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**From:** Micko, Steve/SAC <Steve.Micko@jacobs.com>  
**Sent:** Thursday, March 14, 2019 11:21 AM  
**To:** Wright, Michael J; Barbara Byrne - NOAA Federal  
**Cc:** Leaf, Rob/SAC  
**Subject:** RE: [EXTERNAL] can you give me a call (or just confirm/correct my notes)?

Spot-on Mike! In Tiers 2 and 3, temperature at CCR is not supposed to exceed 56-degrees Fahrenheit during shoulder periods, if possible. I should note there are some Tier 3 years in which the 56-degree threshold is temporarily exceeded. This outcome is a result of the rough approach, abnormally warm meteorology, and/or abnormal Shasta inflows.

Best,  
Steve

**From:** Wright, Michael <mwright@usbr.gov>  
**Sent:** Thursday, March 14, 2019 7:06 AM  
**To:** Barbara Byrne - NOAA Federal <barbara.byrne@noaa.gov>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Leaf, Rob/SAC <Rob.Lead@jacobs.com>  
**Subject:** Re: [EXTERNAL] can you give me a call (or just confirm/correct my notes)?

Hi, that looks right to me. I believe 56F was the not-to exceed temperature for the shoulders in Tiers 2 and 3, yes, while Tier 1 is 53.5F the whole time, but if the wording in the BA disagrees with me then the BA, of course, is right. Attaching Steve and Rob to this so they can correct me on anything if I'm wrong

Thanks,  
- Mike W

On Wed, Mar 13, 2019 at 4:05 PM Barbara Byrne - NOAA Federal <[barbara.byrne@noaa.gov](mailto:barbara.byrne@noaa.gov)> wrote:

Is this right? Trying to capture what we covered at yesterday's meeting; don't want to distribute incorrect info...

**In all scenarios:**

The key inputs into the HEC 5Q model are the Shasta releases (from the CALSIM results) and the target temperature for Shasta releases. The target temperature for Shasta releases are developed based on the targeted regulatory temperature and compliance location (e.g. 53.5 degrees F at CCR gage) and some assumptions about the warming expected between Shasta and the temperature compliance location. For example, if targeting 53.5 degrees F at the CCR gage, and 2 degrees of warming is expected, then the target temperature for Shasta releases would be 51.5 degrees F. The HEC 5Q model then models TCD operations to attempt to meet targeted temperatures for Shasta releases.

**Modeling in BA:**

COS scenario: Used the "SRTTG" approach, which is described in detail in the Final EIS for the previous CVP/SWP ops consultation (see links in Action Items, at end of summary). Temperature target was 56 degrees F at a single temperature compliance location.

PA scenario: Modelers developed a rough temperature management approach to capture the tiered management strategy proposed in the BA. Temperature target was 53.5 degrees F at CCR gage during July and August if possible, shoulder periods were not to exceed 56 degrees F. [\[NMFS1\]](#)

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[\[NMFS1\]](#) Is this right? I'm still not exactly sure what the BA modeling assumed for the shoulders.

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**Barb Byrne**

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