COAL ASH IMPOUNDMENT
SITE ASSESSMENT DRAFT REPORT

Newton Power Station
Ameren Energy Generating Company
Newton, Illinois

Prepared by:

KLEINFELDER
Bright People. Right Solutions.

611 Corporate Circle, Suite C
Golden, CO 80401

KLEINFELDER PROJECT NUMBER 112618-4

October 26, 2010

I acknowledge that the management units referenced herein:

- Primary Ash Pond
- Secondary Ash Pond

Were assessed on August 19, 2010

Signature: _____ Date: _____

Anthony G. Devine, P.E.
Lead Geotechnical Engineer

EXECUTIVE SUMMARY

Background information taken from the U. S. Environmental Protection Agency's (EPA's) website:

> "Following the December 22, 2008 dike failure at the TVA/Kingston, Tennessee coal combustion waste (CCW) ash pond dredging cell that resulted in a spill of over 1 billion gallons of coal ash slurry, covered more than 300 acres and impacted residences and infrastructure, the EPA is embarking on an initiative to prevent the catastrophic failure from occurring at other such facilities located at electric utilities in an effort to protect lives and property from the consequences of a impoundment or impoundment failure of the improper release of impounded slurry."

As part of the EPA's effort to protect lives and the environment from a disaster similar to that experienced in 2008, Kleinfelder was contracted to perform a site assessment at the Newton Power Generating Station that is owned and operated by Ameren Energy. This report summarizes the observations and findings of the site assessment that occurred on August 19, 2010.

The coal combustion waste impoundments observed during the site assessment included:

- Primary Ash Pond – Commissioned in 1977
- Secondary Ash Pond – Commissioned in 1977

Preliminary observations made during the site assessment are documented on the Site Assessment Checklists presented in Appendix A. A copy of this checklist was transmitted to the EPA following the field walk-through. A more detailed discussion of the observations is presented in Section 4, "Site Observations."

The Primary Ash Pond and Secondary Ash Pond impoundments are not regulated by any state agency and therefore do not currently have a designated hazard rating. Due to the potential environmental and economic impacts that a failure at either of these impoundments would present by breaching the south banks into Newton Lake, it is recommended that a Hazard Classification of "Significant" be assigned to both impoundments.

Overall, the site is reasonably well maintained and operated with few areas of concern as discussed in Section 6, "Recommendations."

On the date of this site assessment, there appeared to be no immediate threat to the safety of the impoundment embankments. No assurance can be made regarding the impoundments condition after this date. Subsequent adverse weather and other factors may affect the condition.

A brief summary of the Priority 1 and 2 Recommendations is given below. A more detailed discussion is provided in Section 6, "Recommendations."

Priority 1 Recommendations

1. Prepare an Emergency Action Plan (EAP) for the facility.
2. Perform a hydrologic and hydraulic study.
3. Evaluate adequacy of seepage and groundwater monitoring program.
4. Perform embankment and structural stability analyses.
5. Control vegetation on the upstream and downstream slopes.

Priority 2 Recommendations

1. Repair erosion of embankment.
2. Maintain a log of maintenance and other activities at the fly ash impoundments and supporting facilities.
3. Develop an Operation and Maintenance (O&M) manual for the impoundments and the facility.

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(Note: Figure 4 shows GPS location points taken during the field inspection; some of which coincide with photograph locations)

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SECTION 1 – INTRODUCTION

1.1 General

This report has been prepared for the United States Environmental Protection Agency (EPA) to document findings and observations from a site assessment at the Newton Power Station on August 19, 2010.

The following sections present a summary of data collection activities, site information, performance history of the facility's impoundments, a summary of site observations and recommendations resulting from the site investigation.

1.2 Project Location

The Newton Power Generating Station is located on the west bank of Newton Lake in South Muddy Township, Jasper County, Illinois. The station is located approximately eight miles southwest of the Town of Newton, Illinois at Latitude 38° 55' 40'' N and Longitude 88° 17' 03'' W, as shown in Figure 1.

1.3 Site Documentation

Ameren Energy provided the following documents during the time of this inspection to aid in the review of the impoundments:

- Sargent and Lundy, "Design Drawings S-50, S-69, S-70," 1974
- Sargent and Lundy, "Boring Location Plan and Soil Boring Logs, S-2, S-4 thru S-9," 1976.
- Ameren Energy, Inspection Form for Dams, Levees and Ponds at Ameren Facilities, March 25, 2010.
- Milano and Grunloh Engineers, LLC, Piezometer Survey via email correspondence, work completed August 23, 2010.

SECTION 2 – SITE ASSESSMENT

2.1 Attendees

The site assessment was performed on August 19, 2010 by Tony Devine, P.E. and Travis Kluthe, E.I.T. of Kleinfelder. Other persons present during the site assessment included:

- Paul Pike – Ameren Energy
- Michael Wagstaff, PE – Ameren Energy
- Paul Hardiek, PE – Ameren Energy

2.2 Impoundments Inspected

Impoundments and associated structures that were observed during the site assessment included:

- Primary Ash Pond – Commissioned in 1977
- Secondary Ash Pond – Commissioned in 1977

Observations from the site assessment are documented on the Site Assessment Checklists presented in Appendix A. A summary of observations from the site assessment is presented in Section 4.

2.3 Weather During Assessment

During the assessment of the Newton Power Station impoundments, the weather was sunny and clear with high humidity. Temperatures ranged from 80^{o} to 85^{o} F, and wind ranged from 0 to 5 miles per hour (mph).

3.1 Site Information and History

The Newton Power Generating Station is a coal-fired power generating facility. The facility currently sluices fly ash, bottom ash, and other materials into the Primary Ash Pond. Water from the Primary Ash Pond flows into the Secondary Ash Pond and then into Newton Lake. An aerial image of these impoundments can be seen in Figure 2.

The Primary Ash Pond is a diked earthen impoundment. Sluice pipes, transporting ash from power generating operations, discharge into the north side of the pond. From the discharge point, the ash slurry flows in narrow channels through a buildup of ash toward the south side of the pond, where water decants through a 30-inch pipe into the Secondary Ash Pond. Under normal operations, water is discharged at Elevation 522 feet. A second weir box is also located within the embankment at Elevation 536 feet. The operational water surface elevation varies.

The Secondary Ash Pond is a diked earthen impoundment. Water from the Primary Ash Pond discharges into the north side of the Secondary Ash Pond. Water from the Secondary Ash Pond discharges into Newton Lake at the south side of the Secondary Ash Pond. The minimum operating water surface elevation of the Secondary weir box is 516.5 feet.

3.2 Pertinent Data

A. GENERAL

1. Name ..... Newton Power Generating Station
2. State ..... Illinois
3. County ..... Jasper
4. Latitude ..... 38° 55’ 40” North
5. Longitude ..... 88° 17’ 03” West
6. River used for operations ..... Newton Lake
7. Year Constructed 1977
8. Modifications ..... Corrugated Metal Pipe (CMP) conduits lined with cured-in-place pipe (CIPP)
9. Current Hazard Classification ..... None
10. Proposed Hazard Classification ..... Significant
11. Size ..... Unregulated Currently – Intermediate Impoundment[2]

B. IMPOUNDMENTS

PRIMARY ASH POND

1. Type ..... Earthen – Diked
2. Crest Elevation ..... 555± feet[1]
3. Crest Length ..... Approximately 16,600 feet
4. Crest Width ..... Varies from 15 to 45 feet
5. Impoundment Height ..... Varies from 8 to 45 feet

6. Upstream Slope 3H:1V
7. Downstream Slope 3H:1V
8. Volume of Stored Ash……..2000 acre-feet

SECONDARY ASH POND

1. Type ..... Earthen – Diked
2. Crest Elevation ..... 534± feet[1]
3. Crest Length ..... Approx. 3,000 feet
4. Crest Width ..... 15 feet
5. Impoundment Height ..... Approx. 30 feet
6. Upstream Slope 3H:1V
7. Downstream Slope 3H:1V
8. Volume of Stored Ash……<1 acre-feet

C. DRAINAGE BASIN

1. Area of Drainage Basin..... Unknown
2. Downstream Description: ..... Newton Lake and Weather Creek

D. POND INLET

PRIMARY ASH POND

1. Pond Inlet..... Multiple inlet sluice pipes from the generating station

SECONDARY ASH POND

1. Pond Inlet..... Outlet from Primary Ash Pond

E. POND

PRIMARY ASH POND

1. Pond Capacity..... 9250 acre-feet

SECONDARY ASH POND

2. Pond Capacity..... 83.6 acre-feet

F. PRIMARY SPILLWAY

PRIMARY ASH POND

1. Description..... N/A – No Spillway Present

SECONDARY ASH POND

1. Description..... N/A – No Spillway Present

G. OUTLET WORKS

PRIMARY ASH POND

1. Description..... 30-inch Slip-Lined CMP
2. Location ..... Near south corner of the pond
3. Intake Structure..... Weir box with stop logs
   a. Intake Invert Elevation..... Adjustable
4. Discharge Conduit ..... 30-inch Slip-Lined CMP
   a. Length ..... 230 feet
   b. Diameter ..... 30 inches
5. Outlet Structure ..... Uncontrolled gravity discharge
   a. Outlet Invert Elevation..... 508 feet[1]

b. Energy Dissipation ..... Concrete slab with surrounding riprap[3]
6. Discharge Channel ..... Discharges to Secondary Ash Pond
7. Discharge Capacity with Water Surface at Top of Impoundment ..... Unknown

SECONDARY ASH POND

1. Description ..... 30-inch Slip-Lined CMP
2. Location ..... Near southwest corner of the pond
3. Intake Structure ..... Weir box with stop logs
   a. Intake Invert Elevation ..... Adjustable
4. Discharge Conduit ..... 30-inch Slip-Lined CMP
   a. Length ..... 155 feet
   b. Diameter ..... 30 inches
5. Outlet Structure ..... Uncontrolled gravity discharge
   a. Outlet Invert Elevation ..... 505 feet
   b. Energy Dissipation ..... Concrete slab with surrounding riprap
6. Discharge Channel ..... None; discharges directly into the Newton Lake
7. Discharge Capacity with Water Surface at Top of Impoundment ..... Unknown

H. MANAGEMENT

1. Owner ..... Ameren Energy
2. Purpose ..... Coal Fired Energy Generation

Notes:
1. All elevations are based on original construction drawings by Sargent and Lundy Engineers
2. Impoundment is unregulated; size is based on Illinois Department of Natural Resources Administrative Code for Impoundment Safety
3. Structure was inundated during the time of inspection and was not able to be inspected

3.3 Regional Geology and Seismicity

The plant site is situated in a broad, flat, physiographic area called the Springfield Plain. The landscape was shaped largely by glaciers that covered much of Illinois repeatedly during the past million years. Glaciers left deposits of material on the irregular bedrock surface; these materials, generally, include pebbly clay (till), water-laid sand and gravel (outwash), and wind-laid silt (loess). Based on our review of information from the Web Soil Survey and soil borings obtained at the site, it appears that the soil deposits at the plant site were comprised of glacial till, and the glacial till is underlain by shale bedrock. Based on our review of data published by the United States Geological Survey (USGS) and the Illinois State Geological Survey, the sedimentary rock formations below the glacial soils in Jasper County generally include shale, sandstone, limestone, and coal.

The plant site is situated in a Seismic Zone 1 area. We have noted that the New Madrid Fault has a documented history of seismic activity but is located more than 120 miles west of the plant site.

3.4 Hydrology and Hydraulics

The Primary Ash Pond was constructed in a natural drainageway that was impounded to create Newton Lake. The southeast embankment of the Primary Ash

Pond blocks the historic drainage pattern of this area and redirects flows to the Primary Ash Pond's weir box. The exact extents of the drainage area for the Primary Ash Pond cannot be determined without an updated survey of the impoundments, plant footprint, and surrounding areas, as well as storm sewer plans.

Kleinfelder was not provided with documents for review relating to hydrologic studies, hydraulic design calculations/assumptions, and dam break analyses. As a result, the designed inflow, capacity of the ponds, design freeboard, and outlet works capacity is unknown at this time.

The Primary Ash Pond has a surface area of 401 acres and a maximum storage capacity of 9,250 acre-feet. It has a two-tier weir box configuration used for discharging flows. The weir boxes are equipped with adjustable stop logs and have minimum operating water surface elevations of 522 and 536 feet, respectively. Both weir boxes eventually discharge into a single 30-inch CMP. Both weir boxes can be accessed from a metal catwalk structure.

The Secondary Ash Pond has a surface area of 9.3 acres and a maximum storage capacity of 83.6 acre-feet. The Secondary Ash Pond must receive all discharges from the Primary Ash Pond. The Secondary Ash Pond is equipped with a single-tier weir box structure with a minimum water surface elevation of 516.5 feet. The weir box inlet is also controlled by adjustable stop logs and accessible via a metal catwalk structure. The weir box discharges into a 30-inch CMP. The Secondary Ash Pond outlet has a concrete headwall with surrounding riprap and discharges directly into Lake Newton. Discharge was observed at the Secondary Ash Pond outlet during our site visit.

Ameren staff indicated that both ponds receive "walk-around" inspections on a monthly basis in addition to an annual inspection performed by the Ameren dam safety group. They also indicated that all CMP conduits that are part of the Primary and Secondary Ash Pond outlet works received CIPP liners in 2008.

3.5 Geotechnical Considerations

It is Kleinfelder's understanding that embankment stability analyses are currently being completed for the Primary and Secondary Ash Ponds by another consultant retained by Ameren Energy.

Seepage calculations were not provided from design of the ash ponds but would be desirable for review by Kleinfelder. Kleinfelder understands that possible seepage was observed along the west embankment north of C-160 by Ameren Energy in 2010 and that seepage has historically been observed beyond the berm toe at C-500 and beyond the berm to midway between C-500 and C-525. The designations C-# refer to horizontal curve locations along the berm crest that are shown in documentation attached to the Ameren inspection report dated March 25, 2010.

3.6 Structural Considerations

There are two major outlet structures within the Newton Power Station impoundments. Both are catwalk type structures in the Primary Ash Pond and Secondary Ash Pond areas. The catwalk in the Primary Ash Pond is a two-level catwalk with two reinforced concrete weir boxes. The catwalk in the Secondary Ash Pond is a single level, single-span catwalk. Both structures are founded on reinforced concrete spread footings within the embankments of the pond area.

The outlet structure in the Primary Ash Pond area is a two level catwalk with stairs connecting them. Each level is a single span pedestrian walkway with a steel W-section girder superstructure. Each catwalk has a handrail and connects the levee at one end of each walkway to a reinforced concrete weir box. The upper catwalk is approximately 25 feet long, and the lower catwalk is approximately 35 feet long with the drop height in the weir boxes ranging from approximately 19 to 24 feet in height. The weir boxes have lateral steel bracing supports at approximately 8 feet on center. Due to the height of the weir boxes, this provides additional support during high wind or seismic events. The weir boxes have stop logs to control flow in and out of the reinforced concrete box. The concrete appears to be in very good condition on both the upper and lower weir boxes. The catwalk bridge access portion appears to be in good condition, and the superstructure appears to be intact with minor corrosion. The catwalk substructure concrete foundations appear to be in good condition, as well, with little to no concrete spalling or scaling. The steel girders, handrail, and stairs appear to be in very good condition. Refer to Photograph Numbers 19 and 20 in Appendix B for further clarification.

The outlet structure in the Secondary Ash Pond area is a single level-single span catwalk with a steel W-section girder superstructure. The catwalk has a handrail and connects the levee at one end to a reinforced concrete weir box at the other. The catwalk is approximately 44 feet long with the drop height in the weir box approximately 20 feet above the levee embankment. The weir box has lateral steel bracing supports at approximately 10 feet on center. Due to the height of the weir box, this provides additional support during high wind or seismic events. The weir box has stop logs to control flow in and out of the reinforced concrete box. The concrete appears to be in very good condition. The steel girders, handrail, and stairs appear to be in very good condition. Refer to Photograph Numbers 14, 15 and 16 in Appendix B for further clarification.

Due to the water levels in the ponds at the time of our visit, the foundation condition of the weir boxes at both ponds were not able to be observed.

Documentation of the structural portions of the impoundments under seismic loading was not available for our review. Although the plant site is located in a zone of relatively low risk for damaging seismic activity, evaluation of the structural components of the impoundments under applicable seismic loading conditions merits consideration.

3.7 Performance Evaluations

There have been no previous federal or state assessments of the Newton Power Generating Station's Primary Ash Pond or Secondary Ash Pond. Based on observations by Ameren Energy in their annual assessments, weekly assessments and other documents and accounts, there have been no major incidents or releases involving the Primary Ash Pond or the Secondary Ash Pond in the last ten years. Currently, Ameren Energy's local plant personnel perform weekly assessments of the impoundments and their associated structures. Ameren Energy also performs annual assessments of the Newton impoundments, similar to this assessment, via their Dam Safety and Environmental personnel.

3.8 Hazard Classification

The Newton Power Generating Station's two impoundments are not regulated by any state agency and therefore do not currently have a designated hazard rating. However, due to the potential environmental and economic impacts that a failure at either of these impoundments would present, it is recommended that a Hazard Classification of "Significant" be assigned to both impoundments. A "High Hazard" rating was not assigned to the impoundments, because it is not expected that a loss of life situation would be likely in the event of a failure. A loss of life situation is not expected, because both impoundments sit immediately adjacent to the Newton Lake without any homes, recreational facilities, businesses, roads, or other structures immediately downstream of the impoundments.

3.9 Site Access

We were required to seek permission from Ameren Energy to gain access to the plant site. After arriving at the site and meeting with representatives of Ameren Energy, we were escorted by facility personnel to assess the impoundments. The impoundments can be accessed by standard car during normal weather conditions via gravel-surfaced roadways on the Newton Power Generating Station property.

The impoundment embankments, toes, and outlet works (portions not inundated at the time of inspection) of both the Primary Ash Pond and Secondary Ash Pond were observed during the August 19, 2010 site assessment. General observations of these features are presented below; more specific observations of the site and facilities are documented in the Site Assessment Checklists provided in Appendix A.

4.1 Primary Ash Pond

4.1.1 Upstream Slope

Overall, the upstream slope was in satisfactory condition. Photograph 3 in Appendix B shows typical conditions of the upstream slope. Specific observations include:

- The upstream slope was laid back at approximately 3H:1V, based on visual observations.
- Minor erosion rills, less than 6 inches deep, were noted on some of the upstream slopes.
- A few woody bushes were observed on the upstream slope, and a few trees were observed near the upstream toe of the embankment of the impoundment.
- Mowing/Vegetation control had been completed on the majority of the upstream slope.

4.1.2 Crest

Overall, the crest of the impoundment was in satisfactory condition. Photograph 22 shows the typical condition of the crest. Specific observations include:

- The impoundment crest is a gravel road.
- Almost no grasses were observed on the crest.
- No major depressions or rutting were noted on the impoundment crest.

4.1.3 Downstream Slope

Overall, the downstream slope was in satisfactory condition. Photoraph 4 shows typical conditions of the downstream slope. Specific observations include:

- Erosion rills up to 6 inches deep were noted on some downstream slopes.
- Grasses were observed on the downstream slope.

4.1.4 Downstream Toe Areas

The toe areas of the embankment were in satisfactory condition. Photograph 6 shows typical conditions of these areas. Key features and observations of these areas include:

- Except for a few small bushes and trees, vegetation has been cut back at least 20 feet from the toe, leaving primarily grasses.
- Some hydrophilic vegetation was observed at seepage locations, but ponded water was not observed.

4.1.5 Outlet Works

The outlet works of the Primary Ash Pond are shown in Photographs 19 and 20 and consist of a weir box leading to a 30-inch slip-lined CMP. The outlet structure is accessible via metal stairs and a catwalk. Water from the outlet is discharged to the Secondary Ash Pond.

- Overall, the outlet works system appears to be functioning as intended at this time.

4.1.6 Impoundment Inlet

Inflow into the Primary Ash Pond includes metal pipes on the north side of the impoundment, as well as storm water runoff that flows naturally into the pond. Inlet pipes can be seen in Photograph 27 of Appendix B. The inlet pipe appears to be in satisfactory condition.

4.2 Secondary Ash Pond

4.2.1 Upstream Slope

Overall, the upstream slope of the impoundment was in satisfactory condition. Photograph 14 in Appendix B shows the typical condition of the upstream slope. Specific observations include:

- The upstream slope was laid back at approximately 3H:1V.
- The upstream slope was covered with grasses.

4.2.2 Crest

Overall, the crest of the impoundment was in satisfactory condition. Photograph 14 shows the typical condition of the crest. Specific observations include:

- The impoundment crest is a gravel road.
- Very sparse grasses were observed on the upstream side of the crest.

- No major depressions or rutting were noted on the impoundment crest.

4.2.3 Downstream Slope

Overall, the downstream slope was in satisfactory condition. Specific observations include:

- Erosion rills up to 6 inches deep were noted on some of downstream slopes.
- Grasses were observed on the downstream slope.

4.2.4 Toe Areas

The toe areas of the embankment were in satisfactory condition. Key features and observations of these areas include:

- Erosion rills up to 6 inches deep were noted on some of downstream slopes.
- Grasses were observed on the downstream slope.

4.2.5 Outlet Works

The outlet works of the Secondary Ash Pond are shown in Photographs 14, 15, and 16,and consist of a weir box leading to a 30-inch slip-lined CMP. The wier box is accessible via a metal catwalk. Water from the outlet is discharged to Newton Lake (see Photographs 17 and 18).

- Overall, the outlet works system appears to be functioning as intended at this time.

4.2.6 Impoundment Inlet

Inflow into the Secondary Ash Pond is via the Primary Ash Pond outlet described in Section 4.1.5.

5.1 Analysis and Conclusions

Our analysis is summarized in three general considerations that are presented as follows:

Safety of the Impoundments, Including Maintenance and Methods of Operation

We understand that the impoundments have a history of safe performance. However, the future performance of these impoundments will depend on a variety of factors that may change over time, including surface water hydrology, changes in groundwater levels, changes in embankment integrity, etc. In light of this situation, we have noted several items as follows that present some concern in this regard:

- An Emergency Action Plan (EAP) is not currently in place at the site to mitigate damage in the event of an emergency related to failure of the impoundment(s).
- Analyses of the slope stability for the embankments are not currently available for our review. However, Kleinfelder understands that these analyses are in the process of being developed.
- Documentation of the impoundment capacity under potential hydrologic and hydraulic loading is not currently available for review.
- We understand that an Operation and Maintenance (O&M) manual is not currently in place for the impoundments. Developing an O&M manual, which includes a section that discusses the safety inspection and monitoring program, would be valuable to standardize safety inspection and monitoring practices.

Changes in Design or Operation of the Impoundments Following Initial Construction

We are not aware of significant changes in the design or operation of the impoundments.

Adequacy of Program for Monitoring Performance of the Impoundments

The present monitoring program primarily involves visual inspections by plant personnel and by the Ameren Energy Dam Safety Group. These visual inspections seem to be adequate to address issues, such as surface erosion and general condition of the impoundments. However, a more detailed monitoring program is recommended to be established to quantify various important factors associated with embankment stability. Those factors include, but are not limited to, seepage at the downstream toe of the Primary and Secondary Ash Ponds.

5.2 Summary Statement

I acknowledge that the management unit(s) referenced herein was personally inspected by me and found to be in the following condition:

FAIR

Signature: _____ Date: _____

Anthony G. Devine, P.E.
Lead Geotechnical Engineer

6.1 Definitions

Priority 1 Recommendation: Priority 1 Recommendations involve the correction of severe deficiencies where action is required to ensure the structural safety and operational integrity of a facility, or that may threaten the safety of the impoundment.

Priority 2 Recommendation: Priority 2 Recommendations are where action is needed or required to prevent or reduce further damage or impaired operation of the facility and/or improve or enhance the O&M of the facility, that do not appear to threaten the safety of the impoundment.

Based on observations during the site assessment, it is recommended that the following actions be taken at the Newton Power Generating Station.

6.2 Priority 1 Recommendations

1. **Prepare an Emergency Action Plan (EAP) for the facility.** An EAP should be prepared for the Primary Ash Pond and Secondary Ash Pond as well as any other pertinent features related to the impoundments.
2. **Perform a hydrologic and hydraulic study.** This study should be performed to determine if the existing ponds are capable of impounding the appropriate inflow design flood without overtopping of the impoundments. At a minimum, documentation required for this evaluation will include a current topographic survey of the site and surrounding drainage basin, basin characteristics (surface runoff/infiltration condition), sufficient hydrologic data to determine the design storm event, and discharge capacities for the outlet works.
3. **Evaluate adequacy of seepage and ground water monitoring program** Ameren has installed piezometers and taken initial readings. Piezometer screening intervals should be compared to soil stratigraphy to evaluate the ability of piezometers to measure pore pressure in critical layers. Minor uncontrolled seepage has been observed at the toe of the Primary Ash Pond embankment. The presence of uncontrolled seepage at the downstream toe of the embankment raises questions regarding the integrity and the stability of the embankment. Therefore, a detailed monitoring program should be established to quantify various important factors including the source of the water (seepage or surface runoff) and, if seepage is the source of the ponded water, seepage quantities through the embankment, the amount of sediments carried by the seepage water, and the fluctuation of ground water levels.
4. **Perform embankment and structure stability analyses.** The slopes of the Primary Ash Pond and Secondary Ash Pond were generally 3H:1V, but calculations documenting the embankment stability were not available for our review. Stability analyses of both impoundments should be performed. The analyses should incorporate seepage monitoring data and include evaluation of

the embankments and the structures under seismic loading scenarios. According to Ameren, we understand that this task is currently being completed by another consultant retained by Ameren Energy. The results of this evaluation should be reviewed by the EPA.

5. **Control vegetation on the upstream and downstream slopes.** Refer to Federal Emergency Management Agency's (FEMA) Manual 534, "Impact of Plants on Earthen Impoundments" for guidance on vegetation removal. This manual is available on the FEMA website.

6.3 Priority 2 Recommendations

1. **Repair erosion of embankment.** Minor surface erosion was noted at both the Primary and Secondary Ash Ponds. Areas where erosion has occurred should be filled in and re-dressed with appropriate fill to prevent erosion from cutting further into the embankments.
2. **Maintain a log of maintenance and other activities at the fly ash impoundments and supporting facilities.** We believe that this log will provide continuity during periods of staff change.
3. **Develop an Operation and Maintenance (O&M) manual for the impoundments and the facility.** The O&M manual should include at least the following three key elements:
   - Procedures needed for operation and maintenance of the impoundments during typical operating conditions
   - Procedures for monitoring performance of the impoundments, including visible changes (i.e. surface erosion, settlement and sloughing), internal embankment changes (i.e. erosion due to uncontrolled seepage), and fluctuations in groundwater level
   - Emergency Action Plan (also part of Priority 1 recommendations)

SECTION 7 – GLOSSARY OF TERMS

For the EPA Ash Pond Assessment program, the following glossary of terms shall be used for classification unless otherwise noted.

Hazard Potential Rating

"Hazard Potential" means the possible adverse incremental consequences that result from the release of water or stored contents due to the failure of the impoundment or reservoir or the misoperation of the impoundment, reservoir, or appurtenances. The Hazard Potential Classification of an impoundment or reservoir shall not reflect in any way on the current condition of the impoundment or reservoir and its appurtenant works, including the impoundment's or reservoir's safety, structural integrity, or flood routing capacity. These classifications are as described below:

1. **Low Hazard Potential**

   "Low Hazard" means an impoundment's or reservoir's failure will result in no probable loss of human life and low economic loss or environmental loss, or both. Economic losses are principally limited to the owner's property.

2. **Significant Hazard Potential**

   "Significant Hazard" means a impoundment's or reservoir's failure will result in no probable loss of human life but can cause major economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. Significant Hazard Potential classification impoundments or reservoirs are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

3. **High Hazard Potential**

   "High Hazard" means a impoundment's or reservoir's failure will result in probable loss of human life.

Size Classification

In accordance with the Illinois Department of Natural Resources (IDNR) Administrative Code for Impoundment Safety, "Part 3702 - Construction and Maintenance of Impoundments" dated January 13, 1987, an impoundment system is classified by size based on its height and potential storage capacity. Size classification is determined by which category (storage or height) is greatest (produces the larger size classification).

Category	Storage (acre-feet)	Height (feet)
Small	<1,000	<40
Intermediate	≥ 1,000 to <50,000	≥ 40 to <100
Large	≥ 50,000	≥ 100

Overall Classification of Impoundment

In a system similar to the New Jersey Department of Environmental Protection Impoundment Safety Guidelines for the Inspection of Existing Impoundments (January 2008), when the following terms are capitalized, they denote and shall be used to describe the overall classification of the impoundment as follows:

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

FAIR – Acceptable performance is expected (the term expected is to be defined as likely) under all required loading conditions (static, hydrologic and 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 and seismic) in accordance with the applicable impoundment safety regulatory criteria. Remedial action is necessary. POOR also applies when further critical studies or investigations are needed to identify any potential impoundment safety deficiencies.

UNSATISFACTORY – The facility is considered unsafe. An impoundment safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution. Reservoir restrictions may be necessary.

Condition Rating Criteria

In a system similar to the U.S. Department of Interior, Safety Evaluation of Existing Impoundments (SEED 1995), the terms "Satisfactory," "Fair," "Poor," and "Unsatisfactory" are used in a general sense when describing the structural condition and the operational adequacy of the equipment for a impoundment or reservoir and its appurtenant works during the visual assessment. In addition, the term "Unknown" may be utilized, as applicable.

Satisfactory – Expected to fulfill intended function.

Fair – Expected to fulfill intended function, but maintenance or other actions are recommended.

Poor – May not fulfill intended function; maintenance, repairs, or other actions are necessary.

Unsatisfactory – Is not expected to fulfill intended function; repair, replacement, or modification is necessary.

Unknown – Not visible, not accessible, not inspected, or unable to determine the condition rating based on the observation taken.

Recommendation Listing

Recommendations shall be written concisely and identify the specific actions to be taken. The first word in the recommendation should be an action word (i.e. "Prepare", "Perform", or "Submit"). The recommendations shall be prioritized and numbered to provide easy reference. Impoundment Safety Recommendations shall be grouped, listed or categorized similar to the U.S. Department of Interior, Reclamation Manual - Directives and Standards - Review/Examination Program for High- and Significant-Hazard Impoundments (July, 1998 FAC 01-07) as follows:

Priority 1 Recommendations: Priority 1 Recommendations involve the correction of severe deficiencies where action is required to ensure the structural safety and operational integrity of a facility or that may threaten the safety of the impoundment.

Priority 2 Recommendations: Priority 2 Recommendations are where action is needed or required to prevent or reduce further damage or impaired operation of the facility and/or improve or enhance the O&M of the facility, which do not appear to threaten the safety of the impoundment.

SECTION 8 – LIMITATIONS

The scope of this work is for a preliminary screening for the EPA and plant owner/operator of the visible performance and apparent stability of the impoundment embankments based only on the observable surface features and information provided by the owner/operator. Other features below the ground surface may exist or may be obscured by vegetation, water, debris, or other features that could not be identified and reported. This site assessment and report were performed without the benefit of any soil drilling, sampling, or testing of the subsurface materials, calculations of capacities, quantities, or stability, or any other engineering analyses. The purpose of this assessment is to provide information to the EPA and the plant owner/operator about recommended actions and/or studies that need to be performed to document the stability and safety of the impoundments.

This work was performed by qualified personnel in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession, practicing in the same locality, under similar conditions, and at the date the services are provided. Kleinfelder's conclusions, opinions, and recommendations are based on a limited number of observations. It is possible that conditions could vary between or beyond the observations made. Kleinfelder makes no other representation, guarantee, or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided. Kleinfelder makes no warranty or guaranty of future embankment stability or safety.

This report may be used only by the client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance but in no event later than one (1) year from the date of the report.

The information, included on graphic representations in this report, has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, expressed or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. These documents are not intended for use as a land survey product nor are they designed or intended as a construction design document. The use or misuse of the information contained on these graphic representations is at the sole risk of the party using or misusing the information.

Recommendations contained in this report are based on preliminary field observations without the benefit of subsurface explorations, laboratory tests, or detailed knowledge of the existing construction. If the scope of the proposed recommendations changes from that described in this report, the conclusions and recommendations contained in this report are not considered valid unless the changes are reviewed and the conclusions of this report are modified or approved in writing by Kleinfelder. Kleinfelder cannot be responsible for interpretation by others of this report or the conditions encountered in the field.

- US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey - online

- Illinois Department of Natural Resources (IDNR), Administrative Code for Impoundment Safety, "Part 3702 – Construction and Maintenance of Impoundment," January 13, 1987

- US Department of the Interior, Safety and Evaluation of Existing Impoundments (SEED), 1995

- New Jersey Department of Environmental Protection, Impoundment Safety Guidelines for the Inspection of Existing Impoundments, January 2008

- US Department of Interior, Reclamation Manual – Directives and Standards – Review/Examination Program for High and Significant Hazard Impoundments, July 1998

- Sargent and Lundy, "Design Drawings S-50, S-69, S-70," 1974

- Sargent and Lundy, "Boring Location Plan and Soil Boring Logs, S-2, S-4 thru S-9," 1976.

- Ameren Energy, Inspection Form for Dams, Levees and Ponds at Ameren Facilities, March 25, 2010.

- Milano and Grunloh Engineers, LLC, Piezometer Survey via email correspondence, work completed August 23, 2010.

INGRAHAM, IL
(NEAREST CRITICAL INFRASTRUCTURE)
APPROXIMATELY 7 MILES DOWNSTREAM
NOTE: INGRAHAM LOCATED APPROXIMATELY 1 MILE OFF MAIN DRAINAGE FROM LAKE NEWTON

AERIAL IMAGE

NTS

NOTE: IMAGE TAKEN FROM GOOGLE EARTH, 8/2010

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DATE:	8/30/10
DRAWN BY:	ACH
CHECKED BY:	TAK
FILE NAME:	

NEWTON GENERATING STATION CRITICAL INFRASTRUCTURE MAP

NEWTON POWER GENERATING STATION

NEWTON, IL

FIGURE

1

20 Oct 2010, 3:45pm, MGardella

S:\112618 EPA Ash Pond Inspections\Task 4 - Newton\

AERIAL IMAGE

NTS

NOTE: IMAGE TAKEN FROM GOOGLE EARTH, 8/2010

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DATE:	8/30/10
DRAWN BY:	ACH
CHECKED BY:	TAK
FILE NAME:	

NEWTON GENERATING STATION AERIAL LOCATION MAP

NEWTON POWER GENERATING STATION

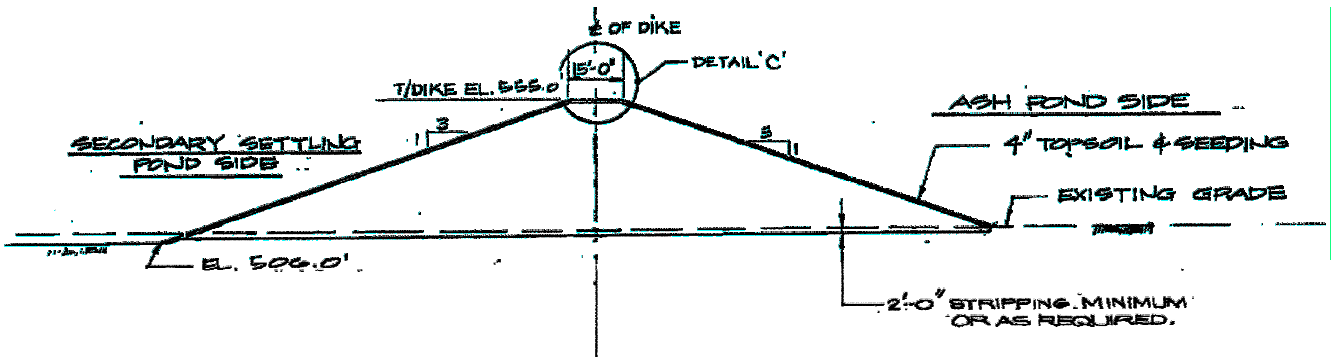
NEWTON, IL

FIGURE

2

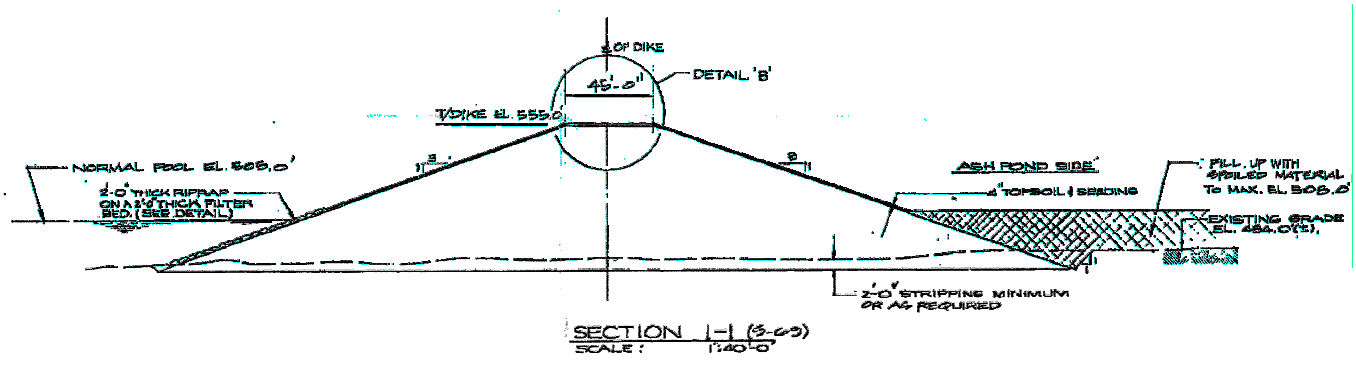
20 Oct 2010, 3:45pm, MGardella

S:\112618 EPA Ash Pond Inspections\Task 4 - Newton\



TYPICAL EMBANKMENT SECTION - PRIMARY ASH POND

NTS



TYPICAL EMBANKMENT SECTION - SECONDARY ASH POND

NTS

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DATE:	8/30/10
DRAWN BY:	MAG
CHECKED BY:	TAK
FILE NAME:	

NEWTON GENERATING STATION CRITICAL INFRASTRUCTURE MAP

NEWTON POWER GENERATING STATION

NEWTON, IL

FIGURE

3

ATTACHED IMAGES: Images: coffeen 1 with points.jpg Images: coffeen 1 without points.jpg Images: Newton with points.jpg Images: Newton without points.jpg
ATTACHED XREFS:
Den-L:\2008\95399 CAD FILE: S:\112618 EPA Ash Pond Inspections\Task 4 - Newton\ LAYOUT: General (2)

WAYPOINT	DATE/TIME (DAY/MO/YEAR)	COORDINATES (LAT, LONG)	DESCRIPTION
1	19-AUG-10 8:43:00AM	N38 55.794 W88 16.354	Shrubs at D/S toe (Vantage point for photo 2)
2	19-AUG-10 8:48:43AM	N38 55.666 W88 16.402	Monitoring well at D/S toe (Vantage point for photo 5)
3	19-AUG-10 8:58:23AM	N38 55.456 W88 16.579	Crest with approx. 45' wide w/ 15' wide road base
4	19-AUG-10 9:03:36AM	N38 55.449 W88 16.713	Distinct vegetation change on D/S slope near toe
5	19-AUG-10 9:10:29AM	N38 55.369 W88 16.900	Vegetation on U/S slope (Vantage point for photo 8)
6	19-AUG-10 9:11:15AM	N38 55.360 W88 16.896	Monitoring well at D/S toe (Vantage point for photo 9)
7	19-AUG-10 9:13:57AM	N38 55.364 W88 16.988	Approx. location of maximum dam embankment section
8	19-AUG-10 9:17:55AM	N38 55.346 W88 17.124	Boring at D/S toe
9	19-AUG-10 9:20:20AM	N38 55.335 W88 17.163	Location of piezometers installed for stability analysis
10	19-AUG-10 9:24:46AM	N38 55.319 W88 17.196	Erosion rill at D/S toe
11	19-AUG-10 9:26:16AM	N38 55.315 W88 17.214	Erosion rill at D/S toe
12	19-AUG-10 9:28:57AM	N38 55.305 W88 17.271	Junction of embankment separating ponds (Vantage point for photo 13)
13	19-AUG-10 9:38:44AM	N38 55.301 W88 17.504	Secondary pond outlet intake (Vantage point for photos 14-16)
14	19-AUG-10 9:41:18AM	N38 55.277 W88 17.522	Secondary pond outlet discharge into Newton Lake
15	19-AUG-10 9:47:53AM	N38 55.383 W88 17.453	Primary pond outlet intake structure (Vantage point for photos 19-20)
16	19-AUG-10 9:53:19AM	N38 55.507 W88 17.644	Road crossing on D/S slope
17	19-AUG-10 10:13:08AM	N38 55.928 W88 17.268	Monitoring well at D/S toe (Vantage point for photo 21)
18	19-AUG-10 10:13:44AM	N38 55.937 W88 17.237	Road on D/S slope (Vantage point for photo 25)
19	19-AUG-10 10:14:42AM	N38 55.940 W88 17.200	Minor vegetation on U/S slope (Vantage point for photo 26)
20	19-AUG-10 10:20:20AM	N38 55.978 W88 16.907	Discharge pipes (Vantage point for photo 27)
21	19-AUG-10 10:24:50AM	N38 56.004 W88 16.821	Small interior pond embankment ties into main dam embankment
22	19-AUG-10 10:27:27AM	N38 56.024 W88 16.706	Road crossing on D/S slope
23	19-AUG-10 10:28:10AM	N38 56.023 W88 16.690	Pipe crossing approx. 2' below crest grade (Vantage point for photo 29)

NOTE: IMAGE TAKEN FROM GOOGLE EARTH, 8/2010

PHOTO PLAN OF INSPECTION POINTS - PRIMARY AND SECONDARY ASH PONDS

NEWTON POWER GENERATING STATION

NEWTON, IL

FIGURE 4 of 4 sheets

SCALE: NTS
DATE: 08/30/10
CHECKED BY: T. KLUTHE
DRAWN BY: A. HASTINGS
DESIGNED BY: N/A

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PROJ. NO.: 112618
ACAD FILE: Newton Figure 4.dwg

NO.	REVISION	BY	DATE
0	-	—	—
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0	-	—	—
0	-	—	—
0	-	—	—

PLOTTED: 20 Oct 2010, 3:46pm, MGardella

Appendix A

Site Assessment Checklists

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name: NEWTON POWER STATION Date: 8/19/10

Unit Name: PRIMARY ASH POND Operator's Name: AMEREN

Unit I.D.: — Hazard Potential Classification: High (Significant) Low

Inspector's Name: TONY DEVINE + TRAVIS KLUTHE

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?	SEE BELOW		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	"		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	N/A		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	N/A		Is water entering inlet, but not exiting outlet?	N/A	
5. Lowest dam crest elevation (operator records)?	555		Is water exiting outlet, but not entering inlet?	N/A	
6. If instrumentation is present, are readings recorded (operator records)?	X		Is water exiting outlet flowing clear?	N/A	
7. Is the embankment currently under construction?		X	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)?		X	From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)	X		At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	N/A		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	N/A		Around the outside of the decant pipe?	N/A	
15. Are spillway or ditch linings deteriorated?	N/A		22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?	N/A		23. Water against downstream toe?	X	
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

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
1.	WEEKLY IN-HOUSE VISUAL. ANNUALLY BY AMEREN'S DAM + SAFETY GROUP.
6.	READINGS ARE BEING TAKEN + WILL BE IN DRAFT REPORT.
9.	MINOR + ISOLATED SMALL TREES (1-3" ϕ).
23.	WET @ TOE ALONG WEST SLOPE.

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # — INSPECTOR Tony Devine + Travis Kluthe

Date 8/19/10

Impoundment Name Newton Power Station

Impoundment Company Primary Ash Pond

EPA Region 5

State Agency (Field Office) Addresss IL EPA - 1021 N. Grand Ave. East Springfield, IL. 62794

Name of Impoundment Primary Ash Pond

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New _____ Update X

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

IMPOUNDMENT FUNCTION: Settling Pond + Ash Storage.

Nearest Downstream Town : Name Breaches into Lake, if Lake overflows

Distance from the impoundment ± 20 m. Nearest city: Clay City, IL.

Impoundment Location: Longitude 88 Degrees 17 Minutes 0.65 Seconds; Latitude 38 Degrees 55 Minutes 42.12 Seconds (Approx. Center of Pond)

State Illinois County Jasper

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

If So Which State Agency? IL DNR # IL0049191 (Discharge only)

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.

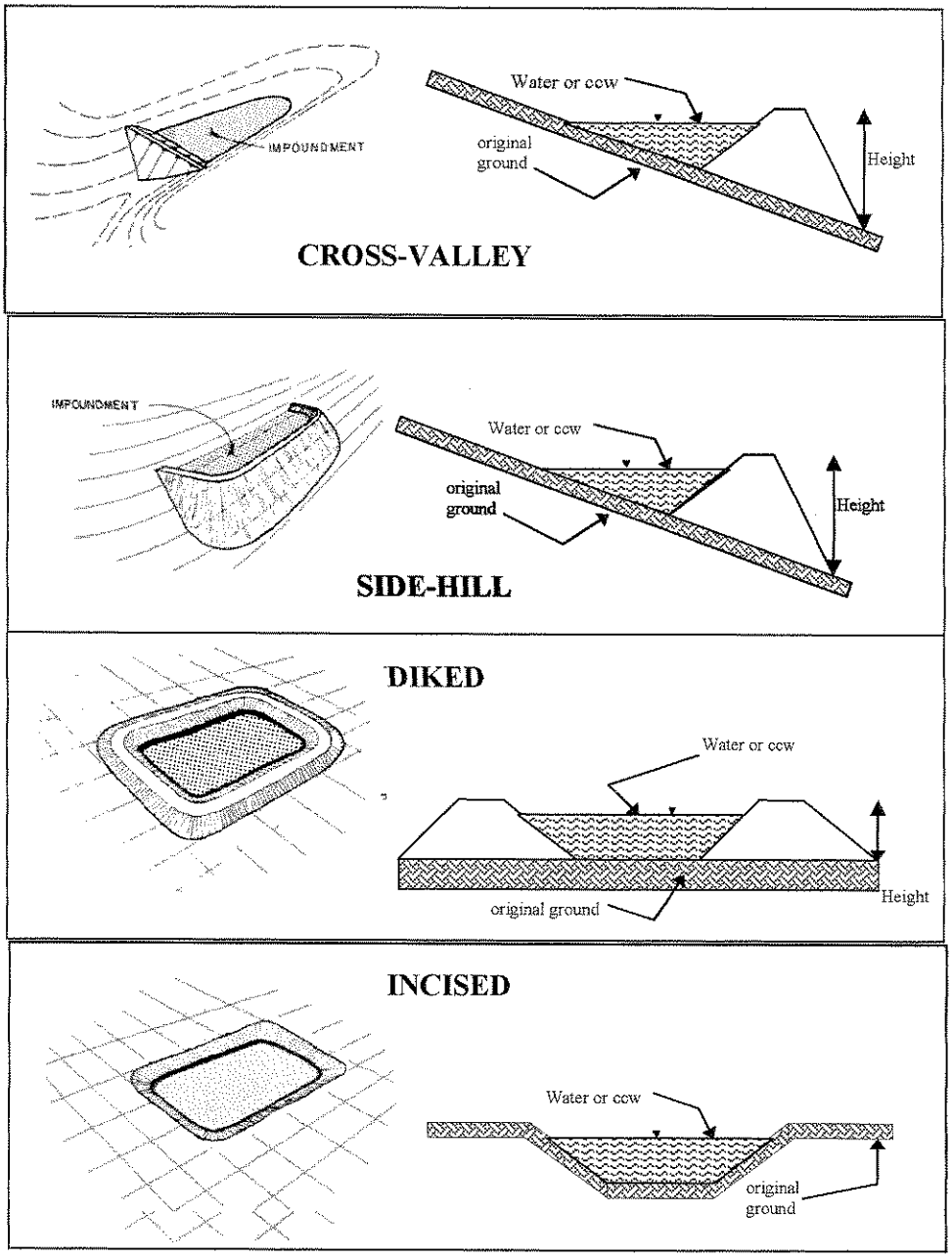
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. 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:

NO LOSS OF LIFE RISK, BREACHES INTO CAVE NEWTON; ENVIRONMENTAL IMPACTS.

CONFIGURATION:



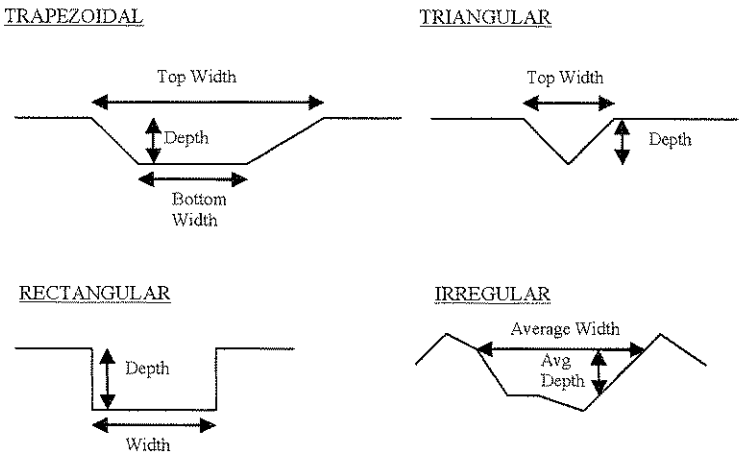
_____ Cross-Valley
_____ Side-Hill
__K__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

Embankment Height 8-45 feet
Pool Area 400 acres
Current Freeboard 19 feet
Embankment Material NATURAL SOILS
Liner NONE
Liner Permeability N/A

TYPE OF OUTLET (Mark all that apply)

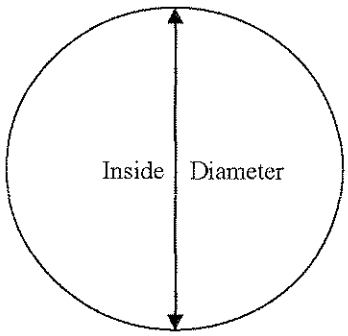
_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular NONE
_____ Rectangular
_____ Irregular

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



X **Outlet**

30" inside diameter



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

_____

Is water flowing through the outlet? YES X NO _____

_____ **No Outlet**

FIRST WEIR BOX @ ELEV. 512, SECOND WEIR @ ELEV. 536.

_____

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

The Impoundment was Designed By SARGENT & LUNDY, CHICAGO, IL. IN 1974

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: NEWTON POWER STATION Date: 8/19/10

Unit Name: SECONDARY ASH POND Operator's Name: AMEREN

Unit I.D.: — Hazard Potential Classification: High (Significant) Low

Inspector's Name: TONY DEVINE + TRAVIS KLUTHE

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?	See Below		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	"		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	N/A		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	N/A		Is water entering inlet, but not exiting outlet?	N/A	
5. Lowest dam crest elevation (operator records)?	534		Is water exiting outlet, but not entering inlet?	N/A	
6. If instrumentation is present, are readings recorded (operator records)?	X		Is water exiting outlet flowing clear?	N/A	
7. Is the embankment currently under construction?		X	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)?		X	From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)	X		At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	N/A		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	N/A		Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?	N/A		22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?	N/A		23. Water against downstream toe?		X
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

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
1.	WEEKLY IN-HOUSE VISUAL. ANNUALLY BY AMEREENS DAM SAFETY GROUP.
6.	READINGS ARE BEING TAKEN & WILL BE IN DRAFT REPORT.
9.	ISOLATED SMALL TREES + BRUSH (<1" ϕ) @ SE CORNER.

EPA FORM -XXXX

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # — INSPECTOR TONY DEVINE + TRAVIS KLUTHE

Date 8/19/10

Impoundment Name NEWTON POWER STATION

Impoundment Company AMEREN

EPA Region 5

State Agency (Field Office) Addresss IL EPA - 1021 N. GRAND AVE. EAST SPRINFIELD, IL. 62794

Name of Impoundment SECONDARY ASH POND

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New _____ Update X

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

IMPOUNDMENT FUNCTION: SETTLING POND + ASH STORAGE

Nearest Downstream Town : Name BREACHES INTO PRIMARY POND OR LAKE

Distance from the impoundment CLAY CITY, IL. ± 20 m

Impoundment Location:

Longitude -88 Degrees 17 Minutes 26.30 Seconds

Latitude 38 Degrees 55 Minutes 19.04 Seconds

State ILLINOIS County _____

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

If So Which State Agency? IL DNR # IL0049191 (DISCHARGE ONLY)

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.

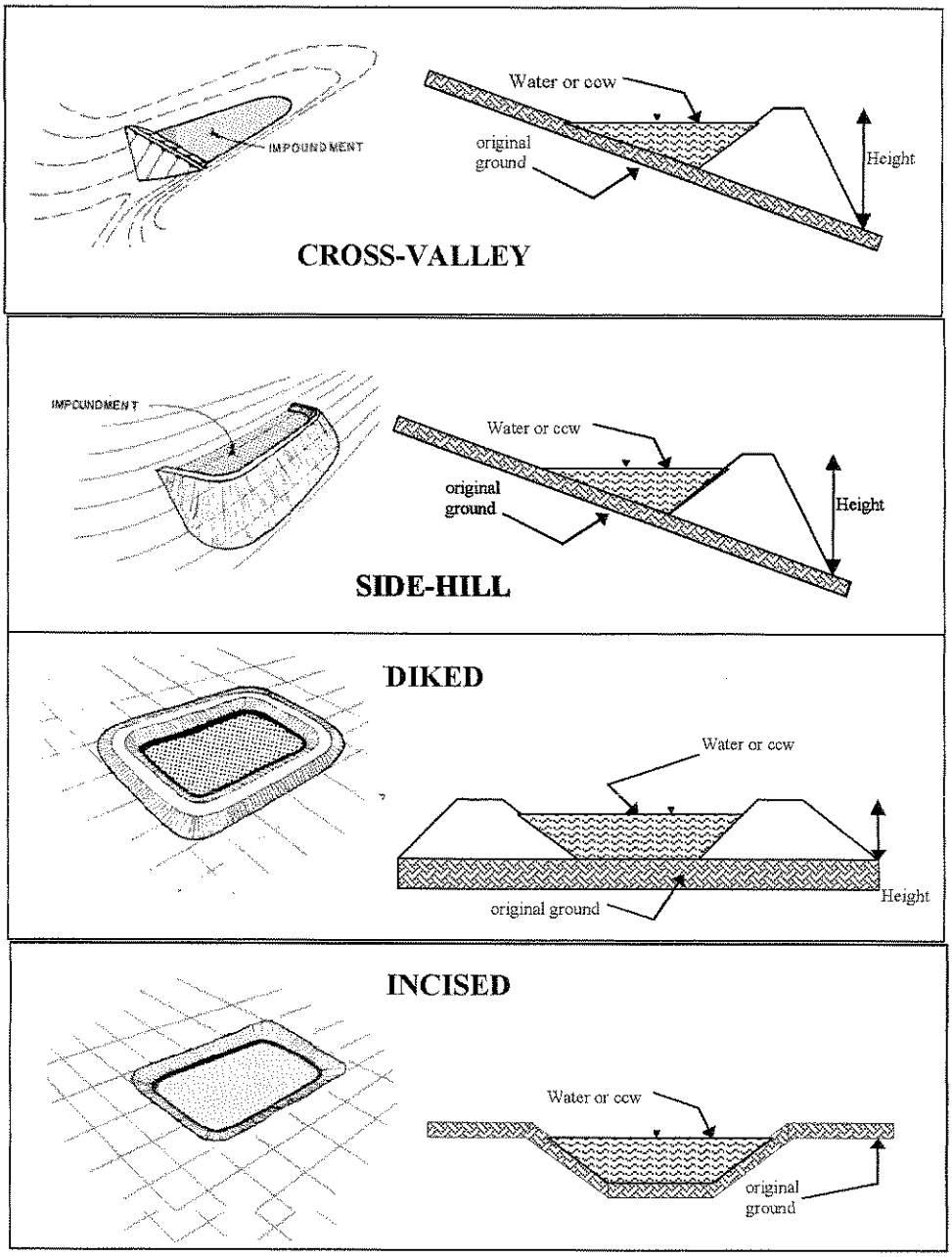
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. 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:

No Loss of Life Risk. Breaches into primary pond or Lake Newton. If into Lake; Environmental Impacts.

CONFIGURATION:



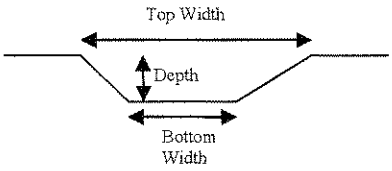
_____ Cross-Valley
_____ Side-Hill
__K__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

Embankment Height 30 feet
Pool Area 9 acres
Current Freeboard 15 feet
Embankment Material NATURAL SOILS
Liner None
Liner Permeability N/A

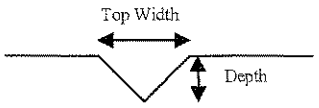
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular ? NONE
_____ Irregular

TRAPEZOIDAL

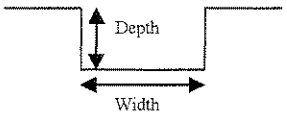


TRIANGULAR

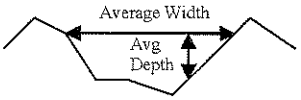


_____ depth
_____ bottom (or average) width
_____ top width
_____

RECTANGULAR

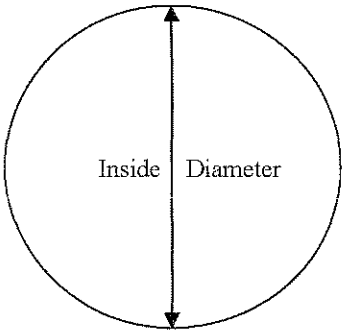


IRREGULAR



K **Outlet**

_____ inside diameter



Material
K corrugated metal 30" CMP; LINED W/CIPP IN 2009.
_____ welded steel
_____ concrete
_____ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

_____

Is water flowing through the outlet? YES K NO _____

_____ **No Outlet**

_____ WEIR BOX INVERT ELEV. @ 506.

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

The Impoundment was Designed By SARGENT + LUNDY, CHICAGO, IL. IN 1974.

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 B

Site assessment Photographs

Photo 1 – Looking East along North embankment

Photo 2 – Shrubs at downstream toe

Photo 3 – Looking South along East embankment, vegetation on upstream slope

Photo 4 – Looking South along East embankment, vegetation on downstream slope

Photo 5 – Monitoring well at toe

Photo 6 – Road up downstream slope to pump house

Photo 7 – Looking South along East embankment

Photo 8 – Vegetation on upstream slope looking Southwest along East embankment

Photo 9 – Monitoring well

Photo 10 – Max section, downstream

Photo 11 – Max section, upstream

Photo 12 – Boring on the downstream slope

Photo 13 – Junction of separating dike

Photo 14 – Secondary pond outlet

Photo 15 – Secondary pond outlet

Photo 16 – Secondary pond outlet

Photo 17 – CIPP lining slipped into CMP, discharging into Lake Newton

Photo 18 – CIPP lining slipped into CMP

Photo 19 – Primary pond outlet

Photo 20 – Primary pond outlet

Photo 21 – Monitoring well on downstream toe

Photo 22 – Looking North along West embankment

Photo 23 – Looking East along North embankment

Photo 24 – Road on upstream slope

Photo 25 – Road on downstream slope

Photo 26 – Minor vegetation on upstream slope

Photo 27 – Discharge pipes

Photo 28 – Looking East along North embankment

Photo 29 – Pipe crossing approximately 2 feet below grade

Photo 30 – Primary pond looking South from North embankment

Photo 31 – Primary pond looking South from North embankment

Photo 32 – Looking West along North embankment

Appendix C

Response Letter to the EPA's Section 104(e) Request for Information

NEWTON

Ameren Services

Environmental Services
314.554.2388 (Phone)
314.554.4182 (Facsimile)
ppike@ameren.com

One Ameren Plaza
1901 Chouteau Avenue
PO Box 66149
St. Louis, MO 63166-6149

March 26, 2009

Mr. Richard Kinch
US Environmental Protection Agency (53306P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Ameren

RE: Request for Information under Section 104 (e) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9604(e)

Dear Mr. Kinch:

This letter and attachments are AmerenEnergy Generating and AmerenEnergy Resources Companies' response to the United States Environmental Protection Agency's request for information relating to the surface impoundments or similar diked or bermed management unit(s) or management units designated as landfills which receive liquid-borne material from a surface impoundment used for the storage or disposal of residuals or by-products from the combustion of coal, including, but not limited to, fly ash, bottom ash, boiler slag, or flue gas emission control residuals.

AmerenEnergy Generating and AmerenEnergy Resources Companies have received requests for information about their five coal-fired power stations in Illinois. Although most of our surface impoundments are not considered to be dams by State or Federal regulations, we are subject to State and Federal NPDES regulations and have had Agency personnel inspect these units. We are providing a full and complete response to each separate request for information set forth in your Enclosure A (attached) with responses corresponding to numbering in your questions. If you have any further questions please feel free to contact Paul Pike at (314) 554-2388.

I certify that the information contained in this response to EPA's request for information and the accompanying documents is true, accurate, and complete. As to the identified portions of this response for which I cannot personally verify their accuracy, I certify under penalty of law that this response and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, those persons directly responsible for gathering the information, the information submitted is, to the best of my

knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Sincerely,

Michael L. Menne
Vice President – Environmental Services

Enclosure A

Please provide the information requested below for each surface impoundment or similar diked or bermed management unit(s) or management units designated as landfills which receive liquid-borne material for the storage or disposal of residuals or by-products from the combustion of coal, including, but not limited to, fly ash, bottom ash, boiler slag, or flue gas emission control residuals. This includes units that no longer receive coal combustion residues or by-products, but still contain free liquids. .

1. Relative to the National Inventory of Dams criteria for High, Significant, Low, or Less-than-Low, please provide the potential hazard rating for each management unit and indicate who established the rating, what the basis of the rating is, and what federal or state agency regulates the unit(s). If the unit(s) does not have a rating, please note that fact.

2. What year was each management unit commissioned and expanded? ;

3. What materials are temporarily or permanently contained in the unit? Use the following categories to respond to this question: (1) fly ash; (2) bottom ash: (3) boiler slag; (4) flue gas emission control residuals; (5) other. If the management unit contains more than one type of material, please identify all that apply. Also, if you identify "other," please specify the other types of materials that are temporarily or permanently contained in the unit(s).

4. Was the management unit(s) designed by a Professional Engineer? Is or was the construction of the waste management unit(s) under the supervision of a Professional Engineer? Is inspection and monitoring of the safety of the waste-management unit(s) under the supervision of a Professional Engineer?

5. When did the company last assess or evaluate the safety (i.e., structural integrity) of the management unit(s)? Briefly describe the credentials of those conducting the structural integrity assessments/evaluations. Identify actions taken or planned by facility personnel as a result of these assessments or evaluations. If corrective actions were taken, briefly describe the credentials of those performing the corrective actions, whether they were company employees or contractors. If the company plans an assessment or evaluation in the future, when is it expected to occur?

6. When did a State or a Federal regulatory official last inspect or evaluate the safety (structural integrity) of the management unit(s)? If you are aware of a planned state or federal inspection or evaluation in the future, when is it expected to occur? Please identify the Federal or State regulatory agency or department which conducted or is planning the inspection or evaluation. Please provide a copy of the most recent official inspection report or evaluation.

7. Have assessments or evaluations, or inspections conducted by State or Federal regulatory officials conducted within the past year uncovered a safety issue(s) with the management unit(s), and, if so, describe the actions that have been or are being taken to deal with the issue or issues. Please provide any documentation that you have for these actions.

8. What is the surface area (acres) and total storage capacity of each of the management units? What is the volume of materials currently stored in each of the management unit(s)? Please provide the date that the volume measurement(s) was taken. Please provide the maximum height of the management unit(s). The basis for determining maximum height is explained later in this. Enclosure.

9. Please provide a brief history of known spills or unpermitted releases from the unit within the last ten years, whether or not these were reported to State or federal regulatory agencies. For purposes of this question, please include only releases to surface water or to the land (do not include releases to groundwater).

10. Please identify all current legal owner(s) and operator(s) at the facility.

AmerenEnergy Generating Company Response

Newton Power Station
6725 North 500th Street
Newton, Illinois 62448

1. Coal-combustion by-product surface impoundments at this Station are not classified as dams by State or Federal regulatory agencies so they have not been rated.

2. See table below.

Management Unit	Year Commissioned or Expanded
Primary Ash Pond	1977
Secondary Ash Pond	1977

3. See table below.

Management Unit	Materials Contained in Unit*
Primary Ash Pond	1, 2, 5
Secondary Ash Pond	1, 2, 5

*Use the following categories to respond to this question: (1) fly ash; (2) bottom ash: (3) boiler slag; (4) flue gas emission control residuals; (5) other.

Other types of materials that are temporarily or permanently contained in the unit(s) include, but are not limited to residual wastes remaining following treatment of wastewater from these systems: primary water treatment; boiler water make-up treatment; laboratory and sampling streams; boiler blowdown; floor drains; coal pile run off; house service water systems; and pyrites.

4. The management units at this facility were designed by a Professional Engineer. The construction of the management units were done under the supervision of a Professional Engineer. And, inspection and monitoring of the safety of the waste management units is under the supervision of a Professional Engineer.

5. The most recent annual internal professional engineering inspection of the management units occurred in 2009. Since these management units are not classified by regulation as dams the evaluation only included a visual inspection of the units. AmerenEnergy Resources Company has formed a Dam Safety Group consisting of civil engineers who oversee the implementation of the company Dam Safety Program and this Group is supervised by a

licensed Professional Engineer. The Dam Safety Program requires routine, annual and special inspection of the ash ponds and employees performing these inspections receive dam safety training. If maintenance issues are identified in these visual inspections, then corrective actions are taken by either plant employees or contractors to remedy the issue and final acceptance of the work is reviewed and evaluated by Dam Safety Group personnel.

6. No State, or Federal regulatory official has inspected or evaluated the safety (structural integrity) of the management unit(s), and we are not aware of a planned state or federal inspection or evaluation in the future.

7. Not applicable, see response to Question 6.

8. See table below.

Management Unit	**Surface Area (Acres)**	**Total Storage Capacity (Acre-ft)**	**Volume of Stored Ash (Acre-ft)**	**Maximum Height of Unit (ft.)**
Primary Ash Pond	400	9250	2000	47
Bottom Ash Pond	9.3	83	minimal	29

The volume measurement includes area excavated below natural surface level and was determined in 2007.

9. Assuming that brief history means incident(s) which could have occurred in the last ten (10) years, we are not aware of any spills or unpermitted releases of coal-combustion by-products from our surface impoundments to surface water or to the land.

10. The current legal owner and operator at the facility is AmerenEnergy Generating Company.