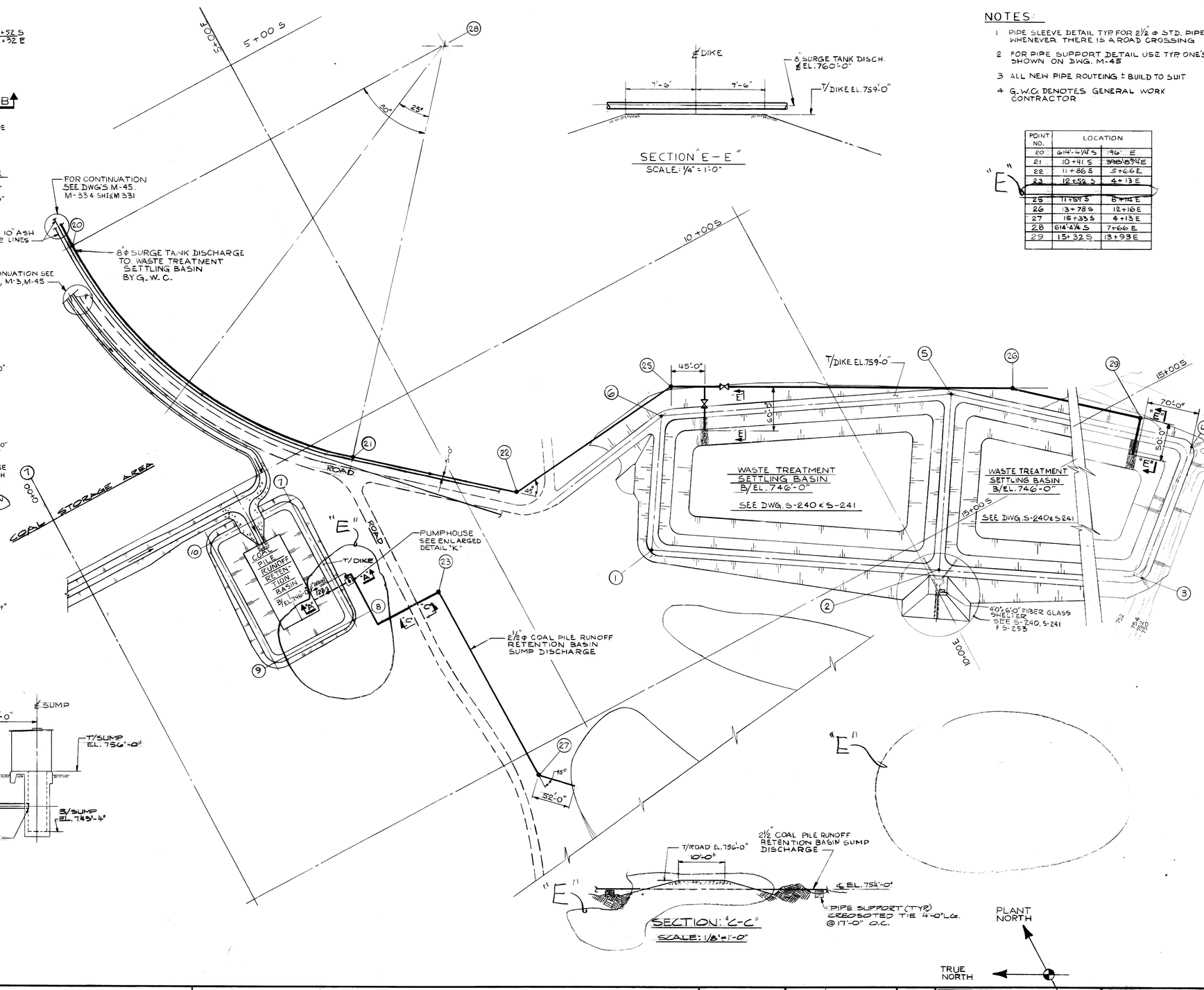

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SECTION: "C-C"
SCALE: 1/8" = 1'-0"

POINT NO.	LOCATION	
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21	10+41 S	3 [illegible] 3/4" E
22	11+86 S	5+66 E
23	12+52 S	4+13 E
25	11+59 S	8+14 E
26	13+78 S	12+16 E
27	15+33 S	4+13 E
28	614'-4 1/4" S	7+66 E
29	15+32 S	13+93 E

NOTES:

1. PIPE SLEEVE DETAIL TYP FOR 2 1/2" ϕ STD. PIPE WHENEVER THERE IS A ROAD CROSSING
2. FOR PIPE SUPPORT DETAIL USE TYP ONE'S SHOWN ON DWG. M-45
3. ALL NEW PIPE ROUTEING ± BUILD TO SUIT
4. G.W.C DENOTES GENERAL WORK CONTRACTOR

PLANT NORTH
TRUE NORTH

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM
O		6-30-76	J. Benson			CLIENT COMMENTS	
A	W-2141	8-9-76				GENERAL WORK BIDS	
B	W-2141	9-8-76				ADDENDUM #1	
C	W-2141	11-16-76	R. Schlueter			RELOCATED SURGE TANK DISCHARGE LINE	
D	W-2141	1-5-77				ADD'D INFO. FOR SETTLING BASINS DISCH. FLUME AREA	X
E	W-2141	6-18-78	R. Schlueter			FOR RECORD	X

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM

DO NOT USE I, O, Q OR X FOR REVISION

WISCONSIN — CHARLES T. QUILLOYLE E-15690 GLEN ELLYN, ILL. — PROFESSIONAL ENGINEER

DRAWN 1"=50'-0" SCALE
CHECKED 11-15-76 DATE
ENGINEER 11-16-76 DATE
APPROVED 11-16-76 DATE

PROJECT NUMBER 5185

OUTDOOR PIPING
ROCK RIVER GENERATING STATION
UNITS 1 & 2
WISCONSIN POWER & LIGHT CO.
NORTH BELOIT, WISCONSIN

SARGENT & LUNDY ENGINEERS CHICAGO

DRAWING NO. M-334 REV. E

SHEET 2 OF 2

JOB NO. 01.0170142.30

FIGURE NO. 4

NOTE: IMAGE HAS BEEN REDUCED AND IS NO LONGER TO A SCALE

GZA GeoEnvironmental, Inc. 10 Science Court, Madison, Wisconsin 53711 Phone (262) 754-2560 ■ Fax (262) 754-9711 www.gza.com

PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

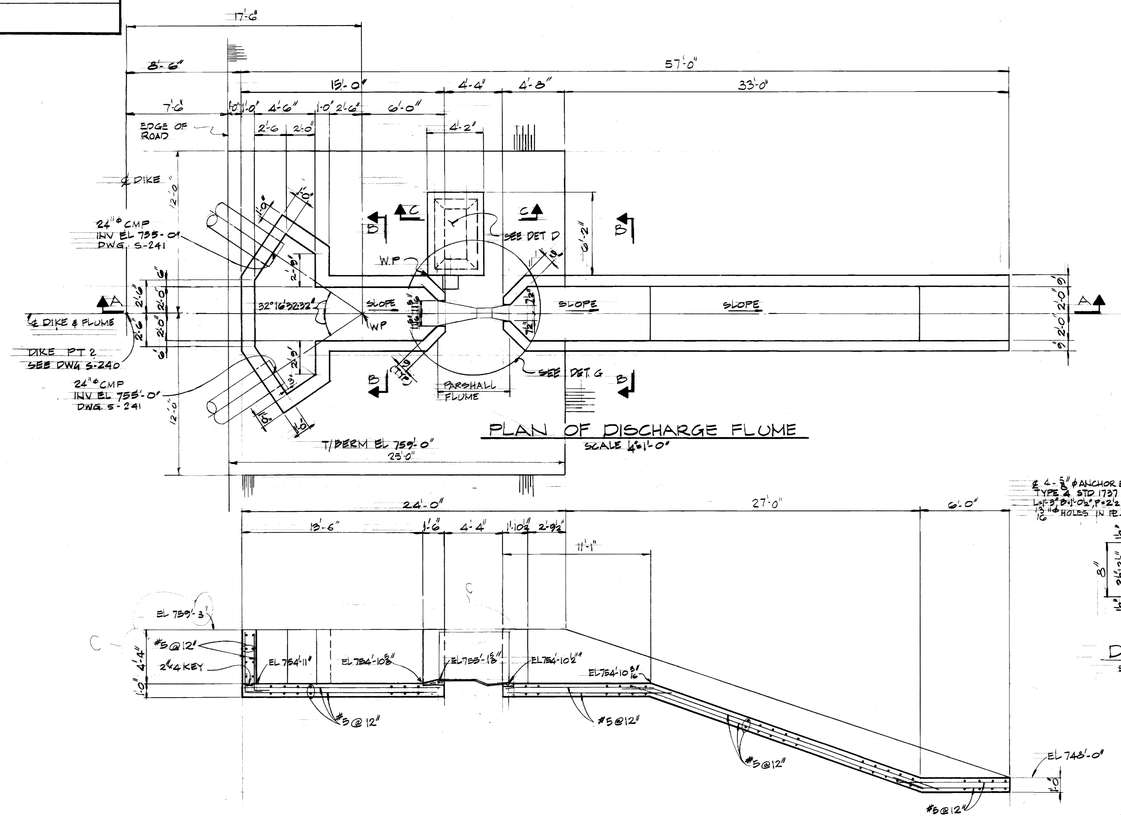
ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

WPDES POND 1 AND 2,
COAL PILE RUNOFF POND DESIGN

CONFIDENTIAL BUSINESS INFORMATION

REV. NO. | BY | DATE | DESCRIPTION

GZA Drawing Name: J:\GZA_LOSAP\01.0170142.30 Task 5 - Rock River\Drawings\Autocad\Scanned Figures - Rock River.dwg Last Modified: Sep 22, 2011 - 12:20pm Plotted on: Sep 22, 2011 - 12:21pm by justin.hegarty



PLAN OF DISCHARGE FLUME
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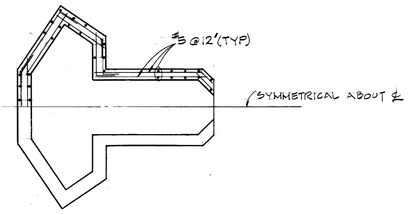

PARTIAL PLAN OF REINFORCING
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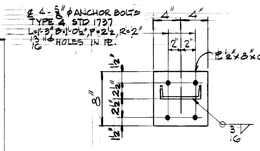

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SECTION H
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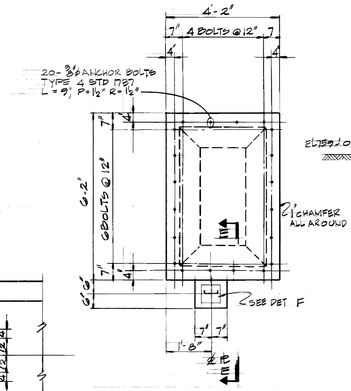

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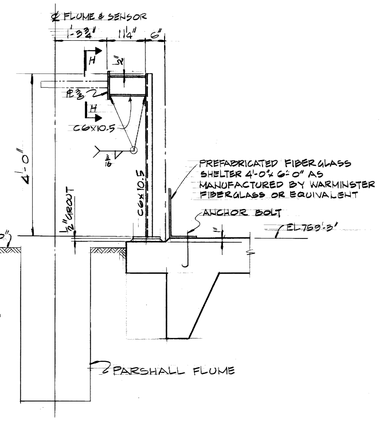

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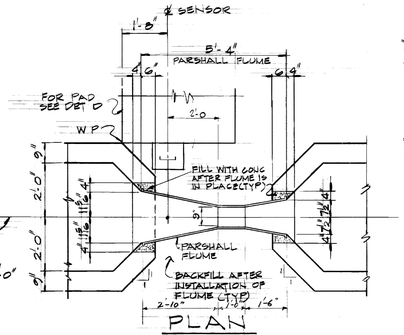

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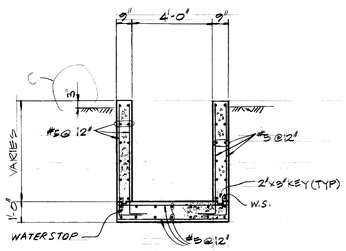

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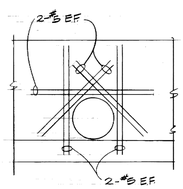

ADDITIONAL REINF. AT PIPE SLEEVES
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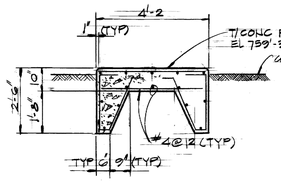

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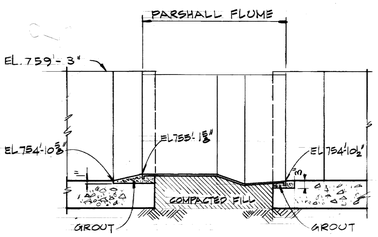
SCALE 1"=1'-0"



SECTION DETAIL G
SCALE 1/2"=1'-0"

PLANT NORTH

NOTES

1. ALL WORK SHOWN ON THIS DRAWING SHALL BE FURNISHED & INSTALLED IN ACCORDANCE WITH JOB SPEC W-2141 BY GENERAL WORK CONTRACTOR UNLESS OTHERWISE NOTED
2. SPLICES OF REINF SHALL HAVE MIN LAP AS INDICATED IN THE SCHEDULE ON DWG S-251

REFERENCE DRAWINGS

S-240	COAL PILE DRAINAGE SYSTEM & WASTE TREATMENT SETTLING BASIN - PLAN
S-241	COAL PILE DRAINAGE SYSTEM & WASTE TREATMENT SETTLING BASIN - SECTIONS

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM
	W-2141	8-9-76	A.C. BROWN			GENERAL WORK BIDS	
A	W-2141	9-8-76	[illegible]			ADDENDUM #1	
B	W-2141	11-16-76	M. PETERSEN	[illegible]		FOR CONSTRUCTION	
C	W-2141	1-13-77	[illegible]	[illegible]	[illegible]	DIMENS.	

DO NOT USE I, O, Q OR X FOR REVISION

GLEN A. CHAUVIN No. E-14430 PARK RIDGE, ILL. PROFESSIONAL ENGINEER

DRAWN	A. Lee Brown	SCALE
CHECKED	Jonathan Reval	8-2-76 DATE
ENGINEER	[illegible]	11-16-76 DATE
APPROVED	[illegible]	11-16-76 DATE

PROJECT NUMBER 5689.00

WASTE TREATMENT SETTLING BASIN DISCHARGE FLUME
ROCK RIVER GENERATING STATION UNIT 1 & 2
WISCONSIN POWER & LIGHT CO.
NORTH BELOIT, WISCONSIN.

SARGENT & LUNDY ENGINEERS CHICAGO

DRAWING NO. S-253 REV. C

SHEET OF

JOB NO. 01.0170142.30

FIGURE NO. 5

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN
WPDES POND 1 AND 2 DISCHARGE FLUME

PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

REV. NO. | BY | DATE | DESCRIPTION

NOTE: IMAGE HAS BEEN REDUCED AND IS NO LONGER TO A SCALE

GZA GeoEnvironmental, Inc. 10 North Patrick Boulevard, Suite 340, Brookfield, Wisconsin 53186 Phone (262) 754-2560 ■ Fax (262) 754-2911 www.gza.com

CONFIDENTIAL BUSINESS INFORMATION

US EPA ARCHIVE DOCUMENT

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

TYPICAL SECTIONS: WPDES POND 1 AND 2, COAL PILE RUNOFF POND

JOB NO. 01.0170142.30
FIGURE NO. 6

PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

GZA GeoEnvironmental, Inc.
Engineers and Scientists
10000 Swenson Drive ■ Waukesha, Wisconsin 53186
Phone (262) 754-2560 ■ Fax (262) 754-9711
www.gza.com

NOTE: IMAGE HAS BEEN REDUCED AND IS NO LONGER TO A SCALE

REV. NO.	DESCRIPTION	BY	DATE

SECTION E-E (S-240)
SCALE 1/4" = 1'-0"

SECTION A-A (S-240)
SCALE 1" = 20'-0"

SECTION B-B (S-240)
SCALE 1" = 10'-0"

SECTION D-D (S-240)
SCALE 1" = 5'-0"

DETAIL 'C' (S-240)
SCALE 1" = 20'-0"

NOTES
1. ALL WORK SHOWN ON THIS DRAWING SHALL BE DONE BY THE EARTHWORK CONTRACTOR IN ACCORDANCE WITH SPECIFICATION W-240, UNLESS NOTED.

REFERENCE DRAWINGS
S-240 COAL PILE DRAINAGE SYSTEM & WASTE TREATMENT SETTLING BASIN PLAN
S-239 WASTE TREATMENT SETTLING BASIN DISCHARGE LINE

SARGENT & LUNDY ENGINEERS CHICAGO
DRAWING NO. S-241 REV. B
SHEET OF

COAL PILE DRAINAGE SYSTEM & WASTE TREATMENT SETTLING BASIN - SECTIONS
ROCK RIVER GENERATING STATION
WISCONSIN POWER & LIGHT CO.
NORTH BELOIT, WISCONSIN

PROJECT NUMBER 5162-202
AS NOTED SCALE
R. PAWAR DRAWN 8-18-76 DATE
CHECKED DATE
ENGINEER DATE
APPROVED DATE

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM
						ISSUED FOR BID	
						FOR EARTHWORK B.I.D.	
						REMOVE E&C-C-C; ADD DET. G, FOR B.I.D. ADDENDUM 1	X
						NEW SECT. E-E, REV. SECT. A, DET. C, FOR B.I.D. ADDENDUM 2	
						GENERAL WORK B.I.D.3	

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION
0	W-2140	5-17-76	M.A.PATEL			ISSUED FOR BID
1	W-2140	6-04-76	M.A.PATEL			REVISED FOR BID ADDENDUM 1
A	W-2140	8-28-76	C.H.SHELDON			NEW SECT. E-E, REV. SECT. A, DET. C, FOR B.I.D. ADDENDUM 2
B	W-2141	8-9-76				GENERAL WORK B.I.D.3

LEGEND

- 100 — EXISTING GROUND CONTOUR
- CONTOUR DEPRESSION
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING FENCE
- EXISTING BUILDING
- 768.5 EXISTING SPOT ELEVATION
- TREES AND/OR BRUSH
- WETLAND AREA
- EDGE OF WATER
- W-11 WATER TABLE WELL LOCATION AND NUMBER
- W-11A PIEZOMETER LOCATION AND NUMBER
- B-9A ABANDONED WELL
- SG-1 STAFF GAUGE
- DESIGN MANAGEMENT ZONE
- (SULFATE) PAL EXCEEDANCES
- O.S. OPEN STORAGE
- O.H. OVERHEAD STRUCTURE
- E.P.S. ELECTRICAL POWER STATION
- T TANK
- W WALL

NOTES

1. BASE MAP IS PROVIDED BY WISCONSIN POWER & LIGHT CO. AND IS BASED ON PHOTOGRAPHY PERFORMED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WI, IN MARCH 1995.
2. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM.
3. VERTICAL DATUM IS REFERENCED TO U.S.G.S. MEAN SEA LEVEL (MSL). TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
4. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER LIGHT CO.
5. THE LOCATION OF THE DESIGN MANAGEMENT ZONE DEMARCATION LINE IS APPROXIMATE.
6. THE LOCATION OF MONITORING WELL W-14 IS APPROXIMATE.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: **WISCONSIN POWER AND LIGHT, CO.**
ROCK RIVER ASH DISPOSAL FACILITY
BIENNIAL GROUNDWATER MONITORING REPORT

SHEET TITLE:
NR 140 GROUNDWATER QUALITY EXCEEDENCES OCTOBER 2009

DRAWN BY: FITZGERALD	SCALE: 1"=200'	PROJ. NO.	03027.47
CHECKED BY: JR		FILE NO.	30274703.DWG
APPROVED BY: JCO	DATE PRINTED: MAR 1 1 2010	**FIGURE 4**	
DATE: MARCH 2010			

RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

NOTE:
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GZA GeoEnvironmental, Inc.
Engineers and Scientists
Brookfield, Wisconsin 53186
Phone (262) 754-2560 ■ Fax (262) 754-2911
www.gza.com

NO.	BY	DATE	DESCRIPTION

PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN
MONITORING WELL AND BORING LOCATIONS

JOB NO.
01.0170142.30

FIGURE NO.
7

GZA Drawing Name: J:\GZA_USA\01.0170142.30 Ash Imp. Round 10\01.0170142.30 Task 5 – Rock River\Drawings\AutoCad\Scanned Figures – Rock River.dwg Last Modified: Sep 22, 2011 – 12:44pm Plotted on: Sep 22, 2011 – 12:45pm by justin.hegarty

APPROXIMATE DRAINAGE AREA FOR SLAG POND

COAL PILE RUNOFF POND

STORMWATER DITCH

DECANT PIPE

APPROXIMATE LOCATION OF 24" DISCHARGE PIPE FROM COAL PILE RUNOFF POND

LANDFILL

APPROXIMATE LOCATION OF 10" DISCHARGE LINE FROM FACILITY

ROCK RIVER

WPDES POND 1

SLAG POND

APPROXIMATE LOCATION OF CONCRETE FLUME

SG-4

WPDES POND 2

APPROXIMATE LOCATION OF DISCHARGE STRUCTURE

SOURCE: DIGITAL ORTHOPHOTO/AERIAL IMAGERY PRODUCED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) AND RETRIEVED THROUGH USE OF A PROFESSIONAL LICENSE OF THE GOOGLE EARTH MAPPING PROGRAM.
DATA ACCESSED JULY 2011

N
W E
S

200 100 0 200 Feet

NOTE

DISCHARGE PIPELINE DIAMETERS ESTIMATED BY GZA GEOENVIRONMENTAL, INC.

LEGEND

- APPROXIMATE IMPOUNDMENT BOUNDARY
- 12 GZA PHOTO LOCATION / DIRECTION
- STAFF GAUGE AND NUMBER

GZA GeoEnvironmental, Inc.
20900 Swenson Drive, Suite 150
Waukesha, Wisconsin 53186
Phone: (262) 754-2560 Fax: (262) 754-9711

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

LANDFILL, COAL PILE RUNOFF POND & SLAG POND

PROJ. MGR.: DPS DESIGNED BY: DPS REVIEWED BY: PJH OPERATOR: CLK	DWG. Date: 09-21-2011 Job NO.: 01.0170142.30	FIGURE NO.: 8

SOURCE: DIGITAL ORTHOPHOTO/AERIAL IMAGERY PRODUCED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) AND RETRIEVED THROUGH USE OF A PROFESSIONAL LICENSE OF THE GOOGLE EARTH MAPPING PROGRAM.
DATA ACCESSED JULY 2011

100 50 0 100 Feet

N W E S

SLAG POND

APPROXIMATE LOCATION OF DISCHARGE STRUCTURE

SG-4

WPDES POND 2

FINAL WPDES POND

B-7RR

W-3

SG-8

APPROXIMATE LOCATION OF DECANT STRUCTURE

SG-2

ROCK RIVER

38 39 37 30 36 41 31 44 42 34 33 40 32 45 43 35

LEGEND

- APPROXIMATE IMPOUNDMENT BOUNDARY
- 12 GZA PHOTO LOCATION / DIRECTION
- W-14 WELL LOCATION AND NUMBER
- SG-2 STAFF GAUGE AND NUMBER

GZA GeoEnvironmental, Inc.
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Waukesha, Wisconsin 53186
Phone: (262) 754-2560 Fax: (262) 754-9711

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

FINAL WPDES POND

PROJ. MGR.: DPS DESIGNED BY: DPS REVIEWED BY: PJH OPERATOR: CLK	DWG. Date: 09-21-2011 Job NO.: 01.0170142.30	FIGURE NO.: 9

APPENDIX A

LIMITATIONS

DAM ENGINEERING & VISUAL INSPECTION LIMITATIONS

1. The observations described in this report were made under the conditions stated herein. The conclusions presented in the report were based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of described services.

2. In preparing this report, GZA GeoEnvironmental, Inc. (GZA) has relied on certain information provided by Wisconsin Power and Light Company, and Federal, state, and local officials and other parties referenced therein. GZA has also relied on other parties which were available to GZA at the time of the inspection. Although there may have been some degree of overlap in the information provided by these various sources, GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this work.

3. In reviewing this Report, it should be realized that the reported condition of the dam is based on observations of field conditions during the course of this study along with data made available to GZA. The observations of conditions at the dam reflect only the situation present at the specific moment in time the observations were made, under the specific conditions present. It may be necessary to reevaluate the recommendations of this report when subsequent phases of evaluation or repair and improvement provide more data.

4. It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through continued care and inspection can there be any chance that unsafe conditions may be detected.

5. Water level readings have been reviewed and interpretations have been made in the text of this report. Fluctuations in the level of the groundwater and surface water may occur due to variations in rainfall, temperature, and other factors different than at the time measurements were made.

6. GZA's comments on the hydrology, hydraulics, and embankment stability for the dam are based on a limited review of available design documentation provided by Wisconsin Power and Light Company. Calculations and computer modeling used in these analyses were not available and were not independently reviewed by GZA.

7. This report has been prepared for the exclusive use of the US EPA for specific application to the existing dam facilities, in accordance with generally accepted dam engineering practices. No other warranty, express or implied, is made.

8. This dam inspection report has been prepared for this project by GZA. This report is for the owner's broad evaluation and management purposes only and is not sufficient, in and of itself, to prepare construction documents or an accurate bid.

APPENDIX B

DEFINITIONS

COMMON DAM SAFETY DEFINITIONS

For a comprehensive list of dam engineering terminology and definitions refer to references published by the U.S. Army Corps of Engineers, the Federal Energy Regulatory Commission, the Department of the Interior Bureau of Reclamation, or the Federal Emergency Management Agency.

Orientation

Upstream – Shall mean the side of the dam that borders the impoundment.

Downstream – Shall mean the high side of the dam, the side opposite the upstream side.

Right – Shall mean the area to the right when looking in the downstream direction.

Left – Shall mean the area to the left when looking in the downstream direction.

Dam Components

Dam – Shall mean any artificial barrier, including appurtenant works, which impounds or diverts water.

Embankment – Shall mean the fill material, usually earth or rock, placed with sloping sides, such that it forms a permanent barrier that impounds water.

Crest – Shall mean the top of the dam, usually provides a road or path across the dam.

Abutment – Shall mean that part of a valley side against which a dam is constructed. An artificial abutment is sometimes constructed as a concrete gravity section, to take the thrust of an arch dam where there is no suitable natural abutment.

Appurtenant Works – Shall mean structures, either in dams or separate there from, including but not be limited to, spillways; reservoirs and their rims; low level outlet works; and water conduits including tunnels, pipelines, or penstocks, either through the dams or their abutments.

Spillway – Shall mean a structure over or through which water flows are discharged. If the flow is controlled by gates or boards, it is a controlled spillway; if the fixed elevation of the spillway crest controls the level of the impoundment, it is an uncontrolled spillway.

General

EAP – Emergency Action Plan - Shall mean a predetermined plan of action to be taken to reduce the potential for property damage and/or loss of life in an area affected by an impending dam break.

O&M Manual – Operations and Maintenance Manual; Document identifying routine maintenance and operational procedures under normal and storm conditions.

Normal Pool – Shall mean the elevation of the impoundment during normal operating conditions.

Acre-foot – Shall mean a unit of volumetric measure that would cover one acre to a depth of one foot. It is equal to 43,560 cubic feet. One million U.S. gallons = 3.068 acre feet.

Height of Dam – Shall mean the vertical distance from the lowest portion of the natural ground, including any stream channel, along the downstream toe of the dam to the crest of the dam.

Spillway Design Flood (SDF) – Shall mean the flood used in the design of a dam and its appurtenant works particularly for sizing the spillway and outlet works, and for determining maximum temporary storage and height of dam requirements.

Condition Rating

SATISFACTORY - No existing or potential management unit safety deficiencies are recognized. Acceptable performance is expected under all applicable loading conditions (static, hydrologic, seismic) in accordance with the applicable criteria. Minor maintenance items may be required.

FAIR - Acceptable performance is expected under all required loading conditions (static, hydrologic, seismic) in accordance with the applicable safety regulatory criteria. Minor deficiencies may exist that require remedial action and/or secondary studies or investigations.

POOR - A management unit safety deficiency is recognized for any required loading condition (static, hydrologic, seismic) in accordance with the applicable dam safety regulatory criteria. Remedial action is necessary. POOR also applies when further critical studies or investigations are needed to identify any potential dam safety deficiencies.

UNSATISFACTORY - Considered unsafe. A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution. Reservoir restrictions may be necessary.

Hazard Potential

(In the event the impoundment should fail, the following would occur):

LESS THAN LOW HAZARD POTENTIAL: Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

LOW HAZARD POTENTIAL: Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

SIGNIFICANT HAZARD POTENTIAL: Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

HIGH HAZARD POTENTIAL: Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

APPENDIX C

INSPECTION CHECKLISTS

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Rock River Generating Station	Date:	6/8/11
Unit Name:	WPDES Pond 1	Operator's Name:	Wisconsin Power & Light Company
Unit I.D.:		Hazard Potential Classification:	High Significant Low ✓
Inspector's Name:	Patrick J. Harrison, P.E. and Doug P. Simon, P.E.		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Semi-Annual		18. Sloughing or bulging on slopes?		✓
2. Pool elevation (operator records)?	750.0		19. Major erosion or slope deterioration?		✓
3. Decant inlet elevation (operator records)?	755.0		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	NA		Is water entering inlet, but not exiting outlet?		NA
5. Lowest dam crest elevation (operator records)?	759.0		Is water exiting outlet, but not entering inlet?		NA
6. If instrumentation is present, are readings recorded (operator records)?	✓		Is water exiting outlet flowing clear?		NA
7. Is the embankment currently under construction?		✓	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?			From underdrain?		✓
9. Trees growing on embankment? (If so, indicate largest diameter below)	✓		At isolated points on embankment slopes?		✓
10. Cracks or scarps on crest?		✓	At natural hillside in the embankment area?		✓
11. Is there significant settlement along the crest?		✓	Over widespread areas?		✓
12. Are decant trashracks clear and in place?	NA		From downstream foundation area?		✓
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		✓	"Boils" beneath stream or ponded water?		✓
14. Clogged spillways, groin or diversion ditches?		✓	Around the outside of the decant pipe?		✓
15. Are spillway or ditch linings deteriorated?		✓	22. Surface movements in valley bottom or on hillside?		✓
16. Are outlets of decant or underdrains blocked?		✓	23. Water against downstream toe?	✓	
17. Cracks or scarps on slopes?		✓	24. Were Photos taken during the dam inspection?	✓	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue # Comments

4. No open channel spillway is present.
8. No information about foundation preparation is available.
9. Largest tree diameter noted was 24 inches.
12. No trash racks are present.
20. No water is entering or exiting the impoundment.

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # WI-0002402-05-0

INSPECTOR Patrick J. Harrison, P.E.
Doug P. Simon, P.E.

Date June 8, 2011

Impoundment Name WPDES Pond 1
Impoundment Company Wisconsin Power & Light Company
EPA Region Region V
State Agency (Field Office) Addresss Wisconsin Department of Natural Resources
Fitchburg, Wisconsin
Name of Impoundment WPDES Pond 1
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	_____	X

IMPOUNDMENT FUNCTION: Previously used to settle fly ash; currently inactive.

Nearest Downstream Town : Name Beloit, Wisconsin
Distance from the impoundment 1 mile
Impoundment Location: Longitude 89 Degrees 01 Minutes 50 Seconds
Latitude 42 Degrees 34 Minutes 40 Seconds
State WI County Rock

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Wisconsin Department of Natural Resources - Under WPDES Permit.

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

__X___ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

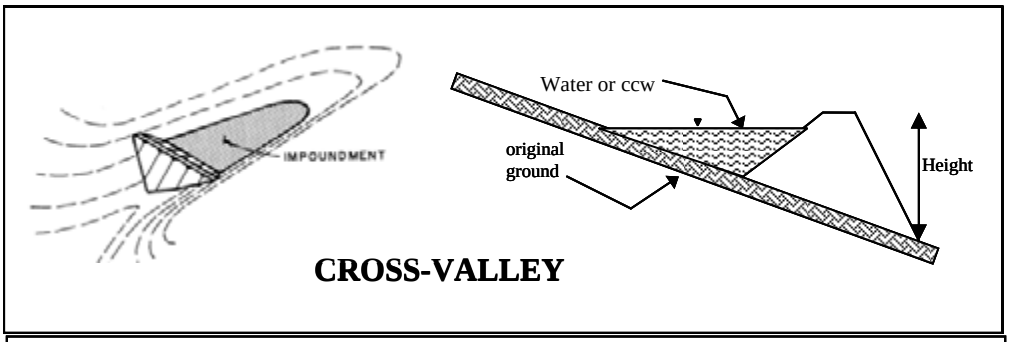
_____ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

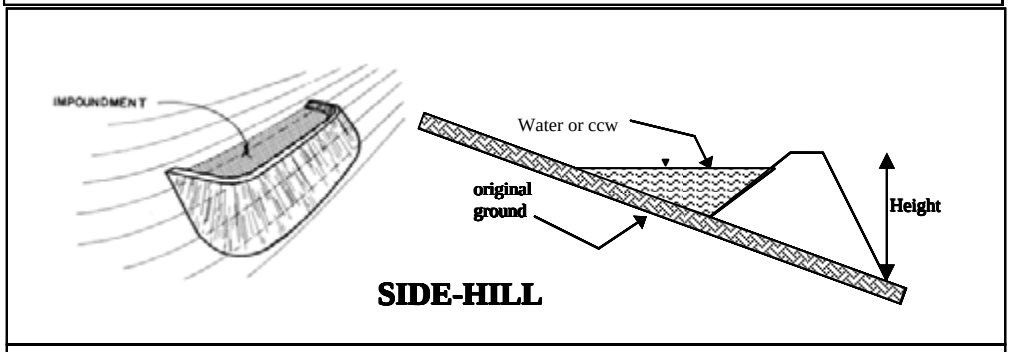
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

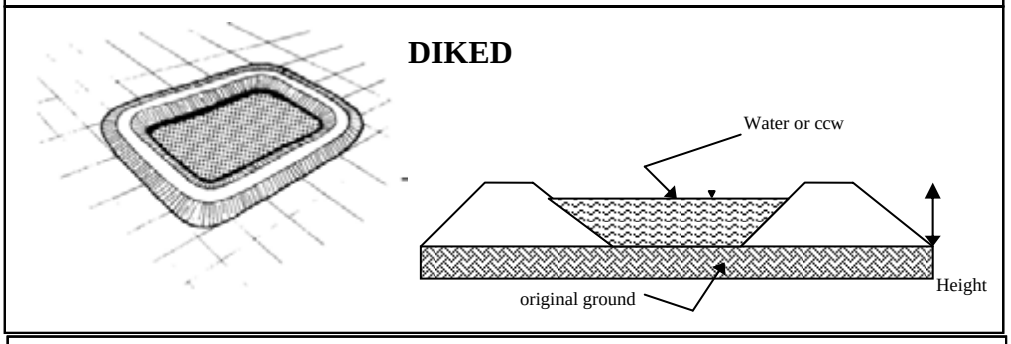
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

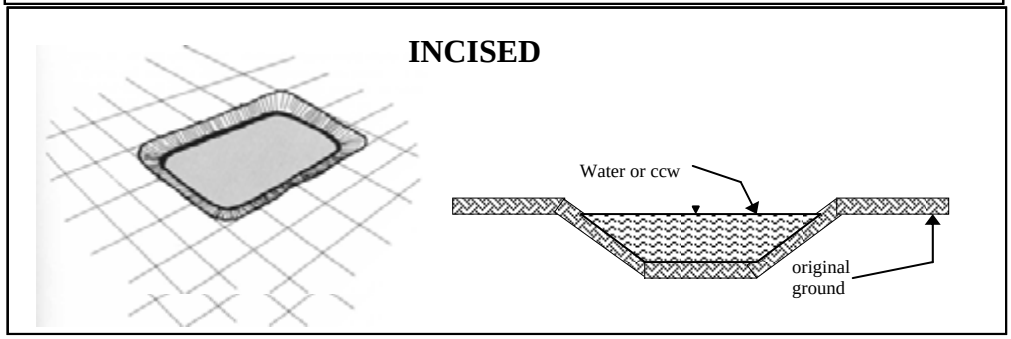
Failure is not likely to result in loss of life. Economic and environmental damages would likely be low.

CONFIGURATION:









_____ Cross-Valley
_____ Side-Hill
__X__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

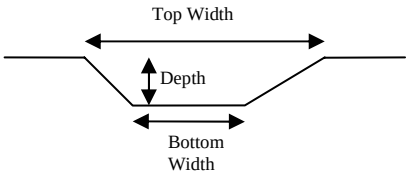
Embankment Height __16__ feet
Pool Area __1.7__ acres
Current Freeboard __9__ feet

Embankment Material __Unknown__
Liner __Not Present__
Liner Permeability __N/A__

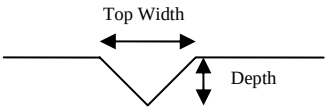
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

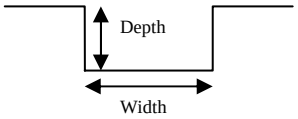


TRIANGULAR

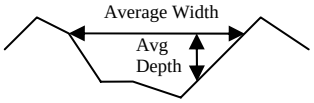


_____ depth
_____ bottom (or average) width
_____ top width

RECTANGULAR

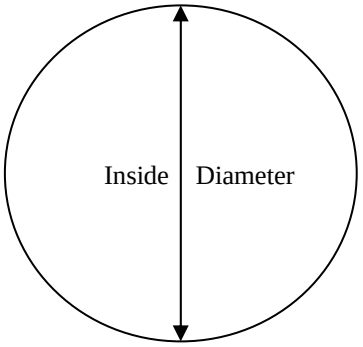


IRREGULAR



__X__ **Outlet**

__24"__ inside diameter



Material
__X__ corrugated metal
_____ welded steel
_____ concrete
_____ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

Is water flowing through the outlet? YES _____ NO __X__

_____ **No Outlet**

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Sargent & Lundy_____
_____

Has there ever been a failure at this site? YES _____ NO __X_____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __X___

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __x____

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Rock River Generating Station	Date:	6/8/11
Unit Name:	WPDES Pond 2	Operator's Name:	Wisconsin Power & Light Company
Unit I.D.:		Hazard Potential Classification:	High Significant Low ✓
Inspector's Name:	Patrick J. Harrison, P.E. and Doug P. Simon, P.E.		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Semi-Annual		18. Sloughing or bulging on slopes?		✓
2. Pool elevation (operator records)?	750.0		19. Major erosion or slope deterioration?		✓
3. Decant inlet elevation (operator records)?	755.0		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	NA		Is water entering inlet, but not exiting outlet?		
5. Lowest dam crest elevation (operator records)?	759.0		Is water exiting outlet, but not entering inlet?		
6. If instrumentation is present, are readings recorded (operator records)?	✓		Is water exiting outlet flowing clear?		NA
7. Is the embankment currently under construction?		✓	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?			From underdrain?		✓
9. Trees growing on embankment? (If so, indicate largest diameter below)	✓		At isolated points on embankment slopes?		✓
10. Cracks or scarps on crest?		✓	At natural hillside in the embankment area?		✓
11. Is there significant settlement along the crest?		✓	Over widespread areas?		✓
12. Are decant trashracks clear and in place?		✓	From downstream foundation area?		✓
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		✓	"Boils" beneath stream or ponded water?		✓
14. Clogged spillways, groin or diversion ditches?		✓	Around the outside of the decant pipe?		✓
15. Are spillway or ditch linings deteriorated?		✓	22. Surface movements in valley bottom or on hillside?		✓
16. Are outlets of decant or underdrains blocked?		✓	23. Water against downstream toe?	✓	
17. Cracks or scarps on slopes?		✓	24. Were Photos taken during the dam inspection?	✓	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue # Comments

4. No open channel spillway is present.

8. No information about foundation preparation is available.

9. Largest tree diameter noted was 24 inches.

20. No water is entering or exiting the impoundment.

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # WI-0002402-05-0

INSPECTOR Patrick J. Harrison, P.E.
Doug P. Simon, P.E.

Date June 8, 2011

Impoundment Name WPDES Pond 2
Impoundment Company Wisconsin Power & Light Company
EPA Region Region V
State Agency (Field Office) Addresss Wisconsin Department of Natural Resources
Fitchburg, Wisconsin
Name of Impoundment WPDES Pond 2
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	_____	X

IMPOUNDMENT FUNCTION: Previously used to settle fly ash; currently inactive.

Nearest Downstream Town : Name Beloit, Wisconsin
Distance from the impoundment 1 mile
Impoundment Location: Longitude 89 Degrees 01 Minutes 50 Seconds
Latitude 42 Degrees 34 Minutes 37 Seconds
State WI County Rock

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Wisconsin Department of Natural Resources - Under WPDES Permit.

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

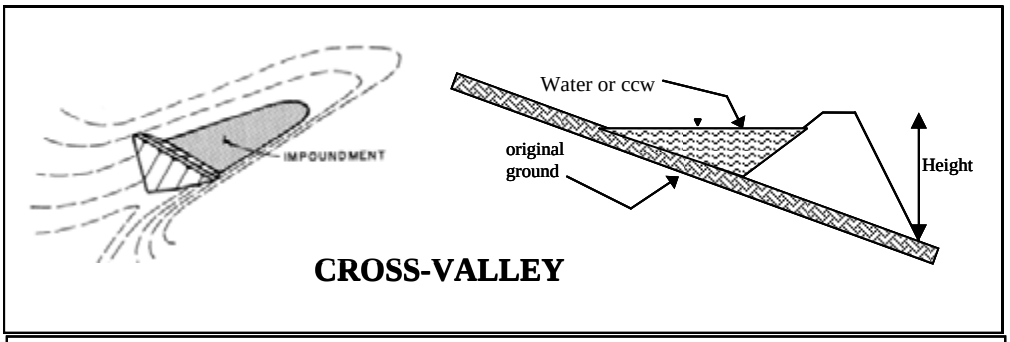
__X___ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

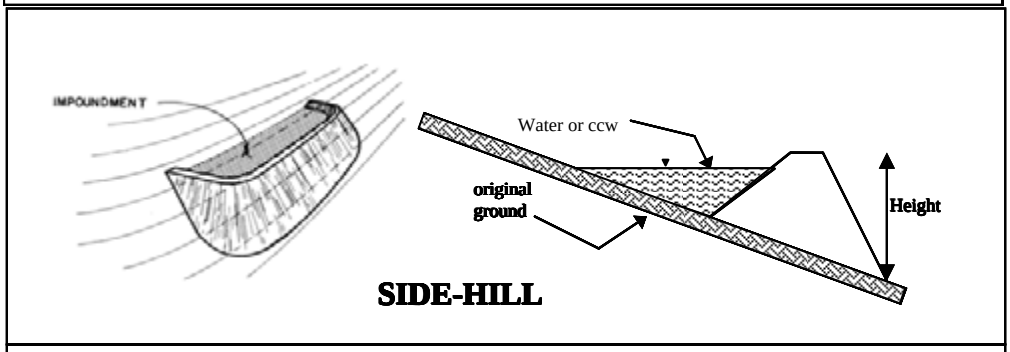
_____ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

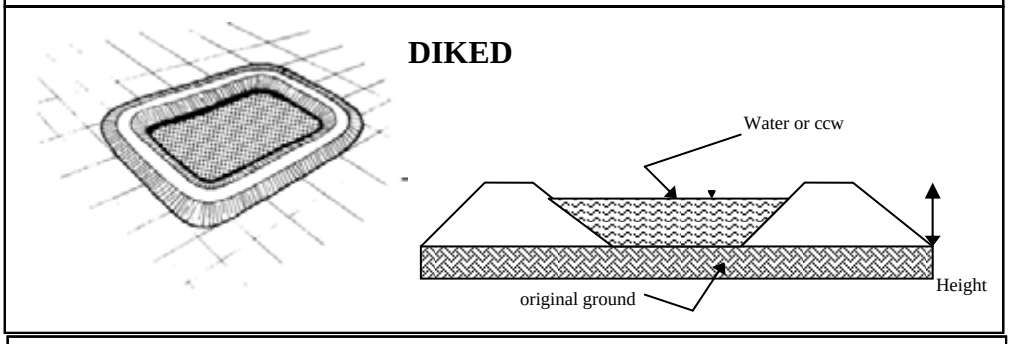
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

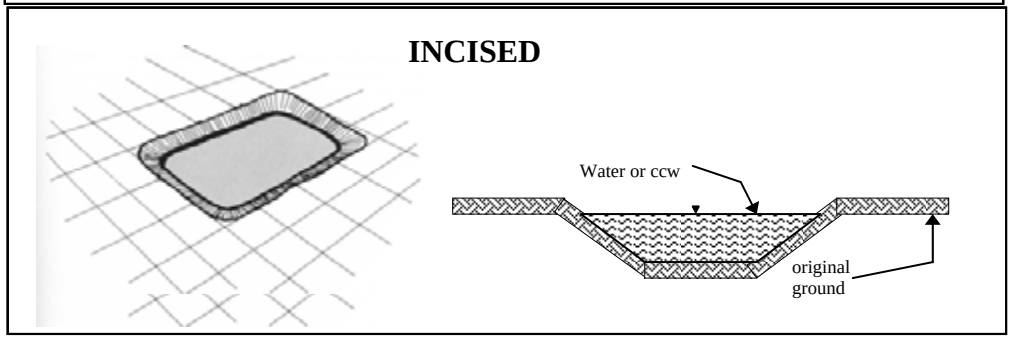
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

CONFIGURATION:









_____ Cross-Valley
_____ Side-Hill
__X__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

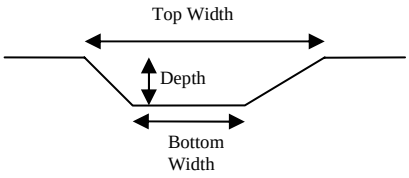
Embankment Height __16__ feet
Pool Area __1.35__ acres
Current Freeboard __9__ feet

Embankment Material __Unknown__
Liner __Not Present__
Liner Permeability __N/A__

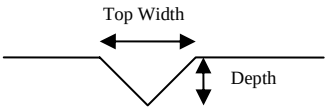
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

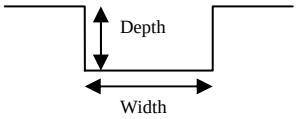


TRIANGULAR

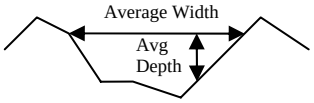


_____ depth
_____ bottom (or average) width
_____ top width

RECTANGULAR

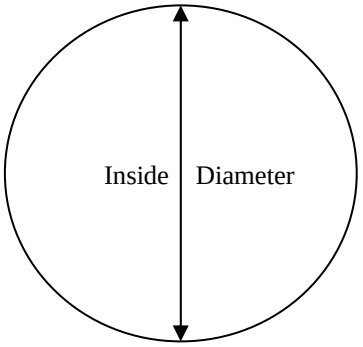


IRREGULAR



__X__ **Outlet**

__24"__ inside diameter



Material
__X__ corrugated metal
_____ welded steel
_____ concrete
_____ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

Is water flowing through the outlet? YES _____ NO __X__

_____ **No Outlet**

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Sargent & Lundy_____
_____

Has there ever been a failure at this site? YES _____ NO __X_____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __X___

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X____

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Rock River Generating Station	Date:	6/8/11
Unit Name:	Slag Pond	Operator's Name:	Wisconsin Power & Light Company
Unit I.D.:		Hazard Potential Classification:	High Significant Low
Inspector's Name:	Patrick J. Harrison, P.E. and Doug P. Simon, P.E.		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Semi-Annual		18. Sloughing or bulging on slopes?		✓
2. Pool elevation (operator records)?	750.0		19. Major erosion or slope deterioration?		✓
3. Decant inlet elevation (operator records)?	756.0		20. Decant Pipes:	[redacted]	
4. Open channel spillway elevation (operator records)?			Is water entering inlet, but not exiting outlet?		
5. Lowest dam crest elevation (operator records)?	759.0		Is water exiting outlet, but not entering inlet?		
6. If instrumentation is present, are readings recorded (operator records)?	✓		Is water exiting outlet flowing clear?		NA
7. Is the embankment currently under construction?		✓	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):	[redacted]	
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?			From underdrain?		✓
9. Trees growing on embankment? (If so, indicate largest diameter below)	✓		At isolated points on embankment slopes?		✓
10. Cracks or scarps on crest?	✓		At natural hillside in the embankment area?		✓
11. Is there significant settlement along the crest?		✓	Over widespread areas?		✓
12. Are decant trashracks clear and in place?		✓	From downstream foundation area?		✓
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		✓	"Boils" beneath stream or ponded water?		✓
14. Clogged spillways, groin or diversion ditches?		✓	Around the outside of the decant pipe?		✓
15. Are spillway or ditch linings deteriorated?		✓	22. Surface movements in valley bottom or on hillside?		✓
16. Are outlets of decant or underdrains blocked?		✓	23. Water against downstream toe?		✓
17. Cracks or scarps on slopes?	✓		24. Were Photos taken during the dam inspection?	✓	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue # Comments

4. No open channel spillway present.
8. No information about foundation preparation is available.
9. Largest tree diameter noted was 12 inches.
10. Scarps on crest between slag pond and final pond.
20. No water is entering or exiting the impoundment.

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # WI-0002402-05-0

INSPECTOR Patrick J. Harrison, P.E.
Doug P. Simon, P.E.

Date June 8, 2011

Impoundment Name Slag Pond
Impoundment Company Wisconsin Power & Light Company
EPA Region Region V
State Agency (Field Office) Addresss Wisconsin Department of Natural Resources
Janesville, Wisconsin
Name of Impoundment Slag Pond
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	_____	X

IMPOUNDMENT FUNCTION: Previously used to settle slag; currently inactive.

Nearest Downstream Town : Name Beloit, Wisconsin
Distance from the impoundment 1 mile
Impoundment Location: Longitude 89 Degrees 01 Minutes 53 Seconds
Latitude 42 Degrees 34 Minutes 40 Seconds
State WI County Rock

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Wisconsin Department of Natural Resources - Soil Waste Division.

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

__X__ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

_____ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

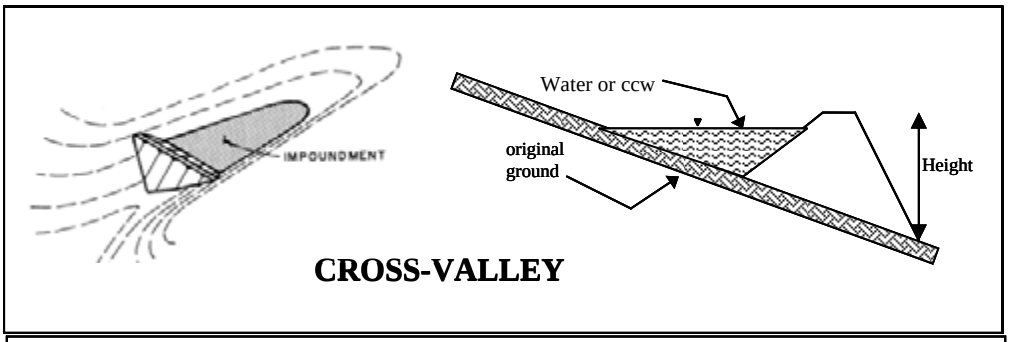
_____ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

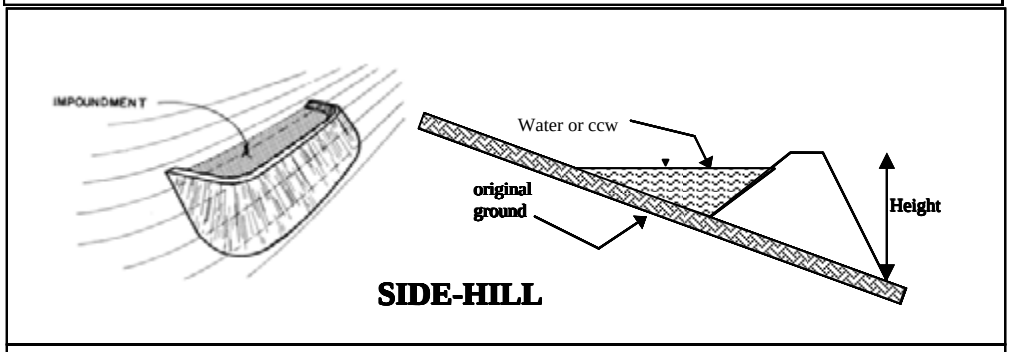
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

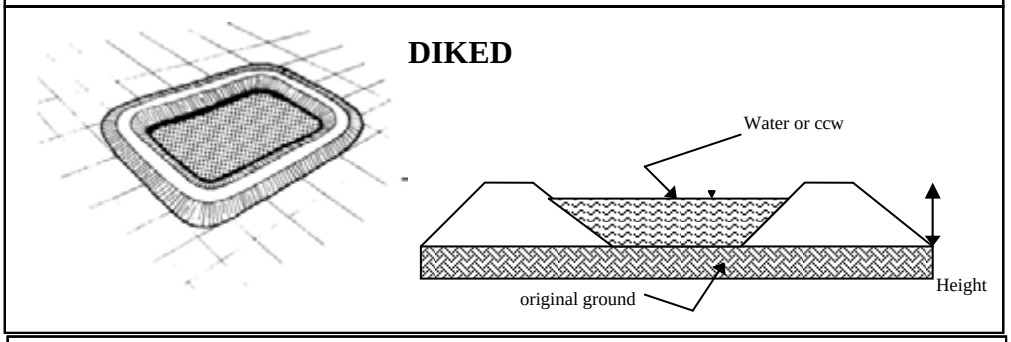
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

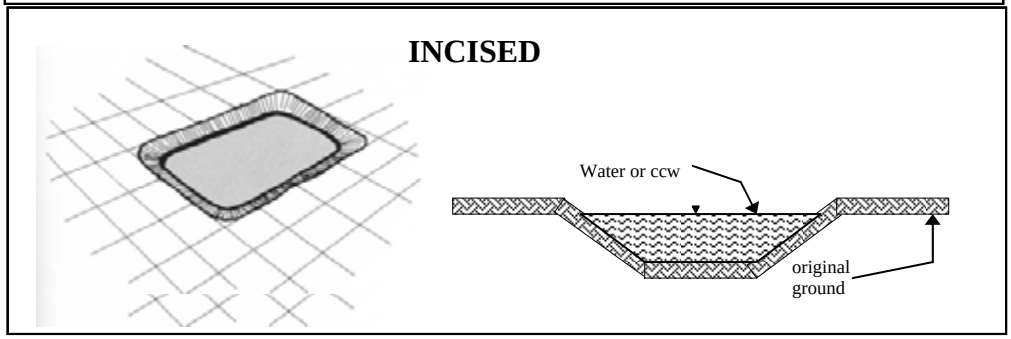
There is no probable loss of life or damages associated with failure.

CONFIGURATION:









_____ Cross-Valley
_____ Side-Hill
_____ Diked
_____ Incised (form completion optional)
__X__ Combination Incised/Diked

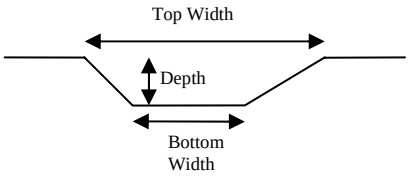
Embankment Height __5_____ feet
Pool Area _____2.94_____ acres
Current Freeboard ____9_____ feet

Embankment Material__Unknown_____
Liner ____Not Present_____
Liner Permeability __N/A_____

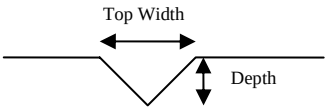
TYPE OF OUTLET (Mark all that apply)

__X__ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
__X__ Rectangular
_____ Irregular

TRAPEZOIDAL

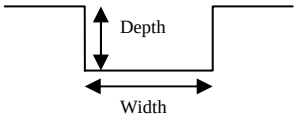


TRIANGULAR

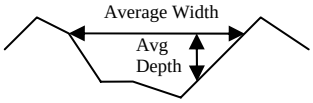


__7__ depth
__48"__ bottom (or average) width
__48"__ top width

RECTANGULAR

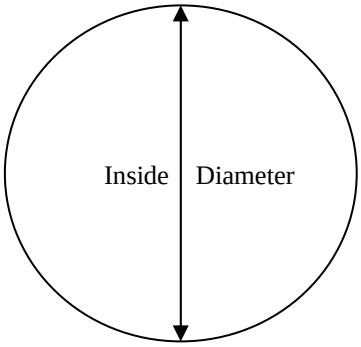


IRREGULAR



__X__ **Outlet**

__12"__ inside diameter



Material
_____ corrugated metal
__X__ welded steel
_____ concrete
_____ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

Is water flowing through the outlet? YES _____ NO __X__

_____ **No Outlet**

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Sargent & Lundy_____
_____

Has there ever been a failure at this site? YES _____ NO __X_____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __X___

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X____

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Rock River Generating Station	Date:	6/8/11
Unit Name:	Final WPDES Pond	Operator's Name:	Wisconsin Power & Light Company
Unit I.D.:		Hazard Potential Classification:	High Significant Low ✓
Inspector's Name:	Patrick J. Harrison, P.E. and Doug P. Simon, P.E.		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Semi-Annual		18. Sloughing or bulging on slopes?		✓
2. Pool elevation (operator records)?	750.0		19. Major erosion or slope deterioration?		✓
3. Decant inlet elevation (operator records)?	756.0		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	NA		Is water entering inlet, but not exiting outlet?		NA
5. Lowest dam crest elevation (operator records)?	759.0		Is water exiting outlet, but not entering inlet?		NA
6. If instrumentation is present, are readings recorded (operator records)?	✓		Is water exiting outlet flowing clear?		NA
7. Is the embankment currently under construction?		✓	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?			From underdrain?		✓
9. Trees growing on embankment? (If so, indicate largest diameter below)	✓		At isolated points on embankment slopes?		✓
10. Cracks or scarps on crest?		✓	At natural hillside in the embankment area?		✓
11. Is there significant settlement along the crest?		✓	Over widespread areas?		✓
12. Are decant trashracks clear and in place?		✓	From downstream foundation area?		✓
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		✓	"Boils" beneath stream or ponded water?		✓
14. Clogged spillways, groin or diversion ditches?		✓	Around the outside of the decant pipe?		✓
15. Are spillway or ditch linings deteriorated?		✓	22. Surface movements in valley bottom or on hillside?		✓
16. Are outlets of decant or underdrains blocked?		✓	23. Water against downstream toe?	✓	
17. Cracks or scarps on slopes?		✓	24. Were Photos taken during the dam inspection?	✓	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue # Comments

4. No open channel spillway is present.

8. No information about foundation preparation is available.

9. Largest tree diameter noted was 24 inches.

20. No water is entering or exiting the impoundment.

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # WI-0002402-05-0 INSPECTOR Patrick J. Harrison, P.E.
Doug P. Simon, P.E.

Date June 8, 2011

Impoundment Name Final WPDES Pond
Impoundment Company Wisconsin Power & Light Company
EPA Region Region V
State Agency (Field Office) Addresss Wisconsin Department of Natural Resources
Janesville, Wisconsin
Name of Impoundment Final WPDES Pond
(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	_____	X

IMPOUNDMENT FUNCTION: Previously used for water clarification; currently inactive.

Nearest Downstream Town : Name Beloit, Wisconsin
Distance from the impoundment 1 mile
Impoundment Location: Longitude 89 Degrees 01 Minutes 56 Seconds
Latitude 42 Degrees 34 Minutes 34 Seconds
State WI County Rock

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Wisconsin Department of Natural Resources - Solid Waste Division.

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

__X___ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

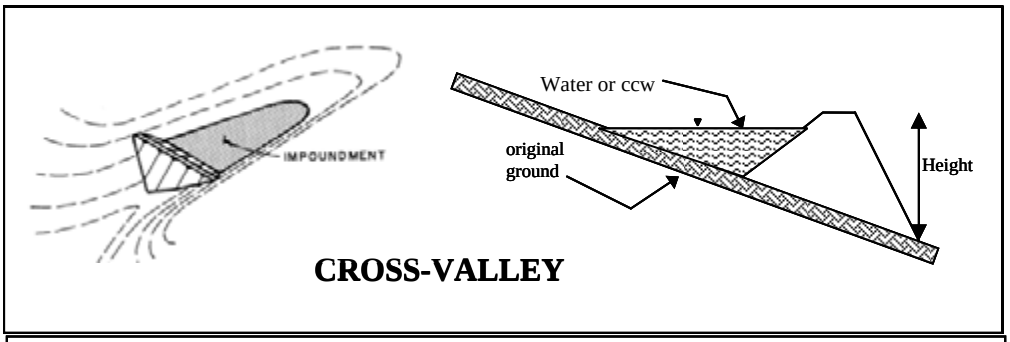
_____ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

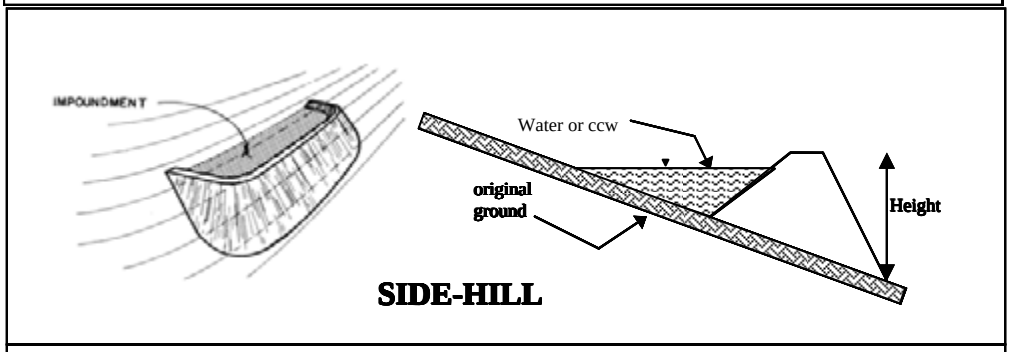
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

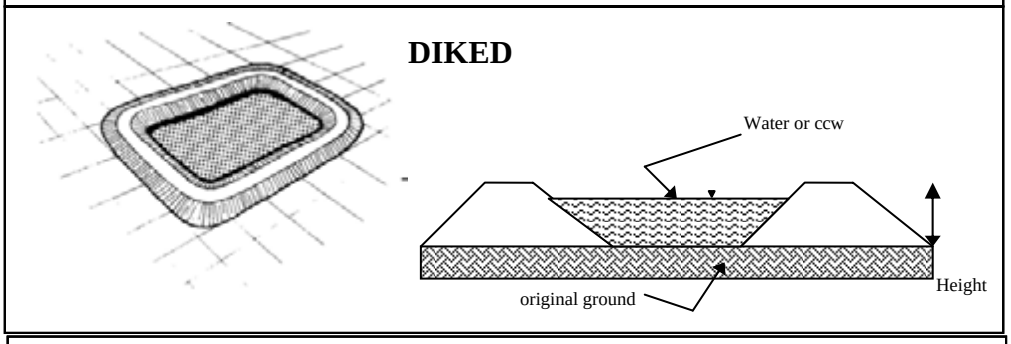
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

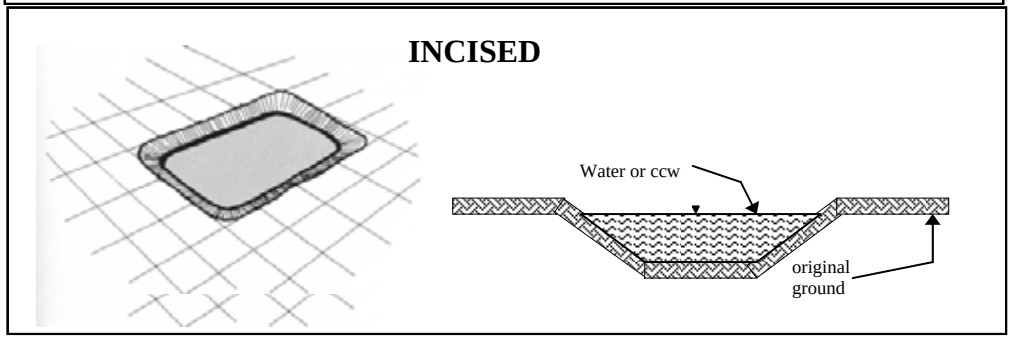
Failure is not likely to result in loss of life. Economic and environmental damages would likely be low.

CONFIGURATION:









_____ Cross-Valley
_____ Side-Hill
_____ Diked
_____ Incised (form completion optional)
__X__ Combination Incised/Diked

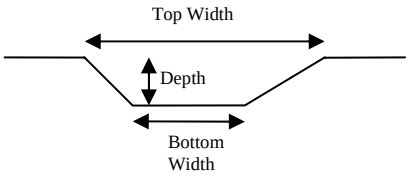
Embankment Height __10_____ feet
Pool Area __Approx. 1 acre_____ acres
Current Freeboard ___9_____ feet

Embankment Material__Unknown_____
Liner ___Not Present_____
Liner Permeability __N/A_____

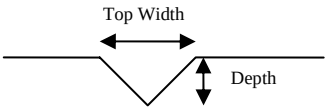
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

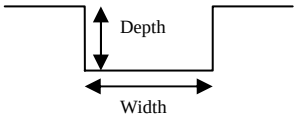


TRIANGULAR

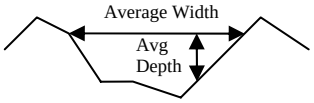


_____ depth
_____ bottom (or average) width
_____ top width

RECTANGULAR

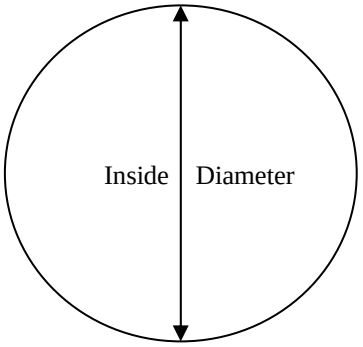


IRREGULAR



__X__ **Outlet**

__24"__ inside diameter



Material
__X__ corrugated metal
_____ welded steel
_____ concrete
_____ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

Is water flowing through the outlet? YES _____ NO __X__

_____ **No Outlet**

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Sargent & Lundy_____
_____

Has there ever been a failure at this site? YES _____ NO __X_____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __X___

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X____

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

APPENDIX D

REFERENCES

REFERENCE LIST
ROCK RIVER GENERATING STATION
ROUND 10 DAM ASSESSMENT

Letter to Mr. Robert Weimer with Alliant Energy regarding Construction Documentation Approval for Rock River Generating Station – Ash Disposal Facility (License #0728). Dated August 6, 2008.

Draft WPDES Permit No. WI-0002402-05-0 for the Rock River Generating Station. Dated January 1, 2011.

Genco Standard Guide for Pond Inspectors. Procedure No. GENCO-0-OP-402-01. Alliant Energy. Dated April 30, 2010.

BT^2 Inc. "Figure 1 2007 Construction Final Grades (As-Built) WP&L Rock River Generating Station 827 WBR Townline Road Beloit, Wisconsin." Dated May 23, 2008.

"Chapter NR213 – Lagoon Compliance Assessment Wisconsin Power & Light Rock River Generating Station Rock County, Wisconsin" by Simon Hydro-Search. Dated June 30, 1992.

"Annual Groundwater Monitoring Report Rock River Ash Disposal Facility" by RMT, Inc. Dated February 1994.

Letter to Mr. Bob Weimer with Alliant Energy regarding Ash Disposal Area Existing Conditions Evaluation Alliant Energy – Rock River Generating Station BT^2 Project #2336. Sherren Clark, Robert Regan. Dated June 12, 2003.

Letter to Mr. James Kralick with the Department of Natural Resources regarding Biennial Groundwater Monitoring Report for 2008 and 2009 Wisconsin Power and Light Company, Rock River Ash Disposal Facility FID 154053900, License #00728. John M. Rice, John C. Oswald. Dated March 11, 2010.

Sargent & Lundy "Coal Pile Drainage System & Waste Treatment Settling Basin – Sections Rock River Generating Station Wisconsin Power & Light Co. North Beloit, Wisconsin" Drawing Number S-241. Dated May 12, 1976.

Sargent & Lundy "Outdoor Piping Rock River Generating Station Units 1 & 2 Wisconsin Power & Light Co. North Beloit, Wisconsin" Drawing Number M-334. Dated November 16, 1976.

Sargent & Lundy "Waster Treatment Settling Basin Discharge Flume Rock River Generating Station Units 1 & 2 Wisconsin Power & Light Co. North Beloit, Wisconsin" Drawing Number S-253. Dated November 16, 1976.

Sargent & Lundy "Waster Treatment Settling Basin Discharge Flume Rock River Generating Station Units 1 & 2 Wisconsin Power & Light Co. North Beloit, Wisconsin" Drawing Number S-254. Dated November 16, 1976.

Letter to Tom Bennwitz with Wisconsin Department of Natural Resources regarding Ash Disposal Area – 2007 Final Closure Construction Documentation FID: 154053900 Alliant Energy – Rock River Generation Station. Robert Weimer. Dated November 30, 2007.

Alliant Energy Surface Pond Visual Inspection by Benjamin L. Bryant. Dated March 24, 2011.

Alliant Energy Surface Pond Visual Inspection by Benjamin L. Bryant. Dated June 22, 2010.

RMT "Water Table Map (October 2009)" Figure Number 3. Dated March 2010.

RMT "NR140 Groundwater Quality Exceedences October 2009" Figure Number 4. Dated March 2010.

Letter to Mr. Richard Kinch Regarding a Response to Request for Information Under Section 104(e) of the Comprehensive Environmental Response, Compensation, and Liability Act. John O. Larson of Alliant Energy. Dated March 22, 2009.

APPENDIX E

PREVIOUS INSPECTION REPORTS

GENCO STANDARD GUIDE FOR POND INSPECTIONS

Procedure No. GENCO-0-OP-402-01

Approved By: Paul Treangen
Regional Director Generation West
Date: 4/29/2009

Terry Kouba
Regional Director Generation Central
Date: 4/30/2009

Linda Poe
Regional Director Generation East
Date: 4/30/2009

TABLE OF CONTENTS

ENCLOSURES

1. GENCO Pond Inspection Guide

GENCO STANDARD GUIDE FOR POND INSPECTIONS

1. INTRODUCTION

Alliant Energy owns numerous generating stations and other facilities that utilize engineered process water systems (ash ponds) to handle coal combustion byproducts (e.g., bottom ash, economizer ash, and fly ash) coal pile and landfill storm water runoff, and cooling ponds. In nearly every case, state mandated monitoring and water quality testing requirements are associated with the discharges of these ponds and a compromise of the structural integrity of these ponds could lead to an uncontrolled or unmonitored discharge to the environment.

2. OBJECTIVE

The purpose of this Guide is to formalize guidance regarding routine Pond inspections including frequency of inspections, management review requirements, and guidance on issue resolution. This procedure will be utilized by all GENCO power plants to establish a comprehensive and corporate-wide compliance and inspection program for ash ponds, storm water runoff ponds including coal piles and landfill ponds, and cooling ponds (if applicable). Failure to routinely inspect and document the integrity of ponds can result in unidentified structural or operational problems that if unresolved can lead to noncompliance with environmental requirements. Encl (1) provides a general overview of the inspection process as well as detailed instructions and a checklist for performing and documenting the inspections.

3. DISCUSSION

Each generating station or facility with a pond system, that may pose a risk to the environment and the company, generally has a system that is unique to their site. This guide along with Encl (1) is meant to provide general guidance to each plant manager or site director to perform routine inspections of their pond systems to allow prompt identification of problems or potential problems. Although no formal state guidelines exist in Iowa, Minnesota, or Wisconsin regarding pond inspections, each plant manager or site director is responsible to ensure that these pond systems operate properly with discharges that are within permit limits and with no breeches in structural integrity.

The GENCO inspection guidelines are a tool for plant or site management to help standardize routine pond inspections. Deficiencies that are identified during the process should be properly vetted through the environmental and engineering groups to determine what corrective actions are required and what state permitting or approvals are necessary to conduct corrective actions.

4. GENCO POND INSPECTION GUIDELINES

4.1 Pond Inspection Periodicities

1. Due to the uniqueness of each plant or site's pond systems, plant managers, site directors, environmental specialists, and engineering representatives must jointly determine inspection periodicities. Routine inspection periodicities should be determined based upon physical construction and arrangement and should also take historical environmental factors into account (e.g. spring melt and flooding). However, ponds should be inspected at a minimum of once per year in accordance with Enclosure (1). Additionally, corporate environmental will participate in site pond inspections a minimum of once a year.

2. To facilitate planning and execution of these inspections each plant should set up a task in Enviance or Maximo to ensure that the inspections are performed and documented at the desired periodicity.

4.2 Pond Inspection Procedure

1. **Inspections**- knowledgeable plant personnel (corporate environmental if applicable) will use Enclosure (1) as a standard checklist to perform the required pond inspections. Inspectors should review previous inspection reports to review past issues and corrective actions prior to each pond inspection. Inspectors will complete Encl (1) for each pond inspected and note any concerns on page two Encl (1). Inspectors shall take pictures of any discrepant conditions and attach them to the report to allow corporate environmental and engineering resources to better understand the exact nature of the concern.

2. **Review Requirements-** the Plant Manager and Environmental and Safety Specialist will review the report with the inspector(s) and sign off on the inspection form.

3. **Issue Resolution**- plant management will determine how to correct any deficiencies noted during the inspection process. Outside assistance may be required in some cases.

    a. Prior to commencing the work, Corporate Environmental shall be contacted to review solutions; and to determine if any type of permitting or approval is required from the State, Federal, or County Agencies.

    b. Engineering shall be contacted to resolve any structural concerns of a dike or levee (e.g. tree removal or erosion).

4.3 Record Retention- plants shall maintain a copy of each pond's Encl (1) inspection results for a period of five years. This requirement may be met by attaching an electronic copy of the Encl (1) pond Inspection results for each pond to the Enviance task or Maximo PM that tracks the inspections.

5.0 Revision / Review Record

Any amendments or revisions to this procedure **must** be approved by GENCO Regional Directors

Revision / Review Record				
Revision	**Reason for Revision**	**Date**	**Author**	**Approved By**
Original	Initial Issue of new GENCO Procedure	4/30/09	Buddy Hasten	Paul Treangen Terry Kouba Linda Poe

**** End of Procedure ****

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME: Rock River Generating Station	DATE COMPLETED: Tuesday, June 22, 2010	LIST POND INSPECTED: WPDES Pond System
INSPECTOR(S): List Below Benjamin L. Bryant	WEATHER CONDITIONS: Sunny	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name Plant Manager: David de Leon	HIGH TEMP: 84^{0}F LOW TEMP:	
	WIND: -	PRESS:
E&S Specialist: Benjamin L. Bryant	SIGNATORY REVIEW:	

Description:

On June 22, 2010 conducted a visual inspection of the Rock River pond areas. All pond levels are low: 1)slag pond is half empty with half of pond showing dry dirt. 2) #1 WPDES pond is very low. 3) #2 WPDES pond reflects the level of the river and that is low 4) final settling pond is heavily overgrown with vegetation within the pond with very little water evident.

There are no signs of rodent holes or excessive root growth compromising the berms. It is rather difficult to traverse the paths to get around the ponds due to the heavy weed growth. All sides of the ponds could not be inspected due to difficult walking conditions.

The plant ceased operations and will no longer discharge to the ponds, the matter of tree and woody brush growth will be dismissed at this time and will be reviewed in 2011 for any change or action.

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	June 22, 2010	WPDES Pond #1
INSPECTOR(S): List Below	**WEATHER CONDITIONS: Describe Weather Conditions**	
Benjamin Bryant	Sunny, 84F	
PLANT MANAGEMENT REVIEW(If applicable): Spell Name	**SIGNATORY REVIEW:**	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of erosion caused either by wind erosion; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	June 22, 2005	WPDES Pond #2
INSPECTOR(S): List Below	WEATHER CONDITIONS: Describe Weather Conditions	
Benjamin Bryant	Sunny, 84F	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name	SIGNATORY REVIEW:	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of erosion caused either by wind erosion; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	June 22, 2010	Slag Pond
INSPECTOR(S): List Below	WEATHER CONDITIONS: Describe Weather Conditions	
Benjamin Bryant	Sunny, 84F	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name	SIGNATORY REVIEW:	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of erosion caused either by wind erosion, storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

CONFIDENTIAL BUSINESS INFORMATION

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	June 22, 2010	Final WPDES Pond
INSPECTOR(S): List Below Benjamin Bryant	WEATHER CONDITIONS: Describe Weather Conditions Sunny, 84F	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name Plant Manager: David De Leon E&S Specialist:	SIGNATORY REVIEW:	

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of erosion caused either by wind erosion; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME: Rock River Generating Station	DATE COMPLETED: Thursday, March 24, 2011	LIST POND INSPECTED: WPDES Pond System
INSPECTOR(S): List Below Benjamin L. Bryant	WEATHER CONDITIONS: Partly Cloudy	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name Plant Manager: David de Leon	HIGH TEMP: 48^{0}F LOW TEMP:	
	WIND: -	PRESS:
E&S Specialist:	SIGNATORY REVIEW:	

Description:

On March 24, 2011 conducted a visual inspection of the Rock River pond areas. All pond levels are low: 1)slag pond is half empty with half of pond showing dry dirt. 2) #1 WPDES pond is very low. 3) #2 WPDES pond reflects the level of the river and that is low 4) final settling pond is heavily overgrown with vegetation within the pond with very little water evident.

The plant ceased operations and will no longer discharge to the ponds, the matter of tree and woody brush growth will be dismissed at this time and will be reviewed in 2012 for any change or action.

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	March 24, 2011	WPDES Pond #1
INSPECTOR(S): List Below	WEATHER CONDITIONS: Describe Weather Conditions	
Benjamin Bryant	Partly Cloudy 4	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name	SIGNATORY REVIEW:	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of eroison caused either by wind eroison; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

CONFIDENTIAL BUSINESS INFORMATION

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	March 24, 2011	WPDES Pond #2
INSPECTOR(S): List Below	WEATHER CONDITIONS: Describe Weather Conditions	
Benjamin Bryant	Partly Cloudy 48F	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name	SIGNATORY REVIEW:	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of eroison caused either by wind eroison; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	March 24, 2011	Slag Pond
INSPECTOR(S): List Below	WEATHER CONDITIONS: Describe Weather Conditions	
Benjamin Bryant	Sunny, 84F	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name	SIGNATORY REVIEW:	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
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Any visual seeps of water through the dike wall?		X	
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Any areas of eroison caused either by wind eroison; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
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Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
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Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

ALLIANT ENERGY SURFACE POND VISUAL INSPECTION

PLANT NAME:	DATE COMPLETED:	LIST POND INSPECTED:
Rock River Generating Station	June 22, 2010	Final WPDES Pond
INSPECTOR(S): List Below	**WEATHER CONDITIONS: Describe Weather Conditions**	
Benjamin Bryant	Sunny, 84F	
PLANT MANAGEMENT REVIEW(if applicable): Spell Name	**SIGNATORY REVIEW:**	
Plant Manager: David De Leon		
E&S Specialist:		

1. Dike/Levee Integrity	Yes	No	Action Needed?
Visual Signs of Animal Activity into the dike wall that may impact the integrity of the dike wall?		X	
Trees growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?	X		Yes
Any visual seeps of water through the dike wall?		X	
Any areas of soft soil/dead vegetation on the dike wall?		X	
Any areas of eroison caused either by wind eroison; storm water runoff into or outside the dike wall?		X	
Any evidence of ash pond water washing over the dike wall?		X	
Where applicable, are any of the valving or piping used to control the discharge from a pond leaking?		X	
Any ponding of water outside the dike wall?		X	
Any evidence of damage caused by heavy equipment?		X	
2. Outfall Structure			
Any areas of erosion or animal activity near or at the entrance of the outfall structure or pipe that may cause wastewater to travel along the outside of the pipe?		X	
Any areas of erosion; animal activity; swirling of wastewater on the discharge side of the outfall structure that may impact the integrity of the dike or structure?		X	
Woody type shrubs growing on top or side of dike in which the root system may impact the integrity of the dike wall?		X	
3. Visable Solids			
Is there a build up of settled ash visible near the dike walls or discharge structure?		X	

APPENDIX F

PHOTOGRAPHS

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
1	6/8/11

Direction Photo Taken:
Northeast

Description:
Upstream slope of the Coal Pile Runoff Pond (CARP).

Photo No.	Date:
2	6/8/11

Direction Photo Taken:
North

Description:
Upstream slope of the CARP.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
3	6/8/11

Direction Photo Taken:
Northwest

Description:
Upstream slope of the CARP where surface drainage enters.

Photo No.	Date:
4	6/8/11

Direction Photo Taken:
Southwest

Description:
Upsteam slope and crest of the CARP.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
5	6/8/11

Direction Photo Taken:
Southeast

Description:
Crest of the CARP.

Photo No.	Date:
6	6/8/11

Direction Photo Taken:
Southwest

Description:
CARP decant structure pipe.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
7	6/8/11

Direction Photo Taken:
East

Description:
Upstream slope of the WPDES Pond 1.

Photo No.	Date:
8	6/8/11

Direction Photo Taken:
Southeast

Description:
Upstream slope of the WPDES Pond 1.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No. 9	Date: 6/8/11

Direction Photo Taken:
South

Description:
Upstream slope of the WPDES Pond 1.

Photo No. 10	Date: 6/8/11

Direction Photo Taken:
West

Description:
Upstream slope of the WPDES Pond 1 with discharge pipe in the background.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No. 11	Date: 6/8/11

Direction Photo Taken:
Southwest

Description:
24–inch diameter CMP discharge pipe at southwest corner of the WPDES Pond 1.

Photo No. 12	Date: 6/8/11

Direction Photo Taken:
North

Description:
Upstream slope of the WPDES Pond 1.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
13	6/8/11

Direction Photo Taken:
West

Description:
Upstream slope of the WPDES Pond 1 showing the riprap that is present above the normal operating level.

Photo No.	Date:
14	6/8/11

Direction Photo Taken:
South

Description:
Crest of the WPDES Pond 1.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
15	6/8/11

Direction Photo Taken:
South

Description:
Crest of the WPDES Pond 1.

Photo No.	Date:
16	6/8/11

Direction Photo Taken:
North

Description:
Upsteam slope and crest of the WPDES Pond 1.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
17	6/8/11

Direction Photo Taken:
West

Description:
Weir structure of outfall from WPDES Pond 1 and WPDES Pond 2.

Photo No.	Date:
18	6/8/11

Direction Photo Taken:
North

Description:
Outfall of WPDES Pond 1.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
19	6/8/11

Direction Photo Taken:
Northeast

Description:
Outfall structure of WPDES Pond 2.

Photo No.	Date:
20	6/8/11

Direction Photo Taken:
East

Description:
Upstream slope of the WPDES Pond 2.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
21	6/8/11

Direction Photo Taken:
Southeast

Description:
Upstream slope of the WPDES Pond 2.

Photo No.	Date:
22	6/8/11

Direction Photo Taken:
North

Description:
Upstream slope of the WPDES Pond 2

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No. 23	Date: 6/8/11

Direction Photo Taken:
Southwest

Description:
Upstream slope of the WPDES Pond 2

Photo No. 24	Date: 6/8/11

Direction Photo Taken:
Southwest

Description:
Upstream slope of the WPDES Pond 2.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
25	6/8/11

Direction Photo Taken:
North

Description:
Upstream slope of the WPDES Pond 2.

Photo No.	Date:
26	6/8/11

Direction Photo Taken:
South

Description:
Upstream slope of the WPDES Pond 2.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
27	6/8/11

Direction Photo Taken:
Southwest

Description:
Crest and downstream slope of the WPDES Pond 2.

Photo No.	Date:
28	6/8/11

Direction Photo Taken:
East

Description:
Crest of the WPDES Pond 2.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No. 29	Date: 6/8/11

Direction Photo Taken:
Northwest

Description:
Crest and downstream slope of the WPDES Pond 2.

Photo No. 30	Date: 6/8/11

Direction Photo Taken:
South

Description:
Downstream slope of the Final WPDES Pond and monitoring well.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
31	6/8/11

Direction Photo Taken:
Northwest

Description:
Upstream slope of the Final WPDES Pond.

Photo No.	Date:
32	6/8/11

Direction Photo Taken:
South

Description:
Looking downstream of the Final WPDES Pond at the water level in the adjacent Rock River.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
33	6/8/11

Direction Photo Taken:
North

Description:
Turtle crossing upstream slope of the Final WPDES Pond.

Photo No.	Date:
34	6/8/11

Direction Photo Taken:
South

Description:
Turtle crossing upsteam slope of the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No. 35	Date: 6/8/11

Direction Photo Taken:
West

Description:
Upstream slope and crest of the Final WPDES Pond.

Photo No. 36	Date: 6/8/11

Direction Photo Taken:
Northeast

Description:
Upstream slope of the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
37	6/8/11

Direction Photo Taken:
Northeast

Description:
Upstream slope of the Final WPDES Pond.

Photo No.	Date:
38	6/8/11

Direction Photo Taken:
Southeast

Description:
Upstream slope and crest of the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
39	6/8/11

Direction Photo Taken:
North

Description:
Crest of the Final WPDES Pond and the WPDES Pond 2.

Photo No.	Date:
40	6/8/11

Direction Photo Taken:
West

Description:
Crest of the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
41	6/8/11

Direction Photo Taken:
Northwest

Description:
Monitoring well along the crest of the Final WPDES Pond.

Photo No.	Date:
42	6/8/11

Direction Photo Taken:
South

Description:
Downstream slope of the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
43	6/8/11

Direction Photo Taken:
South

Description:
Stairs on the downstream slope of the Final WPDES Pond at the discharge structure.

Photo No.	Date:
44	6/8/11

Direction Photo Taken:
South

Description:
Inlet for discharge structure on the upstream slope of the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
45	6/8/11

Direction Photo Taken:
West

Description:
Discharge pipe from the Final WPDES Pond. Water visible is from the Rock River.

Photo No.	Date:
46	6/8/11

Direction Photo Taken:
West

Description:
Upsteam slope of the Slag Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
47	6/8/11

Direction Photo Taken:
South

Description:
Upstream slope and crest of the Slag Pond.

Photo No.	Date:
48	6/8/11

Direction Photo Taken:
East

Description:
Upstream slope of the Slag Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
49	6/8/11

Direction Photo Taken:
Northeast

Description:
Upstream slope of the Slag Pond.

Photo No.	Date:
50	6/8/11

Direction Photo Taken:
Northeast

Description:
Upstream slope of the Slag Pond

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
51	6/8/11

Direction Photo Taken:
East

Description:
Discharge Pipe from the Coal Pipe Runoff Pond.

Photo No.	Date:
52	6/8/11

Direction Photo Taken:
Northeast

Description:
Incompletely abandoned discharge pipe from the facility.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No. 53	Date: 6/8/11

Direction Photo Taken:
East

Description:
Spillway for discharge from the WPDES Pond 1 and WPDES Pond 2.

Photo No. 54	Date: 6/8/11

Direction Photo Taken:
Northeast

Description:
Spillway structure for discharge from the Slag Pond into the Final WPDES Pond.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
55	6/8/11

Direction Photo Taken:
Northwest

Description:
Upstream slope of the Landfill.

Photo No.	Date:
56	6/8/11

Direction Photo Taken:
Northeast

Description:
Upstream slope of the Landfill.

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
57	6/8/11

Direction Photo Taken:
Northwest

Description:
Upstream slope of the Landfill.

Photo No.	Date:
58	6/8/11

Direction Photo Taken:
Southeast

Description:
Toe of the Landfill

GZA GeoEnvironmental, Inc.

PHOTOGRAPHIC LOG

Client Name: U.S. EPA	Site Location: Rock River Generating Station Beloit, Wisconsin	Project No. 01.0170142.30

Photo No.	Date:
59	6/8/11

Direction Photo Taken:
Northwest

Description:
Toe of the Landfill.

Photo No.	Date:
60	6/8/11

Direction Photo Taken:
Southeast

Description:
Toe of the landfill.

GZA
GeoEnvironmental, Inc.

Engineers and
Scientists

January 31, 2013
GZA File No. 170142.30

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

RE: Assessment of Dam Safety of Coal Combustion Surface Impoundments at the Rock River Generating Station

Dear Mr. Hoffman,

One Edgewater Drive
Norwood,
Massachusetts 02062
Phone: 781-278-3700
Fax: 781-278-5701
http://www.gza.com

In accordance with our proposal 01.P0000177.11 dated March 28, 2011, and U.S. Environmental Protection Agency (EPA) Contract No. EP10W001313, Order No. EP-B115-00049, GZA GeoEnvironmental, Inc. (GZA) has completed our inspection of the Rock River Generating Station Coal Combustion Waste (CCW) Impoundments located in Beloit, Wisconsin. The site visit was conducted on June 8, 2011. The purpose of our efforts was to provide the EPA with a site specific inspection of the impoundments to assist EPA in assessing the structural stability of the impoundments under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104(e). We are submitting one hard copy and one CD-ROM copy of this Final Report directly to the EPA.

Based on our visual inspection, and in accordance with the EPA's criteria, the WPDES Pond 1, WPDES Pond 2, Slag Pond and Final WPDES Pond are currently in **POOR** condition in our opinion. Further discussion of our evaluation and recommended actions are presented in the Task 3 Dam Assessment Report. The report includes: (a) a completed Coal Combustion Dam Inspection Checklist Form for each Basin; (b) a field sketch; and (c) selected photographs with captions. Our services and report are subject to the Limitations found in **Appendix A** and the Terms and Conditions of our contract agreement.

We are happy to have been able to assist you with this inspection and appreciate the opportunity to continue to provide you with dam engineering consulting services. Please contact the undersigned if you have any questions or comments regarding the content of this Task 3 Dam Assessment Report.

Sincerely,
GZA GeoEnvironmental, Inc.

Doug P. Simon, P.E
Geologic Engineer
doug.simon@gza.com

Patrick J. Harrison, P.E.
Senior Geotechnical Consultant
patrick.harrison@gza.com

James P. Guarente, P.E. (MA)
Consultant Reviewer
james.guarente@gza.com

SHEET 2 OF 2

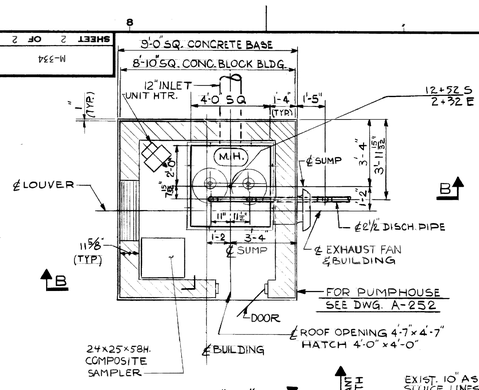
M-334

NOTES:

1. PIPE SLEEVE DETAIL TYP FOR 2½" ϕ STD. PIPE WHENEVER THERE IS A ROAD CROSSING
2. FOR PIPE SUPPORT DETAIL USE TYP ONE'S SHOWN ON DWG. M-45
3. ALL NEW PIPE ROUTEING ± BUILD TO SUIT
4. G.W.C DENOTES GENERAL WORK CONTRACTOR

POINT NO.	LOCATION	
20	614'-4¼" S	196' E
21	10+41 S	3[illegible]3¼E
22	11+86 S	.5+66 E
23	12+58 S	4+13 E
24		
25	11+59 S	8+14 E
26	13+78 S	12+16E
27	15+33 S	4+13 E
28	614'-4¼" S	7+66 E
29	15+32 S	13+93 E

"E"



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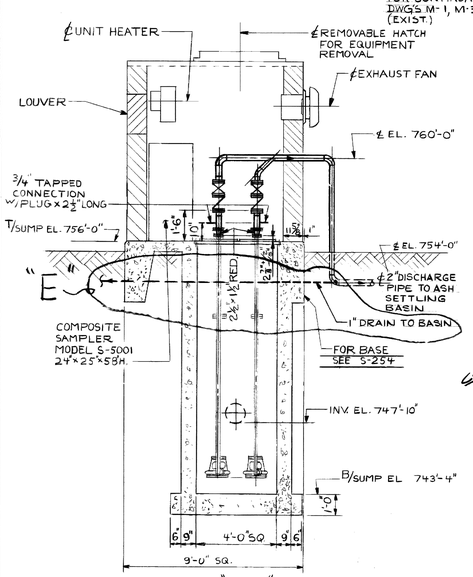

SECTION "B-B"
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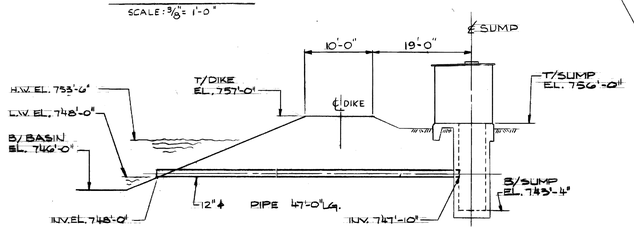

SECTION "A-A"
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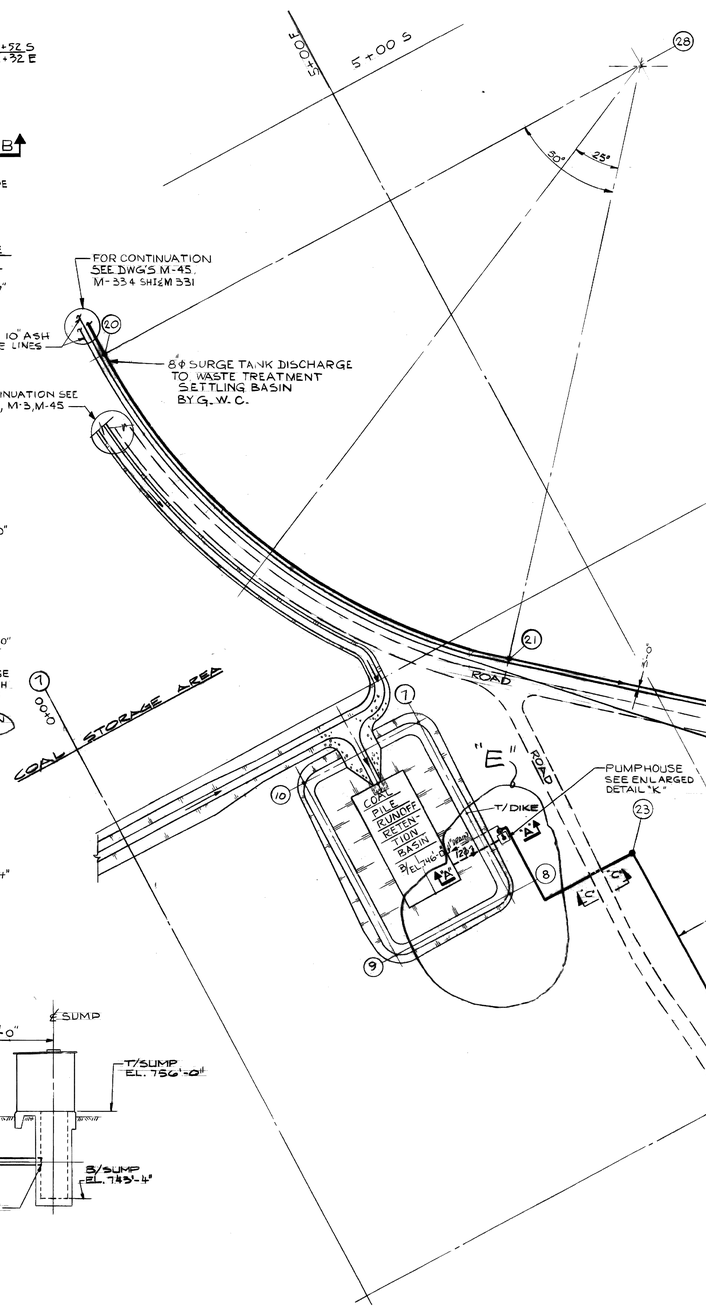
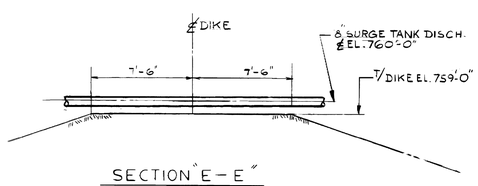
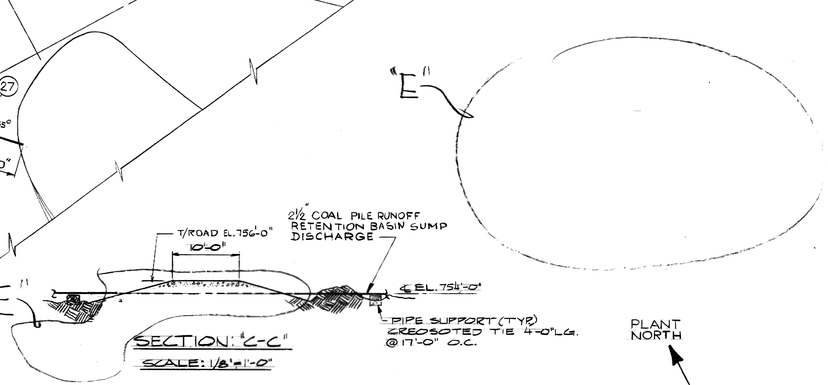
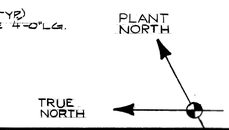




SECTION "E-E"
SCALE: ¼"=1'-0"



SECTION "C-C"
SCALE: 1/8"=1'-0"



NOTE: IMAGE HAS BEEN REDUCED AND IS NO LONGER TO A SCALE

CONFIDENTIAL BUSINESS INFORMATION

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM
O		6-30-76	J. Benson			CLIENT COMMENTS	
A	W-2141	8-9-76				GENERAL WORK BIDS	
B	W-2141	9-8-76				ADDENDUM #1	
C	W-2141	11-16-76	R. Edwards			RELOCATED SURGE TANK DISCHARGE LINE	X
D	W-2141	1-5-77				ADDED INFO. FOR SETTLING BASINS DISCH. FLUME AREA	X
E	W-2141	6-18-79	R. Edwards			FOR RECORD	

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM

DO NOT USE I, O, Q OR X FOR REVISION

CHARLES T. GUILFOYLE E-15690 REGISTERED PROFESSIONAL ENGINEER WISCONSIN

DRAWN	R. Edwards 11-15-76
CHECKED	J. Langhelm 11-16-76
ENGINEER	
APPROVED	C. Guilfoyle 11-16-76

1"=50'-0" SCALE

PROJECT NUMBER 5185

OUTDOOR PIPING
ROCK RIVER GENERATING STATION
UNITS 1 & 2
WISCONSIN POWER & LIGHT CO.
NORTH BELOIT, WISCONSIN

SARGENT & LUNDY ENGINEERS CHICAGO

DRAWING NO. M-334 REV. E

SHEET 2 OF 2

REV.	DATE	BY	DESCRIPTION

GZA GeoEnvironmental, Inc.
Engineers and Scientists
Brookfield, Wisconsin 53186
Phone (262) 754-2600 • Fax (262) 754-2977
www.gza.com

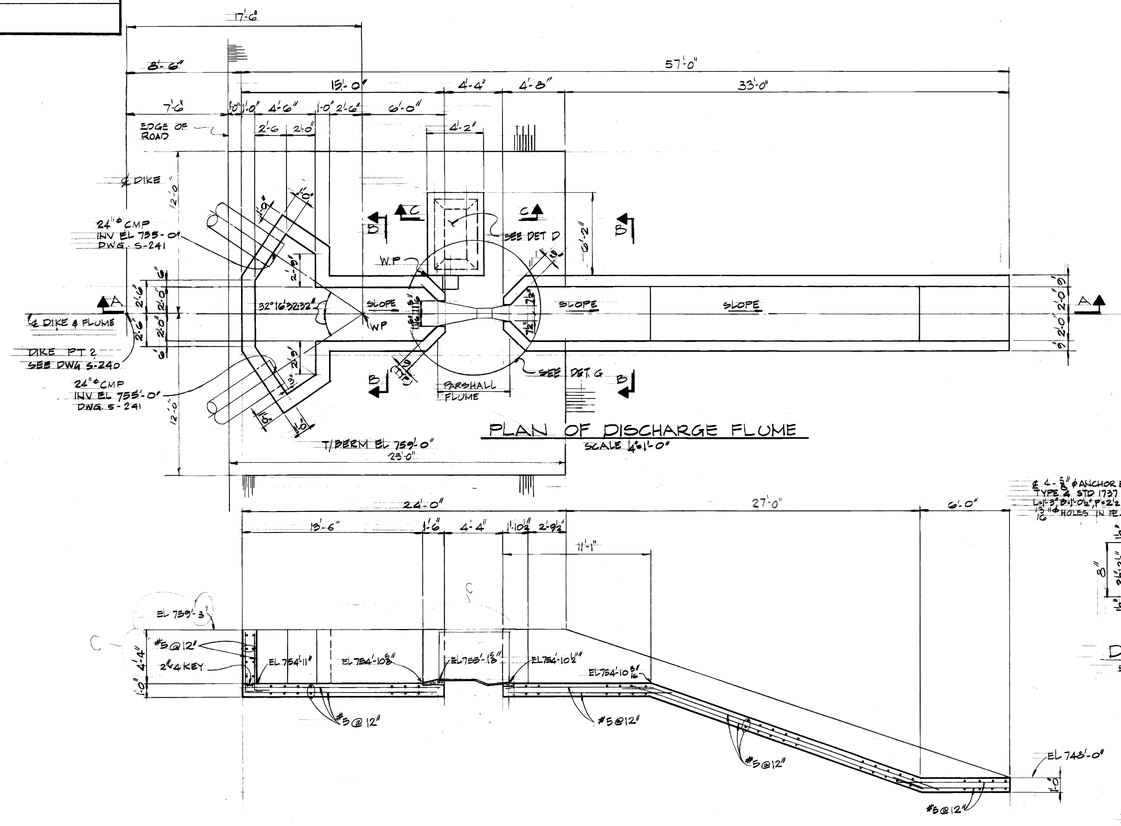
PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN

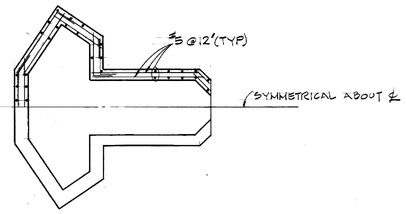
WPDES POND 1 AND 2,
COAL PILE RUNOFF POND DESIGN

JOB NO. 01.0170142.30

FIGURE NO. 4

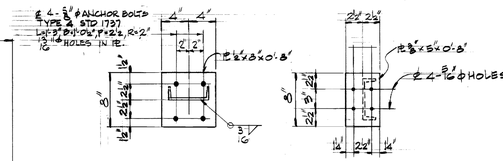


PLAN OF DISCHARGE FLUME
SCALE 1/4"=1'-0"



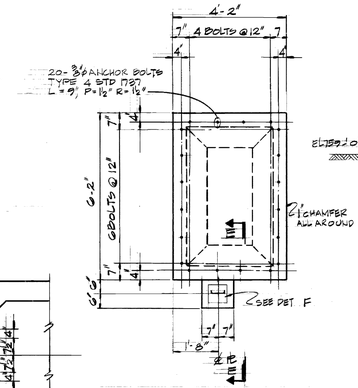
PARTIAL PLAN OF REINFORCING
SCALE 1/4"=1'-0"

SECTION A
SCALE 1/4"=1'-0"

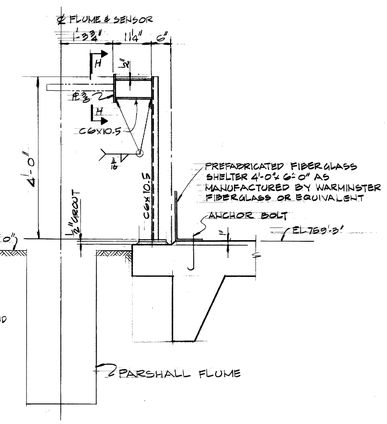


DETAIL F
SCALE 1½"=1'-0"

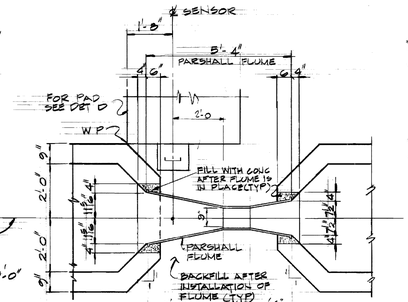
SECTION H
SCALE 1½"=1'-0"



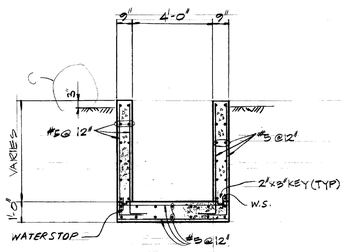
DETAIL D
SCALE ¾"=1'-0"



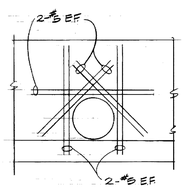
SECTION E
SCALE ¾"=1'-0"



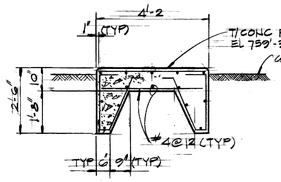
PLAN



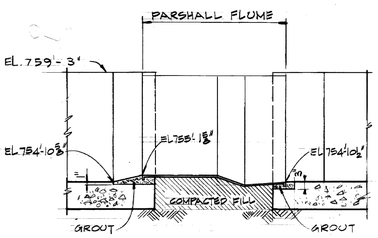
SECTION B
SCALE ¾"=1'-0"



ADDITIONAL REINF AT PIPE SLEEVES
SCALE ¾"=1'-0"



SECTION C
SCALE 1½"=1'-0"



SECTION
DETAIL G
SCALE 1½"=1'-0"

PLANT NORTH
TRUE NORTH

NOTES

1. ALL WORK SHOWN ON THIS DRAWING SHALL BE FURNISHED & INSTALLED IN ACCORDANCE WITH JOB SPEC W-2141 BY GENERAL WORK CONTRACTOR UNLESS OTHERWISE NOTED
2. SPLICES OF REINF SHALL HAVE MIN LAP AS INDICATED IN THE SCHEDULE ON DWG S-251

REFERENCE DRAWINGS

S-240	COAL PILE DRAINAGE SYSTEM & WASTE TREATMENT SETTLING BASIN - PLAN
S-241	COAL PILE DRAINAGE SYSTEM & WASTE TREATMENT SETTLING BASIN - SECTIONS

DRAWING RELEASE RECORD

REV.	SPEC. NO.	DATE	DRAWN	CHECKED	ENGR. APPROVAL	DESCRIPTION	FILM
	W-2141	8-9-76	A.C. BROWN			GENERAL WORK BIDS	
A	W-2141	9-8-76	[illegible]			ADDENDUM #1	
B	W-2141	11-16-76	M. PETERSEN	[illegible]	[illegible]	FOR CONSTRUCTION	
C	W-2141	1-13-77	[illegible]	[illegible]	[illegible]	DIMENS.	

DO NOT USE I, O, Q OR X FOR REVISION

GLEN A. CHAUVIN No. E-14430 PARK RIDGE, ILL. PROFESSIONAL ENGINEER

DRAWN	A. Chauvin	SCALE
CHECKED	Northam Reveal	8-2-76 DATE
ENGINEER	[illegible]	11-15-76 DATE
APPROVED	[illegible]	11-16-76 DATE

PROJECT NUMBER 5169-00

WASTE TREATMENT SETTLING BASIN DISCHARGE FLUME
ROCK RIVER GENERATING STATION UNIT 1 & 2
WISCONSIN POWER & LIGHT CO.
NORTH BELOIT, WISCONSIN.

SARGENT & LUNDY ENGINEERS CHICAGO

DRAWING NO. S-253 REV. C
SHEET OF

JOB NO. 01.0170142.30
FIGURE NO. 5

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN
WPDES POND 1 AND 2 DISCHARGE FLUME

PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

REV. NO. | BY | DATE | DESCRIPTION

NOTE: IMAGE HAS BEEN REDUCED AND IS NO LONGER TO A SCALE

GZA GeoEnvironmental, Inc. Brookfield, Wisconsin 53186 Phone (262) 754-2500 • Fax (262) 754-2977 www.gza.com

CONFIDENTIAL BUSINESS INFORMATION

US EPA ARCHIVE DOCUMENT

LEGEND

- 100 — EXISTING GROUND CONTOUR
- CONTOUR DEPRESSION
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING FENCE
- EXISTING BUILDING
- 788.5 EXISTING SPOT ELEVATION
- TREES AND/OR BRUSH
- WETLAND AREA
- EDGE OF WATER
- W-11 WATER TABLE WELL LOCATION AND NUMBER
- W-11A PIEZOMETER LOCATION AND NUMBER
- B-9A ABANDONED WELL
- SG-1 STAFF GAUGE
- DESIGN MANAGEMENT ZONE
- (SULFATE) PAL EXCEEDANCES
- O.S. OPEN STORAGE
- O.H. OVERHEAD STRUCTURE
- E.P.S. ELECTRICAL POWER STATION
- T TANK
- W WALL

NOTES

1. BASE MAP IS PROVIDED BY WISCONSIN POWER & LIGHT CO. AND IS BASED ON PHOTOGRAPHY PERFORMED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WI, IN MARCH 1995.
2. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM.
3. VERTICAL DATUM IS REFERENCED TO U.S.G.S. MEAN SEA LEVEL (MSL). TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
4. MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY WISCONSIN POWER LIGHT CO.
5. THE LOCATION OF THE DESIGN MANAGEMENT ZONE DEMARCATION LINE IS APPROXIMATE.
6. THE LOCATION OF MONITORING WELL W-14 IS APPROXIMATE.

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: **WISCONSIN POWER AND LIGHT, CO.**
ROCK RIVER ASH DISPOSAL FACILITY
BIENNIAL GROUNDWATER MONITORING REPORT

SHEET TITLE:
NR 140 GROUNDWATER QUALITY EXCEEDENCES OCTOBER 2009

DRAWN BY: FITZGERALD	SCALE: 1"=200'	PROJ. NO.	03027.47
CHECKED BY: JR		FILE NO.	30274703.DWG
APPROVED BY: JCO	DATE PRINTED: MAR 1 1 2010	**FIGURE 4**	
DATE: MARCH 2010			

RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

NOTE: IMAGE HAS BEEN REDUCED AND IS NO LONGER TO A SCALE

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www.gza.com

REV. NO.	DESCRIPTION	BY	DATE

PROJ MGR: DPS
DESIGNED BY: DPS
REVIEWED BY: PJH
OPERATOR: CLK
DATE: 09-21-2011

ROCK RIVER GENERATING STATION
BELOIT, WISCONSIN
MONITORING WELL AND BORING LOCATIONS

JOB NO. 01.0170142.30

FIGURE NO. 7