

SEP 03 2015

REVIEWER: JKS

VIA CERTIFIED MAIL

November 25, 2013

Mr. Richard P. Cobb, P.G.
Deputy Division Manager
Bureau of Water, Division of Public Water Supplies
Illinois EPA
1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276



Re: **Vermilion Site**
North and Old East Ash Ponds
Geotechnical Study

RECEIVED

NOV 26 2013

DIVISION OF PUBLIC WATER SUPPLY
ENVIRONMENTAL PROTECTION AGENCY
STATE OF ILLINOIS

Mr. Cobb:

In response to your May 29, 2013 letter, Dynegy Midwest Generation, LLC submits herein one copy of the geotechnical study of the North and Old East ash ponds at the Vermilion site. The study was performed by the URS Corporation (St. Louis, MO) to satisfy a number of objectives, including:

- (1) Characterizing the current geotechnical condition of both ash ponds;
- (2) Assessing the slope stability of the deposited ash and embankments;
- (3) Determining the distance of erosion necessary to destabilize the embankment slopes that border the river;
- (4) Estimating the amount of time it would take for this amount of erosion to take place; and
- (5) Identifying alternatives for protecting the post-closure integrity of the embankments.

The enclosed study includes the following findings:

- (1) The slope stability factors of safety for the North ash pond embankment for the existing ash pond condition ("drained") range from 2.0 to 2.2. The slope stability factors of safety for the Old East ash pond embankment for the existing condition ("drained") range from 1.5 to 1.9. The minimum allowable non-seismic slope stability factor of safety for any embankment is 1.5.
- (2) Over the past 72 years the river bank erosion rate along the North ash pond system has been estimated to average 0.3 feet/year based upon a review of historical aerial photographs. Along the Old East ash pond, the river bank erosion

rate has been estimated to average 0.4 feet/year again based upon a review of historical aerial photographs. In any one year, erosion rates could be less than or greater than these values.

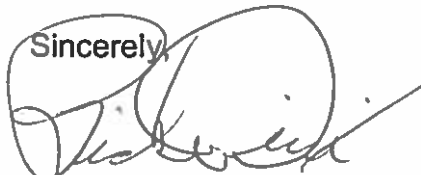
- (3) The distance of erosion by the river necessary to destabilize the North ash pond embankment (i.e. the condition where the slope stability factor of safety is equal to 1.0) is estimated to be 25 feet. The distance of erosion by the river necessary to destabilize the Old East ash pond embankment is estimated to be 39 feet.
- (4) Without applying any river bank armament, the time it would take to destabilize the North ash pond embankment has been conservatively estimated to be 83 years. The time it would take to destabilize the Old East ash pond embankment has been conservatively estimated to be 98 years.

Furthermore, and based upon the findings set forth in the enclosed study regarding the stability of the ash pond embankments, DMG concludes:

- (1) "Pull-back" of the ash in the Old East Ash Pond is not needed because the embankments are stable.
- (2) Robust gabion baskets would be an effective method of "armoring" the embankments to ensure the post-closure integrity of the ash ponds.
- (3) The "cap" closure option proposed in our April 2012 Corrective Action Plans for the north and old east ash ponds is technically feasible. The ash ponds and embankments in their existing condition are sufficiently stable to support a cap comprised of a low permeability geosynthetic membrane and an overlying protective earthen cover.

We would be happy to meet with you if you believe a meeting would be beneficial to close out these issues and obtain the Agency's approval of our April 2012 proposed Corrective Action Plans. If you have any questions concerning the enclosed report or would like to schedule a meeting, please call me at 618-206-5912.

Sincerely,



Rick Diericx
Sr. Director – Environmental Compliance
Dynergy Operating Company, as agent for Dynergy Midwest Generation, LLC

Enclosure

cc: Bill Buscher (without enclosure)