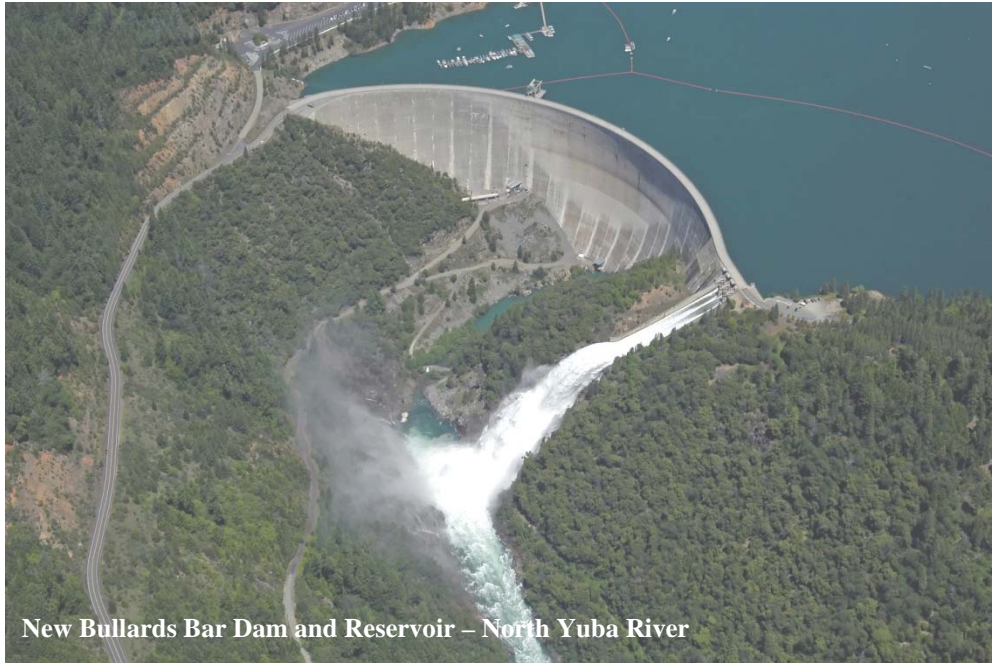


YUBA COUNTY WATER AGENCY

Yuba River Development Project FERC Project No. 2246



New Bullards Bar Dam and Reservoir – North Yuba River

Updated Study Report

- Period from Study Initiation through December 3, 2013 -

[SECURITY LEVEL: PUBLIC]

December 2013



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YUBA COUNTY WATER AGENCY

Yuba River Development Project
FERC Project No. 2246

Updated Study Report
- Period from Study Initiation through December 3, 2013 -

[SECURITY LEVEL: PUBLIC]

December 2013



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UPDATED STUDY REPORT
EXECUTIVE SUMMARY

Pursuant to 18 CFR § 5.15(f) of the Federal Energy Regulatory Commission’s (FERC or Commission) regulations, this Updated Study Report (USR) provides the status of studies being performed by the Yuba County Water Agency (YCWA) in support of its relicensing of the Yuba River Development Project, Federal Energy Regulatory Commission (FERC) Project Number 2246 (Project).

This USR covers the period from initiation of the various relicensing studies through December 3, 2013.

As of December 3, 2013, YCWA has completed 43 of the FERC-approved 48 studies. For each of these studies, a final technical memorandum, which includes the study goals and objectives, methods, results, discussion and any variances to the FERC-approved study has been posted to YCWA’s relicensing Website (www.ycwa-relicensing.com).

The remaining five studies are in progress. Table ES-1 provides the date that YCWA expects to complete each study that is in progress.

Table ES-1. Studies in progress and the date, in chronological order, that YCWA expects each study will be complete.

Study Number	Study Name	Date YCWA Posted an Interim Technical Memorandum to the Relicensing Website	Date YCWA Forecasts the Study Will be Complete
6.1	Riparian Habitat Upstream of Englebright Reservoir	May 31, 2013	January 15, 2014
7.13	Fish Stranding Associated with Shutdown of Narrows 2 Powerhouse Partial Bypass	--	February 28, 2014 ¹
8.2	Recreational Flow	October 29, 2012	June 30, 2014
7.11	Fish Behavior and Hydraulics Near Narrows 2 Powerhouse	December 2, 2012	Interim Tech Memo - January 31, 2014 ^{1, 2} Final Tech Memo - March 31, 2015 ^{1, 2}
7.11a	Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Downstream of Narrows 2 Powerhouse	--	

¹ This date is the same as the completion date in the FERC-approved study.
² The FERC-approved studies direct that an interim technical memoranda for Studies 7.11 and 7.11a will be combined into a single interim technical memorandum that will be posted to YCWA’s relicensing Website by January 31, 2014; and the final technical memoranda for Studies 7.11 and 7.11a will be combined into a single final technical memorandum that will be filed with FERC by March 31, 2015.

YCWA does not propose any modifications to ongoing studies or new studies.

YCWA, in consultation with Relicensing Participants, has scheduled an USR meeting for December 17, 2013 in Marysville, California. YCWA will file with FERC an USR meeting summary by December 31, 2013.

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SECTION 1.0

INTRODUCTION

In accordance with 18 CFR § 5.15(f)¹ of the Federal Energy Regulatory Commission's (FERC or Commission) regulations, this Updated Study Report (USR) provides the status of studies being performed by the Yuba County Water Agency (YCWA) in support of its relicensing of the Yuba River Development Project, FERC Project Number (No.) 2246 (Project). This USR Report covers the period from study initiation through December 3, 2013.² In addition, the USR describes any modifications to ongoing studies or new studies proposed by YCWA, and advises FERC that YCWA and Relicensing Participants³ have scheduled a December 17, 2013 USR meeting, and YCWA plans to file a USR report meeting summary by December 31, 2013.

1.1 Background

YCWA owns and operates the Project. The initial license for the Project was issued by the Federal Power Commission, FERC's predecessor, to YCWA on May 16, 1963, effective on May 1, 1963. The Federal Power Commission's May 6, 1966, Order Amending License changed the license's effective date to May 1, 1966, for a term ending on April 30, 2016.

YCWA intends to apply to FERC for a new license for the Project. To this end, YCWA filed with FERC the following documents:

- *Notice of Intent to File an Application for a New License* (NOI) filed on November 5, 2010
- *Pre-Application Document* (PAD) filed on November 5, 2010
- *Proposed Study Plan* filed on April 19, 2011
- *Revised Study Plan* filed on August 17, 2011

¹ 18 CFR § 5.15(f) states: "Updated Study Report. Pursuant to the Commission-approved study plan and schedule provided for in § 5.13, or no later than two years after Commission approval of the study plan and schedule, whichever comes first, the potential applicant shall prepare and file with the Commission an updated study report describing its overall progress in implementing the study plan and schedule and the data collected, including an explanation of any variance from the study plan and schedule. The report must also include any modifications to ongoing studies or new studies proposed by the potential applicant. The review, comment, and disagreement resolution provisions of paragraphs (c)(2)-(7) of this section shall apply to the updated study report. Any proposal to modify an ongoing study must be accompanied by a showing of good cause why the proposal should be approved as set forth in paragraph (d) of this section. Any proposal for new information gathering or studies is subject to paragraph (e) of this section except that the proponent must demonstrate extraordinary circumstances warranting approval. The applicant must promptly proceed to complete any remaining undisputed information-gathering or studies under its proposed amendments to the study plan, if any, and must proceed to complete any information-gathering or studies that are the subject of a disagreement upon the Director's resolution of the disagreement."

² YCWA filed its Initial Study Report meeting summary on December 27, 2012. The Initial Study Report covered the period from study initiation through December 27, 2012.

³ For the purpose of this Updated Study Report, a "Relicensing Participant" is considered an agency, organization or individual that actively participates in the Project Relicensing. This designation is not intended to exclude any stakeholder from participating in the relicensing at whatever level is comfortable and appropriate for that stakeholder, but to acknowledge that some stakeholders have routinely participated in relicensing meetings and filed comments with FERC.

- *Initial Study Report* filed on December 3, 2012
- *Initial Study Report Meeting Summary* filed on December 27, 2012
- *Draft Application for a New License Major Project – Existing Dam* filed on December 3, 2013.

1.2 Description of the Project

The Project, which was constructed in the mid 1960s and put into service in 1970, replaced three older facilities: 1) the Colgate Diversion Dam, Flume and Powerhouse, which originally were constructed in 1899 by the Yuba Electric Power Company, and which were replaced by the Colgate Tunnel and second Colgate Powerhouse, constructed by the Pacific Gas and Electric Company (PG&E) in 1940 and 1949, respectively; 2) the Bullards Bar Dam and Reservoir, which were constructed in 1923-1924 by a group of private investors led by Harry Payne Whitney and purchased by PG&E a few years later; and 3) the Bullards Bar Powerhouse, which was constructed by PG&E in 1949.

The existing Project is located in Yuba, Sierra, and Nevada counties, California, on the main stems of the Yuba River, the North Yuba River, and the Middle Yuba River, and on Oregon Creek, a tributary to the Middle Yuba River. A portion of the FERC Project Boundary⁴ is located on federal land managed by the United States Department of Agriculture, Forest Service, as either the Plumas National Forest (PNF) or Tahoe National Forest (TNF).

The existing Project consists of three developments, New Colgate, New Bullards Minimum Flow, and Narrows 2, which range in elevation from 280 feet to 2,049 feet.⁵ The Project's principal works include:

- 1 dam and associated storage reservoir - New Bullards Bar
- 2 diversion dams - Our House and Log Cabin
- 2 diversion tunnels - Lohman Ridge and Camptonville
- 2 underground power tunnels - New Colgate and Narrows 2
- 1 above ground penstock - New Colgate
- 3 powerhouses - New Colgate, New Bullards Minimum Flow, and Narrows 2
- 16 recreation facilities, all of which are located at New Bullards Bar Reservoir
- associated stream flow and reservoir gages
- associated streamflow gages and roads

⁴ The existing FERC Project Boundary encompasses all Project facilities and features as well as all land needed by YCWA for the normal operation and maintenance of the Project. The boundary is shown in Exhibit J and K, Project Maps, of the existing FERC license for the Project.

⁵ All elevation data are in United States Department of Commerce (USDOC), National Oceanic and Atmospheric Association (NOAA), National Geodetic Survey (NGS) Vertical Datum of 1929 (NAVD 29).

The Project does not include any aboveground water conduits (e.g., canals or flumes) or transmission lines.^{6,7} The Project does not include any active spoil piles, but does include one active borrow area, which is located within the FERC Project Boundary on YCWA-owned land near the New Colgate Powerhouse.

YCWA operates New Bullards Bar Reservoir by capturing winter and spring runoff from rain and snowmelt. Consequently, New Bullards Bar Reservoir normally reaches its annual peak storage at the end of the spring runoff season, and then is gradually drawn down until its lowest elevation is reached in mid-winter. The reservoir does not undergo substantial daily changes in elevation due to Project operations. Storage in wetter water years can also be affected by New Bullards Bar Reservoir mandatory flood pool criteria established by the United States Army Corps of Engineers (USACE) from October through April.⁸

Our House and Log Cabin diversion dam impoundments do not store water and YCWA operates them to divert water to New Bullards Bar Reservoir in spring during high flow periods.

One of the primary benefits of the Project is Pacific Gas and Electric Company's (PG&E) dispatching of New Colgate Powerhouse through the California Independent System Operator (ISO) to balance the northern California Transmission System through regulation up and down. The powerhouse is under ISO Automatic Generator Control, so the ISO has the ability to vary New Colgate Powerhouse generation on a real-time basis to meet energy needs. YCWA operates New Bullards Minimum Flow and Narrows 2 powerhouses as base-load facilities.

The existing Project passes water through the federally-owned Englebright Reservoir, which is located on the Yuba River near the City of Marysville and managed by the USACE. Englebright Dam is not part of the FERC-licensed Project, nor is it under FERC's jurisdiction. None of the Yuba River Development Project facilities are integral parts of Englebright Dam; the Project's Narrows 2 Power Conduit and Narrows 2 Powerhouse, the lowermost elevation Project facilities,

⁶ Project powerhouse switchyards are connected to the California Transmission Grid via non-Project transmission lines. Of note, the 60 kilovolt (kv) transmission line that extends from the Project's Narrows 2 Powerhouse Switchyard to the grid is owned and operated by PG&E. The portion of the transmission line is part of PG&E's Narrows 2 Substation 60 kV Transmission Line Project, for which PG&E holds a Minor-Part License (FERC Project No. 2678) from FERC. PG&E's license for Project 2678 expires on April 30, 2016. On July 6, 2011, PG&E filed with FERC a Notice of Intent to relicense the Narrows 2 Substation 60 kV Transmission Line Project.

⁷ The Project does not include the Narrows 1 Powerhouse, which is located on the south side of the Yuba River, about 0.5 mile downstream of the USACE's Englebright Dam. Narrows 1 Powerhouse is part of PG&E's Narrows Project (FERC Project No. 1403). PG&E's license for Project No. 1403 expires on January 31, 2023.

⁸ The USACE contributed \$12 million to the construction of New Bullards Bar Dam in exchange for flood control space the reservoir would provide.

are not connected or attached to Englebright Dam in any way, nor do they intersect the dam in any way (e.g., the powerhouse power tunnel and penstock does not pass through the dam).⁹

A uniquely important set of agreements regarding Project operations is the Lower Yuba River Accord (Yuba Accord). In 2005, YCWA and 16 other interested parties signed memoranda of understanding (MOU) that specified terms of the Yuba Accord. The Yuba Accord is a comprehensive, consensus-based program to protect and enhance aquatic habitat in the Yuba River downstream of Englebright Dam. Following environmental review, YCWA executed four agreements in 2007, which together comprise the Yuba Accord. The four agreements are: 1) the Lower Yuba River Fisheries Agreement, which specifies the Yuba Accord's Lower Yuba River minimum streamflows and creates a detailed fisheries monitoring and evaluation program; 2) the Water Purchase Agreement, under which the California Department of Water Resources (CDWR) purchases water, some of which is provided by the Yuba Accord's minimum streamflows, from YCWA for CALFED's Environmental Water Account¹⁰ and for State Water Project and Central Valley Project contractors; 3) the Conjunctive Use Agreements with seven of YCWA's member units, which specify the terms of the Yuba Accord's groundwater conjunctive use program; and 4) amendments to the 1966 Power Purchase Contract between YCWA and PG&E.¹¹

The Yuba Accord was developed by a multi-agency resource team, including representatives from United States Department of Interior, Fish and Wildlife Service (USFWS); United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS); Cal Fish and Wildlife (CDFW); and a group of non-governmental organizations (NGO).

The Yuba Accord flow schedules were developed to essentially optimize fisheries habitat conditions during a majority¹² of years for this regulated river system. Subsequently, additional flow schedules were developed by the resources team for drier conditions which included a "balancing of resources" approach. Together, this package of agreements commits more water to minimum instream flows and provides greater reliability for both instream and consumptive uses than would be possible without the agreements.

⁹ Englebright Dam, which is about 260 feet high and forms Englebright Reservoir, was constructed by the California Debris Commission in 1941, 18 years before YCWA was formed and 22 years before the Federal Power Commission issued the initial Project license. The dam is owned by the United States. When the California Debris Commission was decommissioned in 1986, administration of Englebright Dam and Reservoir passed to the USACE. The primary purpose of the dam is to trap and contain sediment derived from extensive historic hydraulic mining operations in the Yuba River watershed. Englebright Reservoir is about 9 miles long with a surface area of 815 acres. Englebright Reservoir when first constructed had a gross storage capacity of 70,000 ac-ft; however, due to sediment capture, the gross storage capacity today is approximately 50,000 ac-ft (USGS 2003).

¹⁰ The purchase of water through the Yuba Accord Water Purchase Agreement was the first long-term acquisition of water by the California Department of Water Resources that protects San Francisco Bay/Delta fish and wildlife.

¹¹ The 1966 Power Purchase Agreement between YCWA and PG&E expires on April 30, 2016, the same day the existing FERC license for the Yuba River Development Project expires.

¹² The Yuba Accord establishes minimum streamflows in the Yuba River downstream of Englebright Dam for six water year types ranging from wet water years (Schedule 1) to dry water years (Schedule 6). Conferences with agencies are scheduled in very dry years to set minimum streamflows. Water years in Schedule 1 and 2 were designed to optimize fisheries habitat and are expected to occur approximately 78 percent of the time.

The Yuba Accord also provided a \$6 million River Management Fund for monitoring and evaluation of anadromous fish and their habitat in the Yuba River downstream of Englebright Dam. The fund is administered by the River Management Team (RMT), which is comprised of representatives of YCWA, USFWS, NMFS, CDFW, PG&E, CDWR, South Yuba River Citizens League (SYRCL), Trout Unlimited, Friends of the River, and The Bay Institute — all of whom are signatories to the Lower Yuba River Fisheries Agreement. The RMT, in collaboration with representatives from University of California, Davis (UC Davis) and the Pacific States Marine Fisheries Commission, has developed a Monitoring and Evaluation Program (M&E) to guide the efficient expenditure of the River Management Fund to evaluate the effects of implementation of the Yuba Accord on the aquatic resources of the lower Yuba River over the period extending from 2008 to 2016. The M&E Program embraces a monitoring-based adaptive management approach to increase the effectiveness of, and to address the scientific uncertainty associated with, specific monitoring and study activities, and restoration actions.

The primary purpose of the M&E Program is to provide the monitoring data necessary to evaluate whether implementation of the Yuba Accord will maintain fish resources (i.e., the fish community including native fish and non-native fish) of the lower Yuba River in good condition, and will support viable anadromous salmonid populations. The RMT has developed an M&E Program framework document that identifies data collection needs, analytic approaches and thresholds or other metrics for comparison or evaluation. The RMT developed and deployed study plans (i.e., Protocols, which should not be confused with the relicensing study proposals) for:

- Flow and Water Temperature Monitoring
- Topographic Mapping (Digital Elevation Model, or DEM)
- Substrate and Cover Mapping
- 2D Hydrodynamic Modeling
- Morphologic Unit Classification
- Mesohabitat Classification
- Riparian Vegetation Mapping
- Acoustic Tagging and Tracking
- VAKI™ Riverwatcher Fish Counter Monitoring
- Redd Surveys
- Fish Carcass Surveys
- Snorkel Surveys
- Rotary Screw Trap (RST) Fish Collection
- Genetic Sampling and Characterization
- Otolith Sampling and Characterization

The RMT monitors data collection activities, reviews analytic techniques, performs quality assurance/quality control (QA/QC) reviews of data and products, and compiles annual data reports. Monitoring observations, data and annual reports are made available on the RMT website (www.yubaaccordrmt.com) as they become available. Additionally, the RMT provides data upon request to various other study efforts including those of RMT member entities. The RMT routinely coordinates and shares data with several other Sacramento River Valley monitoring or scientific programs, and data-shares with CDWR's Feather River monitoring programs, various CDFW monitoring programs, and research projects based at UC Davis, University of South Carolina, State University of New York, and the University of Idaho.

The results of the ongoing RMT Protocols and annual data reports, in addition to the results of YCWA's relicensing studies and other information that may become available, may inform the development of YCWA's relicensing proposal.

The RMT issued a draft M&E Report that summarized, synthesized and presented results of the first 6 years of the RMT's studies.

YCWA has been operating the Project in conformance with the Yuba Accord since 2006.¹³ On May 20, 2008, the State Water Resources Control Board (SWRCB) adopted its Corrected Order WR 2008-0014, which approved long-term amendments to YCWA's water-right permits that were necessary so that YCWA may continue to implement the Yuba Accord.

1.3 The Relicensing Studies

Beginning in July 2009, over a year prior to filing its Revised Study Plan with FERC, YCWA began to meet with Relicensing Participants to familiarize them with the Project and its operations; discuss process; identify issues; and, most importantly, to collaboratively develop study proposals. After over 70 meetings, YCWA filed its Revised Study Plan, which included 42 individual studies, with FERC on August 17, 2011 (Column A in Table 1.3-1). The studies were proposed to gather pertinent information for environmental analysis of YCWA's proposed Project and alternatives, which information would not be otherwise reasonably available. Through December 3, 2013, FERC modified, amended and revised YCWA's proposed studies and added new studies, so that the total number of studies to be performed by YCWA is now 48 (Table 1.3-1).

¹³ The 2006, 2007, and early 2008 operations were under 1-year pilot programs that were approved by the SWRCB.

Table 1.3-1. Studies proposed by YCWA in its Revised Study Plan and subsequently modified, including new studies added by FERC.

Study Number	Study Description	Proposed in YCWA's August 17, 2011 Revised Study Plan	Columns B, C and D			Column E	Columns F and G		Columns H and I		Column J	Columns K and L		Column M	Column N
			Approved, Modified or Added by FERC's September 30, 2011 Study Plan Determination			Modified by FERC's December 8, 2011 Study Plan Modification	Amended or Revised by FERC's December 28, 2011 Formal Study Dispute Resolution Determination		Approved or Modified by FERC's May 14, 2012 Modified Studies Determination		Modified by FERC's July 24, 2012 Study Plan Determination	Modified or Added by FERC's March 29, 2013 Study Plan Determination		Approved by FERC's June 17, 2013 Study Plan Determination	Approved by FERC's August, 22, 2013 Study Plan Determination
			Approved	Modified	Added	Modified	Amended	Revised	Approved	Modified	Modified	Modified	Added	Approved	Approved
GEOLOGY AND SOILS															
1.1	Channel Morphology Upstream of Englebright Reservoir ¹	X	X	--	--	X	--	--	--	--	--	--	--	--	--
1.2	Channel Morphology Downstream of Englebright Dam	X	--	X	--	--	--	--	X	--	--	X	--	--	--
WATER RESOURCES															
2.1	Hydrologic Alteration	X	--	X	--	--	X	--	--	--	--	X	--	--	--
2.2	Water Balance/Operations Model	X	X	--	--	--	--	--	--	--	--	--	--	--	--
2.3	Water Quality	X	--	X	--	--	--	--	--	--	--	--	--	--	--
2.4	Bioaccumulation ¹	X	X	--	--	--	--	--	--	--	--	--	--	--	--
2.5	Water Temperature Monitoring ¹	X	X	--	--	--	X	--	--	--	--	--	--	--	--
2.6	Water Temperature Model	X	X	--	--	--	--	--	--	--	--	--	--	--	--
AQUATIC RESOURCES															
3.1	Aquatic Macroinvertebrates Upstream of Englebright Reservoir	X	--	X	--	--	--	--	--	--	--	--	--	--	--
3.2	Aquatic Macroinvertebrates Downstream of Englebright Dam	X	--	X	--	--	--	--	--	--	--	--	--	--	--
3.3	Special-Status Aquatic Mollusks	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.4	Special-Status Amphibians – Foothill Yellow-Legged Frog Surveys ¹	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.5	Special-Status Amphibians – Foothill Yellow-Legged Frog Habitat Modeling	X	X	--	--	--	--	--	--	--	X	--	--	--	--
3.6	Special-Status Turtles – Western Pond Turtle	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.7	Reservoir Fish Populations	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.8	Stream Fish Populations Upstream of Englebright Reservoir ²	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.9	Non-ESA-Listed Fish Populations Downstream of Englebright Dam	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.10	Instream Flow Upstream of Englebright Reservoir	X	X	--	--	--	--	--	--	--	--	--	--	--	--
3.11	Entrainment ²	X	--	X	--	--	--	--	X	--	X	--	--	--	--
3.12	New Colgate Powerhouse Ramping	--	--	--	X	--	--	--	X	--	--	--	--	--	--
3.13	Focused 2013 Foothill Yellow-legged Frog Surveys	--	--	--	--	--	--	--	--	--	--	X	--	--	--
3.14	Focused 2013 Western Pond Turtle Surveys	--	--	--	--	--	--	--	--	--	--	X	--	--	--
WILDLIFE RESOURCES															
4.1	Special-Status Wildlife – California Wildlife Habitat Relationships	X	--	X	--	--	--	--	--	--	--	--	--	--	--
4.2	Special-Status Wildlife – Bats	X	X	--	--	--	--	--	--	--	--	--	--	--	--
BOTANICAL RESOURCES															
5.1	Special-Status Plants	X	X	--	--	--	--	--	--	--	--	--	--	--	--
RIPARIAN, WETLANDS AND LITTORAL HABITAT															
6.1	Riparian Habitat Upstream of Englebright Reservoir ^{1,4}	X	--	X	--	X	--	--	X	--	--	--	--	--	--

Table 1.3-1. (continued)

Column A		Columns B, C and D			Column E	Columns F and G		Columns H and I		Column J	Columns K and L		Column M	Column N	
Study Number	Study Description	Proposed in YCWA's August 17, 2011 Revised Study Plan	Approved, Modified or Added by FERC's September 30, 2011 Study Plan Determination			Modified by FERC's December 8, 2011 Study Plan Modification	Amended or Revised by FERC's December 28, 2011 Formal Study Dispute Resolution Determination		Approved or Modified by FERC's May 14, 2012 Modified Studies Determination		Modified by FERC's July 24, 2012 Study Plan Determination	Modified or Added by FERC's March 29, 2013 Study Plan Determination		Approved by FERC's June 17, 2013 Study Plan Determination	Approved by FERC's August, 22, 2013 Study Plan Determination
			Approved	Modified	Added	Modified	Amended	Revised	Approved	Modified	Modified	Modified	Added	Approved	Approved
RIPARIAN, WETLANDS AND LITTORAL HABITAT (continued)															
6.2	Riparian Habitat Downstream of Englebright Dam	X	--	X	--	--	--	--	X	--	--	--	--	--	--
6.3	Wetlands	X	X	--	--	--	--	--	--	--	--	--	--	--	--
THREATENED, ENDANGERED AND FULLY PROTECTED SPECIES															
7.1	ESA-Listed Plants	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.2	Narrows 2 Powerhouse Intake	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.3	ESA-Listed Amphibians – California Red-Legged Frog	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.4	ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.5	CESA-Listed Plants	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.6	CESA-Listed and Fully Protected Wildlife – California Wildlife Habitat Relationships	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.7	CESA-Listed and Fully Protected Wildlife – Bald Eagle	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.8	ESA/CESA-Listed Salmonids Downstream of Englebright Dam	X	X	--	--	--	X	--	--	--	--	--	--	--	--
7.9	North American Green Sturgeon Downstream of Englebright Dam	X	X	--	--	--	--	--	--	--	--	--	--	--	--
7.10	Instream Flow Downstream of Englebright Dam	X	--	X	--	--	X	--	--	--	--	--	--	--	--
7.11	Fish Behavior and Hydraulics Near Narrows 2 Powerhouse ³	X	--	X	--	--	--	X	--	--	X	X	--	--	--
7.11a	Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Downstream of Narrows 2 Powerhouse	--	--	--	--	--	--	--	--	--	--	X	--	--	X
7.12	Evaluation of Project Effects on Daguerre Point Dam and Hallwood-Cordua Fish Facilities	--	--	--	X	--	--	--	--	X	--	--	--	--	--
7.13	Fish Stranding Associated with Shutdown of Narrows 2 Powerhouse Partial Bypass	--	--	--	--	--	--	--	--	--	--	X	X	--	--
RECREATIONAL RESOURCES															
8.1	Recreation Use and Visitor Surveys	X	X	--	--	--	--	--	--	--	--	X	--	--	--
8.2	Recreational Flow ¹	X	X	--	--	--	--	--	--	--	--	X	--	--	--
LAND USE															
9.1	Primary Project Roads and Trails	X	X	--	--	--	--	--	--	--	--	X	--	--	--
SOCIO-ECONOMIC RESOURCES															
10		None													
AESTHETIC RESOURCES															
11.1	Visual Quality	X	X	--	--	--	--	--	--	--	--	--	--	--	--
CULTURAL RESOURCES															
12.1	Historic Properties ¹	X	X	--	--	--	--	--	--	--	--	--	--	--	--
TRIBAL RESOURCES															
13.1	Native American Traditional Cultural Properties ¹	X	X	--	--	--	--	--	--	--	--	--	--	--	--
<i>Subtotal</i>		42	31	11	2	2	4	1	4	2	1	8	4	1	1
Total		48													

¹ YCWA, at its own risk, initiated this study prior to FERC's September 30, 2011 Study Determination.

² On September 20, 2013, YCWA filed a letter advising FERC that YCWA and Relicensing Participants agreed to additional analysis related to Studies 3.8 and 3.11.

³ In the Revised Study Plan, this study was named "Assessment of Narrows 2 Powerhouse as Barrier to Anadromous Fish Upstream Migration." It was subsequently renamed to reflect the changed focus of the study.

⁴ On July 26, 2013, YCWA filed a letter advising FERC that YCWA and Relicensing Participants agreed to additional analysis related to Study 6.1.

1.4 Use of Technical Memoranda

Each of the studies in FERC’s Determination requires-as a step in the study-preparation of a report. For the purpose of this relicensing, YCWA refers to these reports as “technical memoranda,” and has, or will, prepare a single technical memorandum for each study. Each technical memorandum presents, or will present, the results of the study.

Each technical memorandum includes an executive summary and eight major sections. The sections include: 1) Goals and Objectives; 2) Methods; 3) Results; 4) Discussion, if appropriate; 5) Study-Specific Collaboration and Consultation; 6) Variances to FERC-Approved Study; 7) Attachments to the Technical Memorandum; and 8) References Cited. The attachments include items such as maps, background information and data. The section on Attachments to the technical memorandum includes a description of the contents of the attachment (e.g., tables, figures, photos and number of each), the format (e.g., Microsoft® Word, Microsoft® Excel, or *.PDF) and size in megabytes if the attachment is in an electronic file.

With FERC’s approval, YCWA posted its technical memoranda, as they became available, on YCWA’s relicensing Website (www.ycwa-relicensing.com): click on “Technical Memoranda” in the Quick Launch bar. Posted technical memoranda are included in this USR by reference, and YCWA will file with FERC each technical memorandum when YCWA files its final license application.

1.5 Study Completion

In this USR, YCWA states that it considers some FERC-approved studies “complete.” By this, YCWA means that it has completed all the steps required in the FERC-approved study, and a final technical memorandum for the study has been posted on YCWA’s Relicensing Website.

1.6 Content of This Updated Study Report and Other Considerations

This USR includes the following sections:

- Section 1. Introduction. This section describes the background and content of this USR.
- Section 2. Status of Each Study. This section provides YCWA’s progress implementing each of the FERC-approved studies from study initiation through December 3, 2013. This USR summarizes data collected to date and variances to the FERC-approved study. For those studies that YCWA has posted a technical memorandum on the relicensing Website, those technical memoranda, which include data collected during the performance of the study, are included here by reference (i.e., not repeated in the USR).
- Section 3. YCWA’s Proposed Modifications to FERC-Approved Studies and New Studies. This section includes any YCWA-proposed modifications to studies included in FERC’s Determination, as amended, or new studies, including a description of the need for the study.

- Section 4. Updated Study Report Meeting. This section describes YCWA's plans to hold a public meeting to discuss this USR.
- Section 5. References Cited. This section includes a list of references cited in the USR.

Other considerations for this USR are:

- This is a *progress* report - most, though not all, studies are complete.
- For studies that have not been completed, YCWA considers all data collected to date for those studies "*Preliminary and Subject to Change*" because YCWA is in the process of performing quality assurance and quality control (QA/QC) of the data. A reader of this USR should assume this is true for each study that is not identified as complete, even if it is not explicitly stated in the interim technical memorandum for that study.
- This USR does not modify FERC's Determination, as amended by FERC.

SECTION 2.0

STATUS OF EACH STUDY

As of December 3, 2013, YCWA has posted to the relicensing Website technical memoranda for 46 of the 48 FERC-approved studies. The posted technical memoranda can be divided into two types, which are described below and listed on Columns A and B on Table 2.0-1:

- Study Completed. This includes 43 FERC-approved studies for which the study is complete and the technical memorandum is posted to the relicensing Website. See Column A in Table 2.0-1.¹⁴
- Study in Progress with Some Data Reported. This includes five FERC-approved studies, which are not complete. For three of the studies, interim technical memoranda have been posted to the relicensing Website. These studies are in progress and YCWA considers the posted interim technical memoranda to be progress reports only. See Column B in Table 2.0-1.

Column C of Table 2.0-1 sets forth YCWA’s forecasted date by which the “Studies in Progress” (Column B) are estimated to be completed.

Table 2.0-1. Status of studies as of filing of the Updated Study Report.

Study No.	Study Description/ Technical Memorandum	Column A	Column B	Column C
		Study Complete	Study in Progress	
		Date YCWA Posted the Final Technical Memorandum to the Relicensing Website ¹	Date YCWA Posted an Interim Technical Memorandum to the Relicensing Website ¹	Date YCWA Forecasts the Study Will be Complete ²
GEOLOGY AND SOILS				
1.1	Channel Morphology Upstream of Englebright Reservoir	October 31, 2013	--	--
1.2	Channel Morphology Downstream of Englebright Dam	June 5, 2013	--	--
WATER RESOURCES				
2.1	Hydrologic Alteration	July 3, 2013	--	--
2.2	Water Balance/Operations Model	April 5, 2013	--	--
2.3	Water Quality	February 7, 2013	--	--
2.4	Bioaccumulation	September 25, 2012	--	--
2.5	Water Temperature Monitoring	September 24, 2013	--	--
2.6	Water Temperature Model	October 31, 2013	--	--
AQUATIC RESOURCES				
3.1	Aquatic Macroinvertebrates Upstream of Englebright Reservoir	April 25, 2013	--	--

¹⁴ YCWA does not plan to modify data from “completed studies” unless YCWA determines that there was a mistake in the reporting of such data, in which case YCWA will revise the technical memorandum to correct the error and advise Relicensing Participates of the correction. YCWA, may, however, reorganize or change the presentation or format of such data in the technical memorandum if YCWA concludes such changes would improve the clarity of the technical memorandum or consistency with other relicensing technical memoranda.

Table 2.0-1. (continued)

Study No.	Study Description/ Technical Memorandum	Column A	Column B	Column C
		Study Complete	Study in Progress	
		Date YCWA Posted the Final Technical Memorandum to the Relicensing Website ¹	Date YCWA Posted an Interim Technical Memorandum to the Relicensing Website ¹	Date YCWA Forecasts the Study Will be Complete ²
AQUATIC RESOURCES (continued)				
3.2	Aquatic Macroinvertebrates Downstream of Englebright Dam	April 25, 2013	--	--
3.3	Special-Status Aquatic Mollusks	November 29, 2012	--	--
3.4	Special-Status Amphibians – Foothill Yellow-Legged Frog Surveys	May 16, 2013	--	--
3.5	Special-Status Amphibians – Foothill Yellow-Legged Frog Habitat Modeling	November 27, 2013	--	--
3.6	Special-Status Turtles – Western Pond Turtle	May 16, 2013	--	--
3.7	Reservoir Fish Populations	September 28, 2012	--	--
3.8	Stream Fish Populations Upstream of Englebright Reservoir	November 6, 2013	--	--
3.9	Non-ESA-Listed Fish Populations Downstream of Englebright Dam	May 28, 2013	--	--
3.10	Instream Flow Upstream of Englebright Reservoir	May 24, 2013	--	--
3.11	Entrainment	November 27, 2013	--	--
3.12	New Colgate Powerhouse Ramping	December 21, 2012	--	--
3.13	Focused 2013 Foothill Yellow-legged Frog Surveys	October 10, 2013	--	--
3.14	Focused 2013 Western Pond Turtle Surveys	October 10, 2013	--	--
WILDLIFE RESOURCES				
4.1	Special-Status Wildlife – California Wildlife Habitat Relationships	September 6, 2012	--	--
4.2	Special-Status Wildlife – Bats	November 27, 2012	--	--
BOTANICAL RESOURCES				
5.1	Special-Status Plants	October 29, 2012	--	--
RIPARIAN, WETLANDS AND LITTORAL HABITATS				
6.1	Riparian Habitat Upstream of Englebright Reservoir	--	May 31, 2013	January 15, 2014
6.2	Riparian Habitat Downstream of Englebright Dam	June 25, 2013	--	--
6.3	Wetlands	September 29, 2012	--	--
THREATENED, ENDANGERED AND FULLY PROTECTED SPECIES				
7.1	ESA-Listed Plants	December 26, 2012	--	--
7.2	Narrows 2 Powerhouse Intake Extension	November 27, 2013	--	--
7.3	ESA-Listed Amphibians – California Red-Legged Frog	June 13, 2013	--	--
7.4	ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle	November 19, 2012	--	--
7.5	CESA-Listed Plants	September 12, 2012	--	--
7.6	CESA-Listed and Fully Protected Wildlife – California Wildlife Habitat Relationships	September 29, 2012	--	--
7.7	CESA-Listed and Fully Protected Wildlife – Bald Eagle	October 12, 2012	--	--
7.8	ESA/CESA-Listed Salmonids Downstream of Englebright Dam	April 29, 2013	--	--

Table 2.0-1. (continued)

Study No.	Study Description/ Technical Memorandum	Column A	Column B	Column C
		Study Complete	Study in Progress	
		Date YCWA Posted the Final Technical Memorandum to the Relicensing Website ¹	Date YCWA Posted an Interim Technical Memorandum to the Relicensing Website ¹	Date YCWA Forecasts the Study Will be Complete ²
THREATENED, ENDANGERED AND FULLY PROTECTED SPECIES (continued)				
7.9	Green Sturgeon Downstream of Englebright Dam	April 25, 2013	--	--
7.10	Instream Flow Downstream of Englebright Dam	September 13, 2013	--	--
7.11	Fish Behavior and Hydraulics Near Narrows 2 Powerhouse	--	December 2, 2012	Interim - January 31, 2014 ³ Final - March 31, 2015 ³
7.11a	Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Downstream of Narrows 2 Powerhouse	--	--	
7.12	Evaluation of Project Effects on Daguerre Point Dam and Hallwood-Cordua Fish Facilities	May 15, 2013	--	--
7.13	Fish Stranding Associated with Shutdown of Narrows 2 Powerhouse Partial Bypass	--	--	February 28, 2014
RECREATION RESOURCES				
8.1	Recreation Use and Visitor Surveys	April 15, 2013	--	--
8.2	Recreational Flow	--	October 29, 2012	June 30, 2014
LAND USE				
9.1	Primary Project Roads and Trails	July 9, 2013	--	--
AESTHETIC RESOURCES				
10.1	Visual Quality	September 18, 2012	--	--
SOCIO-ECONOMIC RESOURCES				
11	None			
CULTURAL RESOURCES				
12.1	Historic Properties	April 25, 2013	--	--
TRIBAL RESOURCES				
13.1	Native American Traditional Cultural Properties	February 27, 2013	--	--
<i>Subtotal</i>		43	3	5
Total		48 Studies and 47 Technical Memoranda		

¹ Although in some instances, YCWA may have posted data or an interim technical memorandum earlier than the date listed in Columns A or B, this column reflects the date that the current version of the technical memorandum, including attachments, was posted to the Relicensing Website as of December 3, 2013.

² YCWA forecasts completing the remaining studies by the date listed in Column C.

³ As provided in the FERC-approved studies, an interim technical memoranda for Studies 7.11 and 7.11a will be combined into a single interim technical memorandum that will be posted to YCWA's Relicensing Website by January 31, 2014; and the final technical memoranda for Studies 7.11 and 7.11a will be combined into a single final technical memorandum that will be filed with FERC by March 31, 2015.

Provided below is a description of the status of each study.

2.1 Geology and Soils Studies

FERC's Determination, as amended, included two studies related to Geology and Soils. The status of each of these studies, each of which is complete, is provided below.

2.1.1 Channel Morphology Upstream of Englebright Reservoir (Study 1.1)

The study was completed during the period covered by the USR. Refer to Technical Memorandum 1-1, *Channel Morphology Upstream of Englebright Reservoir*, which was posted to YCWA's relicensing Website on October 31, 2013 for a description of the study results and any variances from the FERC-approved study.

2.1.2 Channel Morphology Downstream of Englebright Dam (Study 1.2)

The study was completed during the period covered by the USR. Refer to Technical Memorandum 1-2, *Channel Morphology Downstream of Englebright Dam*, which was posted to YCWA's relicensing Website on June 5, 2013 for a description of the study results and any variances from the FERC-approved study.

2.2 Water Resources Studies

FERC's Determination, as amended, included six studies related to Water Resources. The status of each of these studies, each of which is complete, is provided below.

2.2.1 Hydrologic Alteration (Study 2.1)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 2-1, *Hydrologic Alteration*, which was posted to YCWA's relicensing Website on July 3, 2013 for a description of the study results and any variances from the FERC-approved study.

2.2.2 Water Balance/Operations Model (Study 2.2)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 2-2, *Water Balance/Operations Model*, which was posted to YCWA's relicensing Website on April 5, 2013 for a description of the study results and any variances from the FERC-approved study.

2.2.3 Water Quality (Study 2.3)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 2-3, *Water Quality*, which was posted to YCWA's relicensing Website on February 7, 2013 for a description of the study results and any variances from the FERC-approved study.

2.2.4 Bioaccumulation (Study 2.4)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 2-4, *Bioaccumulation*, which was posted to YCWA's relicensing

Website on September 25, 2012 for a description of the study results and any variances from the FERC-approved study.

2.2.5 Water Temperature Monitoring (Study 2.5)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 2-5, *Water Temperature Monitoring*, which was posted to YCWA's relicensing Website on September 24, 2013 for a description of the study results and any variances from the FERC-approved study.

2.2.6 Water Temperature Model (Study 2.6)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 2-6, *Water Temperature Model*, which was posted to YCWA's relicensing Website on October 31, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3 Aquatic Resources Studies

FERC's Determination, as amended, included 14 studies related to Aquatic Resources. The status of each of these studies, each of which is complete, is provided below.

2.3.1 Aquatic Macroinvertebrates Upstream of Englebright Reservoir (Study 3.1)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-1, *Aquatic Macroinvertebrates Upstream of Englebright Dam*, which was posted to YCWA's relicensing Website on April 25, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.2 Aquatic Macroinvertebrates Downstream of Englebright Dam (Study 3.2)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-2, *Aquatic Macroinvertebrates Downstream of Englebright Dam*, which was posted to YCWA's relicensing Website on April 25, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.3 Special-Status Aquatic Mollusks (Study 3.3)

This study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 3-3, *Special-Status Aquatic Mollusks*, which was posted to YCWA's relicensing Website on November 29, 2012 for a description of the study results and any variances from the FERC-approved study.

2.3.4 Special-Status Amphibians – Foothill Yellow-Legged Frog Surveys (Study 3.4)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-4, *Special-Status Amphibians – Foothill Yellow-Legged Frog Surveys*, which was posted to YCWA’s relicensing Website on May 16, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.5 Special-Status Amphibians – Foothill Yellow-Legged Frog Habitat Modeling (Study 3.5)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-4, *Special-Status Amphibians – Foothill Yellow-Legged Frog Habitat Modeling*, which was posted to YCWA’s relicensing Website on November 27, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.6 Special-Status Turtles – Western Pond Turtle (Study 3.6)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-6, *Special-Status Turtles – Western Pond Turtle*, which was posted to YCWA’s relicensing Website on May 16, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.7 Reservoir Fish Populations (Study 3.7)

This study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 3-7, *Reservoir Fish Populations*, which was posted to YCWA’s relicensing Website on September 28, 2012 for a description of the study results and any variances from the FERC-approved study.

2.3.8 Stream Fish Populations Upstream of Englebright Reservoir (Study 3.8)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-8, *Stream Fish Populations Upstream of Englebright Reservoir*, which was posted to YCWA’s relicensing Website on November 6, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.9 Non-ESA-Listed Fish Populations Downstream of Englebright Dam (Study 3.9)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-9, *Non-ESA-Listed Fish Populations Downstream of Englebright Dam*, which was posted to YCWA’s relicensing Website on May 28, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.10 Instream Flow Upstream of Englebright Reservoir (Study 3.10)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-10, *Instream Flow Upstream of Englebright Reservoir*, which was posted to YCWA's relicensing Website on May 24, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.11 Entrainment (Study 3.11)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-11, *Entrainment*, which was posted to YCWA's relicensing Website on November 27, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.12 New Colgate Powerhouse Ramping (Study 3.12)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 3-12, *New Colgate Powerhouse Ramping*, which was posted to YCWA's relicensing Website on December 21, 2012 for a description of the study results and any variances from the FERC-approved study.

2.3.13 Focused 2013 Foothill Yellow-Legged Frog Surveys (Study 3.13)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-13, *Focused 2013 Foothill Yellow-Legged Frog Surveys*, which was posted to YCWA's relicensing Website on October 10, 2013 for a description of the study results and any variances from the FERC-approved study.

2.3.14 Focused 2013 Western Pond Turtle Surveys (Study 3.14)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 3-14, *Focused 2013 Western Pond Turtle Surveys*, which was posted to YCWA's relicensing Website on October 10, 2013 for a description of the study results and any variances from the FERC-approved study.

2.4 Wildlife Resources Studies

FERC's Determination, as amended, included two studies related to Wildlife Resources. The status of each of these studies, each of which is complete, is provided below.

2.4.1 Special-Status Wildlife – California Wildlife Habitat Relationships (Study 4.1)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 4-1, *Special-Status Wildlife – California Wildlife Habitat Relationships*,

which was posted to YCWA's relicensing Website on September 6, 2012 for a description of the study results and any variances from the FERC-approved study.

2.4.2 Special-Status Wildlife – Bats (Study 4.2)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 4-2, *Special-Status Wildlife - Bats*, which was posted to YCWA's relicensing Website on November 27, 2012 for a description of the study results and any variances from the FERC-approved study.

2.5 Botanical Resources Studies

FERC's Determination, as amended, included one study related to Botanical Resources. The status of the study, which is complete, is provided below.

2.5.1 Special-Status Plants (Study 5.1)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 5-1, *Special-Status Plants*, which was posted to YCWA's relicensing Website on October 29, 2012 for a description of the study results and any variances from the FERC-approved study.

2.6 Wetlands, Riparian and Littoral Habitats Studies

FERC's Determination, as amended, included three studies related to Wetlands, Riparian and Littoral Habitats. The status of each of these studies is provided below. Two of the studies are complete and one is in progress.

2.6.1 Riparian Habitat Upstream of Englebright Reservoir (Study 6.1)

The study was substantially complete during the period covered by this USR. Refer to Interim Technical Memorandum 6-1, *Riparian Habitat Upstream of Englebright Reservoir*, which was posted to YCWA's relicensing Website on May 31, 2013 for a description of the study results and any variances from the FERC-approved study.

Overall Progress in Implementing the Study Plan

YCWA completed the FERC-approved study.

YCWA agreed to provide additional analysis regarding recession rates and stage-discharge relationships at six collaboratively chosen existing Study 6.1 transects. Two transects each in the Middle Yuba River, Oregon Creek, and the Yuba River were selected.

Summary of Data Collected and Key Findings

Refer to the May 31, 2013 technical memorandum for a summary of findings from the FERC-approved study.

With regards to the additional analysis, on September 13, 2013, YCWA provided to Relicensing Participants a stage discharge relationship for each of the six selected transect using available hydrology data and modeling as appropriate. YCWA provided a tool in Microsoft™ Excel that shows the elevation of water along each transect at different flows for the period between April 1 and July 15 in each of the 41 years in the relicensing hydrology period of record (i.e., Water Year 1970 through Water Year 2010). YCWA created Microsoft™ Excel tables with data requested by Relicensing Participants.

The With-Project and Without-Project Hydrology datasets used to develop the tables were obtained from the relicensing Water Balance/Operations Model. YCWA highlighted table cells with a stage change of 2.5 cm or less. In addition, YCWA created ‘spaghetti hydrographs’ (using stage in cm) by water year type for With- and Without-Project hydrologies, and by five water year types (i.e., 10 charts per transect).

Explanation of Variances from the Study Plan

Refer to the May 31, 2013 technical memorandum for a discussion of variances to the FERC-approved study. There have been no significant variances to the planned additional analysis

Schedule

On November 14, 2013, YCWA and Relicensing Participants agreed on additional analysis of the developed data, and that YCWA would file the material as an attachment to the final Study 6.1 technical memorandum by January 15, 2014.

2.6.2 Riparian Habitat Downstream of Englebright Dam (Study 6.2)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 6-2, *Riparian Habitat Downstream of Englebright Dam*, which was posted to YCWA’s relicensing Website on June 25, 2013 for a description of the study results and any variances from the FERC-approved study.

2.6.3 Wetlands (Study 6.3)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 6-3, *Wetlands*, which was posted to YCWA’s relicensing Website on September 29, 2012 for a description of the study results and any variances from the FERC-approved study.

2.7 Threatened, Endangered and Fully Protected Species Studies¹⁵

FERC's Determination, as amended, included 14 studies related to Threatened, Endangered and Fully Protected Species. The status of each of these studies is provided below. Eleven of the studies are complete and three are in progress.

2.7.1 ESA-Listed Plants (Study 7.1)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 7-1, *ESA-Listed Plants*, which was posted to YCWA's relicensing Website on December 26, 2012 for a description of the study results and any variances from the FERC-approved study.

2.7.2 Narrows 2 Powerhouse Intake Extension (Study 7.2)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 7-2, *Narrows 2 Powerhouse Intake Extension*, which was posted to YCWA's relicensing Website on November 27, 2013 for a description of the study results and any variances from the FERC-approved study.

2.7.3 ESA-Listed Amphibians – California Red-Legged Frog (Study 7.3)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 7-3, *ESA-Listed Amphibians – California Red-Legged Frog*, which was posted to YCWA's relicensing Website on June 13, 2013 for a description of the study results and any variances from the FERC-approved study.

Subsequent to the technical memorandum, YCWA organized a July 11, 2013 field trip attended by USFWS and Forest Service representatives to view certain wetland sites in the vicinity of Little Oregon Creek that may be suitable for CRLF, the formerly used staging area for New Bullards Bar Reservoir woody material disposal located at Moran Cove, and the existing staging area. The field trip also included a night survey of a site in the Little Oregon Creek area with previous observations of CRLF. A trip report was provided to FERC.

On September 26, 2013, YCWA, USFWS, and Forest Service met again to discuss CRLF. The agencies discussed woody material management at New Bullards Bar Reservoir and asked that YCWA provide more details in regards to how material would be handled if it exceeded the capacity of the current staging site.¹⁶

¹⁵ FERC designated YCWA as FERC's non-federal representative for Section 7 consultation under the ESA.

¹⁶ In response to this request, YCWA included in its Draft License Application a New Bullards Bar Reservoir Floating Material Management Plan.

2.7.4 ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle (Study 7.4)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 7-4, *ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle*, which was posted to YCWA’s relicensing Website on November 19, 2012 for a description of the study results and any variances from the FERC-approved study.

2.7.5 CESA-Listed Plants (Study 7.5)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 7-5, *CESA-Listed Plants*, which was posted to YCWA’s relicensing Website on September 12, 2012 for a description of the study results and any variances from the FERC-approved study.

2.7.6 CESA-Listed and Fully Protected Wildlife – California Wildlife Habitat Relationships (Study 7.6)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 7-6, *CESA-Listed and Fully Protected Wildlife - California Wildlife Habitat Relationships*, which was posted to YCWA’s relicensing Website on September 29, 2012 for a description of the study results and any variances from the FERC-approved study.

2.7.7 CESA-Listed and Fully Protected Wildlife – Bald Eagle (Study 7.7)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 7-7, *CESA-Listed and Fully Protected Wildlife – Bald Eagle*, which was posted to YCWA’s relicensing Website on October 12, 2012 for a description of the study results and any variances from the FERC-approved study.

2.7.8 ESA/CESA-Listed Salmonids Downstream of Englebright Dam (Study 7.8)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 7-8, *ESA/CESA-Listed Salmonids Downstream of Englebright Dam*, which was posted to YCWA’s relicensing Website on April 29, 2013 for a description of the study results and any variances from the FERC-approved study.

2.7.9 Green Sturgeon Downstream of Englebright Dam (Study 7.9)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 7-9, *North American Green Sturgeon Downstream of Englebright Dam*, which was posted to YCWA’s relicensing Website on April 25, 2013 for a description of the study results and any variances from the FERC-approved study.

2.7.10 Instream Flow Downstream of Englebright Dam (Study 7.10)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 7-10, *Instream Flow Downstream of Englebright Dam*, which was posted to YCWA's relicensing Website on September 13, 2013 for a description of the study results and any variances from the FERC-approved study.

2.7.11 Fish Behavior and Hydraulics Near Narrows 2 Powerhouse (Study 7.11)

Study 7.11 began in 2012 by conducting a series of physical measurements and biological monitoring in the area proximal to the Narrows 2 Powerhouse. An interim study report was posted to the relicensing Website documenting effort in 2012.

In 2013, YCWA, FERC and Relicensing Participants collaborated on an agreed upon study effort for 2013. It was determined that YCWA would continue DIDSON™ monitoring, conduct on-shore visual counts and fish observations, complete remaining pressure and velocity calculations, and conduct the velocity sampling below Narrows 2 Powerhouse. The trigger for DIDSON™ monitoring was revised and requires monitoring the following events:

- During the 2013 planned outage (current scheduled to occur from August 26 through September 4, 2013)
- Operational change from generation status to non-generation status (i.e., taking Narrows 2 Powerhouse from online to offline)
- Operational change from non-generation status to generation status (i.e., taking the Narrows 2 Powerhouse from offline to online)
- During prolonged outage of Narrows 2 Powerhouse not including the planned 2013 outage
- Change in flow magnitude of 400 cfs during bypass or generation (this scenario was included in the FERC-approved Study 7.11, and includes any combination of changes in the combined releases from the Narrows 2 Powerhouse, Full Bypass and Partial Bypass)

On-shore visual counts and fish observations were performed congruently with DIDSON monitoring.

Overall Progress in Implementing the Study Plan

Currently, YCWA has conducted DIDSON™ and onshore monitoring. Each event was notified to Relicensing Participants and FERC when it occurred to allow for observation, if desired. YCWA is collecting water surface elevation and collected velocity in the tailrace and pressure within the powerhouse tunnel in mid-November 2013.

Summary of Data Collected and Key Findings

On August 28, YCWA conducted a DIDSON™ camera placement assessment. The event was attended by NMFS. First, an underwater video camera was deployed near the draft tubes for testing. The camera was able to identify two to three adult salmon moving quickly, but generally orienting near the substrate. Observations were brief and the testing occurred for approximately 30 minutes. Then, the DIDSON™ camera was positioned in several locations from 60 to 150 ft from the Narrows 2 Powerhouse at various angles. A final position was agreed to by YCWA and NMFS, and the DIDSON™ camera mount was moved to the new location (approximately 60 ft from the powerhouse downstream on river left facing upstream). This new location was employed for all monitoring events after August 28, 2013.

A total of seven DIDSON™ and onshore observation events and one outage monitoring event have been completed in 2013 through November. A summary of each of these events is included in Table 2.7-1.

Table 2.7-1. Summary of planned and actual operational events from July through November 2013.

Event	E-mail Announcement to Relicensing Participants Date	Event Date(s)	Summary
OPERATIONAL EVENT			
Event 1	July 31 and August 1, 2 and 7, 2013	August 8, 2013	Beginning on August 1, YCWA began working with PG&E to transfer flow (i.e. generation) from the Narrows 2 to the Narrows 1 Powerhouse following an outage period. Challenges with bringing Narrows 1 Powerhouse back online resulted in two unsuccessful attempts on August 1 and August 2. YCWA was informed PG&E was planning to work until August 9 on Narrows 1 Powerhouse to conduct the measures to remedy discovered issues. PG&E then alerted YCWA on August 7 that another attempt would be made on August 8 to bring Narrows 1 Powerhouse online. This attempt was successful at 6 pm, August 8. During this time, YCWA has left the DIDSON™ camera continuously collecting data from August 1 through the morning of August 9 (following the successful event). Staff was present during August 1, 2, and 8 to observe and document fish behavior in anticipation of the operational change. The event occurred on August 8 and DIDSON monitoring and fish observations occurred from the waters surface.
Event 2	August 22, 2013	August 25, 2013	An operational event occurred and was successfully monitored on August 25, 2013. Shoreline fish observations were made and the DIDSON™ camera recorded pre-, during and post-event fish behavior. Bypass did not occur. The planned 9 am event occurred at 11 am when flow increased from 788 cfs to 1,217 cfs through the powerhouse as generation. The magnitude of flow change necessitated the monitoring event, but the powerhouse maintained power-generation status during the entire period. The 2-hour delay was a result of minor logistical issues. Fish were observed on the DIDSON™ camera.

Table 2.7-1. (continued)

Event	E-mail Announcement to Relicensing Participants Date	Event Date(s)	Summary
OPERATIONAL EVENT (cont.)			
Event 3	August 22, 2013	August 31, 2013	On Saturday August 31, YCWA conducted an operational change that reduced flow from the Narrows 2 Powerhouse from 709 cfs of generation to 41 cfs of bypass through the partial bypass. The YCWA monitoring team was onsite and conducted onshore visual observations and DIDSON™ camera monitoring. Prior to the change-over the DIDSON™ camera was positioned at a new location collaboratively agreed upon with NMFS (described above) and the gear housing was moved. During the operational change, the width of the water plume was wider than initially anticipated. The force of the water intruded into the gear housing and damaged the data logger. Unfortunately, DIDSON™ monitoring was not recorded during the August 31, changeover or following it due to the damaged data logger. Recordings were made prior to the changeover and visual observations were completed and will be documented. The DIDSON™ was repaired, and the new location with the reinforced housing was used in subsequent events. Observations from the surface and on the DIDSON™ camera were made prior to the changeover, but not during or following due to the water damage.
Event 4	September 27, 2013	October 1, 2013	YCWA approached the conclusion of the outage at Narrows 2 Powerhouse and passed water through the powerhouse to test function. Some 74 cfs was put through the Partial Bypass. The discharge continued, but near 4pm an additional 300 cfs (approximately) was passed through the Narrows 2 Powerhouse for a brief period (estimated time less than 10 minutes). Flow then ceased through the Narrows 2 Powerhouse, but continued through the Partial Bypass. Behavioral observations from the shore occurred prior to, during and after the event and the DIDSON camera collected footage as well. Flow from the partial bypass did not change and therefore did not require a stranding survey. Fish were observed from the water surface and on the DIDSON™ camera.
Event 5	October 7, 2013	October 7, 2013	An operational event occurred at 2:00 pm. Increased water demand required for flow to be transitioned from the Partial Bypass to the Full Bypass. The transition allowed for more response and flexibility by operators for releasing additional capacity from the Full Bypass to address rising water needs. YCWA monitoring staff conducted visual observations, DIDSON™ monitoring, and a Stranding Survey. Stranded fish were not observed, but fish were observed from the waters surface.
Event 6	October 11, 2013	October 11, 2013	An operational event occurred before noon. Power necessitated that flow from the Full Bypass (near 200 cfs) be transferred to generation at 800 cfs. YCWA field teams conducted DIDSON™ monitoring and fish behavior observations for the shoreline. Fish observations were made and also collected on the DIDSON™ camera.
Event 7	--	November 22, 2013	A seventh event occurred on November 22, 2013 when, in the morning, the 1,000 cfs of flow through the Narrows 2 Powerhouse was switched to 800 cfs through the Narrows Full Bypass. In the evening, the full flow was returned to the Narrows 2 Powerhouse. Prior to and during the morning switch-over, DIDSON™ and visual monitoring occurred. During the evening switch-over, only DIDSON™ monitoring occurred because it was too dark to perform visual observations.
PLANNED OUTAGES			
Outage	August 14, 2013	September 8 – 30, 2013	Operators shortly after 7 am transferred approximately 30 cfs running through the Partial Bypass to the Full Bypass and maintained flow between 200 to 300 cfs as of current during an outage period at Narrows 2 Powerhouse. This condition continued through September 30. The low flow resulted in minimal change in overall conditions and difference in water stage was negligible. The DIDSON™ camera operated successfully before, during and after the change and continued to operate through the outage. Behavioral observations were made pre-, during, and following the operational. Three staff also walked the shoreline from Narrows 2 to Narrows 1 powerhouse and thoroughly searched for stranding. Stranded fish were not observed. Following the event, a large school of 40-50 adult Chinook salmon were observed moving upstream and milled within the vicinity of the Narrows 2 Powerhouse. The fish were observed clearly on the DIDSON™ camera.

Table 2.7-1. (continued)

Event	E-mail Announcement to Relicensing Participants Date	Event Date(s)	Summary
UNPLANNED OUTAGE			
Outage	--	October 13, 2013	An emergency event occurred that could not be monitored. Harmonic vibration at the Narrows 2 Powerhouse required for a temporary change from generation to Full Bypass and then a return to generation. The notice of the event from the operator was following the situation due to its urgency.

These monitoring events documented salmonid presence in proximity to the Narrows 2 Powerhouse during operations. The abundance of fish present has ranged from less than 10 to over 100 fish identified from the DIDSON camera. In September and October 2013, a school of Chinook salmon ranging from 20 to 50 individuals at times, was frequently observed milling in front of the powerhouse. One to two adults infrequently were observed breaking the waters surface and leaping into the air.

Behavioral observations have shown that fish appear to mill within the upper 60 percent of the water column (i.e. top 12 ft of water) with no apparent association with flow direction. Individuals will periodically swim through deeper water where flow becomes more laminar in mid-depths of representing 30 percent of depth (12-18 ft of depth). At depth (18-20 ft), fish will hold near the substrate where velocity refugia are created from the structure of the base of the powerhouse and angular substrate. Fish can be observed milling in proximity of the powerhouse, but cannot be clearly identified to be moving within the draft tubes and no mortality as a result of the powerhouse or turbine has been observed to date.

In addition, YCWA is aware of incidental observations of single fish carcasses on the bank on October 25, 2012 and on October 7, 2013 near the Narrows 2 Powerhouse, and fish isolated in a pool for a short period of time on October 11, 2013 near Narrows 2 Powerhouse. In response to some of these incidental observations and a report from NMFS to FERC on November 1, 2013, on November 25, 2013, FERC directed YCWA to provide by December 26, 2013 information regarding the October 2013 observations. YCWA has not yet assembled all the information requested by FERC and YCWA, therefore, is not including this information in this Updated Study Report. The information will be provided to FERC and included in YCWA's Final License Application.

Explanation of Variances from the Study Plan

A single operational event was missed due to it being the result of an emergency operational change. Field crew was alerted after the change occurred. This represents the only missed event and was due to unique circumstance.

Schedule

The study is on schedule. In accordance with the FERC-approved study, an interim technical memorandum will be posted to the relicensing Website by January 31, 2014 and a final technical memorandum by March 31, 2015. As directed by FERC, the interim technical memoranda for Studies 7.11 and 7.11a will be combined into a single interim technical memorandum, and the final technical memoranda for Studies 7.11 and 7.11a will be combined into a single final technical memorandum.

2.7.12 Radio Telemetry Study of Spring- and Fall-run Chinook Salmon Downstream of Narrows 2 Powerhouse (Study 7.11a)

Relicensing Participants requested a radio telemetry study to be performed in 2013 and 2014. The study monitors adult Chinook salmon in the Yuba River and in proximity to the Narrows 2 Powerhouse.

Overall Progress in Implementing the Study Plan

YCWA developed desktop summaries of telemetry technology, and after discussion, YCWA and Relicensing Participants collaboratively agreed to test in the field: 1) Lotek Radio equipment; 2) Lotek MAP equipment (acoustic); and 3) HTI telemetry equipment (acoustic). YCWA worked with telemetry vendors to prepare and plan for field testing, which occurred in mid-November 2013. Relicensing Participants were invited to observe the equipment testing.

YCWA submitted a 4(d) research permit application in October 2013. The application is being processed over the next several months and the final approval is expected in February 2014.

Summary of Data Collected and Key Findings

YCWA is analyzing the field test data and will recommend a technology for use in 2014.

Explanation of Variances from the Study Plan

No variances have occurred to date.

Schedule

The study is on schedule. In accordance with the FERC-approved study, an interim technical memorandum will be posted to the relicensing Website by January 31, 2014. Collection and tagging of fish for tracking will occur in late spring 2014. A final technical memorandum will be issued by March 31, 2015. As directed by FERC, the interim technical memorandum will be combined with the interim and final technical memorandum for Study 7.11.

2.7.13 Evaluation of Project Effects on Daguerre Point Dam and Hallwood-Cordua Fish Facilities (Study 7.12)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 7-12, *Evaluation of Project Effects on Daguerre Point Dam and Hallwood-Cordua Fish Facilities*, which was posted to YCWA's relicensing Website on May 15, 2013 for a description of the study results and any variances from the FERC-approved study.

2.7.14 Fish Stranding Associated with Shutdowns of the Narrows 2 Powerhouse Partial Bypass (Study 7.13)

The study required for field technicians to walk the shoreline of the Narrows 2 Powerhouse following an operational change when the powerhouse switches from the Partial Bypass to either generation or the Full Bypass. A series of data would be collected on the status of any adult salmonid observed to be alive and stranded on the shoreline or deceased.

Overall Progress in Implementing the Study Plan

YCWA has monitored all operational events (4 total to date) that involved a change from the Narrows 2 Partial Bypass to either the Narrows Powerhouse or the Full Bypass.

Summary of Data Collected and Key Findings

No fish have been observed stranded during study monitoring.

Explanation of Variances from the Study Plan

No variances have occurred to date.

Schedule

The study is on schedule. In accordance with the FERC-approved study, a final technical memorandum will be posted to the relicensing Website by February 28, 2014.

2.8 Recreation Resources Studies

FERC's Determination, as amended, included two studies related to Recreation Resources. The status of each of these studies is provided below. One study is complete and one study is in progress.

2.8.1 Recreational Use and Visitor Surveys (Study 8.1)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 8.1, *Recreation Use and Visitor Surveys*, which was posted to YCWA's

relicensing Website on April 15, 2013 for a description of the study results and any variances from the FERC-approved study.

2.8.2 Recreational Flow (Study 8.2)

The primary goals of the study were to: 1) determine acceptable whitewater boating opportunities consistent with demand on river reaches; 2) determine anglers' preferences (e.g., flow, location and type of fishing); and 3) be consistent with the needs of the area, the primary purposes or ability of the Project, and other resource management plans. An interim technical memorandum was posted to the relicensing Website on May 15, 2013 summarizing the information on whitewater boating and angling in stream reaches.

Overall Progress in Implementing the Study Plan

All study tasks are complete with the exception of the completion of whitewater boating on one study reach, the Middle Yuba and Yuba River from Highway 49 Bridge downstream to Englebright Reservoir. Due to water conditions beyond YCWA's control, YCWA was not able to collect any data on this reach in 2012 or 2013. The current approach is to collect data during the winter/spring of 2013/2014.

Summary of Data Collected and Key Findings

Refer to Interim Technical Memorandum 8-2, *Recreation Flow*, for a summary of data collected to date and key findings.

Explanation of Variances from the Study Plan

Refer to Interim Technical Memorandum 8-2, *Recreation Flow*, for a description of variances to the FERC-approved study.

Schedule

YCWA will make a good faith effort to mechanically operate the slide gate at Lohman Ridge Diversion Tunnel in winter/spring 2013/2014 to augment the flows below Our House Diversion Dam in order to meet the necessary target flow ranges for the Highway 49 to Englebright Reservoir study reach that were not accomplished by opportunistic flows in 2012 and 2013. Mechanically operating the gate is a crude means of controlling the flow below Our House Diversion Dam (completely open or closed). YCWA will include the results of this effort and boating surveys during the effort in the final technical memorandum with will be filed with FERC by June 30, 2014.

2.9 Land Use Studies

FERC's Determination, as amended, included one study related to Land Use. The status of the study is provided below.

2.9.1 Primary Project Roads and Trails (Study 9.1)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 9-1, *Primary Project Roads and Trails*, which was posted to YCWA's relicensing Website on July 9, 2013 for a description of the study results and any variances from the FERC-approved study.

2.10 Aesthetic Resources Studies

FERC's Determination, as amended, included one study related to Aesthetic Resources. The status of the study, which is complete, is provided below.

2.10.1 Visual Quality (Study 10.1)

The study was completed during the period covered by this Initial Study Report. Refer to Technical Memorandum 11-1, *Visual Quality*, which was posted to YCWA's relicensing Website on September 18, 2012, for a description of the study results and any variances from the FERC-approved study.

2.11 Socio-Economic Resources Studies

FERC's Determination, as amended, did not include any study plans related to socio-economics resource.

2.12 Cultural Resources Studies¹⁷

FERC's Determination, as amended, included one study related to Cultural Resources. The status of the study, which is complete, is provided below.

2.12.1 Historic Properties (Study 12.1)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 12-1, *Historic Properties*, which was posted to YCWA's relicensing Website on April 25, 2013 for a description of the study results and any variances from the FERC-approved study.

2.13 Tribal Resources Studies¹⁸

FERC's Determination, as amended, included one study related to Tribal Resources. The status of the study, which is complete, is provided below.

¹⁷ FERC designated YCWA as FERC's non-federal representative for § 106 consultation under the NHPA.

¹⁸ FERC designated YCWA as FERC's non-federal representative for § 106 consultation under the NHPA.

2.13.1 Native American Traditional Cultural Properties (Study 13.1)

The study was completed during the period covered by this USR. Refer to Technical Memorandum 13-1, *Native American Traditional Cultural Properties*, which was posted to YCWA's relicensing Website on February 27, 2013 for a description of the study results and any variances from the FERC-approved study.

SECTION 3.0

YCWA'S PROPOSED STUDY MODIFICATIONS AND NEW STUDIES

This section includes two subsections. Section 3.1 describes FERC's criteria related to proposals for modifications to FERC-approved studies or new studies at this time in the relicensing, as provided in 18 CFR Section 5.15(e) and Section 5.9(b). Section 3.2 notes that there are no study modifications or new studies proposed by YCWA.

3.1 Criteria Related to Proposed Study Modifications or New Studies

Specifically with regard to requests for a study modification or a new study related to the Updated Study Report, § 5.15(f) states in part:

Any proposal to modify an ongoing study must be accompanied by a showing of good cause why the proposal should be approved as set forth in paragraph (d) of this section. Any proposal for new information gathering or studies is subject to paragraph (e) of this section except that the proponent must demonstrate extraordinary circumstances warranting approval.

Paragraph (d) of the section states:

Criteria for modification of approved study. Any proposal to modify an ongoing study pursuant to paragraphs (c)(1)-(4) of this section must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a demonstration that:

- (1) Approved studies were not conducted as provided for in the approved study plan; or
- (2) The study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way.

Paragraph (e) of the section states:

Criteria for new study. Any proposal for new information gathering or studies pursuant to paragraphs (c)(1)-(4) of this section must be accompanied by a showing of good cause why the proposal should be approved, and must include, as appropriate to the facts of the case, a statement explaining:

- (1) Any material changes in the law or regulations applicable to the information request;

- (2) Why the goals and objectives of any approved study could not be met with the approved study methodology;
- (3) Why the request was not made earlier;
- (4) Significant changes in the project proposal or that significant new information material to the study objectives has become available; and
- (5) Why the new study request satisfies the study criteria in § 5.9(b).

Section 5.9(b) study criteria are:

(b) Content of study request. Any information or study request must:

- (1) Describe the goals and objectives of each study proposal and the information to be obtained;
- (2) If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
- (3) If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
- (4) Describe existing information concerning the subject of the study proposal, and the need for additional information;
- (5) Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;
- (6) Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
- (7) Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

3.2 YCWA's Proposed Study Modifications or New Studies

YCWA does not propose any modifications to ongoing studies or new studies.

SECTION 4.0

UPDATED STUDY REPORT MEETING

FERC's ILP regulations require that within 15 days following the filing of the USR, an applicant for a new license hold a meeting with interested parties and FERC staff to discuss YCWA's and/or other parties' proposals, if any, to modify FERC-approved studies or proposed new studies. Further, within 15 days following the meeting, the applicant must file with FERC a meeting summary. The summary must identify any changes the applicant proposes to the proposed study modifications and new studies the applicant proposed in its USR.

YCWA consulted with Relicensing Participants, who agreed YCWA will hold the USR meeting as follows:

- DATE: December 17, 2013 (Tuesday)
- TIME: 9:30 AM to Noon
- LOCATION: Yuba County Water Agency, 1220 F Street, Marysville, CA 95901-4226

A meeting agenda is provided below.

- Introductions
- Purpose of Meeting
- Review of Relicensing Schedule
- Brief Overview of Study Progress
- Discussion of Study Status and Relicensing Participant's Proposals Regarding Study Modifications/New Studies
- YCWA's Plan to Prepare and File an USR Meeting Summary
- Adjourn

YCWA anticipates filing with FERC the USR meeting summary by December 31, 2013. The letter will provide a summary of the meeting and any changes proposed by YCWA to the study modification and new studies proposed by YCWA in its USR.

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SECTION 5.0

REFERENCES CITED

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