

Kaweah Project

FERC Project No. 298

Initial Study Report Meeting

November 1, 2018

Agenda

- Welcome and introductions
- Meeting objectives
- Relicensing process overview
- Technical study implementation
- Key contacts
- Adjourn

Meeting Objectives

- Describe overall progress in implementing study plans including any:
 - Variances
 - Modifications to ongoing studies
 - New studies proposed by the applicant

Relicensing Process Overview

- Pre-Application Document (PAD) – Dec 14, 2016
 - Fifteen draft technical study plans (TSP) included in the PAD
 - Bureau of Land Management (BLM), National Park Service (NPS), and American Whitewater filed study requests
 - Based on study requests:
 - SCE revised one plan (REC 1 – Recreation Resources)
 - Added two plans (REC 2 – Whitewater Boating and LAND 3 – Land Use)

Relicensing Process Overview

- Proposed Study Plan (PSP) – May 24, 2017
 - Seventeen TSPs included in the PSP
 - BLM, NPS, and American Whitewater filed comments on the PSP
 - Comments did not result in revision to the PSP
- Revised Study Plan (RSP) – Sept 19, 2017
 - Since no comments filed, PSP without revision constituted RSP
- FERC Study Plan Determination – Oct 24, 2017
 - Approved all study plans included in the PSP

Relicensing Process Overview

Integrated Licensing Process Steps



KTT22 AT SQUAW VALLEY SKI RESORT

Technical Study Implementation

Aquatics

AQ-1 Instream Flow

AQ-2 Fish Population

AQ-3 Macroinvertebrates

AQ-4 Water Temperature

AQ-5 Geomorphology

AQ-6 Water Quality

AQ-7 Special-status Amphibians
and Aquatic Reptiles

AQ-8 Fish Passage

AQ-9 Entrainment

Cultural

CUL-1 Cultural Resources

Land

LAND-1 Transportation System

LAND-2 Aesthetic Resources

LAND-3 Land Use

Recreation

REC-1 Recreation Resources

REC-2 Whitewater Boating

Terrestrial

TERR-1 Botanical Resources

TERR-2 Wildlife Resources

Technical Study Implementation

Data Collection

- SCE initiated technical studies in 2018
- Majority of data collection will be completed by Q4 2018
- Remaining data collection includes:
 - AQ 6 – Water Temperature
 - Continue data download from water temperature loggers and meteorological station
 - AQ 8 – Fish Passage
 - Evaluate fish passage at potential Project-related and natural barriers

Technical Study Implementation

Data Collection

- Remaining data collection includes (cont.):
 - AQ 9 – Entrainment
 - Directly estimate the potential for entrainment and mortality by sampling fish entrainment in the Project flowlines
 - REC 1 – Recreation Resources
 - Continue recreation counts and data download from trail cameras
 - TERR 2 – Wildlife Resources
 - Monitor use of wildlife bridges and escape ramps along Kaweah No. 2 and 3 Flowlines (fall/winter)

Technical Study Implementation

Preliminary Findings

- Aquatic Resources
 - Occurrence of hardhead in the Kaweah River
 - No FYLF found during protocol-level surveys
 - Abundance of trout spawning gravel
- Cultural Resources
 - 18 historic period built environment resources documented; 6 appear eligible for listing in NRHP
 - 34 previously documented archaeological resources relocated and assessed
 - 8 new archaeological sites identified (7 historic, 1 prehistoric)

Technical Study Implementation

Preliminary Findings

- Recreation Resources (Whitewater Boating)
 - Flow studies not required
 - Dissemination of real-time flow information would enhance existing boating opportunities
- Botanical Resources
 - 1 special-status plant, Munz's iris (*Iris munzii*), found in the vicinity of Kaweah No. 1 Flowline – 29 distinct populations mapped
 - NNIPs are prolific in the Project area

Technical Study Implementation

Preliminary Findings

- Wildlife Resources
 - Wildlife observed successfully crossing wildlife bridges, including mule deer, bobcat, black bear, and coyote
 - 4 special-status bat species were found in the study area: Pallid Bat (*Antrozous pallidus*), Western Mastiff Bat (*Eumops perotis californicus*), Western Small-footed Myotis (*Myotis ciliolabrum*), and Yuma Myotis (*Myotis yumanensis*).
 - 2 other special-status wildlife species (other than bats) were found in the study area: Ringtail (*Bassariscus astutus*) and Yellow Warbler (*Setophaga petechia*)

Technical Study Implementation

Initial Study Report

- Initial Study Report filed Oct 18, 2018
- Initial Study Report components:
 - Cover Letter
 - Attachment A – Certificate of Service
 - Attachment B – Distribution List
 - Attachment C – TSP Implementation Summary
 - Attachment D – TSP Implementation Schedule
- Available for download here:
 - www.sce.com/kaweah
 - www.ferc.gov/docs-filing/elibrary.asp

Technical Study Implementation

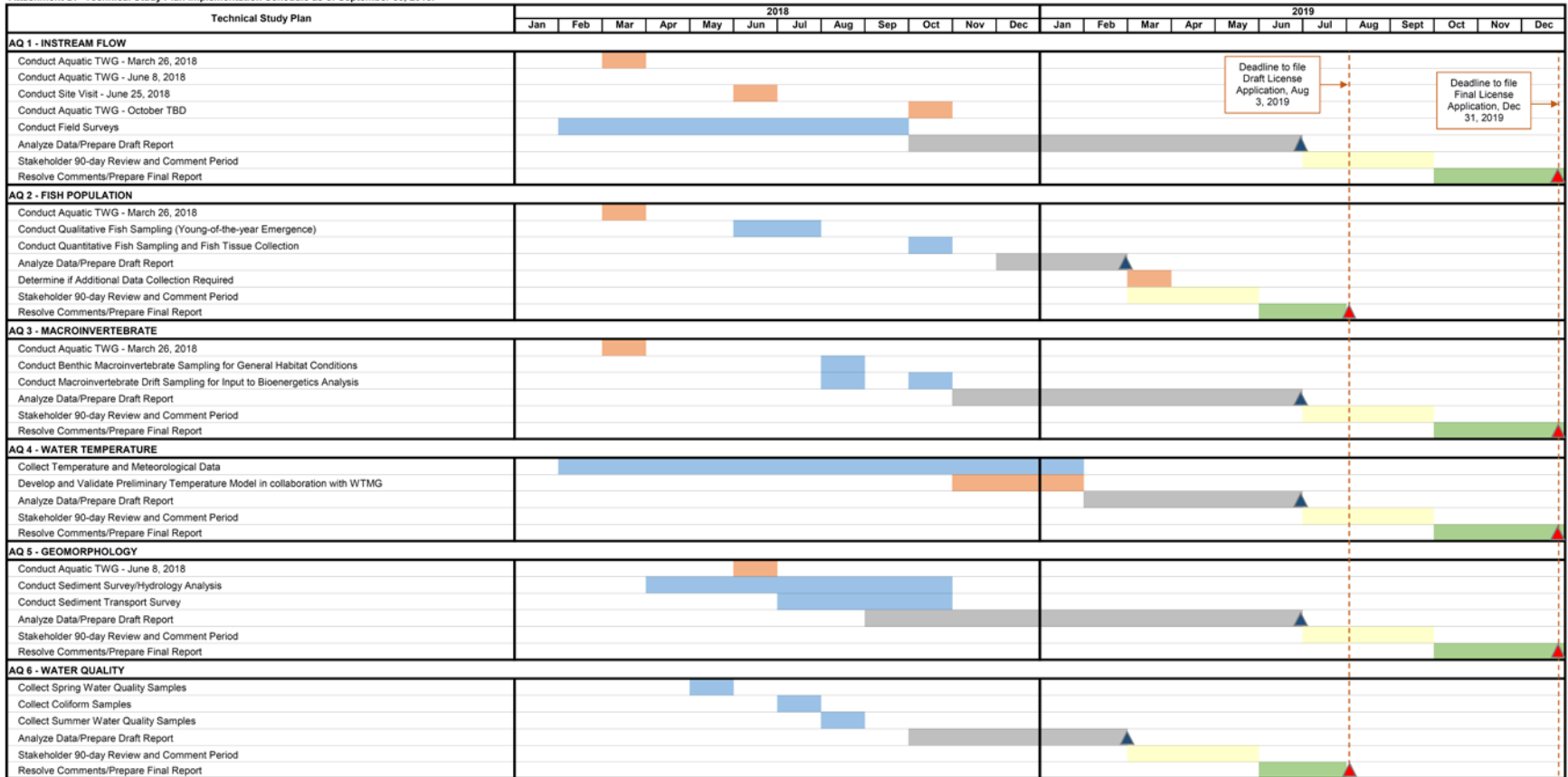
Initial Study Report

Attachment C. Technical Study Plan Implementation Summary as of September 30, 2018.

Technical Study Plan	Study Elements Completed / Data Collected	Work Group Update	Technical Study Plan Variances	Outstanding Study Elements (Data analysis and reporting schedules are shown on the implementation schedules provided in Attachment D)	Modifications to Ongoing Studies	Proposed New Studies
Aquatic Resources						
AQ 1 – Instream Flow	<p>Study Site Selection</p> <ul style="list-style-type: none"> Selected instream flow modeling sites and transects in consultation with the Aquatic Technical Working Group and in consideration of other relicensing studies. <p>Data Collection</p> <ul style="list-style-type: none"> Conducted channel habitat mapping/reach stratification, river segments, and site selection. Selected habitat units to be modeled in the three reaches. Installed transect locator pins to prepare sites for data collection. Selected reference sites outside the study area (above Kaweah No. 3 Powerhouse; upstream of Kaweah No. 1 Diversion; and below Kaweah No. 2 Powerhouse). Collected data for instream flow modeling (topography, water surface elevations, velocities, substrate, and cover) during high/high-, high-, mid-, and low-flow surveys at 61 transects in 3 reaches. Data collected on instream flow transects will serve as hydraulic data for riparian transects. Collected data on the 3 reference reach sites (topography, water surface elevations, velocities, substrate, and cover) during high/high-, high-, mid-, and low-flow surveys. Completed a riparian survey of all instream flow sites and reference reach sites. Instream flow transects and reference reach transects will be used for geomorphic transects. 	<ul style="list-style-type: none"> March 26, 2018: Conducted Aquatic Resources Technical Working Group to select instream flow modeling sites and transects. June 8, 2018: Conducted Aquatic Resources Technical Working Group to select study sites and specific habitat units and transects to model; obtain concurrence on cross-section placement within mesohabitat units; and select location and lengths of reach study sites. June 25, 2018: Conducted site visit with interested agencies and Aquatic Technical Working Group participants. 	<ul style="list-style-type: none"> None 	<p>Target Species and/or Guilds</p> <ul style="list-style-type: none"> Prepare a species distribution map for fish, special-status amphibians and reptiles, and riparian resources within the bypass river segments. Develop a life stage periodicity chart for aquatic species and riparian vegetation present in each study reach. Select species and life stages (and/or guilds) used for instream flow habitat modeling in collaboration with interested resource agencies. <p>Habitat Suitability Criteria</p> <ul style="list-style-type: none"> Confirm that HSC developed for the relicensing of Placer County Water Agency's Middle Fork Project can be used for Kaweah Project habitat modeling. <p>Hydrodynamics Modeling</p> <ul style="list-style-type: none"> Complete hydrodynamics modeling. Habitat Modeling Complete habitat modeling. <p>Technical Working Group</p> <ul style="list-style-type: none"> Conduct a Technical Working Group meeting to review field studies and select habitat suitability criteria, periodicity charts, and habitat modeling methods. <p>Data Analysis and Reporting</p> <ul style="list-style-type: none"> Analyze data and prepare Draft AQ 1 – TSR. Distribute Draft AQ 1 – TSR for stakeholder review, address comments, finalize, and distribute Final AQ 1 – TSR. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
AQ 2 – Fish Population	<p>Study Site Selection</p> <ul style="list-style-type: none"> Selected fish population sampling sites in consultation with the Aquatic Technical Working Group. <p>Special-Purpose Qualitative Sampling</p> <ul style="list-style-type: none"> Conducted two of three qualitative surveys for fry emergence in the vicinity of Project diversion (6 sites) (June and July). <ul style="list-style-type: none"> Kaweah River upstream/downstream of Kaweah No. 2 Diversion East Fork Kaweah River upstream/downstream of the Kaweah No. 1 Diversion Middle Fork Kaweah River upstream of Middle Fork Diversion Marble Fork Kaweah River upstream of Marble Fork Diversion 	<ul style="list-style-type: none"> March 26, 2018: Conducted Aquatic Resources Technical Working Group to select fish population sampling sites. 	<p>Survey Timing</p> <ul style="list-style-type: none"> Due to delays in acquisition of a scientific collection permit, the early May fry emergence sampling was not able to be performed. SCE will analyze results of the June/July sampling and consult with interested agencies and Aquatic Technical Working Group participants to make a determination on whether a third sampling is necessary. 	<p>River Sampling</p> <ul style="list-style-type: none"> Conduct quantitative river sampling (electrofishing and/or snorkeling) at 8 sites (October). <p>Special-Purpose Qualitative Sampling</p> <ul style="list-style-type: none"> Determine need to conduct third fry emergence sampling. <p>Data Analysis and Reporting</p> <ul style="list-style-type: none"> Analyze data and prepare Draft AQ 2 – TSR. Distribute Draft AQ 2 – TSR for stakeholder review, address comments, finalize, and distribute Final AQ 2 – TSR. <p>Data Distribution</p> <ul style="list-style-type: none"> Provide an electronic database of fish sampling data to the BLM, resource agencies, and interested stakeholders. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None

Technical Study Implementation Initial Study Report

Attachment D. Technical Study Plan Implementation Schedule as of September 30, 2018.



Technical Study Implementation Variances

- All studies implemented as outlined in FERC-approved TSPs with a few variances
- Variances fall into three categories:
 - Survey timing
 - Study approach refinement
 - Report distribution

Technical Study Implementation

Variance – Survey Timing

- AQ 2 – Fish Populations
 - Timing identified in the AQ 2 – TSP for conducting qualitative fish sampling (YOY emergence) was May-June 2018 (three sampling periods).
 - Due to delay in acquisition of scientific collection permit, the early May fry emergence sampling was not able to be performed.
 - SCE will analyze results of the June/July sampling and consult with interested agencies and the Aquatic TWG to make a determination on whether a third sampling is necessary.

Technical Study Implementation

Variance – Survey Timing

- AQ 5 – Geomorphology
 - Timing identified in the AQ 5 – TSP for conducting sediment survey and hydrology analysis was November 2017 to August 2018.
 - Timing to complete these surveys extended through October 2018.

Technical Study Implementation

Variance – Survey Timing

- CUL 1 – Cultural Resources (Archaeology)
 - Timing identified in the CUL 1 – TSP for conducting the archaeological inventory and survey was April-May 2018.
 - Archaeological inventory and survey was completed in May-June 2018.

Technical Study Implementation

Variance – Survey Timing

- LAND 2 – Aesthetic Resources
 - Timing identified in the LAND 2 – TSP for conducting the helicopter noise assessment was April-June 2018.
 - SCE did not utilize a helicopter for O&M activities during this period.
 - The helicopter noise assessment occurred in September 2018.

Technical Study Implementation

Variance – Survey Timing

- REC 1 – Recreation Resources
 - Timing identified in the REC 1 – TSP for conducting visitor counts at Edison Beach was January-December 2018.
 - Survey counts did not begin until March 2018.
 - Visitor counts will continue through March 2019 to obtain a complete year of data.

Technical Study Implementation

Variance – Survey Timing

- TERR 2 – Wildlife Resources
 - Timing identified in the TERR 2 – TSP for conducting special-status bat reproductive surveys was August/September 2018.
 - In consultation with resource agencies, acoustic survey timing was shifted to the last two weeks in June to coincide with the end of the typical maternal roosting period to maximize the potential for detections.

Technical Study Implementation

Variance – Study Approach Refinement

- CUL 1 – Cultural Resources
 - Implementation of the CUL 1 – TSP included the addition of a one-mile CHRIS record search buffer surrounding the APE to provide additional contextual information for resources in the APE.
 - Historic period built environment resources associated with the Project in Sequoia National Park were inventoried and evaluated for NRHP eligibility because these resources are contextually associated with historic period built environment resources in the Project APE.

Technical Study Implementation

Variance – Study Approach Refinement

- LAND 1 – Transportation System
 - The estimated useful remaining life span of surface treatments and erosion and drainage features on Project roads and trails was not included in the assessment.
 - It was determined that the useful remaining lifespan of surface treatments and erosion and drainage features was subjective and could change dramatically depending on the severity of local conditions (i.e., heavy equipment use or severe storms).

Technical Study Implementation

Variance – Study Approach Refinement

- REC 1 – Recreation Resources
 - The REC 1 – TSP included installation of two trail cameras along Salt Creek Road.
 - Following consultation with the BLM, it was determined that only one trail camera would be necessary.

Technical Study Implementation

Variance – Study Approach Refinement

- REC 1 – Recreation Resources
 - The REC 1 – TSP included estimation of recreation counts at SCE's Kaweah No. 2 River Access Area (Edison Beach) through randomly scheduled vehicle counts.
 - To augment visitor counts at Edison Beach, a trail camera was installed at the parking area to record visitor use.

Technical Study Implementation

Variance – Study Approach Refinement

- TERR 1 – Botanical Resources
 - The TERR 1 – TSP indicated that if non-native invasive plants (NNIP) are identified on the perimeter of the study area, that the study area would be expanded to document the extent of the population.
 - In most cases this occurred with one exception – tocalote (*Centaurea melitensis*) was found to be ubiquitous in portions of the Project area and vicinity.
 - TERR 1 – TSR maps will clearly indicate the locations where extensive tocalote populations occurred.

Technical Study Implementation

Variance – Report Distribution

- Report distribution delayed because additional time was needed to:
 - Complete field studies
 - Consult with agencies
 - Acquire or compile data
 - Analyze data
 - Complete modeling
- Updated schedules are included in Initial Study Report (Attachment D)

Technical Study Implementation Variance – Report Distribution

	2018		2019			
	Q3	Q4	Q1	Q2	Q3	Q4
Aquatic Resources						
AQ 1 - Instream Flow					▲	
AQ 2 - Fish Population			▲			
AQ 3 - Macroinvertebrates			▲		▲	
AQ 4 - Water Temperature		▲			▲	
AQ 5 - Geomorphology					▲	
AQ 6 - Water Quality			▲			
AQ 7 - Special-Status Amphibians and Reptiles			▲	▲		
AQ 8 - Fish Passage				▲		
AQ 9 - Entrainment		▲			▲	
Cultural Resources						
CUL 1 - Built Environment	▲	▲				
CUL 1 - Archaeology	▲	▲				
CUL 1 - Ethnography	▲		▲			
Land Resources						
LAND 1 - Transportation System		▲				
LAND 2 - Aesthetic Resources		▲				
LAND 3 - Land Use			▲			
Recreation Resources						
REC 1 - Recreation Resources			▲	▲		
REC 2 - Whitewater Boating		▲	▲			
Terrestrial Resources						
TERR 1 - Botanical Resources		▲				
TERR 2 - Wildlife Resources			▲			

Draft Application

- ▲ TSP Distribution Date
- ▲ Revised Distribution Date

Technical Study Implementation Modifications

- AQ 9 – Entrainment study proposed modifications
 - Revised AQ 9 TSP distributed to stakeholders for review October 26, 2018
 - File comments concurrent with Initial Study Report Meeting Summary
 - Proposed Approach
 - Four representative sampling time periods
 - Three consecutive days (12 hours/day)
 - Initial and night sampling at 50% diversion capacity (safety precaution)
 - Use Kaweah No. 2 Flowline information as surrogate for Kaweah No. 3 Flowline
 - Sampling in Kaweah No. 1 Flowline contingent on repair of damage (landslide)

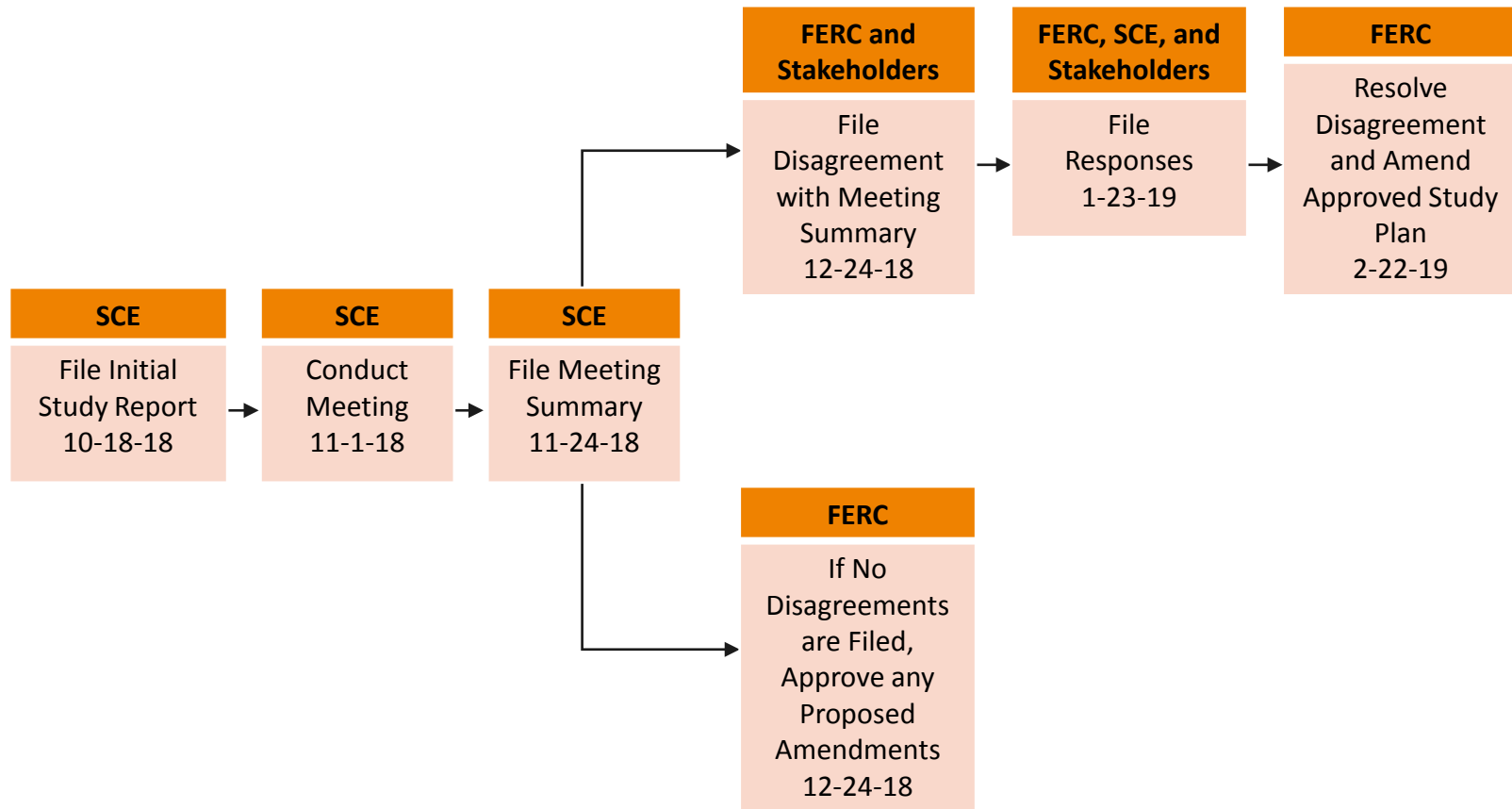
Technical Study Implementation

New Studies

- No new studies are proposed by SCE

Technical Study Implementation

Next Steps per FERC ILP Regulations



18 CFR §5.15(c)

Key Contacts

Name	Role/Resource	E-mail	Phone
Southern California Edison			
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SCE Relicensing website: www.sce.com/kaweah

Key Contacts

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www.ferc.gov/esubscribenow.htm

Access documents filed related to the Kaweah Project

www.ferc.gov/docs-filing/elibrary.asp

Adjourn

