Allegheny Energy

Environment, Health & Safety

800 Cabin Hill Drive
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FEDEX and EMAIL

May 20, 2010

Mr. Stephen Hoffman
US Environmental Protection Agency
Two Potomac Yard
2733 S. Crystal Yard
5th Floor: N-237
Arlington, VA 22202-2733
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Dear Mr. Hoffman:

PLEASANTS POWER STATION
McELROY'S RUN DAM
WILLOW ISLAND, WV
ALLEGHENY ENERGY SUPPLY COMPANY, LLC
COMMENTS TO THE ASSESSEMENT OF DAM SAFETY COAL COMBUSTION
SURFACE IMPOUNDMENTS FINAL REPORT

Allegheny Energy Service Corporation as an agent for Allegheny Energy Supply Company, LLC (Allegheny Energy) is responding with their comments on the Final Report of the Assessment of the Dam Safety Coal Combustion Surface Impoundment for the Pleasants Power Station.

The Final Report was transmitted to Allegheny Energy under an EPA email letter dated April 21, 2010 from Mr. James Kohler, Environmental Engineer. The report is understood to have been prepared in conjunction with an October 13-14, 2009 site assessment along with our comments that were submitted to your office regarding the Draft Report on January 27, 2010.

Allegheny Energy thanks the Environmental Protection Agency (EPA) and their subcontractor, CHA for their review of our comments regarding the Draft Report and appreciates the opportunity to respond to comments made by the EPA in the April 21, 2010 Final Report.

As requested we have responded to each of your recommendations and have provided a schedule for implementing each of the recommendations.

4.2 Surface Degradation

EPA Comment:
In general, the embankment slopes were in acceptable condition. However, several areas of thin vegetation, erosion rills and animal burrows were observed on both the upstream and downstream slopes of the dam. Continued vigilance to these types of issues is always warranted on an earthen embankment. CHA understands that the weekly inspections by Plant personnel include evaluating the surface condition and addressing conditions where necessary. In addition, we recommend best management practices be implemented on the active work bench areas to minimize concentrated stormwater run-off when work ceases for more than a couple of days or when heavy rain is expected.

Allegheny Energy Response:
Pleasants Power station supervisory personnel have reminded the contractor that maintains the active work bench area to keep best management practices current. Also discussed with the contractor was the point to use best management practices on the active work bench area including minimizing concentrated stormwater run-off when work ceases for more than several days or when heavy rain is anticipated. As reported in our comments from the Draft Report, Allegheny Energy's present construction practices incorporate many best management practices including collecting and redirecting stormwater to minimize surface erosion off the active benches. Allegheny Energy also performs grading on active work bench areas in a manner that directs surface water towards armored channels that lead to sedimentation ponds and avoids over-slope flow conditions.

It was also observed during our annual inspection held in conjunction with WVDEP, a consulting firm and Pleasants Power Station personnel on May 12, 2010 that grassy vegetation growth continues to flourish on both the downstream and upstream slopes.

4.3 McElroy's Run Dam Hydrologic and Hydraulic Analysis

EPA Comment:
We recommend that confirmation of stormwater drawdown times be made. Currently there is conflicting statements in various reports reviewed by CHA as to what rate the primary spillway and siphon outlet can drain storm surcharges from the reservoir.

Allegheny Energy Response:
Allegheny Energy will confirm the stormwater drawdown times for the primary spillway and siphon outlet and publish the results in the operation documents for the facility. This activity will be completed by the end of 2010.

4.4 McElroy's Run Dam Recommendations for Additional Stability Analyses

EPA Comment:
Allegheny Energy's consultant, GAI, concluded that storm surcharges could not be removed from the reservoir quickly enough for a rapid drawdown condition to develop. As mentioned in Section 4.3, there is conflicting information on the rate of drawdown possible at this site. In addition, while CHA understands that rapid drawdown via pumping or other discharge methods may be undesirable for a waste disposal impoundment, CHA suggests that in the event of an emergency at the facility, rapid drawdown may be more desirable to reduce hydrostatic pressures on the dam, thereby preventing a more catastrophic collapse. There have also been documented case histories where other types of failure (such as a gate failure) have resulted in rapid drawdown conditions developing which have led to a domino effect and made the situation
worse. For these reasons, CHA recommends that a rapid drawdown analysis be performed. CHA was also not provided with a Flood Pool loading condition stability analysis, which while not specifically required under WVDEP regulations, US Army Corps of Engineers guidelines in EM-1110-2-1902 suggest a factor of safety under flood pool conditions of 1.4 is appropriate. Again, since there is the possibility that slow drainage of storm surcharge will occur, confirmation of drainage of the storm surcharge in the required time, and a stability analysis showing that the embankment is stable at the raised flood pool should be made.

Allegheny Energy Response:
A rapid drawdown analysis will be performed. The analysis will be based in part on soil parameters obtained from laboratory testing as a part of the response to recommendation 4.5. Therefore the results of these analyses will be presented along with the results of other analyses by the end of 2010.

A flood pool loading condition stability analysis of the downstream slope will also be conducted. This analysis will also be based in part on the results of the testing for recommendation 4.4, and therefore, will be presented with the results of the other analyses by the end of 2010.

4.5 McElroy's Run Dam Recommendations for Additional Soil Behavior Analyses

EPA Comment:
CHA was not provided with an evaluation of liquefaction susceptibility of the foundation or dam embankment soils.

The majority of the dam is constructed from fly ash. While reports suggest the fly ash was compacted during construction, soil properties used in stability analyses were reportedly based on the engineer of record's experience with no site specific backup of these properties. In addition, some of the soil strata defined in the slope stability analyses (as summarized in Table 4) were also reported to be assumed values. CHA recommends that soil strata having an impact on the overall stability of McElroy's Run Dam have site specific verification of in situ soil properties determined, and stability subsequently verified if properties vary from those used in previous analyses.

Allegheny Energy Response:
Many tests of soils from the site have been made over the years, but the results have not been summarized in a convenient location. Replacement piezometers are to be installed at the locations of currently damaged piezometers CP- 9 and CP-11. (See recommendation 4.6.) Allegheny Energy will take this opportunity to conduct standard penetration tests and to obtain undisturbed Shelby tube samples of the fly ash at various depths in conjunction with making the borings for the piezometers. Laboratory tests will be conducted to determine the strengths and densities of the samples obtained. The borings at these locations will encounter both fly ash placed as compacted fill for the downstream slope of the original dam embankment as well as fly ash placed using less compaction in the disposal area portion of the fly ash embankment. Thus, properties of both levels of compaction will be obtained from samples from these borings. The results of the testing will be compared with the parameters used in the original design stability analyses to see if they are still applicable or if additional analyses are warranted.

The liquefaction susceptibility of the facility will also be assessed as a part of these activities.

These activities will be completed and the results reported by the end of 2010.

4.6 McElroy's Run Dam Movement and Piezometer Data Changes

EPA Comment:
The recent instrumentation reports suggest that a couple of piezometers that formerly were dry have seen as much as 10 feet of water in them. During this same period the apparent movement of the dam has shifted from a trend of the instruments reading southwesterly movement (i.e., upstream toward the left abutment), to a trend suggesting downstream northeasterly movement. CHA recommends that in light of changing piezometer level readings, a further evaluation of the water levels and survey data be performed to confirm that these data are not indicating a change in the behavior of the embankment.

We understand that some instruments have become inactive because of ongoing landfill operations but that in February 2009 previously non-functional piezometers (CP-2, CP-6, and CP-10) were replaced. An additional piezometer has become inactive at the time of this report, but replacement is planned.

AE Response:
The piezometers are read and evaluated weekly, and conclusions of the evaluations are published each year in the formal annual inspection report prepared by the consulting firm inspecting the facility. Previous evaluations of the piezometer data and the survey monument movement data have concluded that the observed changes are relatively small and do not indicate either instability or conditions leading to instability. The water levels measured in the piezometers are below those used in the stability analyses for the design of the facility. Surveyed movements over the past 13 years of the five survey monuments in the upstream slope near the crest of the 2,100-foot long, 225-foot high embankment have been on the order of 1 to 3 inches of settlement and 1 to 4 inches of horizontal movement in the upstream direction. (It should be noted that the survey monuments are small diameter aluminum monuments reportedly installed to depths of 30 inches. Thus, frost and desiccation may some affect on the positions of the shallow monuments.)

The 2010 annual inspection of the facility was conducted by a consulting firm and by WVDEP on May 12, and a survey of the monitoring points was also performed in 2010. Thus, the next report of the annual inspection will report on the evaluation of the most recent survey and piezometer data, and will indicate if the data suggest any adverse trends relative to embankment stability. The next report will also include plan-view plots of the resultant horizontal movements, which make it easier to observe the unavoidable normal scatter in the survey data as well as the trends of the data. This report should be available by the end of July 2010 after the results of the monument survey have been made available to the inspection team.

4.7 McElroy's Run Dam Routine Inspection Procedures

EPA Comment:
West Virginia regulation require inspections be made following a storm event equal to or greater than a 50-year, 6-hour rainfall. The Monitoring and Emergency Action Plan and Operations Plan for McElroy's Run Dam indicates inspections are made following storm events equal to a 25-year, 24-hour storm event. Because these storm events are of different durations, it is difficult to directly compare which would have a greater likelihood of causing erosion or sloughing from saturation. CHA recommends the inspection procedures for McElroy's Run Dam be clarified to be consistent with West Virginia regulation, and include storm events as required now as well if deemed appropriate by Allegheny Energy and/or their consultant.

Allegheny Energy

Allegheny Energy Response:
Allegheny Energy will modify its *Monitoring and Emergency Action Plan and Operations Plan* for McElroy's Run Dam to include that inspections will be made following storm events equal to a 25-year, 24-hour storm event and equal to a 50-year, 6-hour rainfall. This information will be included in our updated *Monitoring and Emergency Action Plan and Operations Plan* which is due for review by WVDEP by September 30, 2010.

Again, we appreciate the opportunity to comment on the Final Report and will be pleased to answer any questions regarding this information. Should you have any questions or require any additional information, please contact Gary Haag, P.E. (724) 830-5459.

Sincerely,

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Vice President, Generation Operations

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