Working Draft Suggestions for Adjustments [for discussion purposes only]
December 8, 2016

Areas of General Agreement
Temperature Modeling/Monitoring

In Section 11.2.1.2, edit item #2 to read:

2) Temperature monitoring and modeling ~~identified in RPA Action I.5~~ for the Sacramento River. Continue to refine and develop operational water temperature forecasting and modeling tools through a defined workplan developed by the Bureau of Reclamation.

Rationale: Recent drought and associated impacts to fish species have increased attention on water temperature management in the Sacramento River below Keswick Dam. Water temperature models have been developed to assist resource managers to plan, forecast, and operate storage and conveyance systems such as the Shasta and Trinity Divisions of the CVP to meet a wide range of water supply demands. A useful element in ongoing resource management is a periodic assessment of existing tools and opportunities for improvement. Currently, the Bureau of Reclamation utilizes a water temperature modeling framework to forecast water temperature conditions in the Sacramento River for seasonal operations planning based on the HEC-5Q modeling software. Though the current HEC-5Q modeling framework for the Shasta and Trinity Divisions remains a valuable and effective tool for operations planning, opportunities may exist for improvement and refinement.

Designation/definition of technical/management teams

In Action 1.2.4, edit "Implementation Procedures" item #4 to read:

4) By May 15, Reclamation and NMFS shall jointly submit a final Temperature Management Plan to meet the SWRCB 90-5 requirements using the SRTTG. From May 15 through October 31, the SRTTG shall track implementation of this plan, and shall refine it based real-time information, including run timing, location of redds, air and surface water temperature modeling, and projected versus actual extent of the cold water pool. Any disagreement at the work group level regarding how to implement or modify the plan will be elevated to ~~NMFS and resolved through WOMT standard operating procedures~~ a "Sacramento Water Interagency Management" (SWIM) Team made up of management representatives from Reclamation, NMFS, FWS, DWR, DFW, and the SWRCB for resolution.

Rationale: As the SRTTG continues to function in its technical capacity, certain issues related to ESA management and/or outside the scope or authority of the SRTTG may need to be elevated and/or discussed at the director/policy levels of the involved agencies.

Tracking/monitoring

In Action 1.2.4, edit "Implementation Procedures" item #4 to read:

4) By May 15, Reclamation and NMFS shall jointly submit a final Temperature Management Plan to meet the SWRCB 90-5 requirements using the SRTTG. From May 15 through October 31, the SRTTG shall track implementation of this plan, and shall refine it based real-time information, including run timing, location of redds, air and surface water temperature modeling, and projected versus actual extent of the cold water pool. Tracking mechanisms may include increased frequency of temperature profiles at Shasta Lake and temperature modeling, as well as check-ins to ensure that sufficient cold water reserves are being maintained. Reclamation will verify that the temperature compliance point and temperature management targets can continue to be met through the temperature management season, the volume of Shasta Reservoir water at certain temperatures is not less than the forecasted volume at a specified frequency (with an appropriate buffer determined by the water year type), and full operation of the side gates on the Shasta Dam temperature control device are not forecasted to occur prior to a date determined during the development and concurrence of the plan. Tracking/monitoring frequencies and exceedance buffers for these items will be determined based on the projected risk of exceeding the temperature compliance points and management targets, as identified during development and concurrence with the plan, and documented through that process. Any disagreement at the work group level regarding how to implement or modify the plan will be elevated to ~~NMFS and resolved through WOMT standard operating procedures~~ a "Sacramento Water Interagency Management" (SWIM) Team made up of management representatives from Reclamation, NMFS, FWS, DWR, DFW, and the SWRCB for resolution.

Rationale: Tracking mechanisms provide for increased transparency in operations, and assurance that compliance and goals for the cold water management season will be met. Due to the resources involved with providing those tracking mechanisms, the frequency of updating the information associated with these tracking mechanisms should be modified based on the degree of risk of exceeding compliance and/or targeting metrics.

Potential interim measures for 2017

In letter exchange summarizing the amendments, discuss:

1) Phased approach to amendments, outlining that minor adjustments will be made in this phase while meetings/discussions are ongoing between the agencies regarding more significant items with potential system-wide impacts and in need of more rigorous evlaution, some of which may be better suited to reconsultation process.
2) Current hydrologic situation, which mitigates risks associated with the phased approach, while allowing time for more fully analyze more significant conceptual changes.
3) Successes of 2016 (particularly w/r/t monitoring and pilot efforts with location-based targeting of different temperature metrics), and how those will be continued and modified into 2017.

In Action 1.2.4, add an item under "Implementation Procedures" to read:

5) As part of an evaluation process and/or pilot project to further evaluate management strategies at the locations of the Winter Run redds, ongoing monitoring of temperatures at the most downstream redd will be completed. This monitoring will include the 55.0° seven day average

daily maximum (7DADM) temperatures, as well as the 53.0° daily average temperatures (DAT). This monitoring will be used to support operations to target temperature management at the location of the most downstream redd (unless it is determined by the SWIM Team that a further upstream location is more advantageous/reasonable), provided the operational adjustments to meet these operational targets do not impede Reclamation's ability to meet the temperature compliance metric and location identified and concurred in the annual Temperature Management Plan.

Rationale: As the agencies further evaluate potential temperature management metrics and compliance points, the development of appropriate monitoring and pilot studies to target these metrics and locations provides valuable information regarding implementation and benefits/impacts of these potential metrics and compliance points. This information can be used for development of future RPA modifications, and can be used to inform future reconsultation efforts.

For planning purposes:

1) Set up two separate but related processes/scheduled series of meetings, likely involving the same team as the RPA Adjustments Team, to focus on the following items:
    a. Working towards resolution (or an improved common understanding) regarding the issues and operations of the past three years, so that the common understanding can improve the concepts for future adjustments/revisions under reconsulation.
    b. Continuing to work on the items identified for future adjustments/revisions under reconsulation, first by separating these into which process the items should fall under, and then by focusing on any items identified for the next phase of the adjustments process.