

APPENDIX E1

REPLY TO FERC STAFF COMMENTS ON DRAFT LICENSE APPLICATION

This appendix provides a reply to each of FERC staff's comments on the DLA included in FERC's March 4, 2014 letter to YCWA.

1.0 Reply to FERC Staff's Comments

FERC's March 4, 2014 letter included: two requests for clarification regarding Exhibit A; four requests for clarification on Exhibit E, Terrestrial Resources; and one request for clarification on Exhibit H. YCWA has revised the appropriate sections in this FLA to include the clarifications requested by FERC staff. For ease of reference, the requested clarifications are also provided below.

1.1 Exhibit A Clarifications

1.1.1 New Colgate Powerhouse Tailwater Depression System

FERC staff stated:

- (1) It is unclear from the Draft License Application how the Tailwater Depression System (TDS) functions and what are its potential environmental effects. Please describe in further detail:
 - a. Is the depression of water levels by pressurized air confined to the turbine chamber?
 - b. Does the increased air pressure introduced into the turbine chamber by the TDS result in a greater level of dissolved gases in the water discharged from the turbine?
 - c. Under what flows and water surface elevations at the Colgate powerhouse would the TDS be used?
 - d. How often would the TDS be used? Please include information on frequency, duration, and timing of TDS use.
 - e. What are the potential environmental effects of using the TDS in terms of effects on water quality and aquatic resources?
 - f. Please quantify the increased power production that would result from the construction and operation of the TDS.

A detailed description of the proposed New Colgate Powerhouse TDS, its operations and effects can be found in Exhibit E, Section 2.2.1.1.1. Descriptions are also provided in Exhibit A,

Section 5.1.1.1 and Exhibit B, Section 7.2.3. YCWA's direct responses to FERC staff's questions are as follows:

- a. The pressurized air resulting from activation of the TDS would be confined to the turbine discharge chamber, the supply piping and compressor equipment on the deck of the powerhouse.
- b. The air pressure necessary to operate the TDS would be approximately 6.5 pounds per square inch (psi), which would not increase dissolved gases in the water released from the turbine chamber.
- c. The TDS would be used when spills at New Bullards Bar Reservoir combined with flows from the Middle Yuba River and Oregon Creek raise the WSE within the turbine chamber to an elevation of approximately 558.5 ft or higher. This corresponds to flows above the New Colgate Powerhouse of approximately 17,000 cfs or higher.
- d. The flow conditions described in c above caused 14 generation curtailment events over a 31-year period between WY 1971 through 2002 (*Report of Feasibility of Tailwater Depression at New Colgate Powerhouse, an Element of the Yuba-Feather Supplemental flood control Project, YCWA October 2002*). The ability to release approximately 7,000 ac-ft per day from New Bullards Bar Reservoir before water elevations reach the lip of the spillway would reduce the rapid loss of available storage space between the normal operating level in good water years and the lip of the existing (or proposed Auxiliary Flood Control Outlet) spillway during flood events. This additional release capacity could also decrease the amount and peak rate of spill flows, which are currently limited by the height of the spillway lip (El. 1,902 ft) and the spillway capacity, which ranges from 19,000 cfs at the minimum level of the flood control pool (El. 1,918 ft), to approximately 167,000 cfs at maximum water surface elevation (El. 1,965 ft). The duration of TDS use per event would be approximately equal to or less than the average historical duration of spills at New Bullards Bar Reservoir, approximately 21 days per year.
- e. The potential environmental effects of the TDS are related to the possible release of approximately 12 gallons of lubricating oil for the electrical air compressors used by the system (taken from a report for the SWRCB by NCPA on the No. Fork Stanislaus River Project FERC No. 2409 – Feb. 2008 GLR 031214) and the potential for super-saturation of dissolved gases in the tailwater discharge of the New Colgate Powerhouse during TDS operations. The potential for oil releases would be mitigated by containment structures around the base of the air compressors capable of capturing the entire volume of oil in the system, and a condensation system for removing oil mist from the compressed air before it is introduced into the turbine chamber. The negligible effect of the 6.5 psi increased air pressure on dissolved gases in the discharged water would not have a measurable effect of aquatic life and does not require mitigation.

- f. The cumulative loss of power generation between 1971 and 2002 was nearly 204,000 MWh, or about 6,580 MWh per year on the average. These amounts equal the amounts of increased power production that would result from the construction and operation of the TDS.

1.1.2 New Bullards Bar New Auxiliary Flood Control Outlet

FERC staff stated:

(1) The Draft License Application states that the primary benefit of the new flood control outlet is increased flood control. However, it is unclear from the Draft License Application how the new outlet would operate in tandem with the existing concrete ogee overflow spillway, what changes to high flows would occur as a result of the construction and operation, and what are its potential environmental effects. Please describe in further detail:

- a. The differences in flood release operations that would occur due to the addition of the new flood control outlet.
- b. The differences in high flow hydrology, if any, that would occur at the stations downstream of Bullards Bar reservoir that were analyzed in the Hydrologic Alteration study. Please compare “with project hydrology” to “with project and a new flood control outlet hydrology.”

A detailed description of the proposed New Bullards Bar Auxiliary Flood Control Outlet, its operations and effects are included in Exhibit E, Section 2.2.1.2.1. Descriptions are also provided in Exhibit A, Section 5.1.2.1 and Exhibit B, Section 7.2.3. YCWA’s direct responses to FERC staff’s questions are as follows:

The proposed Auxiliary Flood Control Outlet would be operated under two situations:

- The new Auxiliary Flood Control Outlet would be operated if a large storm event is forecasted to occur within the near future, and the combination of New Bullards Bar Reservoir storage and the contributing watershed to New Bullards Bar Reservoir are in a state in which the storm event would necessitate very large releases from New Bullards Bar Reservoir. Under this scenario, the proposed Auxiliary Flood Control Outlet would be used to make releases from New Bullards Bar Reservoir in anticipation of the storm event, to reduce the subsequent required peak release from the reservoir.
- If a large storm event is forecasted to occur within the near future, and there is a concern that the required peak release from New Bullards Bar Dam would coincide with the peak release from DWR’s Oroville Reservoir, the proposed Auxiliary Flood Control Outlet would be used to make releases from New Bullards Bar Reservoir in anticipation of the storm event, so the peak flow would occur at an earlier time than it would otherwise

would have occurred, to allow for better management of flood operations from Oroville Reservoir.

Under each situation, the proposed Auxiliary Flood Control Outlet would be used only during high-flow events, and is not planned that this new outlet would be used for routine flood management releases that may be necessary because of relatively small encroachments into the flood reservation. The existing New Bullards Bar Dam spillway is anticipated to continue to be the primary flood management release facility for New Bullards Bar Reservoir. The proposed Auxiliary Flood Control Outlet would be a supplementary facility, and would be used in an anticipatory manner to avoid potential subsequent flood management challenges. Other than reducing the peak flow rate during storms, or shifting the peak release to an earlier time, the proposed Auxiliary Flood Control Outlet would not affect Project operations.

Below are specific responses to FERC's questions.

- a. Flood management operations with the proposed Auxiliary Flood Control Outlet would generally be the same as under current operations; for the majority of storm events, the proposed Auxiliary Flood Control Outlet would not be used.

If YCWA forecasts a substantial storm event is imminent, and basin conditions are such that inflow to New Bullards Bar Reservoir would necessitate a large release from the New Bullards Bar Dam spillway, YCWA would open the proposed Auxiliary Flood Control Outlet, even if storage in New Bullards Bar Reservoir had not encroached into the flood reservation. YCWA would likely also open the New Bullards Bar Dam spillway to its maximum opening, so long as the combined release from the two outlets did not exceed the objective flow below New Bullards Bar Dam (i.e., 50,000 cfs). The resulting flow in the North Yuba River below New Bullards Bar Dam and in the Yuba River would be greater than if the New Bullards Bar Dam spillway had been used by itself, but, by increasing releases in anticipation of the storm event, additional space would be created within New Bullards Bar Reservoir so the ultimate peak flow would be reduced in magnitude.

Similarly, if YCWA forecasts a substantial storm event is imminent and both New Bullards Bar Reservoir and Oroville Reservoir would experience substantial inflows, potentially necessitating large releases from both reservoirs, YCWA would open the proposed Auxiliary Flood Control Outlet in addition to the New Bullards Bar Dam spillway ahead of the storm to create additional space within New Bullards Bar Reservoir, both reducing the peak storm event, and releasing it earlier than it would otherwise have occurred, so as not to coincide with the peak release from Oroville Reservoir, allowing for improved conditions on the Feather River downstream from the Yuba River.

- b. The Operations Model used for the Hydrologic Alteration Study is not intended to be used for flood management operations, particularly including the proposed Auxiliary Flood Control Outlet. Detailed flood operations modeling reflecting operations of the proposed Auxiliary Flood Control Outlet would require additional information, including

an hourly timestep, a representation of the state of New Bullards Bar Reservoir’s contributing watershed, a detailed implementation of the USACE flood operations manual for New Bullards Bar Reservoir; and modeling on DWR’s Oroville Reservoir for flood control purposes. Accordingly, a quantitative analysis of the differences in high-flow flows between “With Project Hydrology” and “With Project and the Proposed Flood Control Outlet” is not possible. From a qualitative perspective, the proposed Flood Control Outlet would not affect the frequency of spills from New Bullards Bar Dam, but it would reduce the peak flow on the Yuba River near Smartsville, and on the Yuba River near Marysville for storms with a return period greater than approximately 10 years.

1.2 Exhibit E, Terrestrial Resources, Clarifications

1.2.1 Use of Pesticides on Non-federal Land

FERC staff stated:

(1) Although you discuss the use of pesticides on federal lands in the *Integrated Vegetation Management Plan*, you do not provide any specifics on the use of pesticides on non-federal lands. Therefore, describe the use, if any, of pesticides on non-federal lands including application procedures, situations when pesticides are used, and general extent of use and area covered.

On private land, YCWA’s State-certified applicators periodically apply herbicides, such as Garlon® or Surflan®, around the immediate vicinity (i.e., within 100 feet) of Project facilities. All federal, state and local regulations are adhered to during the application. The herbicides are used on an as needed basis, but typically twice each year.

Table 1.2-1 summarizes YCWA’s herbicide use on non-federal lands in 2012, a typical year.

Table 1.2-1. Location, types and amounts of herbicides applied to non-federal lands by Yuba County Water Agency for the Yuba River Development Project in 2012.

Facility Where Applied	Herbicide							
	Hoss Ultra®	Garlon® 3A/4	Surflan®	Roundup®	Goal®	Milestone™	Oust®	Telar®
	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (gal) ¹	Liquid (oz) ²	Solid (oz) ²	Solid (oz) ²
New Colgate Right-of-Way	5	32.5	25	35	30	190	48	12
Narrows 2 Access Road	--	--	5	5	5	--	--	--

¹ gal = gallons
² oz = ounces

1.2.2 Non-native Invasive Plants on Private Land

FERC staff stated:

(2) In Section 3.3.4.1.1, *Botanical Resources*, you describe the presence of non-native invasive plants on public lands but not on private lands within the project area. Please describe any existence of non-native invasive plants on private lands in the project area.

A detailed description of NNIPs can be found in Exhibit E, Section 3.3.4.1.1, *Botanical Resources*. Descriptions are also provided in the IVMP, Section 2.3.2, *Existing NNIP Populations*. YCWA's direct response to FERC staff's question is below.

In 2012, YCWA performed surveys for NNIPs, as part of Study 5.1, *Special-Status Plants* (YCWA 2012b). The additional study area for Garden Valley Road in 2014 and the Auxiliary Flood Control Outlet at New Bullards Bar in 2015 was also surveyed for NNIP. YCWA found 14 NNIP species, which was comprised of 377 occurrences (290.85 ac) excluding Himalayan blackberry. There were 197 occurrences (97.53 ac) on public land, and 180 occurrences (200.31 ac) on private lands excluding Himalayan blackberry. On public lands, 122 occurrences of Himalayan blackberry were located, totaling 167.39 ac. On private lands, 102 occurrences of Himalayan blackberry were located, totaling 191.45 ac. In total, there were 515 occurrences of NNIP on 635.19 ac, 233 (243.43 ac) on public lands and 282 (391.76) on private lands.

1.2.3 Bald Eagle Nest Productivity

FERC staff stated:

(3) In Section 3.3.4.1.2, *Wildlife Resources*, you indicate that you received nesting survey reports from the Tahoe National Forest for 1989 through 2011 but do not provide information on nest success. Please provide any available data on the productivity of these nests.

The discussion on YCWA's *Special-status Wildlife – Bald Eagle Study* in Section 3.3.4.1.2 of Exhibit E was updated to include a summary of nesting survey reports from the TNF. The summary describes nesting success of the Garden Point Peninsula Nest since 1989, identifies years in which the nest failed, and the likely cause for nest failure during those years.

According to the TNF (2002), the Garden Point Peninsula nest was used from 1989 until its destruction in the October 1999 Pendola Fire, which was not caused by the Project. In 2000, the nest was rebuilt on the east side of the peninsula near Tractor Cove and has remained in use since. Over the 23 years of monitoring the Garden Point Peninsula Nest (1989-2012), 21 bald eagles have fledged for an annual reproductive rate of 0.91. According to the TNF nesting survey reports, nesting did not occur in 1995, 1996, 1997, 2000, 2004, 2005, 2006, and 2010. In four of the years that nesting did not occur (2004, 2005, 2006, and 2010), the TNF believes late winter/early spring storms were believed to have damaged the nest and is the suspected cause of failure. The TNF also believes the rebuilding of the nest after the Pendola Fire, may be related to the pair not successfully nesting in 2000. The cause of the three remaining nest failures (1995, 1996, and 1997) are unknown, but these years also correspond to wetter than normal (based on 50 year average for unimpaired runoff) (YCWA 2012d).

1.2.4 Number of Acres of Disturbed by New Bullards Bar Dam new Auxiliary Flood Control Outlet and Recreation Facilities Rehabilitation and Enhancements

FERC staff stated:

(4) You indicate in section 3.3.4.2.5, *Effects of Construction-Related Activities*, that New Bullards Bar dam flood control outlet and recreation facilities rehabilitation and enhancements would result in ground disturbance and habitat alteration, but you do not quantify the effects. Therefore, please provide an estimate of the number of acres of different habitat types that would be temporarily or permanently disturbed by these construction activities.

The discussion in Section 3.3.4.2.5, *Effects of Construction-Related Activities*, was updated to reflect the number of ac of different habitat types that would be temporarily or permanently disturbed by construction activities associated with the New Bullards Bar Dam Auxiliary Flood Control Outlet and recreation facilities rehabilitation and enhancements.

Areas permanently disturbed by construction activities associated with the New Bullards Bar Dam flood control outlet would likely be limited to 2.4 ac (1.7 ac of Douglas-Fir, and 0.7 ac of Barren habitats).¹ This site is located at the base of the New Outlet Works on Figure 2.2-5 (Exhibit E, Section 2.0). Those areas where disturbances are believed to be temporary include 10 sites that could serve as staging, laydown, or disposal areas. Combine, these areas encompass 83.7 ac, and include the following, 30.2 ac of Barren; 26.9 ac of Montane Hardwood Conifer; 24 ac of Douglas-Fir; 1.6 ac of Urban; 0.6 ac of Montane Hardwood; and 0.4 ac of Sierran Mixed Conifer. At this time, these 10 sites are only a proposed list of areas that could serve as staging, laydown, or disposal areas.

1.3 Exhibit H Clarifications

1.3.1 Number of Acres of Affected by Disturbed by New Bullards Bar Dam Auxiliary Flood Control Outlet and Recreation Facilities Rehabilitation and Enhancements

FERC staff stated:

Even though YCWA does not serve retail customers, please describe any of YCWA's ongoing efforts to encourage energy conservation.

YCWA encourages energy efficiency improvements especially in regards to agricultural users within its Member Units. For example, as part of the Lower Yuba River Accord, YCWA paid

¹ Acreages of permanently and temporarily disturbed habitat were derived from overlaying the conceptual-level map with California Wildlife Habitat Relationship habitat types.

approximately \$884,000 for the conversion of 72 diesel groundwater pump motors to cleaner, more efficient electrical groundwater pump motors. Also, YCWA constructed the Wheatland Project to provide surface water supplies to farmers in southwestern Yuba County that previously relied entirely on groundwater pumping. This information is included in Section 11.0 of Exhibit H.