

## ***Hydropower Project License Summary***

### ***STANISLAUS RIVER, CALIFORNIA***

SPRING GAP-STANISLAUS HYDROELECTRIC PROJECT (P-2130)



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**Hydropower Reform Coalition**

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### **SPRING GAP-STANISLAUS HYDROELECTRIC PROJECT (P-2130)**

***DESCRIPTION:***

The Spring Gap-Stanislaus Project is located in Calaveras and Tuolumne Counties, CA on the Middle Fork Stanislaus River (Middle Fork) and South Fork Stanislaus River. Owned. The project, operated by Pacific Gas and Electric Company (PG&E), has an installed capacity of 87.9 MW and occupies approximately 1,060 acres of federal land within the Stanislaus National Forest.

Both the Middle and South Forks are popular destinations for a variety of outdoor recreation activities. With a section of the lower river designated by the State of CA as a Wild Trout Fishery, the Middle Fork is widely considered to be one of California's best wild trout fisheries. The South Fork on the other hand, with its high gradient and steep rapids, is a popular whitewater kayaking and rafting destination.

#### **A. SUMMARY**

1. License application filed: December 26, 2002
2. License Issued: April 24, 2009
3. License expiration: March 31, 2047
4. Capacity: Spring Gap- 6.0 MW  
Stanislaus- 81.9 MW
5. Waterway: Middle & North Forks of the Stanislaus River
6. Counties: Calaveras, Tuolumne
7. Licensee: Pacific Gas & Electric Company (PG&E)
8. Licensee Contact: Pacific Gas and Electric Company  
P.O. Box 997300  
Sacramento, CA 95899-7300
  
9. Project area: The project is located in the Sierra Nevada mountain range of north-central California. The headwaters of the Stanislaus River flow from Kennedy Creek in the Emigrant Wilderness Area near an elevation of 9,650 feet. The stream then flows in a southwesterly direction to its confluence with the San Joaquin River approximately five miles east of the city of Modesto. The Stanislaus River is bordered by the Mokelumne River to the north and the Tuolumne to the south.
  
10. Project Facilities: The project is comprised of four developments and is intricately connected with several other licensed hydro projects in the Stanislaus River watershed:
  - i. The Irrigation Districts' Beardsley/Donnells Hydroelectric Project No. 2005;
  - ii. Tri-Dam Power's Sand Bar Hydroelectric Project No. 2975;

- iii. PG&E's Phoenix Hydroelectric Project No. 1061; and the
- iv. Irrigation Districts' Tulloch Hydroelectric Project No. 2067.

The project consists of the following developments:

- a. Relief Reservoir (Middle Fork)
  - The uppermost project facility located on Summit Creek just before its confluence with Kennedy Creek to form the Middle Fork. Acts as a storage reservoir for downstream developments.
- b. Stanislaus (Middle Fork)
  - The Stanislaus development begins with the Sand Bar diversion dam, a 24-foot-high, 174-foot-long dam that forms a 7.5-acre impoundment. Water is then diverted into the Stanislaus power tunnel, an 11.4-mile-long tunnel that drains into the 16-acre Stanislaus forebay. The forebay is drained by the 4,707-foot-long Stanislaus penstock, which powers the Stanislaus powerhouse. Water then flows from the powerhouse into the 5.1 acre Stanislaus Afterbay, which is impounded by the breached Stanislaus Afterbay dam.
- c. Strawberry (South Fork)
  - The Strawberry development includes the 133-foot-high, 720-foot-long Strawberry dam which impounds the 300 acre Pinecrest Lake.
- d. Spring Gap (South Fork)
  - The Spring Gap development is composed of a network of various infrastructure. The Philadelphia diversion dam, an 11-foot-high, 56-foot-long spillway dam with a fish screen and ladder forms a 0.25-acre impoundment. The dam diverts water into the Philadelphia ditch, a 4.7-mile-long canal which flows into the Spring Gap forebay. The forebay is emptied by the 7,249-foot-long Spring Gap penstock which feeds the Spring Gap powerhouse.

11. Project Facilities- Recreation: Only the two PG&E-maintained parking areas at the Stanislaus forebay and Stanislaus powerhouse are project recreation facilities currently located within the project boundary. That said, many other recreation facilities, both developed and primitive, are located on Forest Service land near many of the project facilities.

## **B. IMPORTANT PROVISIONS AND REQUIREMENTS IN LICENSE**

In March 2004, a group of stakeholders<sup>1</sup> known as the Stanislaus Planning Action Team (SPLAT), filed a collaborative agreement that addresses the following:

1. year types;
2. maximum and minimum flows;
3. ramping rates;
4. Philadelphia diversion fish screen and ladder;
5. Stanislaus power tunnel fish screen;
6. fish stocking;
7. hardhead and trout monitoring;
8. special status species;
9. vegetation rejuvenation;
10. employee awareness training;
11. ground-disturbing activities;
12. noxious weeds management;
13. yellow-legged frogs;
14. bats;
15. western pond turtles;
16. heritage resource management plan;
17. recreation streamflow information;
18. Recreation implementation plan;
19. Stanislaus Afterbay dam;
20. Fire fuel treatment plan;
21. Road management plan; and
22. Historic Properties Management Plan.

This agreement, along with the mandates imposed by various resource agencies, help to ensure the protection and enhancement of fish, wildlife, water quality, recreation, and cultural resources at the Spring Gap-Stanislaus Project. A summary of the notable requirements included in the license are presented below.

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<sup>1</sup> Signatories to the Planning Team Agreement for the consensus-recommended resource measures include the following: PG&E; the Forest Service; Tuolumne Utilities District; Interior's National Park Service (NPS); the Irrigation Districts (as Tri-Dam Project); Central Sierra Environmental Resources Center; Friends of the River; American Whitewater; and Trout Unlimited. Other entities, such as the Water Board and California Fish and Game participated in the Stanislaus Planning Team's negotiations, but for various reasons did not sign the agreement.

**1. Instream Flows** [Reference: State Water Board Terms & Conditions (Appendix A, Conditions 1-7), Forest Service Terms & Conditions (Appendix B, Condition 34)]

PG&E is required to provide minimum instream flows for the Sand Bar Dam, Pinecrest, and Philadelphia reaches of the Stanislaus watershed. These flows are dependent on the timeframe, water-year type, and must provide an occasional 2-day recreational boating streamflow event for the Sand Bar Dam reach. PG&E must follow the requirements outlined below, except when subject to temporary modifications required by malfunctions, law enforcement activity, or other extenuating circumstances outside of their control.

Each year, PG&E must determine the *water-year type* based on the California Department of Water Resource’s forecast for annual unimpaired inflow into New Melones Reservoir. The forecast will be used to determine the minimum flow requirements for each reach within the scope of the project.

<u>Water-Year Type</u>	<b>DWR Forecast Annual Unimpaired Inflow to New Melones Reservoir (acre-feet)</b>
Critically Dry	Less than or equal to 350,000
Dry	Greater than 350,000 and less than or equal to 676,000
Normal	Greater than 676,000 and less than 1,585,000
Normal-Dry	Greater than 676,000 and less than 1,050,000
Normal-Wet	Greater than or equal to 1,050,000 and less than 1,585,000
Wet	Greater than or equal to 1,585,000

**Minimum and Maximum flows for the Relief Reach (cfs)**

The Relief Reach is defined in the license as the 15.8 mile-long reach of Summit Creek and the Middle Fork Stanislaus River from Relief Dam to Donnell’s Reservoir. The condition contains numerous requirements to ensure that Relief Reach’s streamflow mimics the shape of the unimpaired hydrograph, i.e. peak flows in spring, low flows in late summer.

Additionally, PG&E must maintain at least 5 cfs in Summit Creek between Relief Dam and Kennedy Creek year-round.

<i>Month</i>	<i>Water-Year Type</i>					
	<i>Normal</i>		<i>Dry and Critically Dry</i>		<i>Wet</i>	
	<i>Min</i>	<i>Max</i>	<i>Min</i>	<i>Max</i>	<i>Min</i>	<i>Max</i>
October 1-31	30	50	20	40	40	125
November 1-30	30	60	20	50	40	125
December 1-31	30	60	20	50	40	125
January 1–February 9	30	60	20	50	40	125
February 10–March 9	30	60	20	50	40	125
March 10–April 9	30	60	25	50	40	125
April 10–May 9	60	NA	45	NA	70	NA
May 10–May 31	100	NA	80	NA	150	NA
June 1-30	150	NA	100	NA	250	NA
July 1-31	90	NA	40	NA	200	NA
August 1-31	40	200	20	40	100	300
September 1-30	30	120	20	40	60	200

**Minimum flows for the Sand Bar Dam Reach (cfs)**

The Sand Bar Dam Reach is defined in the license as the 12.3 mile-long reach of the Middle Fork Stanislaus River extending from Sand Bar Diversion Dam to the confluence of the Middle Fork Stanislaus River with the North Fork Stanislaus River

<i>Month</i>	<i>Water-Year Type</i>		
	<i>Normal</i>	<i>Dry and Critically Dry</i>	<i>Wet</i>
October 1-31	80	50	80
November 1-30	70	50	70
December 1-31	70	50	70
January 1 - February 9	70	50	70
February 10 - March 9	70	50	70
March 10 - April 9	80	50	80
April 10 - May 9	80	50	80
May 10 – May 31	80	50	80
June 1 – 30	80	50	80
July 1- 31	80	60	100
August 1 – 31	80	60	100
September 1 – 30	80	50	100

*Supplemental flows for the Sand Bar Dam Reach (cfs)*

In order to more closely mimic the shape of the natural hydrograph and to provide seasonal cues for spawning, PG&E must also maintain the minimum Supplemental Flows specified in the table below. The annual variability of the timing and magnitude of the

Supplemental Flows will provide a more natural annual variation during the spring runoff season.

<i>Week</i>	<i>Water-Year Type</i>			
	<i>Normal</i>	<i>Dry</i>	<i>Critically Dry</i>	<i>Wet</i>
1	5	5	15	5
2	10	10	75	10
3	25	25	250	25
4	35	35	150	35
5	75	75	100	75
6	140	140	40	140
7	220	220	20	220
8	400	400	NA	400
9	180	180	NA	180
10	110	110	NA	110
11	65	65	NA	65
12	25	25	NA	25
13	10	10	NA	10

For years in which Beardsley Reservoir is forecast to spill, PG&E may begin the Supplemental Flow period any time between March 1 and May 1 to best coincide with the period of spill (Date Trigger). For years in which Beardsley Reservoir is forecast not to spill, the Licensee shall initiate the Supplemental Flow period at a time between March 1 and May 1 so that the peak Supplemental Flow will occur approximately two weeks after the then-forecast peak inflow to Donnell's Reservoir.

**Minimum flows for the Pinecrest Reach (cfs)**

The Pinecrest Reach is the 3.9 mile-long section of South Fork Stanislaus River (SFSR) from Strawberry Dam to Philadelphia Diversion.

<i>Month</i>	<i>Water-Year Type</i>			
	<i>Dry</i>	<i>Normal-Dry</i>	<i>Normal-Wet</i>	<i>Wet</i>
October 1-31	10	10	15	15
November 1-30	10	10	15	15
December 1-31	10	10	10	15
January 1 – February 9	10	10	10	15
February 10 – March 9	10	10	10	15
March 10 - April 9	10	10	10	15
April 10 - May 9	10	10	15	15
May 10 – May 31	10	10	15	15
June 1 – 30	10	10	15	15
July 1- 31	10	10	15	15
August 1 – 31	10	10	15	15
September 1 – 30	10	10	15	15

**Minimum flows for the Philadelphia Reach**

The Philadelphia Reach is the 8.5 mile-long section of SFSR from the Philadelphia Diversion dam to Lyons Reservoir.

<i>Month</i>	<i>Water-Year Type</i>			
	<i>Dry</i>	<i>Normal-Dry</i>	<i>Normal-Wet</i>	<i>Wet</i>
October 1-31	10	10	15	15
November 1-30	10	10	15	15
December 1-31	10	10	10	15
January 1 – February 9	10	10	10	15
February 10 – March 9	10	10	10	15
March 10 - April 9	10	10	10	15
April 10 - May 9	10	10	15	15
May 10 – May 31	10	10	15	15
June 1 – 30	10	10	15	15
July 1- 31	10	10	15	15
August 1 – 31	10	10	15	15
September 1 – 30	10	10	15	15

**2. Stanislaus Power Tunnel Fish Screen-** [Reference: State Water Board Terms & Conditions (Appendix A, Condition 8)]

To address the well-documented issue of fish entrainment, PG&E is required by the license to construct a fish screen at the Stanislaus Power Tunnel. The screen should ensure that most fish are prevented from entering the power tunnel, which renders them unable to contribute to the popular wild trout fishery in the Spring Gap and Sand Bar reaches.

The fish screen has (2) primary environmental objectives:

- Reduce entrainment of all life-stages of trout from Middle Fork Stanislaus River into Stanislaus Power Tunnel to less than significant levels; and
- Provide for all life-stages of trout in the Middle Fork Stanislaus River to pass downstream of Sand Bar Diversion Dam.

By May 2010, PG&E shall submit a plan to the Deputy Director that details the construction, operation, and testing of the fish screen. PG&E must construct the approved fish screen within 4 years following approval of the plans and drawings.



3. **Wildlife Monitoring-** [Reference: State Water Board Terms & Conditions (Appendix A, Condition 8), Forest Service Terms & Conditions (Appendix B, Condition 39)]

By September 2009, PG&E must, in consultation with various resource agencies, develop a plan to:

- Determine if the streamflow regime affects hardhead habitat in the lower portions of the Sand Bar Dam Reach.
- Monitor and evaluate the effects of the regulated streamflow on trout populations in the Sand Bar Dam Reach.
- Determine the effects of the regulated streamflow on Foothill Yellow-Legged Frog habitat and populations.

4. **Recreation Streamflow Event-** [Reference: State Water Board Terms & Conditions (Appendix A, Condition 10)]

Immediately following the issuance of the license, PG&E must provide a Recreation Streamflow Event immediately below Sand Bar Diversion on two consecutive weekend days in the third of three consecutive years in which a flow event has not otherwise occurred. The Recreation Streamflow Event must:

- Last at least two consecutive days
- Have calculated flows below San Bar Diversion Dam between 700 and 2,000 cfs from 10 AM to 3PM
- Take place between May 15 and June 15
- Occur simultaneously with the Supplemental Flow Schedule (see #1, *supra*)

5. **Rights-Of-Way-** [Reference: Forest Service Terms & Conditions (Appendix B, Condition 28)]

By September 2009, PG&E shall initiate the process to provide an easement to the Forest Service across PG&E-owned property at (1) Kennedy Meadows for public use of the Huckleberry Trail and access into the Emigrant Wilderness, and (2) Spring Gap for public use of the fishing access trail and Spring Gap foot-bridge. The easement should be granted by May 2011.

6. **Recreation Facilities & Administration-** [Reference: Forest Service Terms & Conditions (Appendix B, Condition 29)]

By May 2010, the Licensee shall file with the Commission a Recreation Implementation Plan that must be approved by the Forest Service. The Recreation Implementation Plan must include address the following:

**Pinecrest Day Use Facilities.**

Among other responsibilities, PG&E will be responsible for updating and rehabilitating the following facilities and areas:

- *Boat Ramp.* PG&E shall install new restrooms, ADA compliant fish cleaning stations, directional signs, replacing water and sewage lines, and various other improvements.
- *Beaches and Picnic Area.* PG&E shall, among other responsibilities, install informational kiosks, remove existing restroom facilities and install new unisex facilities with shower fixtures, and install new picnic tables with group-size cooking grills and single-size cooking grills. Additionally, PG&E must establish and maintain a beach sand cushion on three beaches. Trees must be cleared from the beach areas, and their stumps must be removed.
- *Day Use/Boat Trailer Parking.* PG&E shall, among other responsibilities, grade and pave a new boat trailer parking area, grade and pave the existing marina parking area, and install new concrete paths that meet ADA standards
- *Fishing Pier Area.* PG&E, shall among other responsibilities, remove the existing building, barriers and day use site components, install picnic tables, install new paths that meet ADA standards, rehabilitate the fishing pier and landscape the unpaved area near the pier, install trash and recycle bins, and install one new six-unit unisex restroom.
- *Pinecrest National Recreation Trail.* PG&E shall rehabilitate the 4-mile loop foot-trail around Pinecrest Lake. They must install waterbars, repair tread, clear vegetation from the trail way, install directional signs, close and restore user-created trail, and install bulletin/information signs at each end of the trail (near the marina and the fishing pier).
- *East Shore Day Use Area.* PG&E shall construct two to three picnic sites, a new two-unit vault toilet and a small courtesy dock.
- *Amphitheater.* PG&E shall install entry, directional and informational signs, walkway fences to manage foot traffic., remove one restroom and install one new six-unit unisex flush restroom with two outdoor unheated showerheads, replace water spigots, and install wildlife-resistant trash and recycle bins.

The improvements listed above must be completed according to the following schedule.

<b>Facility</b>	<b>Completed By</b>
Amphitheater	May 2014
Beach Sand/tree removal	May 2010

East shore picnic/restroom	May 2011
Boat Ramp including parking	May 2014
Pinecrest Day Use Area: parking, beaches, fish pier areas	May 2014
Pinecrest National Recreation Trail	May 2014

**Relief Reservoir**

PG&E will be responsible for funding campsite and trail rehabilitation; and annual campsite and trail maintenance within the Project Boundary at Relief Reservoir.

**Spring Gap Foot-Bridge**

PG&E shall be responsible for maintenance of the Spring Gap Foot-Bridge to allow fishing access to the Middle Fork Stanislaus River. An easement for public access through PG&E lands shall be granted.

**C. MAP**

There are two convenient ways to become familiar with this project on the Hydropower Reform Coalition website, [www.hydroreform.org](http://www.hydroreform.org).

- Go directly to the project page:  
<http://www.hydroreform.org/projects/stanislaus-spring-gap-p-2130>
- To understand the geographical context of the project, visit the *On Your River* section of the site. This link (<http://www.hydroreform.org/on-your-river/California>) will take you to the section for rivers in California. Zoom in until you can see the Stanislaus National Forest. Mouse over the marker near Pinecrest, CA. P-2130 is the third from the left.