

BOYCE HYDRO POWER, LLC

A W.D. Boyce Trusts Legacy Enterprise
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ORIGINAL

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SECRETARY OF THE
COMMISSION
2012 JUN 28 P 3:10
FEDERAL ENERGY
REGULATORY COMMISSION

June 22, 2012

Mr. Kyle Kruger, Sr. Fisheries Biologist
Michigan Department of Natural Resources
191 S. Mt. Tom Road
Mio, Michigan 48647

Re: Sanford Dam Water Discharge
P-2785

Dear Mr. Kruger:

Per your request of May 4, 2012 we have developed the hourly flow data for our Sanford Project for the period of March 15, 2012 to April 30, 2012. This is the time of year we are required to discharge a minimum of 650 cfs on a continuous basis from the Sanford Dam. The attached spread sheet shows the turbine settings and discharges for each day, the discharge from the spill gates, and the leakage through the wicket gates when a turbine is off line. The leakage through the wicket gates is significant and was determined during the flow testing done by the USGS in 2010. The leakage appears to be about 25 cfs per turbine.

As can be seen from these sheets, the flow dropped below 650 cfs for part of the day for twenty five days in April. For sixteen of these days the lowest flow of the day was 630 cfs, which is 97% of the requirement. In the other nine days the lowest flow of the day was 359 cfs, or 55% of the requirement. The variations of flow throughout the day are a result of our operation of the other three upstream dams. As reservoir levels increase at the upstream sites water must be released to maintain the water level within our operating mandates. Thus all plants need to be operated in unison to prevent excessive levels and when upstream releases are increased or decreased Sanford must do the same.

As you may recall, we contacted you around the end of March and explained that because of the warm winter and lack of snow, coupled with record warm temperatures in March, we would probably not be able to meet the minimum flow requirement in April unless we pulled one or more of the reservoirs down below their prescribed minimum levels. The unknown being the amount of rain we would receive in April. In that discussion it was decided to first maintain the reservoir levels and discharge the remaining amount available. As it turned out we did not receive much rain in April (1.08"). The attached spread sheet represents our operations and plant discharges under these conditions from March 15 through the end of April of 2012.

We would also like to point out that the water temperatures in the reservoir increased early and faster than normal because of the warm spring. The temperature of the

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Sanford reservoir water was up to 39 degrees on March 14, 45 degrees on March 19, and 50 degrees on March 25. It would seem that with these temperatures the downstream spawning would have begun earlier and would not have been significantly affected by the somewhat lower water in mid April.

A copy of this letter is being filed with the FERC in Washington.

Sincerely,
Boyce Hydro Power, LLC

A handwritten signature in black ink, appearing to read "Frank O. Christie". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Frank O. Christie, PE
General Manager

cc: FERC, Washington

Sanford Flow March 15-April 30 2012							
Date	Time	Turbine Setting	Gate	Turbine Q	Wick Gate	Spill Q, cfs	Total cfs
			Opening	cfs	Leakage		Discharge
3/15/2012	2400	3 @100%	6	2140		1641	3781
	0245	3 @100%	6.5	2140		1732	3872
	0830	3 @100%	4	2140		1201	3341
	1000	3 @100%	3	2140		938	3078
	1130	3 @100%	2	2140		649	2789
	1300	3 @100%	1	2140		336	2476
	1830	3 @100%	0.7	2140		238	2378
						0	
3/16/2012	0200	3 @100%	0.5	2140		171	2311
	0930	3 @100%	1.5	2140		496	2636
	1100	3 @100%	2.5	2140		797	2937
	1630	3 @100%	1.5	2140		496	2636
	1830	3 @100%		2140			2140
3/17/2012	1400	3@95%		2100			2100
3/18/2012	2445	3@100%		2140			2140
	0330	3@100%	1	2140		336	2476
	0545	3@100%		2140			2140
	0800	3@95%		2100			2100
	1430	3@90%		2050			2050
3/19/2012	0001	3@98%		2130			2130
	0600	3@94%		2080			2080
	2300	2@98%		1450	25		1475
3/20/2012	0530	3@94%		2080			2080
	1530	2@94%		1420	25		1445
	2300	1@70%		610	50		660
3/21/2012	0720	3@90%		2050			2050
	1800	2@92%		1430	25		1455
	2130	1@70%		610	50		660
3/22/2012	0700	1@94%		770	50		820
	0900	2@100%		1470	25		1495
	1200	3@90%		2050			2050
	1600	2@85%		1300	25		1325
	2000	1@70%		610	50		660
3/23/2012	0630	1@94%		770	50		820
	0900	3@90%		2050			2050
	2130	1@70%		610	50		660

3/24/2012	0630	1@94%		770	50	820
	1030	2@94%		1420	25	1445
	1740	3@94%		2080		2080
	1950	3@84%		1880		1880
	2130	1@70%		610	50	660
3/25/2012	0630	1@94%		770	50	820
	1130	1@70%		610	50	660
3/26/2012	0630	1@94%		770	50	820
	1100	2@94%		1420	25	1445
	2130	1@70%		610	50	660
3/27/2012	0600	2@94%		1420	25	1445
	1530	2@94%		1420	25	1445
	1545	1@70%		610	50	660
3/28/2012	0630	1@94%		770	50	820
	1300	2@94%		1420	25	1445
	1500	1@70%		610	50	660
3/29/2012	0700	2@94%		1420	25	1445
	1500	1@70%		610	50	660
3/30/2012	0700	1@94%		770	50	820
	1800	1@70%		610	50	660
3/31/2012	0630	1@98%		790	50	840
	1500	1@60%		580	50	630
4/1/2012	0630	1@90%		710	50	760
	1400	1@60%		580	50	630
4/2/2012	0630	1@90%		710	50	760
	1500	1@60%		580	50	630
4/3/2012	0630	1@90%		710	50	760
	1630	2@98%		1450	25	1475
	1800	3@90%		2050	0	2050
	2200	1@60%		580	50	630
4/4/2012	0630	1@94%		770	50	820
	1000	2@90%		1410	25	1435
	1500	1@60%		580	50	630
4/5/2012	0630	1@70%		610	50	660

	1500	1@60%		580	50		630
4/6/2012	0630	1@85%		660	50		710
	1300	1@70%		610	50		660
	1500	1@60%		580	50		630
4/7/2012	0630	1@85%		660	50		710
	1200	1@60%		580	50		630
4/9/2012	1500	OFF	0.84		75	284	359
4/10/2012	0700	1@90%		710	50		760
	1500	OFF	0.84		75	284	359
4/11/2012	0700	1@90%		710	50		760
	1500	OFF	0.84		75	284	359
4/12/2012	0700	1@90%		710	50		760
	1500	OFF	0.84		75	284	359
4/13/2012	0700	1@90%		710	50		760
	1500	OFF	0.84		75	284	359
4/14/2012	0630	1@70%		610	50		660
	0930	OFF	0.84		75	284	359
4/15/2012	0700	SAME	0.84		75	284	359
4/16/2012	0700	1@94%		770	50		820
	1500	1@60%		580	50		630
4/17/2012	0700	1@94%		770	50		820
	1400	2@90%		710	25		735
	1600	3@90%		2050			2050
	1830	1@60%		580	50		630
4/18/2012	0730	2@100%		1470	25		1495
	2000	3@100%		2140			2140
	2200	1@70%		610	50		660
4/19/2012	0700	1@100%		800	50		850
	1130	2@100%		1470	25		1495
	1630	2@94%		1420	25		1445
	1830	1@70%		610	50		660
	2100	1@65%		595	50		645

4/20/2012	0700	1@100%		800	50		850
	1030	2@90%		710	25		735
	1145	2@100%		1470	25		1495
	1330	2@85%		1300	25		1325
	2130	1@70%		610	50		660
4/21/2012	0630	2@100%		1470	25		1495
	1700	3@90%		2050			2050
	2230	1@70%		610	50		660
4/22/2012	0600	1@100%		800	50		850
	0800	3@100%		2140			2140
	1930	1@65%		595	50		645
4/23/2012	0630	1@90%		710	50		760
	1030	2@88%		1380	25		1405
	2200	1@60%		580	50		630
4/24/2012	0645	2@90%		1410	25		1435
	2200	1@60%		580	50		630
4/25/2012	0700	1@94%		770	50		820
	1500	2@90%		1410	25		1435
	1900	1@60%		580	50		630
4/26/2012	0700	1@92%		720	50		770
	1500	1@60%		580	50		630
4/27/2012	0700	1@94%		770	50		820
	1500	1@60%		580	50		630
4/28/2012		SAME		580	50		630
4/29/2012	2130	OFF	0.84		75	284	359
4/30/2012	0700	1@70%		610	50		660
	0930	1@94%		770	50		820
	1500	OFF	0.84		75	284	359

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