



**Testimony of Ron Milligan
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**State Water Resources Control Board
Hearing Regarding Emergency Drought Conditions**

February 17, 2009

My name is Ronald Milligan and I have been the Central Valley Project (CVP) Operations Manager since November 2004.

I have a bachelor's degree with honors in civil engineering from California State University, Sacramento, and I direct the functions of Reclamation's Central Valley Operations Office which includes operations forecasting; water supply allocation; river releases and flood control operations; and control and scheduling of power generation. My office coordinates the real-time system operations of the major CVP facilities. I also co-chair the Water Operations Management Team.

I have worked with Reclamation since November 1999. During this time, I have also served as the Mid-Pacific Region's Deputy Planning Officer and was active in CALFED implementation and the Region's overall planning program. Before joining Reclamation, I worked for the US Army Corps of Engineers starting in 1984, working as a civil engineer in the Sacramento District. There I worked with hydrologic modeling, flood plain management, planning investigations, and reservoir operations within the Central Valley of California.

California is in its third straight year of below-average rainfall and very low snowmelt runoff. DWR's current forecasted runoff estimates suggests that 2009 may likely be the third straight year classified as "Critically dry" for the Sacramento River Basin. As a result, reservoir levels throughout the state are significantly below average at the beginning of the 2009 water year. The dry conditions and low storage have resulted in significant reductions in water supplies throughout the state including annual allocations to Project contractors.

2009 has the potential to be one of the most severe drought years in California's history. Extremely low reservoir storage levels are forecast for this coming year in Northern California, in some cases at new record low levels. Daily reservoir records show the storage levels for the following reservoirs (as of Tuesday, February 16):

<u>Reservoir</u>	<u>Storage (TAF)</u>	<u>Percent of 15-year Average</u>
Shasta	1,532	46
Trinity	992	55
Oroville	1,069	46
Folsom	272	56
New Melones	1,179	70

San Luis -- Fed Share	314	38
San Luis - Total	740	45

Reclamation will announce its initial allocation of water deliveries from the Central Valley Project (CVP) to its contractors on February 20. Given the current snowpack projections, runoff estimates, and upstream storage levels, it is likely that allocations to many CVP contractors will be extremely low in 2009. In December 2008, DWR announced its initial 2009 allocations of Table A water supplies for the State Water Contractors (SWC) would be limited to 15% of SWC requests for Table A water. If the SWP 2009 allocation is not increased over the course of the year, this would represent the largest allocation deficiency for Municipal and Industrial (M&I) contractors since the construction of the SWP. Due to the extremely low precipitation in January, the February update of these SWP allocations may be reduced below the December projections - something that has happened on only one previous occasion.

At this time, the CVP and SWP are faced with a situation where the current hydrologic conditions are not sufficient to bring California out of the drought, and could be poor enough to continue or worsen the situation. However, the limited rainfall in late January was sufficient to barely trigger additional demands on the Projects associated with the February Delta Outflow Objective.

The criteria for the "Starting Gate" requirement and the number of Chipps Island days are related to the estimated Eight River Index (8RI) as of the end of January. For most of January it appeared that the 8RI would end the month at a level corresponding to an outflow objective at Collinsville, or in the range allowing for discretion by the Executive Director to set the objective. Unfortunately given the extremely dry conditions over the last 12 months, runoff into the Delta is not responding in a manner typically correlated to the 8RI.

The Sacramento River has been at record low flows at several key gauging stations in the month of January. The Bend Bridge component of the 8RI was very low for January and the other runoff components are representative of inflows into very empty reservoirs. Under these hydrologic conditions, and very low reservoir storages, the use of the 8RI may not be a representative metric to establish the Delta Outflow Objective for January 2009. Therefore, Reclamation and DWR are asking for the relief from Delta Outflow ("X2") objective as outlined in the petition that is the subject of this Notice.

At the beginning of February, DWR and Reclamation coordinated reduced exports in an attempt to achieve the "Starting Gate" condition at that time. Although there was a slight increase in Delta inflow during this period, salinity at the Collinsville station was only lowered to about 3.8 mmhos/cm. Later in the month, increased Delta inflows helped bring the Collinsville reading to 2.74 mmhos/cm on February 14th.

The San Joaquin River Basin was officially forecasted by DWR as "Critically dry" for 2009 on the same date this petition was filed. Reclamation and DWR had asked that the Airport Way Bridge, Vernalis flow objective be relaxed from the 1,420 cfs associated with a Dry year forecast. As with the Sacramento River Basin this year, flows in the San Joaquin River have

been very low due to the prolonged dry conditions. However, given that the Water Year Type for the San Joaquin River Basin is now forecasted to be Critically Dry, the D-1641 relaxation for this objective to 1,140 cfs when X2 is at or west of Chipps Island is achievable. Therefore, there is no longer a need for the State Board to approve a relaxation of this objective.

The opportunities to conserve reservoir storage and/or to build supplies to meet critical water needs this year will be very limited if dry conditions persist. The proposed modifications outlined in the petition will allow the projects to conserve stored water upstream until later this summer, allow for some minimal pumping to build on reduced supplies south of the Delta, and will continue to be protective to sensitive Delta fish species. All other water quality objectives in the Delta and upstream will continue to be met. The proposed modifications should not adversely affect water levels or upstream flows.

Without the modifications requested, the following impacts could occur:

1) If all the X2 requirements remain in effect as currently mandated in D-1641, these outflow targets could further jeopardize the Projects' ability to maintain cold-water reserves in upstream reservoirs for the protection of endangered Winter-run Chinook salmon and threatened Spring-run Chinook salmon and Central Valley steelhead. Reduced upstream storage could also limit flows to benefit delta smelt, salmon, or steelhead later this year.

2) Without a modification of the above X2 standards, the Projects could be forced to reduce exports even further than the severe limitations currently projected and increase releases from upstream reservoirs in February to increase the Net Delta Outflow Index from 7,100 cfs to 11,400 cfs (approximately 8,000 acre-feet per day). Based on the January 8RI of 973 TAF, twenty-four (24) X2 compliance days are required at Chipps Island by interpolation of values in Table 4. This could result in a required release of up to nearly 200,000 acre-feet of water just to meet the February X2 requirements. (By way of contrast, the outflow level for most of January was 4,500 cfs.)

3) The lack of sufficient upstream storage also has the potential to result in a "loss of control" over salinity intrusion in the Delta by late summer 2009 and into 2010 if conditions do not improve. In addition, the ability to maintain the minimum flow requirements of Order 90-5 and D-893 may be limited if reservoir levels are reduced to these levels.

The Delta Outflow Objective is in large part based on the premise that a given level of precipitation will produce an estimated amount of runoff into the basin. Unfortunately with the extremely dry conditions over the last year, runoff has been well below past estimates. Without the support of side streams in the basin, these requirement flows fall to releases from upstream reservoirs. Simply put, there are no other actions that could be taken that would allow the CVP and SWP to meet this objective (given the present hydrology) without depleting cold water resources to protect salmon and steelhead, without running the risk of reducing exports below public health and safety standards, and without running the risk of "loss of control" over salinity encroachment in the Delta.

Bona Fide Drought Emergency - On June 4, 2008, citing two straight years of below-average rainfall, very low snowmelt runoff and the largest court-ordered restrictions on SWP and CVP operations in state history, Governor Schwarzenegger declared a statewide drought and issued Executive Order S-06-08. Since this declaration, California has experienced a third consecutive year of significantly below-normal precipitation. For example, the 8RI (measured) for December was only 590 TAF, 29% of average. Historically, nearly 20% of annual precipitation occurs in the month of January. However, January 2009 was extremely dry, and this Index for January was 973 TAF -well below average. Reservoir storage is at historically low levels. DWR's analysis of January 2009 forecasts another Critically dry year for both the Sacramento and San Joaquin Basins this year. All of these factors clearly establish that a bona fide drought emergency exists.

Water Conservation Measures – Reclamation's CVP contractors are required by § 210 of the Reclamation Reform Act (P.L. 97-293) to develop and implement water conservation plans. These plans include an annual reporting requirement in which the contractor must describe the actions taken to implement the plan. In addition, Reclamation has awarded \$6.4 million in grants to 31 projects in California under the Water 2025 Program since 2004, resulting in the conservation of nearly 200,000 acre-feet of water annually for agricultural and urban uses.

Availability of Alternative Sources of Water Supply – As described above, there are no alternative sources that Reclamation can use to meet the Delta Outflow Objective.

Conclusion

Reclamation does not believe that total exports could have been reduced enough to help meet the necessary number of days for the Chipps Island X2 requirement for the month of February. Once it became apparent that the overall number of days at Chipps Island were not obtainable, Reclamation and DWR closely coordinated Delta operations with the various fishery agencies and proceeded to manage exports at a level that were both protective to listed species and would allow for a some level of exports to meet critical needs south of the Delta while the subject petition was being considered. The marginal increase in Delta pumping was not an attempt to “manage” to the Collinsville object, but was an attempt to balance critical needs in light of very dire hydrologic conditions. Also, Reclamation cannot state the exact amount of storage needed to maintain cold-water reserves and sufficient “salinity control” in the Delta this year. Such determinations are dependant on many variables that are as yet unknown.

The lack of definite numbers, however, does not diminish the need for the requested changes. Initial allocations are at historic lows and any water “saved” by an approval of the requested changes is critical to this State's water supply. Additionally, considering that California is in its third year of below-average snowfall, any water the requested changes can help keep in storage may be critically needed if the dry conditions persist.

In sum, given the dire water supply conditions which are projected, and the impacts for fish and wildlife and urban and agricultural beneficial uses, this petition requests that the State Water Resources Control Board consider granting emergency relief under Water Code Section 1435 et. seq. from the D-1641 X2 standards for the month of February 2009. The modifications

would help to maintain the cold water reserve held in upstream reservoirs for 2009, maintain storage for flows, and would help minimize any additional impacts to Reclamation's ability to deliver critical water supply needs in 2009.

This concludes my written testimony.