RECLAMATION

Managing Water in the West

Temperature Control Device Update

U.S. Department of the Interior
Bureau of Reclamation

LTEMP BO Conservation Measure

Reclamation would explore the efficacy of a temperature control device at the dam to respond to potential extremes in hydrological conditions due to climate conditions that could result in nonnative fish establishment. **Evaluations would be ongoing for all current and evolving technological advances t**hat could provide for warming and cooling the river in both high- and low-flow discharge scenarios, and high and low reservoir levels. These studies should include evaluating and pursuing new technologies, **an analysis of the feasibility, and a risk assessment and cost analysis for any potential solutions.**

Current Status

- TSD will have a summary report **of *all current and evolving technological advances*** completed by the end of fiscal year 2018.
- The report will inform the anticipated Prize Competition to solicit new and innovative technologies.
- Conduct ***an analysis of the feasibility, and a risk assessment and cost analysis for any potential solutions***.

Temperature modeling was conducted to determine the release temperature using half and, full bypass and without bypass at three reservoir elevation.

- ≈3700 ft - 2004
- ≈3600 ft - 2018, 2012 and 2016
- ≈3550 ft – 2007, 2009

Downstream temperatures were modeled at five locations.

Surface elevation ≈3700		
November		
	Temp C	Δ
No Bypass	7.0	
Half Bypass	6.5	0.5
Full Bypass	6.0	1.0
August		
No Bypass	10.0	
Half Bypass	9.0	1.0
Full Bypass	9.0	1.0

Surface elevation ≈3600		
November		
	Temp C	Δ
No Bypass	12.5	
Half Bypass	11.0	1.5
Full Bypass	9.0	2.0
September		
No Bypass	13.0	
Half Bypass	11.0	2.0
Full Bypass	10.5	2.5

Surface elevation ≈ 3550		
October		
	Temp C	Δ
No Bypass	15.0	
Half Bypass	11.0	4.0
Full Bypass	11.0	4.0
August		
No Bypass	13.0	
Half Bypass	11.0	2.0
Full Bypass	10.5	2.5