MEETING SUMMARY*
LEE VINING, FERC PROJECT NO. 1388
AQUATIC TECHNICAL WORKING GROUP
MAY 24, 2021, 9:30AM -12:30PM

**These meeting notes are documentation of general discussions from the meeting held on the above-noted date and focus on stakeholder questions and comments. These notes are not a verbatim account of proceedings and do not represent any final decisions or official documentation for the project or participating agencies.*

1.0 OBJECTIVE

- To discuss hydrology and operations updates in accordance with stakeholder requests.
- To present SCE's proposed study plans and solicit feedback.

2.0 ATTENDEES

Relicensing Team Members
Seth Carr, SCE
Lyle Laven, SCE
Matt Woodhall, SCE
Martin Ostendorf, SCE
Finlay Anderson, Kleinschmidt
Isha Deo, Kleinschmidt
Shannon Luoma, Kleinschmidt
Heather Bowen Neff, Stillwater
Adam Cohen, Stillwater

Facilitation Team
Terra Alpaugh, Kearns & West
Mike Harty, Kearns & West
Lindsay Tryba, Kearns & West

Technical Working Group Members
Alyssa Marquez, CDFW
Nick Buckmaster, CDFW
Chris Shutes, CSPA
Paul Pau, LADWP
Greg Reis, Mono Lake Committee
Claire Landowski, Mono Lake Committee
Sheila Irons, USFS
Nathan Sill, USFS, Inyo National Forest
Monique Sanchez, USFS
Chad Mellison, USFWS
Sue Burak, Snow Survey Associates

3.0 COMPILED ACTION ITEMS

- Kleinschmidt will add Sheila Irons to the Lee Vining distribution list.
- Chris Shutes will send SCE an example of analysis the Water Board did on intraday operations driven by the market, and SCE will distribute it to the Team.

- SCE will send the existing stage-discharge data to Nick Buckmaster.
- Nathan Sill will follow up on motorized craft regulations on Tioga and Ellery Lakes and whether SCE could receive an exception.
- Nick Buckmaster will send SCE a document about the impact of temperature fluxes on species.
- TWG members will submit comments to Heather and/or Finlay about any resource questions they want the peaking study to examine.
- Finlay Anderson will talk to the SCE team to determine the final week to submit comments on proposed studies.
- Sue Burak will contact Andy Rouse and ask for his input on the studies, especially the proposed study on Aquatic Invasive Plants and Algae.

4.0 WELCOME & INTRODUCTIONS

Finlay Anderson, the Relicensing Team ("Team") Lead, welcomed TWG members to the meeting, introduced the Team, and provided an overview of the March TWG meeting. He reported on action items from that meeting, which included updating study plans to accommodate the group's feedback, circulating Benthic Macroinvertebrate data and Adam Cohen's associated study, and continuing discussions with the Recreation TWG about the lack of nexus between the Project and the water quality near dispersed camping sites.

5.0 HYDROLOGY AND OPERATIONS

Finlay Anderson explained that SCE has collected data and worked with the Lee Vining Project powerhouse operators to analyze past short-term flow increases and decreases. Historically, these kinds of abrupt changes in flow have been the result of grid-related events, plant-trips, and other short-term outages. Since approximately 2016, SCE has been operating Poole Powerhouse to respond to load demands, as requested by power markets (CPUC); these kinds of demands result from daily fluctuations in supply from solar and other renewables, seasonal heat wave events that increase load, and fires and fire prevention activities. These events and release schedules comply with the FERC license and Sales Agreement.

SCE records daily average flows below Poole Powerhouse, but the data does not provide the resolution needed to examine intra-day releases. To fill this need, LADWP provided SCE with ten years of 15-minute data from their diversion five miles downstream of the Powerhouse; however, Finlay cautioned that the data is not reviewed and collected according to USGS standards and incorporate flows from unregulated tributaries (e.g., Warren Fork) below the Powerhouse. The Team is reviewing this data with the goal of characterizing the frequency and magnitude of short-term resource optimization events as measured at LADWP diversion. The Team did not show specific data at this meeting but proposed including this kind of analysis as part of the study plan.

The Team stated that given that this mode of operations is relatively new, there is a nexus that justifies examining potential impacts of this type of operation on resources downstream of the Powerhouse (e.g., fish habitat and populations, bird habitat) down to the LADWP diversion. The Team will develop a study plan outline and objectives for inclusion in the PAD. SCE will review additional literature to find comparable streams and similar operations for reference and will identify any existing data-sources that may supplement information gaps. SCE believes that most questions can be addressed by expanding the existing studies and looking at the relationship between flows and resources of interest, which may require new equipment installation to understand stage-discharge relationships in key areas.

The Team asked for TWG members to submit comments in writing about any resource questions they want the study to examine **[ACTION ITEM]**. As part of the PAD filing, the Team will also address all the parts of MLC's initial hydropeaking study request, which aspects they incorporated, and any aspects they felt were outside the relicensing scope. There will be opportunities for further TWG input on the study plan after the PAD filing.

TWG member questions and comments are summarized below:

- Question (Q) (CSPA): Will daily averages be included in a study plan? Will it include a post-processing or analytical tool that will allow you to look at different operations within a given day? Will it provide a technical means to look at this (as opposed to a narrative description of general practices)? It could also be both.
    - Response (R) (Team): The first step is to understand, describe, and talk about the ramifications of the operations. The Team is open to how this study ties to the Ops Model in that the Ops Model is currently focused on what controls releases on a daily basis; more discussion would be needed to understand how to expand it to cover intraday releases. Factoring owner prices and cues into a model might take it outside the scope of relicensing, in that those are largely economic decisions rather than strictly operational ones. Ideally, the study plans will help SCE focus on what should be addressed.
    - Comment (C) (CSPA): Assuming the Ops Model is on a daily timestep, agree that trying to integrate that with a shorter timestep would make it very cumbersome. Chris can share an example of analysis from the Water Board that looked at intraday operations to provide a general window into how operations followed load and market without getting into excessive detail. [**ACTION ITEM]**
    - R (Team): Appreciate any examples of how to link a daily model with sub-daily analysis.
- Q (MLC): Are there any additional requirements beyond the daily average requirements? Or is there flexibility as long as those are met?
    - R (SCE): SCE also meets instantaneous minimum flow requirements. Also, SCE operates within the parameters of daily recreational requirements to balance inflows and outflows to minimize the need for any spills at Rhinedollar Lake.

- Q (CDFW): Has SCE looked at stage changes in the channels during ramping and considered the possibility for fish stranding? How is flow ramping impacting fisheries? This should be an area of consideration for studies.
    - R (SCE): SCE conducted internal analysis to make sure that the channel has adequate water, and SCE doubled what they discovered was needed to prevent drying of the creek (5 cfs) to develop their minimum flow of 10 cfs. SCE has looked at stage-discharge relationships at one recreation site, but they are probably not well understood, so this is an area that SCE will likely consider further. We will hold this question for further discussion.
    - R (CDFW): CDFW would like to look at the existing stage-discharge data sets to determine whether they are adequate or not [**ACTION ITEM].**

6.0 AQUATIC RESOURCES: PROPOSED STUDIES

The Team presented the proposed studies that will be included within the PAD application. The studies attempt to respond to stakeholder management interests that have a nexus with the Project.

Proposed Study: Hydro Operations Model
This proposed study aims to develop a robust operations model (Model) to assist SCE and stakeholders in understanding how Project operations interact with Lee Vining hydrology. At past meetings, CSPA asked about whether the model would be developed as an excel tool or in ResSim; SCE and the Team reported that the rating curves for the reservoirs are high enough resolution that they should be able to develop a reliable model in excel.

- Q (CSPA): Will this study include a daily timestep?
    - R (Team): SCE will address this within the study plan. The Bishop Creek Ops Model is being done on a monthly time step. The Team is somewhat concerned about the ability to use the Lee Vining historic hydrologic record in a model that would accurately reflect reality on a daily timestep.
    - C (MLC): The issue with a daily timestep is that bathymetry, wind, and other factors can cause errors in modeled unimpaired flows at that resolution. On Lundy, the Water Management Team (which includes SCE, MLC, USFS, and CDFW representatives) is taking unimpaired flows and averaging them over a weekly period.
    - C (CSPA): CSPA recommends a daily timestamp, because of the differences in load between weekdays and weekends; because of a much lower weekend load, averaging demand/supply over a longer period can be misleading. CSPA supports the idea of an excel-based model that is easily accessible in the public domain.

Proposed Study: Reservoir Fish Populations
This study aims to obtain information on reservoir fish populations where information is lacking. The study will assess fish species composition, relative abundance, and age distribution within Project reservoirs.

- C (CDFW): There are not very many near-shore fish communities, so the beach seine methodology identified for this study may not yield much information. Electrofishing would be preferable.
    - R (Team): The Team also has concerns about using the beach seine approach, but they selected it because of the limitations on boat use in the reservoirs. They are interested in better understanding the USFS concerns about motorized craft in Tioga and Ellery Lakes and how they might get approval.
    - C (USFS): USFS said it could be a Wilderness restriction. They will follow up with the Ranger to determine if SCE could be authorized to use crafts to conduct surveys. [**ACTION ITEM]**
- Q (CDFW) Will SCE save the heads from the gillnetted fish to pull otoliths?
    - R (Team): Instead of otoliths, SCE is including in the study plan a scale assessment to evaluate age.

Proposed Study: Stream Fish Populations
This study aims to supplement existing information about Saddle Bag Lake and other fish populations downstream of the Project reservoirs. Also, it will assess species composition, density, and age-distribution of the existing trout population.

- C (CDFW): Nick Buckmaster will email the Team a document detailing the impact of temperature fluxes on species. **[ACTION ITEM]**

Proposed Study: Aquatic Habitat Assessment and Sediment Characterization
This study aims to determine habitat conditions for fisheries within Project streams and characterize baseline conditions of channel substrate, habitat types, spawnable gravel patches (i.e., coarse sediment), and potential habitat-related limiting factors for the trout population.

- Q (USFS): Does SCE have any plans to examine adjacent riparian areas using an approach similar to the SWAMP protocol, which looks at various cover types?
    - R (Team): The current proposal is only looking at riparian coverage, but SCE is open to the concept of incorporating something similar to SWAMP. SCE will look into the benefits of doing this.
- Q (CDFW): Is SCE planning to map habitat at one flow or multiple flows?
    - R (SCE): At the moment, the proposal is written to map habitat at one flow.
    - Q (CDFW): Would SCE consider mapping at higher flows to see how pool and ripple habitat changes?
    - R (SCE): SCE will consider it, but if there are specific areas of concern, then SCE could propose focusing on those. It might make more sense to complete the

initial study, understand the results, and then evaluate if another study is needed to analyze various flows. Any stage-discharge work proposed in the study plan could also inform this discussion.

Proposed Study: Aquatic Invasive Plants and Algae
This study aims to obtain a semi-quantitative estimate of the spatial extent and distribution of invasive aquatic plants and algae, with a particular focus on Didymo downstream of Project reservoirs.

- C (Snow Survey Associates): I will contact Andy Rouse and ask for his input on this study. **[ACTION ITEM]**

Proposed Study: Stream and Reservoir Water Quality
This study aims to assess the consistency of Project reservoirs and Project-affected stream reaches with Basin Plan objectives to evaluate parameters obtained from reservoir profiles and *in situ* measurements.

7.0 SCHEDULE & NEXT STEPS

The Relicensing Team is on track to file the PAD by early August. The Team will distribute copies of the proposed study drafts during the week of May 31st, and then the participants will have three weeks to review the proposals and provide feedback. SCE will include responses to all comments within the PAD application. Again, the Team reiterated that the public could provide additional comments after the PAD is filed.