



Appendix B – Lower Drum Additional Information

PG&E's Lower Drum Hydroelectric Project
(FERC No. 14531)

Nevada and Placer Counties, California

December 2020



Prepared for:

State Water Resources Control Board

Prepared by:

HDR



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1 Introduction

This appendix provides details on the existing facilities, operations, and license conditions for the Proposed Lower Drum Project.

2 Existing Facilities

2.1 Halsey Development

The Halsey Development includes the Bear River Canal Diversion Dam, Bear River Canal, Halsey Forebay and Dam, Halsey Powerhouse Penstock and Tunnels, and Halsey Powerhouse.

- Bear River Canal Diversion Dam is a concrete-fill dam with an unlimited spillway capacity located on the Bear River. Releases from the Bear River Canal Diversion Dam flow into Lake Combie (non-Project facility) via the Bear River.
- Bear River Canal diverts up to 490 cubic feet per second (cfs) from the Bear River to Halsey Forebay. The canal has open ditch (10 feet wide by 9 feet deep), flume (10 feet wide by 7.8 feet deep), and tunnel (8 feet wide by 11 feet high) sections and a total length of 22.7 miles.
- Halsey Forebay Dam is a 42-foot-high, 850-foot-long earth-fill dam at the downstream end of the Bear River canal that forms Halsey forebay. The dam has a crest elevation of 1,821.4 feet. Pacific Gas and Electric Company (PG&E) operates Halsey Forebay for re-regulating purposes, regulating flow into Halsey Powerhouse. Releases from Halsey Forebay dam flow into the Halsey Powerhouse Penstock.
- Halsey Powerhouse Penstock is a 72-inch-diameter, 1,205-foot-long steel penstock that diverts a maximum of 490 cfs from Halsey forebay to Halsey Powerhouse. The Halsey Powerhouse Tunnels consist of two concrete-lined tunnels with a combined flow capacity of 490 cfs.
- Halsey Powerhouse is located adjacent to Halsey Afterbay. PG&E operates Halsey Powerhouse semi-automatically based on downstream water demands. Halsey Powerhouse has an installed capacity of 11 megawatts (MW) with a synchronous generator, one Francis double-overhung turbine with a rated nameplate hydraulic

capacity of 495 cfs, and a dependable capacity¹ of 11 MW. Halsey Powerhouse discharges into Halsey Afterbay.

- Recreational Facilities associated with the Halsey Development include the Halsey Forebay picnic area (9 picnic sites and 12 parking spaces).

2.2 Wise Development

The Wise Development includes Halsey Afterbay Dam and Afterbay, Upper Wise Canal, Rock Creek Dam and Reservoir, Lower Wise Canal, Wise Dam and Forebay, Wise Powerhouse Penstock, Wise Powerhouses, and one distribution line. No recreational facilities are associated with this development.

- Halsey Afterbay Dam is a 38-foot-high, 222-foot-long rock-fill dam that impounds Dry Creek to form Halsey Afterbay, which has a usable storage capacity of 76 acre-feet and a surface area of 10.3 acres. Normal maximum water surface elevation within the afterbay is 1,494.0 feet. The dam has a crest elevation of 1,499 feet mean sea level. PG&E operates Halsey Afterbay dam for re-regulating purposes, diverting flows in Dry Creek and from Halsey Powerhouse into Upper Wise Canal. The dam has an overflow spillway, and a controlled 2-foot-diameter pipe serves as the low-level outlet. Releases from Halsey Afterbay Dam flow into Rock Creek Reservoir via Upper Wise Canal; however, some of this flow discharges downstream as spillage or leakage into Dry Creek or is diverted to meet downstream non-Project consumptive water demands by Nevada Irrigation District (NID) and Placer County Water Agency (PCWA).
- Upper Wise Canal consists of an open ditch (12 feet wide by 8 feet deep), concrete flume, and natural waterway sections and has a total length 2.18 miles. The canal diverts up to 488 cfs to Rock Creek Reservoir, also operated as a re-regulating reservoir. As mentioned above, Upper Wise Canal delivers water to both Rock Creek Reservoir and to downstream areas for consumptive water demands.
- Rock Creek Reservoir Dam is a 36-foot-high, 1,020-foot-long earth-fill and multiple-concrete-arch dam that impounds Rock Creek to form Rock Creek Reservoir, which has a usable storage capacity of 482 acre-feet and a surface area of 58 acres. Normal maximum water surface elevation within the reservoir is 1,439.6 feet. The dam has a crest elevation of 1,445.1 feet. Rock Creek Reservoir Dam has a 60-foot-long passive overflow spillway. A 2-foot pipe with a maximum capacity of 80 cfs serves as the low-level outlet. PG&E operates the dam for re-regulating purposes. Releases from Rock Creek Dam flow into Wise Forebay via Lower Wise

¹ California Independent System Operator (ISO) defines “dependable capacity” as “The maximum normal capability of the Generating Unit.”



Canal; however, some of this flow is diverted for NID's water delivery point NID-1 or released downstream in Rock Creek.

- Lower Wise Canal consists of an open ditch (12 feet wide by 8 feet deep) and tunnel (8.5 feet wide by 11.2 feet deep) sections and has a total length 3.76 miles. The canal diverts up to 488 cfs to Wise Forebay, also operated as a re-regulating reservoir.
- Wise Forebay Dam is a 20-foot-high, 1,741-foot-long earth-fill dam that forms Wise Forebay, which has a usable storage capacity of 32 acre-feet and a surface area of 4.5 acres. Normal maximum water surface elevation within the forebay is 1,418.0 feet. The dam has a crest elevation of 1,422.0 feet. The dam has a 130-foot-long uncontrolled overflow spillway, which is not currently in use. A 60-inch pipe with a flow capacity of 32 cfs serves as the low-level outlet. PG&E operates Wise Forebay Dam for re-regulating purposes for flows into Wise powerhouse penstock.
- Wise Powerhouse Penstock is a 93- to 96-inch-diameter steel pipe with a total length of 8,580 feet. Wise penstock bifurcates into two separate penstocks about 1,000 feet above the Wise powerhouses, allowing up to 393 cfs to Wise Powerhouse and 80 cfs to Wise No. 2 Powerhouse.
- Wise Powerhouse is located 1.8 miles downstream of Wise Forebay. PG&E operates Wise Powerhouse semi-automatically based on downstream consumptive water demand. Wise Powerhouse has an installed capacity of 14 MW with a synchronous generator, one Francis turbine with a rated nameplate hydraulic capacity of 393 cfs, and a dependable capacity of 9.0 MW. Wise Powerhouse discharges into South Canal, where the flow is either diverted to Auburn Ravine for downstream consumptive water demands or continues to the Newcastle Powerhouse Header Box at the terminus of South Canal.
- Wise Powerhouse Distribution Line is a 12-kilovolt (kV) single-circuit line extending 5 feet from Wise Powerhouse to a connection with PG&E's interconnected system adjacent to the powerhouse yard.

2.3 Wise No. 2 Development

The Wise No. 2 Development consists of Wise No. 2 Powerhouse Penstock and Wise No. 2 Powerhouse. No recreational facilities are associated with this development.

- Wise No. 2 Powerhouse Penstock is a 1,362-foot-long 30- to 60-inch-diameter steel pipe that delivers up to 80 cfs to Wise No. 2 Powerhouse.
- Wise No. 2 Powerhouse has an installed capacity of 3.2 MW (normal operating capacity is 3.1 MW) with a synchronous generator, one Francis turbine with a rated nameplate hydraulic capacity of 80 cfs, and a dependable capacity of 3.0 MW.

PG&E operates Wise No. 2 Powerhouse semi-automatically as a base-loaded plant for downstream water demand. Wise No. 2 Powerhouse discharges into South Canal, where the flow is either diverted to Auburn Ravine for consumptive water demands or continues to the Newcastle Powerhouse Header Box at the terminus of South Canal.

2.4 Drum No. 1 and No. 2 Development

The Newcastle Development consists of South Canal, Newcastle Powerhouse Header Box, Newcastle Penstock, Newcastle Powerhouse, and one transmission line. No recreational facilities are associated with this development.

- South Canal consists of an open ditch (6.7 to 10 feet wide by 6 feet deep), flume (9 feet wide by 6 feet deep), and tunnel (6.5 feet wide by 8 feet high) sections with a total length of 5.4 miles. As noted above, South Canal currently diverts up to 375 cfs from the two Wise powerhouses to Newcastle Powerhouse Header Box. South Canal traverses over (or under in the event of a tunnel crossing) the Dutch, Secret, and Miners ravine watersheds, respectively. No water (outside of minimal leakage) is released or spilled from South Canal into these drainages.
- Newcastle Powerhouse Header Box delivers water from South Canal to Newcastle Penstock. The header box delivers a minimum instream flow, as well as periodic spills, from the South Canal into Mormon Ravine.
- Newcastle Penstock consists of concrete (84-inch-diameter) and steel (60- to 84--inch-diameter) sections with a total length of 5,649.6 feet. The penstock has a maximum flow capacity of 392 cfs that is delivered to Newcastle Powerhouse.
- Newcastle Powerhouse is located 6.0 miles downstream of Wise Powerhouse and Wise No. 2 Powerhouse. PG&E operates the Newcastle Powerhouse automatically from the Wise Switching Center as a base-loaded plant. Newcastle Powerhouse has an installed capacity of 11.5 MW with a synchronous generator, one Francis turbine with a rated nameplate hydraulic capacity of 392 cfs, and a dependable capacity of 0 MW. The water discharged from Newcastle Powerhouse flows into Folsom Lake (non-Project facility operated by the Bureau of Reclamation) via a 0.3-mile reach of Mormon Ravine.
- Newcastle Powerhouse Tap is a 500-foot-long underground 115-kV transmission line that connects Newcastle Powerhouse to the Newcastle Switchyard for the non-Project Placer-Gold Hill No. 1 and No. 2 115-kV transmission lines.

2.5 Existing Stream Gages

PG&E maintains and operates three gages to measure minimum streamflows and other flows related to the operation of the Lower Drum Project (Table B-1).



Table B-1. Stream Gages used by PG&E for the Operation of the Lower Drum Project

Location	Licensee Gage No.	Purpose of Gage	Location (Latitude and Longitude)		Elevation (feet)
Rock Creek below Rock Creek Diversion Dam	YB-86	Minimum streamflows and Canal Outages	38°56'53"	121°5'26"	1,425 (Approx.)
Dry Creek below Halsey Afterbay Dam	YB-62A	Minimum streamflows and Canal Outages	38°57'22"	121°2'38"	1,475 (Approx.)
Mormon Ravine at South Canal Release Point	YB-292	Minimum streamflows and Canal Outages	38°50'12"	121°5'43"	525 (Approx.)

3 License Conditions

3.1 Existing Conditions

The Federal Power Commission (FPC), the predecessor to the Federal Energy Regulatory Commission (FERC), issued the initial Drum-Spaulding Project license to PG&E on June 24, 1963, effective for the period from May 1, 1963, through April 30, 2013. The initial license included 44 articles that specified conditions of the license (that is, articles numbered 1 through 48 with articles 12, 13, 17, and 20 being excluded from the license). Articles 1 through 24 were from “Terms and Conditions of License for Unconstructed Project Affecting Lands of the United States,” dated December 15, 1953, and were typical of “standard” articles included in project licenses at the time. Since 1963, FERC has added 30 new articles to the license. License articles numbered between 25 and 405 are considered “Project-specific” articles. Table B-2 lists the current Drum-Spaulding Project license articles, including the general topic of each article.

Table B-2. General Topic of Each Active Article in the Current Drum-Spaulding Project FERC License²

Article	Description
1	Entire Project subject to terms of license.
2, 3	FERC approval of changes.
4	Construction and operations and maintenance subject to FERC inspection.
5	Revisions to maps and plans showing project area and boundary subject to FERC approval.
6	Installation and maintenance of stage and flow gages and meters to determine energy generated by Project.
7	Roads, trails, and other land uses on US-owned lands to be approved by appropriate federal agency or department.
8	Place and maintain suitable structures for public safety related to transmission lines, telephone lines, and other signal wires.
9	Avoid inductive interference between Project transmission lines and radio, telephone, or other communication facility.
10	Clearing of lands prior to filling reservoirs and maintaining margins of reservoirs.
11	Clearing of transmission line right-of-ways on US-owned lands.
12	Not included in the License
13	Not included in the License
14	Reasonable rules for release of water from reservoirs to protect life, property, beneficial uses, etc.
15	Provisions regarding water for fire suppression, sanitary and domestic needs to agencies with jurisdiction on US-owned lands.
16	Licensee liability regarding buildings, bridges, roads, trails, etc. on US-owned lands.
17	Not included in the License
18	Licensee rights limited to use, occupancy, and enjoyment of lands of US related to construction, operation, and maintenance of Project.
19	Reservation of rights for US agency or state or county to take over Project roads after construction.

² Pacific Gas and Electric (PG&E). 2011. "Application for New License, Drum-Spaulding Project." Accessed November 12, 2020.

https://elibrary.ferc.gov/eLibrary/filelist?accession_num=20110412-5005&optimized=false.



Table B-2. General Topic of Each Active Article in the Current Drum-SpaULDing Project FERC License²

Article	Description
20	Not included in the License
21	Specified rate of return for determining surplus earnings of the Project.
22	Lease of Project works for power subject to Commission approval.
23	Licensee to retain possession of Project property covered by the license.
24	Terms and conditions of license shall not impair terms and conditions of Federal Power Act.
25	Licensee construction of Drum Number 2 Powerhouse.
26	Licensee to file revised Exhibits F and K, defining Project boundary.
27, 28	Construction of fishways and fish handling facilities.
29	Installation of additional capacity.
30	Coordination of operation with such other power systems.
31	Reservation by Commission to determine what additional transmission facilities should be included as part of Project works.
34	Licensee to file recreational use plan.
35	Right of Licensee to occupy public lands in Project lakes under Act of July 26, 1866.
36	Cost of Project and net investment to be determined by Commission.
37	Cost of Project and any betterments to be determined by Commission.
38	Releases from reservoirs no greater than natural conditions.
39	Minimum streamflow requirements.
40	Maintenance of water levels in Project reservoirs.
41	Prevention of substances injurious to fish and wildlife from entering streams or waters.
42	Protection of deer in Project area.
43	Stockpile of topsoil from borrow sites and replacement upon completion of borrow operations.
44	Consultation requirements regarding historical and archeological data at Drum Number 2 Powerhouse construction site.

Table B-2. General Topic of Each Active Article in the Current Drum-Spaulding Project FERC License²

Article	Description
45	Permanent Project roads on lands in Tahoe National Forest to be constructed subject to standards of Commission.
46	Payment or disposal of cleared timber on lands of the US during construction and maintenance of Project works.
47	Prevention and suppression of fires on project lands.
48	Submittal of plans for Commission approval for repairs of specific dams.
49	Specified rate of return for determining surplus earnings of the Project.
50	Requirement to conduct threatened and endangered plant species survey prior to construction or inundation of Fordyce development.
51	Requirement to revise Exhibits K and L for the Fordyce development
52	Safety requirement regarding Wise and Halsey forebays.
53	Plan for improvements to Lake Valley Dams and revision of Exhibit L drawings.
54	Verification of spillway adequacy of Lake Valley and Lake Arthur Dams.
55	Implement and modify, when appropriate, an emergency action plan for early warning to sudden releases of water.
56	Requirements for clearance of vegetation and trees along conduits and reservoirs.
57	Requirements for a feasibility analysis regarding development of drops between Bear River Canal and Halsey Forebay, South Canal and Folsom Reservoir, and Lake Valley Canal and Drum Canal.
58	Consultation requirements with environmental protection agencies during construction and operation of Project works.
59	Licensee authority to grant permission for certain types of land use without prior Commission approval.
60	Requirement to file revised Exhibit F drawings and Exhibit G maps.
61	Requirements to provide contract drawings and specifications for Regional Engineer review prior to construction.
62	Requirements for Licensee approval of contractor design and construction of cofferdams and deep excavations prior to start of construction.



Table B-2. General Topic of Each Active Article in the Current Drum-SpaULDing Project FERC License²

Article	Description
63	Minimum streamflow requirement at Mormon Ravine above Newcastle Powerhouse.
64	Requirements for conducting studies for fishery and wildlife resources at Newcastle Development intake to determine minimum flows needed.
65	Requirements for consultation with State Historic Preservation Office prior to future construction.
66	Requirements for commencement of construction of Newcastle Development.
67	Requirements for development of restoration plan for Wise 2 development.
68	Requirements for plan to protect riparian vegetation of Rock Creek.
71	Requirements to provide contract drawings and specifications for pertinent features of project additions to FERC prior to start of construction.
72	Requirements for submitting revised Exhibit F drawings and supporting design report showing final design of major Project works.
73	Requirements for filing revised Exhibits F and G for approval.
401	Requirements to file a plan to monitor water temperature in Bear River at the Highway 20 gage and at release from South Yuba Canal.
402, 403, 404, 405	Requirements regarding abandonment of Upper Boardman Canal.

In addition to the FERC license requirements, PG&E entered into three agreements with resource agencies that included various streamflow-related requirements. In an April 11, 1963, agreement between PG&E, the US Forest Service, and the California Department of Fish and Game (CDFG), which expired April 30, 2013, PG&E agreed to release 1 cfs in the North Fork of the North Fork American River below Lake Valley Reservoir and 1 cfs below Lake Valley Canal Diversion Dam. In May 1985, PG&E and CDFG agreed to provide a “fish water release” of 3 cfs in the summer (June through September) and 1 cfs the remainder of the year. No expiration date of the agreement

was stated in the original letter and PG&E still maintains these.³ PG&E also agreed to drawdown provisions for Kelly Lake and Kidd Lake (modified in the June 22, 1979, agreement below) and provisions to use storage in White Rock Lake to augment flow of North Creek in summer and fall months.

A June 22, 1979, letter agreement between PG&E, US Forest Service, and CDFG acted as an interim modification to the 1963 agreement. In this agreement, PG&E agreed to make releases from Kidd Lake and Upper and Lower Peak Lakes to maintain a minimum flow of 5 cfs and a maximum water temperature of 70 degrees Fahrenheit (°F) in the South Yuba River, as measured at Cisco Grove, consistent with the primary purposes of the Project and as water conditions permit, although releases from these reservoirs prior to September 1 would be controlled to keep the lake water surfaces as high as reasonably possible during the recreation season.

Finally, in an April 21, 1987, "letter agreement" between PG&E and CDFG, PG&E agreed to bypass 0.25 cfs year-round in Little Bear River below Alta Powerhouse.

3.2 Proposed Conditions

In its December 2014 Final Environmental Impact Statement (FEIS), FERC staff adopted without modification 17 of the measures proposed by PG&E in its Final License Application, as amended; recommended 48 additional measures; and noted that the Bureau of Reclamation's 15 final Federal Power Act (FPA) Section 4(e) conditions dated October 21, 2013, would be included in the new license. Some of these measures were recommended by California Department of Fish and Wildlife (CDFW)⁴ and the United States Fish and Wildlife Service during relicensing.

Besides these conditions, FERC would include in any new license for the Lower Drum Project FERC's 37 Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States (Form L-5 Standard Articles). Combined, the FEIS included 80 measures. Table B-3 lists the measures; identical conditions are shown across the same row, under the appropriate recommending agency.

³ May 10, 1985, letter from PG&E to Mr. Paul Jensen at CDFG regarding various issues including flows below Lake Valley Diversion Dam.

⁴ On January 1, 2013 California Department of Fish and Game was renamed California Department of Fish and Wildlife



Table B-3. Proposed Conditions in the New Lower Drum Hydroelectric Project License as Developed during the FERC National Environmental Policy Act (NEPA) Process⁵ (Identical conditions, to the extent they apply to the Lower Drum Hydroelectric Project, are shown along the same row.)

Condition	Standard Articles and FERC Staff Recommendation (FERC Standard Article L-5, Appendix F-2 of FEIS, or Page # in FEIS)	PG&E Proposed Conditions Adopted by FERC Staff Without Modification (Page # in FEIS)	Reclamation Final 4(e) Condition (Appendix H of FEIS) ⁶	Proposed by Other Agencies (Table 5-5 in FEIS)
	Article # or Page #	Page #	Condition #	Agency
Entire Project Subject to Terms and Conditions in License	Standard Art. 1	—	—	—
No Substantial Changes Without FERC Approval	Standard Art. 2	—	—	—
Substantial Conformity to Approved Exhibits	Standard Art. 3	—	—	—
Project Subject to Inspection and Supervision of FERC Regional Engineer	Standard Art. 4	—	—	—

⁵ Federal Energy Regulatory Commission (FERC). 2014. "Final Environmental Impact Statement for Hydropower License." Accessed November 12, 2020.

https://elibrary.ferc.gov/eLibrary/filelist?document_id=14283202&optimized=false

⁶ Bureau of Reclamation 4(e) conditions B-1 through B-14 are related to the operation and maintenance of Newcastle Powerhouse.

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	Article # or Page #	Page #	Condition #	Agency
Acquire Rights to Use Project Lands	Standard Art. 5	—	—	—
Termination or Transfer	Standard Art. 6	—	—	—
Original Cost of Project	Standard Art. 7	—	—	—
Gages	Standard Art. 8	—	—	—
Installation of Additional Capacity	Standard Art. 9	—	—	—
Coordinated Operations with Other Water Projects	Standard Art. 10	—	—	—
Headwater Benefits	Standard Art. 11	—	—	—
Navigation	Standard Art. 12	—	—	—
Reasonable Use of Project by Others	Standard Art. 13	—	—	—
Place Facilities for Reduction of Liability of Contact Between Lines and Wires	Standard Art. 14	—	—	—
Construction and Maintenance of Fish and Wildlife Facilities	Standard Art. 15	—	—	—



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	Article # or Page #	Page #	Condition #	Agency
Construction of Fish and Wildlife Facilities by the United States	Standard Art. 16	—	—	—
Recreation Facilities	Standard Art. 17	—	—	—
Public Use of Project Water Consistent with Project Operations	Standard Art. 18	—	—	—
Prevention of Soil Erosion	Standard Art. 19	—	—	—
Clearing Along Open Water Conduits and along Reservoirs	Standard Art. 20	—	—	—
Dredging and Excavation	Standard Art. 21	—	—	—
Construction of Navigation Facilities by the United States	Standard Art. 22	—	—	—
Operation of Navigation Facilities	Standard Art. 23	—	—	—
Power for Navigation Facilities	Standard Art. 24	—	—	—

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	Article # or Page #	Page #	Condition #	Agency
Lights and Signals Related to Navigation	Standard Art. 25	—	—	—
Timber on Lands of the United States	Standard Art. 26	—	—	—
Suppression of Fires	Standard Art. 27	—	—	—
Use of Project Waters for Fire Suppression	Standard Art. 28	—	—	—
Liability	Standard Art. 29	—	—	—
Use of Project lands by the United States	Standard Art. 30	—	—	—
Roads and Trails	Standard Art. 31	—	—	—
Avoiding Inductive Interference	Standard Art. 32	—	—	—
Treatment of Transmission Line Right-of-Ways	Standard Art. 33	—	—	—
Disposal of Mineral and Vegetation Material on United States Lands	Standard Art. 34	—	—	—
Surrender of License	Standard Art. 35	—	—	—



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	Article # or Page #	Page #	Condition #	Agency
Rights Cease at End of License	Standard Art. 36	—	—	—
Consistency with the Federal Power Act	Standard Art. 37	—	—	—
DS-GEN3, Coordinated Operations Plan	Draft Article 4XX (pg. F-2-1)	741	—	CDFW 10j #1.2
DS-GEN2, Annual Employee Training	Draft Article 4XX (pg. F-2-2)	741	—	CDFW 10j #1.1
Reservation of Authority to Prescribe Fishways	Draft Article 4XX (pg. F-2-2)	—	—	—
Canal Release Point Plan (filed by PG&E with FERC on 4/11/14)	Draft Article 4XX (pg. F-2-2)	742	—	CDFW 10j #11
Erosion and Sediment Control and Management Plan (filed by PG&E with FERC on 4/11/14)	Draft Article 4XX (pg. F-2-2)	742	—	CDFW 10j #22, #27, and #28
Water Year Types	Draft Article 4XX (pg. F-2-2)	742	—	CDFW 10j #2.1

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	Article # or Page #	Page #	Condition #	Agency
DS-AQR1, Minimum Streamflows	Draft Article 4XX (pg. F-2-3)	742	—	CDFW 10j #2.2
Coordination of the Lower Drum Project and the Yuba-Bear Project Operations Regarding the Yuba-Bear Project's Streamflow Requirements in the Bear River Below Rollins Reservoir at Gage YB-196.	Draft Article 4XX (pg. F-2-7)	742	—	CDFW 10j #2.3
Minimum Streamflow During Canal Outages	Draft Article 4XX (pg. F-2-7)	742	—	CDFW 10j #2.5
DS-AQR2, Canal Outage Fish Rescue Plan	Draft Article 4XX (pg. F-2-7)	743	—	CDFW 10j #3
DS-AQR4, Gaging Plan	Draft Article 4XX (pg. F-2-7)	742	—	CDFW 10j #4
Aquatic Invasive Species Management and Monitoring Plan	Draft Article 4XX (pg. F-2-7)	743	—	CDFW 10j #6



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	Article # or Page #	Page #	Condition #	Agency
Fish Population Monitoring Plan (filed by PG&E with FERC on 11/21/13)	Draft Article 4XX (pg. F-2-8)	743	—	CDFW 10j #8
Incidental Observations of Western Pond Turtles	Draft Article 4XX (pg. F-2-8)	743	—	CDFW 10j #8
Aquatic Benthic Macroinvertebrate Monitoring Plan	Draft Article 4XX (pg. F-2-8)	—	—	CDFW 10j #8
Water Temperature and Stage Monitoring Plan (filed by PG&E with FERC on 4/11/14)	Draft Article 4XX (pg. F-2-8)	—	—	CDFW 10j #8
Integrated Vegetation Management Plan	Draft Article 4XX (pg. F-2-9)	—	—	CDFW 10j #7.1
DS-TR2, and TR3, Wildlife Crossing Plan	Draft Article 4XX (pg. F-2-9)	—	—	CDFW 10j #7.2, #7.5, and #7.4

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Condition	Standard Articles and FERC Staff Recommendation (FERC Standard Article L-5, Appendix F-2 of FEIS, or Page # in FEIS)	PG&E Proposed Conditions Adopted by FERC Staff Without Modification (Page # in FEIS)	Reclamation Final 4(e) Condition (Appendix H of FEIS) ⁶	Proposed by Other Agencies (Table 5-5 in FEIS)
	Article # or Page #	Page #	Condition #	Agency
Bat Management (filed by PG&E with FERC on 12/20/13)	Draft Article 4XX (pg. F-2-10)	—	—	CDFW 10j #7.12
DS-TR5, Bald Eagle Management Plan (filed by PG&E with FERC on 11/21/13)	Draft Article 4XX (pg. F-2-11)	743	—	CDFW 10j #7.7
Avian Management Plan	Draft Article 4XX (pg. F-2-11)	—	—	CDFW 10j #7.10 and #7.11
Fish Stocking Plan	Draft Article 4XX (pg. F-2-12)	—	—	CDFW 10j #17
DS-RR1, Implement Recreation Facilities Plan (filed by PG&E with FERC on 11/18/13), with some modifications)	Draft Article 4XX (pg. F-2-12)	744	—	CDFW 10j #16, #12, and #15



Table B-3. Proposed Conditions in the New Lower Drum Hydroelectric Project License as Developed during the FERC National Environmental Policy Act (NEPA) Process⁵ (Identical conditions, to the extent they apply to the Lower Drum Hydroelectric Project, are shown along the same row.)

Condition	Standard Articles and FERC Staff Recommendation (FERC Standard Article L-5, Appendix F-2 of FEIS, or Page # in FEIS)	PG&E Proposed Conditions Adopted by FERC Staff Without Modification (Page # in FEIS)	Reclamation Final 4(e) Condition (Appendix H of FEIS) ⁶	Proposed by Other Agencies (Table 5-5 in FEIS)
	Article # or Page #	Page #	Condition #	Agency
DS-LU1, Implement Transportation Management Plan for Primary Project Roads (filed by PG&E with FERC on 8/29/12)	Draft Article 4XX (pg. F-2-12)	—	—	—
Fire Prevention and Response Plan	Draft Article 4XX (pg. F-2-12)	—	—	—
Hazardous Substances Plan	Draft Article 4XX (pg. F-2-12)	—	—	CDFW 10j #23
Programmatic Agreement and Historic Properties Management Plan	Draft Article 4XX (pg. F-2-13)	744	—	—
Use and Occupancy	Draft Article 4XX (pg. F-2-13)	—	—	—
Reservation of Authority to Modify Conditions	—	—	A-1	—

Appendix B Lower Drum Additional Information
 PG&E's Lower Drum Hydroelectric Project (FERC No. 14531)

Table B-3. Proposed Conditions in the New Lower Drum Hydroelectric Project License as Developed during the FERC National Environmental Policy Act (NEPA) Process⁵ (Identical conditions, to the extent they apply to the Lower Drum Hydroelectric Project, are shown along the same row.)

Condition	Standard Articles and FERC Staff Recommendation (FERC Standard Article L-5, Appendix F-2 of FEIS, or Page # in FEIS)	PG&E Proposed Conditions Adopted by FERC Staff Without Modification (Page # in FEIS)	Reclamation Final 4(e) Condition (Appendix H of FEIS) ⁶	Proposed by Other Agencies (Table 5-5 in FEIS)
	Article # or Page #	Page #	Condition #	Agency
Consultation	—	741	B-1	CDFW 10j #1 and #10
Approval of Changes	—	—	B-2	—
O&M of Newcastle Powerhouse and Appurtenances	—	—	B-3	—
Surrender of License or Transfer of Ownership	—	—	B-4	—
Protection of United States Property	—	—	B-5	—
Indemnification and Hold Harmless	—	—	B-6	—
Damage to Land, Property, and Interests of the United States	—	—	B-7	—
Unrestricted Access	—	—	B-8	—
Pesticide-Use Restrictions on Reclamation Lands	—	—	B-9	CDFW 10j #16
Hazardous Materials	—	—	B-10	—



Table B-3. Proposed Conditions in the New Lower Drum Hydroelectric Project License as Developed during the FERC National Environmental Policy Act (NEPA) Process⁵ (Identical conditions, to the extent they apply to the Lower Drum Hydroelectric Project, are shown along the same row.)

Condition	Standard Articles and FERC Staff Recommendation (FERC Standard Article L-5, Appendix F-2 of FEIS, or Page # in FEIS)	PG&E Proposed Conditions Adopted by FERC Staff Without Modification (Page # in FEIS)	Reclamation Final 4(e) Condition (Appendix H of FEIS) ⁶	Proposed by Other Agencies (Table 5-5 in FEIS)
	Article # or Page #	Page #	Condition #	Agency
Discovery of Cultural Resources	—	—	B-11	—
Health and Safety	—	—	B-12	—
Reclamation Land Use Stipulation	—	—	B-13	—
Removal of Structures	—	—	B-14	—
<i>Subtotal</i>	<i>65</i>	<i>17</i>	<i>15</i>	<i>25</i>

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