AEP John E Amos Power Plant
St. Albans, Putnam County, West Virginia
US EPA Inspection
Fly Ash Dam and Bottom Ash Pond Complex
Action Plan based on Final Recommendations
December 2009

1.2 Bottom Ash RECOMMENDATIONS

1.2.1 Recommendations Regarding the Structural Stability

Planned dam modification should assure structural stability, but if the existing conditions remain for several years, we recommend a structural stability analysis for various embankments in the Bottom Ash Pond Complex.

Response:

The approved dam modifications will be constructed in 2010.

1.2.2 Recommendations Regarding the Hydrologic/Hydraulic Safety

None appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2.3 Recommendations Regarding the Supporting Technical Documentation

None appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2.4 Recommendations Regarding the Description of the Management Unit(s)

None appear warranted at this time

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2.5 Recommendations Regarding the Field Observations

None appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2.6 Recommendations Regarding the Maintenance and Methods of Operation

The maintenance and operation of the dam seem to be adequate. However, the following recommendations may help maintain safe and trouble-free operation:

• Upon approval of the proposed upgrades to the Bottom Ash Pond complex, proceed with due speed to implement the improvements.

Response:

The approved dam modifications will be constructed in 2010.

• The observed crack in the concrete spillway discharge channel and the vegetation in the joints should be sealed and repaired as needed, especially if the spillway is not removed with the proposed modifications to the complex;

Response:

The approved dam modifications will be constructed in 2010. This work includes the removal of the concrete spillway channel. The cracks in the concrete spillway section were repaired and sealed in 2009 as temporary work until the dam modifications are completed.

• Before constructing the proposed modifications, the reservoir's major trees and sources of floating debris should be cut and removed to reduce the chance of blockage of the new pipe spillways;

AEP performed additional vegetation control in November and December 2009. This work included removal of trees within the reservoir area.

• The observed small "vole" tunnels should be filled and the voles controlled as needed to prevent damages to the vegetation cover;

Response:

The "vole" tunnels were sealed with bentonite clay pellets in 2009. As part of the approved dam modifications, AEP will repair any additional voids created by the voles and closely monitor the facility during the monthly inspections to prevent damages to the vegetative cover.

• Verify successful completion of the removal of fill from the emergency spillway at the crest of the dam;

Response:

AEP removed the fill within the emergency spillway as part of other maintenance work completed in December 2009. The approved dam modifications will be constructed in 2010.

• Monitor slopes showing erosion and backfill erosion gullies;

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP). Monthly inspections of the facility are performed by Plant personnel and AEP Engineering conducts an annual inspection. If erosion areas are noted during the inspections, repairs will be performed and stabilized.

• Mowing should be performed at least annually for proper monitoring of slopes (some tall brush was observed at several locations in Pond 1B and some minor brush observed along the slopes of the Treatment and the Sedimentation ponds);

Response:

AEP fully understands that maintenance of the facilities is part of the actions required to ensure the integrity of the dam and dikes at the AEP facilities. Therefore, AEP will continue a proactive maintenance and monitoring program as established. As part of our annual maintenance program, mowing is performed at least twice a year. Mowing will be coordinated such that the visual inspections can be performed without hindrance.

• Perform a hydrologic and hydraulic analysis to ensure suitability of the existing drainage shaft 1A (in Pond 1B) to handle design storm;

Response:

The approved dam modifications will be constructed in 2010. As part of the engineering analyses to support the modifications, hydrologic and hydraulic analyses were performed. The facility will be modified to adequately handle the design storm.

• Install support to the wooden stairs down to drainage shaft 1A (in Pond 1B).

Response:

AEP performed additional maintenance work since the date of the inspection of this facility. The work included repairs to the wooden stairs to the drainage shaft. This work will be completed by February 2010.

1.2.7 Recommendations Regarding the Surveillance and Monitoring Program

Continue current program

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2.8 Recommendations Regarding Continued Safe and Reliable Operation

None appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2 Fly Ash RECOMMENDATIONS

1.2.1 Recommendations Regarding the Structural Stability

None appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam inspection and maintenance program (DIMP).

1.2.2 Recommendations Regarding the Hydrologic/Hydraulic Safety

None appear warranted at this time. However it is recommended that a new analysis be provided with updated survey information, since the last dam break analysis was performed over 15 years ago. The John Amos Monitoring and Emergency Action Plan dated January 24, 2008 (see Appendix A-Doc 02) presents a comprehensive assessment of critical infrastructures downstream of the dam. According to Appendix D of this document, a number of residences and businesses have also been identified to be within the flood inundation area. However, the inundation area is apparently based on the original dam break analysis. Several changes in the assumption and methodology compared to the original analysis would be required to assure the new dam break analysis would be consistent with current engineering practice. These changes are listed in Section 6.1.4 of this report.

Response:

AEP is currently evaluating the continued use of this facility. If the ash dam is not abandoned, AEP will consider updating the dam break analysis and corresponding flood inundation mapping.

1.2.3 Recommendations Regarding the Supporting Technical Documentation

No recommendations appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam and dike inspection and maintenance program (DIMP).

1.2.4 Recommendations Regarding the Description of the Management Unit(s)

No Recommendations appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam and dike inspection and maintenance program (DIMP).

1.2.5 Recommendations Regarding the Field Observations

No recommendations appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam and dike inspection and maintenance program (DIMP).

1.2.6 Recommendations Regarding the Maintenance and Methods of Operation

The maintenance and operation of the dam seem to be adequate. However, the following recommendations may help maintain safe and trouble-free operation:

• The WV – Dam Safety report (see Appendix A- Doc 09) indicated that AEP engineers inspected the tunnel and pipe in October 2008. The AEP inspection report concluded the tunnel and pipe were in good condition. The AEP report included a recommendation that the spillway tunnel be re-lined or abandoned. The WV-Dam Safety report indicated that the tunnel will be abandoned and fully grouted as part of the planned dam expansion project;

Response:

AEP has withdrawn the plans for the dam expansion project. The Company is currently evaluating the condition and repair options for the tunnel. The final recommendation report will be completed by December 2010. Any repairs that are necessary will be performed by December 2011.

• Repair access stairs and walkways to monitoring points if the dam is not expanded;

Response:

AEP is currently evaluating the continued use of this facility. If the ash dam is not abandoned, the stairs and walkways will be repaired by December 2010.

• Evaluate the cause of movement restrictions of floating docks around the decant riser and repair wooden walkway to overflow structure;

Response:

AEP has completed repairs in December 2009 to the walkway and floating skimmer structure at the decant structure. Site inspections and observations have noted that the repairs to the floating walkway and dock have corrected the problems and the system operates as designed.

• Evaluate valve condition at the overflow structure to assure it is operational in case flow out of the pond needs to be stopped;

Response:

AEP is preparing plans to repair the valve within the decant riser. This work will be completed by November 2010.

• Monitor, address or otherwise repair minor erosion areas and erosion gullies, wet areas and isolated seepage spots.

Response:

AEP will continue to monitor seepage and erosion as part of its Dam Inspection and Maintenance Program (DIMP). Monthly inspections of the facility are performed by Plant personnel and AEP Engineering conducts an annual inspection. If erosion areas are noted during the inspections, repairs will be performed and vegetated. Any areas showing signs of increased seepage will be monitored more frequently and evaluated by AEP engineering staff.

1.2.7 Recommendations Regarding the Surveillance and Monitoring Program

Continue monitoring existing groundwater, seepage locations and survey monuments.

Response:

AEP acknowledges this comment and will continue its dam and dike inspection and maintenance program (DIMP), which includes monitoring of the piezometric surface, seepage and semi-annual deformation surveys.

1.2.8 Recommendations Regarding Continued Safe and Reliable Operation

No recommendations pertaining to the continued safe and reliable operation of the management unit appear warranted at this time.

Response:

AEP acknowledges this comment and will continue its dam and dike inspection and maintenance program (DIMP).