

MEETING HIGHLIGHTS
CALFED DRINKING WATER QUALITY OPERATIONS WORKGROUP

August 20, 1999

2:00 p.m. to 4:00 p.m.

Resources Building, Room 1147-C1

Attendance

Paul Sandhu, DWR
Sanjaya Seneviratne, DWR
Jay Lund, UCD
Dave Briggs, CCWD (via conference call)
Chuching Wang, MWDSC (via conference call)
Terry Erlewine, SWC
Bill Smith, SWRI
Paul Hutton, CALFED

North of Delta Storage (2 MAF) Operating Rules

The workgroup agreed to utilize a spreadsheet analysis to evaluate North of Delta storage for drinking water quality enhancement. Bill Smith will develop this tool.

1. Inlet and outlet capacities for the 2 MAF facility will be limited to 3,000 cfs and 2,000 cfs, respectively.

NOTE: In CALFED's June 1999 EIR/S, a 3 MAF facility was assumed to have an inlet/outlet limit of 5,000 cfs. The 3 MAF facility was assumed to serve water supply and environmental objectives.

2. Diversion triggers for the 2 MAF facility will be consistent with CALFED's June 1999 EIR/S.

NOTE: In CALFED's June 1999 EIR/S, North of Delta surface storage diversions were restricted to periods with Sacramento River flow was greater than 20,000 cfs.

3. Releases from the 2 MAF facility will be made to improve drinking water quality only, i.e. water supply and environmental objectives will not be considered. Release triggers may be based on antecedent outflow variables (such as "G" or X2) or on in-Delta water quality variables. More discussion with Bill Smith is required.

4. If promising operating rules are developed, additional model development will be required to evaluate this facility within a comprehensive framework. The existing DWRSIM treatment of North of Delta surface storage, with water supply and environmental components, could be expanded to include a drinking water quality component.

5. Post-meeting thoughts (thanks Dave!) on a release trigger for north of Delta storage:

The basic principle we agreed to called for storage releases based on quality in the south Delta. There are several choices:

- a. Raise minimum required outflow. This guarantees that outflow will never be below a certain level and seawater intrusion will be less of an influence in the south Delta during the summer and fall of drier years. This works well but may not be the most efficient method (but it does work!)
- b. Reduce the Rock Slough TDS requirement in DWRSIM from 225/130 mg/L to 200/100 mg/L or increase the number of days that the lower standard applies. This would have the same effect as raising the minimum required outflow.
- c. Use the previous month's salinity calculated by the G-model or previous month's rate of change of salinity. This would have to be added to DWRSIM but the code work is minimal for a forward G-model. The current month's salinity would be difficult to determine in DWRSIM because of the iterative nature of the code (I think).

South of Delta Storage (1 MAF) Operating Rules

The workgroup agreed to utilize DWRSIM's existing representation of new off-aqueduct surface storage for purposes of developing operating rules.

1. Inlet and outlet capacities for the 1 MAF facility will be limited to 3,000 cfs.

NOTE: In CALFED's June 1999 EIR/S, a 2 MAF facility was assumed to have an inlet/outlet limit of 3,500 cfs.

2. The 1 MAF facility is assumed to have a dedicated 3,000 cfs diversion directly from the Delta. The location of this diversion was not discussed.
3. A diversion trigger for the 1 MAF facility will be similar to that previously developed by Bill Smith for San Luis Reservoir. The trigger allows for selective filling of the reservoir when in-Delta water quality is good.
4. Releases from the 1 MAF facility will be made to improve drinking water quality only, i.e. water supply and environmental objectives will not be considered. Modeling will assume that deliveries are "fixed" to the base condition (CALFED's June 1999 EIR/S Preferred Alternative without storage).
5. Benefits from new South of Delta Storage will be evaluated by computing the difference in water quality (e.g. total salt load) exported from the Delta.
6. Post-meeting thoughts (thanks Dave!) on a trigger for south of Delta storage and delivery:

We agreed to trigger exports when quality is relatively good near the export locations while keeping deliveries roughly constant (over what they would have been before the pumping alterations were invoked). The goal of such an operation is to pump as much water as possible

when quality is good while keeping fish protection and supply whole relative to the base. Some thoughts are outlined below:

- a. Bill previously developed code to selectively fill San Luis Reservoir. We believe the logic has a trigger based on the previous month's south Delta water quality that limits exports in the current month (this logic is restricted to the fall when seawater intrusion is the worst). Chuching suggested basing the trigger on the previous month's change in salinity, so that if salinity increases rapidly pumping can be reduced. Alternatively, the trigger could be based on the previous month's salinity, rather than change in salinity. As the water year progresses, the trigger would be relaxed (if the year turned out to be dry, pumping irrespective of water quality would be necessary to avoid severe delivery impacts).
- b. We have a fairly good idea of what water quality looks like in the south Delta based on simulations over the 73-year period. We could add water quality data from base Delta simulations into DWRSIM and identify periods of good and bad water quality. This method would also pick up the agricultural drainage component which dominates in wet years and which the G-model does not simulate. This could be a good and simple idea.
- c. We must avoid operation rules that have biased foresight. That is, we cannot tell DWRSIM when to pump based on our knowledge of how the water year will end up! If we detect very bad salinity in the fall or in the winter due to agricultural drainage, we could reduce exports at that time and cover the risk to deliveries with the use of JPOD, larger Banks and larger storage. We could use Delta simulation data to develop thresholds on exports, such as when TDS is greater than 180 mg/L in the fall months and greater than 120 mg/L in the winter months.

San Luis Reservoir Operating Rules

The workgroup agreed to utilize the selective filling trigger previously developed by Bill Smith.

Hood Demonstration & Delta Cross Channel Facilities

The workgroup agreed to utilize operating rules developed for CALFED's June 1999 EIR/S under Criterion B.

Other

The workgroup briefly discussed exploring operating rules to flex the export:inflow ratio. No specific rules were developed at the meeting, however.

Some additional post-meeting thoughts (thanks Dave!):

1. Identify occurrences in June and July when the export:inflow ratio or other governing standards that, if lifted, would greatly improve drinking water quality. If this shows promise, we can develop operating criteria for subsequent runs.

2. Develop a parameterization for the annual DOC peak that occurs in the February-March period which typically lasts for 4 weeks. (The parameterization could be developed by water year, occurrence of high runoff, flow in the San Joaquin River, etc.) Pumping could be reduced during this period to reduce annual loading of DOC.