

# BOYCE HYDRO POWER LLC

P-2785

6000 S. M-30 (P.O.Box 15)  
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DEC 16 2013

December 11, 2013

Mr. John A. Zygaj, PE  
Regional Engineer  
Federal Energy Regulatory Commission  
230 S. Dearborn St., Suite 3130  
Chicago, IL 60604

RE: Sanford P-2785  
Left embankment drain memo

Dear Mr. Zygaj:

We are submitting herewith 3 copies of a revised memo dated Oct. 27, 2009 concerning the status of the left embankment drain at Sanford. This revision is submitted in response to your letter of November 29, 2013.

We will replace the original memo in our STID for Sanford with this memo.

Sincerely,  
Boyce Hydro Power, LLC

Frank O. Christie, PE  
General Manager

cc: L. Mueller, S. Hultberg

# ***BOYCE HYDRO, LLC***

*A W.D. Boyce Trusts Legacy Enterprise*  
*Stephen B. Hultberg & Lee W. Mueller, Co-Member Managers*  
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## **MEMO**

**SUBJECT:** Sanford left embankment drain

**DATE:** October 27, 2009

**FROM:** Frank Christie



Grove excavating completed the extension of the toe drain line at Sanford into the wet area along the upper end of the left embankment. He installed 30 feet of 3 inch slotted pipe (same as used in our reverse toe filter projects). The depth is about 3+ feet and discharges into the upper catch basin of the left embankment drain line. The backfill was our type I material placed adjacent to the natural ground, then our Type II material adjacent to that and around the pipe (Type I and II are as used in our reverse toe filter projects).

We are more certain now that this water is not seeping out of the embankment, but is seeping under the road and coming from a natural swale drainage area to the east of our project. Here is our observation and conclusions.

1. So far this year we have had an above average amount of rainfall. As a result an area about 100 feet wide extending from our embankment to the Consumers Energy substation has been saturated all summer. This appears to match the low area on the east side of the road. In talking with some "old timers" they said there was a culvert under the road at this location years ago, until the road was reconstructed and the culvert removed.
2. In excavating the trench we found a natural clay barrier parallel to the road about 15 feet upstream of the last catch basin. The water was ponding in the soil on the road side of the barrier and coming to the surface. That is the water we have always seen saturating the topsoil in this area.
3. The above statements have not been verified by a detailed engineering evaluation of the situation.