

US EPA ARCHIVE DOCUMENT

Thu 7/17/2014 4:44 PM

From: Malone, Michael M. <MMMalone@CPSEnergy.com>

RE: Coal Ash Site Assessment At CPS JK Spruce and JT Deely

To: Hoffman, Stephen <Hoffman.Stephen@epa.gov>; Englander, Jana <Englander.Jana@epa.gov>

Cc: Dufficy, Craig <Dufficy.Craig@epa.gov>; Kelly, PatrickM <Kelly.PatrickM@epa.gov>; Tieken, Gregg R. <GRTieken@CPSEnergy.com>; Stoker, Kimberly R. <krstoker@CPSEnergy.com>; Olson, Eric R <EROlson@CPSEnergy.com>; Goode, Joel D. <JDGoode@CPSEnergy.com>; Paysinger, Robert D. <RDPaysinger@CPSEnergy.com>

Dear Mr. Hoffman,

CPS Energy is please to submit the two attached documents regarding the JK Spruce and JT Deely Coal Ash Site Assessments. The first document address each of the recommendations listed in the document(s) you sent on June 17, 2014. The second attachment supplements the Hydrologic/Hydraulic Safety recommendations regarding IDF and capacities related to the SRH and Evaporation Ponds. Please acknowledge receipt of this response by email. We will also send hard copies to the address below.

If you have any questions or comments, please let me know.

Sincerely,

Michael M. Malone, P.E., LEED Green Associate, R.E.M.

Senior Engineer

CPS Energy

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145 Navarro, Mail Drop 100406

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Check out the new *Environmental Awareness* employee training on i-Grid (ENV002)

http://connect.cps-satx.com/News/nb_Env_CBT.asp

CPS Energy
CCR Stability – Response to EPA Comments dated June 17, 2014

Hydrologic/Hydraulic Safety

- **CDM Smith/EPA Recommendations**
 - It is recommended that a qualified professional engineer determine the required IDF and evaluate the hydrologic and hydraulic capacity of the North and South Bottom Ash Ponds and Evaporation Pond to withstand design hydrologic/hydraulic events, without overtopping, as recommended by FEMA.
- **CPS Energy Response**
 - CPS Energy will address the above recommendations by implementing operational procedures recommended in the attached document – Pape-Dawson Engineers Coal Combustion Waste (CCW) Ponds Slope Stability Analysis, July 17, 2014. The procedural change will be implemented on or before December 31, 2014.

Technical Documentation for Structural Stability

- **CDM Smith/EPA Recommendation**
 - None
- **CPS Energy Response**
 - None

Field Observations

- **CDM Smith/EPA Recommendations**
 - CDM Smith observed dense vegetation and trees up to 8 inches in diameter at the north embankment exterior slope of the North Bottom Ash Pond. CDM Smith recommends that trees and vegetation in the area be cut back and maintained to improve the ability to conduct a visual assessment of the slope. An area of erosion was observed in the north embankment crest of the North Bottom Ash Pond. To restore this area of erosion, it is recommended to place and compact structural fill to adjacent existing grade contours, and reseed or place armoring.
- **CPS Energy Response**
 - CPS Energy will remove trees necessary to allow for adequate visual assessment of the north embankment exterior slope of the North Bottom Ash Pond and restore the erosion on the north embankment crest of the North Bottom Ash Pond on or before December 31, 2014.

Adequacy if Maintenance and Methods of Operation

- **CDM Smith/EPA Recommendations**
 - It is recommended that vegetation on the Evaporation Pond embankments be maintained with seasonal mowing, as necessary, for animal control and surveillance and monitoring of embankments.
- **CPS Energy Response**
 - CPS Energy has a vegetation management program in place that establishes minimum and maximum grass heights for the Evaporation Pond embankment. Currently, the maximum grass height is 18” with a minimum height of 6”.

Surveillance and Monitoring Program

- **CDM Smith/EPA Recommendations**
 - The CPS surveillance, recording, and monitoring program for the North and South Bottom Ash Ponds, under the Texas Commission on Environmental Quality (TCEQ) for the National Pollutant Discharge Elimination System (NPDES) Permit appears to be adequate and complies with TCEQ requirements. Although the inspection program for the North and South Bottom Ash Ponds appears to be adequate, CDM Smith recommends that these inspections be documented in the future. It is recommended that CPS prepare formal surveillance and monitoring procedures for the Evaporation Pond.
- **CPS Energy Response**

- CPS Energy will formalize an existing informal process that's currently in use for the surveillance and monitoring program to inspect the North and South Bottom Ash Ponds and Evaporation Pond to include documentation on or before December 31, 2014.

Continued Safe and Reliable Operation

- **CDM Smith/EPA Recommendations**
 - Inspections should be made following periods of heavy and/or prolonged rainfall, and the occurrence of these events should be documented. Inspection procedures should be documented and inspection records should be retained at the facility for a minimum of three years. Major repairs and slope restoration should be designed by a registered professional engineer experienced with earthen dam design. The above recommendations should be implemented to help maintain continued safe and reliable operation of the CCW impoundments.
- **CPS Energy Response**
 - CPS Energy will develop a procedure to inspect North and South Bottom Ash Ponds and Evaporation Ponds after heavy and/or prolonged periods of rainfall and document findings for a minimum of three years on or before December 31, 2014. Major repairs and slope restoration will be designed and overseen by a professional engineer.

SRH / EVAPORATION PONDS

Hydrologic/Hydraulic Safety

- **CDM Smith/EPA Recommendations**
 - It is recommended that a qualified professional engineer determine the required Inflow Design Flood (IDF) and evaluate the hydrologic and hydraulic capacity of the SRH Pond and Evaporation Pond to withstand design hydrologic/hydraulic events, without overtopping, as recommended by FEMA.
- **CPS Energy Response**
 - CPS Energy will address the above recommendations by implementing operational procedures recommended in the attached document – Pape-Dawson Engineers Coal Combustion Waste (CCW) Ponds Slope Stability Analysis, July 17, 2014. The procedural change will be implemented on or before December 31, 2014.

Technical Documentation for Structural Stability

- **CDM Smith/EPA Recommendation**
 - None
- **CPS Energy Response**
 - None

Field Observations

- **CDM Smith/EPA Recommendations**
 - None; no significant deficiencies were observed at the SRH Pond and Evaporation Pond.
- **CPS Energy Response**
 - None

Adequacy of Maintenance and Methods of Operation

- **CDM Smith/EPA Recommendations**
 - CDM Smith recommends that vegetation on the SRH Pond and Evaporation Pond embankments be cut on a regular basis to help ensure that adequate visual observations can be made by CPS' personnel during routine inspections. CDM Smith also recommends trees (including the root ball) located at and within 15 feet of the toe of all embankments of the Evaporation Pond be removed and the excavations filled with compacted fill under the supervision of a qualified dam engineer. Animal control measures should be implemented to reduce embankment disturbance. All affected areas should be backfilled with

compacted fill, graded to match the surrounding topography, and seeded with appropriate noninvasive grassy vegetation. It is also recommended that riprap be placed on interior embankment slopes in areas with little or no armoring.

- **CPS Energy Response**

- CPS Energy has a vegetation management program in place that establishes minimum and maximum grass heights for the SRH Ponds and Evaporation Pond embankment. Currently, the maximum grass height is 18" with a minimum height of 6". CPS Energy will remove trees and their rootball that are within 15 feet of the toe of all embankments of the Evaporation Pond and backfilled under the supervision of professional engineer on or before December 31, 2014.

Surveillance and Monitoring Program

- **CDM Smith/EPA Recommendations**

- CPS Energy is required by Texas Commission on Environmental Quality (TCEQ) under National Pollutant Discharge Elimination System (NPDES) Permit No. WQ0001514000 to monitor discharge of wastewater into Calaveras Lake. Surveillance procedures should be in accordance with the TCEQ – NPDES Permit. According to CPS, no surveillance procedures exist for the SRH Pond and Evaporation Pond. It is recommended that CPS prepare formal surveillance and monitoring procedures for the SRH and Evaporation Pond.

- **CPS Energy Response**

- CPS Energy will formalize an existing informal process that's currently in use for the surveillance and monitoring program to inspect the SRH Ponds and Evaporation Pond to include documentation on or before December 31, 2014.

Continued Safe and Reliable Operation

- **CDM Smith/EPA Recommendations**

- Inspections should be made following periods of heavy and/or prolonged rainfall, and the occurrence of these events should be documented. Inspection procedures should be documented and inspection records should be retained at the facility for a minimum of three years. Major repairs and slope restoration should be designed by a registered professional engineer experienced with earthen dam design. The above recommendations should be implemented to help maintain continued safe and reliable operation of the CCW impoundments.

- **CPS Energy Response**

- CPS Energy will develop a procedure to inspect SRH Ponds and Evaporation Pond after heavy and/or prolonged periods of rainfall and document findings for a minimum of three years on or before December 31, 2014. Major repairs and slope restoration will designed and overseen be a professional engineer.



LAND DEVELOPMENT ENVIRONMENTAL TRANSPORTATION WATER RESOURCES SURVEYING

July 17, 2014

Mr. Eric Olson
CPS Energy
12900 US 181 North
San Antonio, Texas 78263

Re: Coal Combustion Waste (CCW) Ponds
Slope Stability Analysis

Dear Mr. Olson:

Per your request, we have reviewed the comment letters you received on June 17, 2014 from the United States Environmental Protection Agency (EPA) concerning the coal combustion residual ponds at the Deely and Spruce power generation facilities. These comment letters contained recommendations that a professional engineer should determine the adequacy of the hydrology and hydraulics of the North and South Bottom Ash Ponds, Evaporation Ponds and the SRH Ponds. We have completed our analysis and the remainder of this letter provides a summary of this analysis.

The EPA recommended a hydrologic analysis be performed for the SRH Ponds and Evaporation Pond to determine if they can store the FEMA 100-year storm and the inflow design flood (IDF). The IDF is a ratio of the Probable Maximum Flood (PMF) with the ratio being determined by the hazard classification of the pond. According to page 6-1 of CDM Smith's Dec 2013 Draft Report, the SRH Ponds are classified as high hazard, meaning the IDF is 75% of the Probable Maximum Flood per the Texas Commission on Environmental Quality (TCEQ) standards. The Evaporation Pond is classified as low hazard, meaning the IDF is 25% of the Probable Maximum Flood.

Our analysis assumed normal operation procedures in the SRH Pond provides 2-feet of freeboard between the normal pool and the elevation of the overflow spillways that discharge into the south bottom ash pond. Similarly, our analysis for the Evaporation Pond assumed 2-feet of free board from the normal pool to the lowest elevation of the pond embankment. Because the SRH Ponds spill into the South Bottom Ash Pond, the Bottom Ash Ponds were also included in the analysis. The normal pool for the bottom ash ponds is controlled by the elevation of the 12" pipe outfalls. Per TCEQ requirements, the 1-hr, 2-hr, 3-hr, 6-hr, 12-hr, 24-hr, 48-hr, and 72-hr IDF's were analyzed.

Mr. Eric Olson
Coal Combustion Waste (CCW) Ponds
July 17, 2014
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Per our discussion and due to operational constraints, both SRH Ponds and Bottom Ash Ponds will never be at operation level simultaneously. One SRH Pond and one Bottom Ash pond will always be empty. For the sake of this analysis, we assumed the “empty” Bottom Ash pond contained bottom ash. The Bottom Ash Ponds are also connected by a 24” pipe which allows flows to communicate between the ponds when the plugs are opened. This relationship between the Bottom Ash Ponds was included in our analysis.

The results show the evaporation pond can store the IDF (25% of the PMF) for the 8 specified storm durations, as well as the FEMA 100-year storm. The North Bottom Ash Pond can also store the IDF (75% of the PMF) for the 8 specified storm durations, as well as the FEMA 100-year storm. The SRH Pond can store the 1-hr, 2-hr, and 3-hr IDFs (75% of the PMF), as well as the FEMA 100-year storm without spilling into the South Bottom Ash Pond. The South Bottom Ash Pond can store the overtopping flow from the SRH Pond in 6-hr, 12-hr, 24-hr, 48-hr, and 72-hr IDFs.

It is recommended an operational procedure be developed for the Bottom Ash Ponds to require the plugs in the Ponds be opened, during a design storm event, to allow the flows to communicate and also utilization of the storage in the empty Bottom Ash pond. We also recommend the depth of ash in the “empty” Bottom Ash Pond be limited to a maximum of elevation of 495.00 ft-msl to provide sufficient additional storage volume in the empty pond during a design storm event.

If you have questions or would like to discuss further, please let me know.

Sincerely,
Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers. Firm Registration #470



Steven C. Dean, P.E.
Vice President

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