

US EPA ARCHIVE DOCUMENT

NOTE

Subject: EPA Comments on PPL Generation, LLC - PPL Brunner Island Power Station,
York Haven, PA
Round 10 Draft Assessment Report

To: File
From: Jana Englander, OSWER, US EPA

Date: April 30, 2012

1. On page i, "Executive Summary," the justification for the rating of Ash Basin No. 6 as **Significant** is poorly worded and should be clarified: "The hazard potential rating is based on GZA's opinion that failure of the embankment is not likely to result in loss of human life, due to the size of the structure, limited habitation adjacent to the basin buffering of impacts by the Susquehanna River." Also, see Section 1.2.7 "Hazard Potential Classification" as wording should be similarly revised in this section.
2. On p. iii, last paragraph under "Remedial Measures" and p. 14, section 3.5, the report states:
"It is our understanding that permanent closure of the basin is expected to begin approximately 1 to 1.5 years after the date of this inspection based on conversations with PPL personnel during the onsite inspection. In GZA's opinion it would be prudent for PPL to at least implement the above recommended operations and maintenance and minor repair activities. We acknowledge that implementation of some of the above studies and analyses and remedial measures recommendations may not be critical given the current permanent closure plans. However based on our review of the HDR report, we understand that the factor of safety for the rapid drawdown condition, which could occur during the recession of major flooding on the Susquehanna River, is below required minimum values. Therefore it must be noted that regardless of whether or not the basin is permanently closed, PPL will at a minimum need to address this stability inadequacy which exists on downstream embankment portions adjacent to/along the river."
-- If the impoundment is going to be closed, there should be no need to address the stability deficiencies, as once closed, **if** the dikes will already have been breached. If during closure, the dikes will not be breached, the analyses will be necessary. Please see if there is a state approved closure plan.
3. On page 2, Section 1.2.3 "Purpose of the Basins," the report refers to "Equalization Pond." In Figure 2 "Ortho-Photo Locus Map Coal Combustion Surface Impoundments," there is no unit "Equalization Pond," but rather "Equalization Basin." If these are the same unit, this discrepancy should be reconciled and maintained throughout the report.

4. On p. 6, section 1.3.3, second paragraph, please spell out MGD, prior to using the acronym.
5. On p. 7, section 1.3.6, third paragraph, please revise the following sentence: "*Because of the relatively shallow bedrock, it was determined to provide adequate cutoff the embankments were to be constructed directly on bedrock.*"
6. On p. 10, section 2.1.5, second paragraph, replace "(Photos 27." with "(Photo 27)."
7. On p. 11 section 2.2, the report states: "*Mr. Shamory indicated during the on-site inspection that the Ash Basin No. 6, or IWTB and Equalization Pond, had failed since their construction.*"--likely want to add "not" ahead of "failed."
8. On page 11, Section 2.6 "Structural and Seepage Stability," it may be advantageous to provide calculated factors of safety along with associated minimum acceptable design factors of safety. Contractor must state calculated factors of safety in some capacity in this section.
9. On page 11, Section 2.6 "Structural and Seepage Stability," contractor should state that seismic and steady state analyses were performed, if so. The report only notes the analysis of rapid drawdown condition. Refer to previous comment (no. 8) for appropriate presentation of analysis.
10. On p. 12, section 2.6, please include a table that identifies the stability analyses performed, the minimum value for meeting FOS and the actual value from each analysis conducted.
11. We have requested that the following question be answered for each pond, this is generally accompanied with the assessment check list sheets: "*Is any part of the impoundment built over wet ash, slag, or other unsuitable materials (like TVA)?*" Please address for the Ash Basin No.6.
12. Please include stability analyses report on Ash Basin No. 6 as an appendix.

Pennsylvania Department of Environmental Protection's Division of Dam Safety Comments
On:

Draft Report – CCW Impoundments Inspection Report

Brunner Island Power Station

SES Ash Basin No. 6 Dam

York County, Pennsylvania

Report has been prepared for the U.S. Environmental Protection Agency, Washington, D.C. by GZA GeoEnvironmental, Inc.

Comments per Section of the Report:

Executive Summary

Pennsylvania Department of Environmental Protection Dam Safety Division (DDS) generally concurs with the summary prepared by GZA GeoEnvironmental, Inc. It should be noted that according to our records, the dam has a height of 39-feet. The height for DDS regulations is measured from the downstream toe of the dam to the top of the crest of the dam. DDS classifies a dam by size category and hazard potential category. Ash Basin No. 6 Dam is classified as a B-3, (B= Size Category, 3= Hazard Potential Category). The "B" identifies that the impoundment created by the dam has a storage between 1,000 acre feet and 50,000 acre feet. The "3" identifies that there would be significant property damage and no loss of life if the dam were to fail.

Studies and Analyses:

DDS concurs with GZA GeoEnvironmental's recommendations.

Operations and Maintenance Activities:

DDS concurs with GZA GeoEnvironmental's recommendations.

Minor Repairs:

DDS concurs with GZA GeoEnvironmental's recommendations.

Remedial Measures:

DDS concurs with GZA GeoEnvironmental's recommendations to address the stability inadequacy which exists on the downstream portions of the embankment that are adjacent to/along the river.

1.0 Description of Project:

DDS generally concurs with the Description of Project prepared by GZA GeoEnvironmental. It should be noted that according to section 1.2.7 Hazard Potential Classification, GZA documented that, according to PADEP Dam Safety Regulations, Ash Basin No. 6 has a hazard classification of 2. As of January 8, 2011, DDS regulations were revised and the hazard classifications were changed. Due to these changes, Ash Basin No. 6 Dam was reclassified as having a hazard classification of 3.

2.0 Inspection:

DDS concurs with GZA GeoEnvironmental's documentation.

3.0 Assessments and Recommendations:

DDS concurs with GZA GeoEnvironmental's recommendations.

4.0 Engineer's Certification:

DDS concurs with GZA GeoEnvironmental's conclusion.

PPL Comment's on Coal Ash Site Assessment R10 Draft Report - PPL Brunner Island Power

Shamory, Craig S to Stephen Hoffman, James Kohler, Jana Englander

Cc "Foltz, Robert D", "Shamory, Craig S", "Murphy, Megan A"

From: "Shamory, Craig S" <csshamory@pplweb.com>
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Hi Jana,

PPL Brunner Island LLC appreciates the opportunity to provide EPA with comments on your draft report for the inspection that you completed on May 18th, 2011 at this plant site near York Haven, PA.

PPL's comments will be first focused in general and then in specific responses to statements made in the draft report. PPL understands that it will be asked to formally respond to the inspection report once it is finalized and issued and PPL plans to do so.

General Comments:

At the end of the end of the Executive Summary on page iii, the report states:

"It is our understanding that permanent closure of the basin is expected to begin approximately 1 to 1.5 years after the date of this inspection based on conversations with PPL personnel during the onsite inspection. In GZA's opinion it would be prudent for PPL to at least implement the above recommended operations and maintenance and minor repair activities. We acknowledge that implementation of some of the above studies and analyses and remedial measures recommendations may not be critical given the current permanent closure plans. However based on our review of the HDR report, we understand that the factor of safety for the rapid drawdown condition, which could occur during the recession of major flooding on the Susquehanna River, is below required minimum values. Therefore, it must be noted that regardless of whether or not the basin is permanently closed, PPL will at a minimum need to address this stability inadequacy which exists on downstream embankment portions adjacent to/along the river."

PPL has and will continue to conduct monthly inspections of this impoundment and will complete necessary maintenance actions in consultation with our engineering contractors and PA DEP Dam Safety personnel. As you acknowledge, PPL has taken steps to eliminate the need to operate Basin No. 6 at this facility and will over the next several years be taking steps to permanently close the basin. PPL will be submitting closure plan permit applications to DEP within the next month and will commence dewatering once PPL has the necessary DEP approval. The timing for the dewatering and subsequent closure of this basin depends upon the issuance of the NPDES permit renewal which adds the river discharge point from the newly installed waste water treatment facility that was built to replace Basin No. 6. The draft NPDES permit was issued, but PA DEP will need to resolve the comments including those from the EPA they have received on the draft before they can issue the final permit.

Additionally, your report discusses concern with observed wet areas at the toe of the dike and with overgrown vegetation at the time of the inspection. PPL has the dikes mowed two times per year, but was unable to mow before this EPA inspection due to the wet conditions. One month of rain leading up to the inspection (April 18 – May 18) produced roughly 6.9 inches of rain, which is exceptionally high for this region. PPL does try to ensure that the dikes are mowed prior to our annual inspection by our outside dam engineering consultant, which has been HDR.

Specific Comments:

1. The primary reason noted in the inspection report that resulted in judging Basin No. 6 to be in POOR condition related to potential insufficient factor of safety under a rapid drawdown condition. Specifically, this issue was noted in the Executive Summary in item #1 on Page ii, in item #3 of the Studies and Analyses on Page ii, and in item #2 of the Remedial Measures on Page iii.

PPL Response:

As I mentioned to you when we talked briefly regarding this draft report, PPL has addressed this concern since the May 18, 2011 inspection was completed. A transient study, including soil sampling and lab analysis was started in 2011 and has since been completed by Schnabel Engineering to more thoroughly examine the basin's dikes behavior under rapid drawdown conditions. The study has concluded that the dikes have an adequate FS of 1.13 and the minimum recommended value is 1.1 by the United States Army Corps of Engineers. A summary of the report was provided to PA DEP Dam Safety in March 2012 and the report will be submitted with the pending closure plans. An electronic copy of Schnabel's February 17, 2012 report is attached.

2. In item #1 of the Studies and Analyses on Page ii, the report recommends that PPL: *“Perform a detailed hydrologic and hydraulic study using current methodology to evaluate the impoundment’s ability to safely pass the SDF at Ash Basin No. 6 and the Polishing Pond.”*

PPL Response:

Basin No. 6 and the Polishing Pond have no contributing watershed since the dam is a dike impoundment. By design, the basin is fed only by pumped water from the power plant and rainfall that land on the pond area within the dike perimeter. The basin’s flood procedure calls to stop flow to the basin during extreme storm events. Using a 2011 aerial survey of the basin and polishing pond, the volume of storage at the crest elevation (low crest elevation determined to be 288.5’) is roughly 3,128,500 cubic feet with water in the basin up to 286’. The surface area of the basin and polishing pond is about 3,330,000 square feet. Assuming that all of the surface area in the impoundment is impervious and rainfall runoff fills in the storage areas in the basin, we can divide the volume of storage by the surface area to determine an average rainfall depth which the basin can receive prior to overtopping with the existing discharge structure assumed out-of-service. The average rainfall depth that the basin can store is 0.94 feet or 11.3 inches prior to overtopping. According to NOAA Atlas 14 at Mt. Wolf, Pennsylvania, the 24 hour duration 500 year storm event is 10.7 inches. PPL feels that the impoundment has the ability to store a large storm event without requiring an emergency spillway. Furthermore, as part of the final stage of basin closure, the outfall structure will be removed.

3. In Section 2.2 on Page 11 of the draft report, the report states: *“Mr. Shamory indicated during the on-site inspection that the Ash Basin No. 6, or IWTB and Equalization Pond, had failed since their construction.”*

PPL Response:

I do not recall making such a statement. If I stated anything regarding these facilities it would have been that since their construction PPL has not had any structural failures. Perhaps there was just a word missing. If you add the word neither after that then the sentence makes sense. Please correct this statement.

Most importantly, based on PPL's response to the draft report, PPL believes that EPA should reconsider its rating of this facility as POOR since PPL has addressed the primary reason for that lower rating. PPL requests that EPA re-rate the facility as FAIR.

Thanks again for the opportunity to comment on this draft report. Please contact me at my email address csshamory@pplweb.com or cell phone (610) 393-8176 if you want to discuss any of these comments.

Craig

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