

**National Marine Fisheries Service (NMFS) Determination re: Implementation of  
Action IV.2.1 of the Biological Opinion on the Long-Term Operations of the  
Central Valley Project and State Water Project (SWP; NMFS Opinion) during the  
Planned Shutdown of the SWP's Banks Pumping Plant in May 2010**

**May 13, 2010**

**Summary of May implementation issue, and advice from the Delta Operations for  
Salmonids and Sturgeon (DOSS) technical team:**

May Implementation Issue:

Exports: Combined Central Valley Project (CVP) and State Water Project (SWP) exports<sup>1</sup> are managed to no more than 1,500 cfs<sup>2</sup> from April 1 through May 31, 2010, pursuant to the San Joaquin River Inflow to Export Ratio Action (Action IV.2.1, p. 641-645 of the NMFS Opinion).

The SWP's Banks Pumping Plant will be shut down for 10 days from May 11-21, 2010 (partial operations on the first and last day of the shutdown) during a planned power shutdown to allow work on the South Bay Aqueduct power lines. The CVP pumps cannot be operated at variable pumping rates, so each unit is either on (and pumping at 800 cfs) or off. Cycling the pumps on and off is minimized in order to avoid wear and tear on the pumps. The U.S. Bureau of Reclamation and the California Department of Water Resources asked DOSS to consider some export scenarios that would accommodate the operational constraints during the planned shutdown.

Background on DOSS Discussions (*final DOSS notes for the referenced meetings are posted at <http://swr.nmfs.noaa.gov/ocap/doss.htm>*):

On April 20 and 27, 2010, the DOSS technical team advised the Water Operations and Management Team (WOMT) and NMFS to consider an operations plan in which the projects would manage to a daily combined export rate of 1400 cfs for 10 days before or after the SWP shutdown, and that the CVP manage to a daily export rate of 1600 cfs for the 10 days of the SWP shutdown for a 20-day average export rate of 1500 cfs.

On May 4, 2010, the DOSS technical team discussed a new option that took advantage of the fact that (1) the Banks pumping plant could pump 700 cfs for a partial day of operations on the first and last days of the power shutdown, and (2) Clifton Court Forebay (CCF) inflow could likely be maintained at 700 cfs for five to six days during the shutdown period, because the power shutdown does not extend to the radial gates at CCF. Continued CCF operations reduces the number of on/off cycles necessary at the CVP's Jones Pumping Plant to manage to a combined daily export rate of 1500 cfs. On days that the SWP cannot fill CCF at 700 cfs, the

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<sup>1</sup> Combined exports for this action are intended to be measured as the sum of the inflow rate into the SWP's Clifton Court Forebay (minus actual Byron-Bethany Irrigation District diversions from Clifton Court Forebay) and the export rate of the CVP's Jones Pumping Plant. Note that the sum of pumping rates at the SWP's Banks Pumping Plant and the CVP's Jones Pumping Plant may be higher than 1500 cfs under an operations schedule that complies with Action IV.2.1.

<sup>2</sup> when Vernalis flows do not exceed 6000 cfs

CVP will turn on a second 800 cfs unit and pump the volume of water equivalent to a daily pumping rate of 700 cfs per day (by pumping for a partial day). The following table (“Schedule 3” in the May 4<sup>th</sup> DOSS meeting notes) depicts one possible example of the combined operations of the CVP and SWP pumping plants during the power shutdown.

Date	CCF	CVP#1	CVP#2	Combined	
				Export Level	Note
10-May	700	800	off	1500	
11-May	700	800	off	1500	
12-May	700	800	off	1500	
13-May	700	800	off	1500	
14-May		800	700	1500	Turn CVP #2 on at 0500 hr
15-May		800	700	1500	Turn CVP #2 off at 2000 hr
16-May		800	700	1500	Turn CVP #2 on at 0500 hr
17-May		800	700	1500	Turn CVP #2 off at 2000 hr
18-May	700	800	off	1500	
19-May	700	800	off	1500	
20-May	700	800	off	1500	
21-May	700	800	off	1500	

\* Units for all columns are daily average cubic feet per second.

**DOSS Advice related to Action IV.2.1**

*(from 5/11/2010 DOSS meeting)*

DOSS intends for the advice provided on May 4, 2010, to supersede the advice provided on April 20 and 27, 2010.

*(from 5/4/2010 DOSS meeting)*

DOSS advises NMFS and WOMT to implement operations according to Schedule 3 [discussed during the May 4, 2010, DOSS meeting, and displayed above] during the SWP shutdown from May 11-21, 2010. That is, the CVP will always have one unit operating at a daily export rate of 800 cfs, and the remaining 700 cfs of combined exports allowed<sup>3</sup> under Action IV.2.1 will be exported in one of two ways:

1. While CCF still has capacity to draw in water, the SWP will adjust its CCF inflow to 700 cfs per day.
2. On days when CCF inflow is zero, the CVP will add a partial day of pumping by a second unit to attain a daily export rate of 1500 cfs.

**NMFS Determination**

NMFS accepts the advice from DOSS and determines that export operations conducted in the manner of schedule 3, under which the daily combined export rate does not exceed 1500 cfs, are consistent with NMFS RPA Action IV.2.1.

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<sup>3</sup> assuming Vernalis flows do not exceed 6000 cfs

NMFS acknowledges that although inflow to CCF (minus actual Byron-Bethany Irrigation District diversions from Clifton Court Forebay) will be limited to a rate of 700 cfs per day, the SWP will, at times, pump at a rate considerably higher than this. The intention of the export restriction in Action IV.2.1 is to moderate and limit the hydraulic changes in the Delta caused by exports and, thus, moderate and limit the impacts of those changes on listed anadromous fish. For the SWP, the rate of inflow into CCF (rather than the rate of pumping at Banks Pumping Plant) is the most direct measure of hydraulic impact on the Delta. For the CVP (which has no forebay or equivalent), the rate of pumping at the Jones Pumping Plant is the most direct measure of hydraulic impact on the Delta.

NMFS also acknowledges that during the SWP shutdown, the residence time of water in CCF will increase by days, potentially resulting in an incremental increase in predation (and therefore loss). However, because loss at the CVP facilities is less than the loss at the SWP facilities, the shift of exports to the CVP for approximately 4 days will likely offset the potential slight increase in predation expected due to increased residence time in CCF.