

26 F.P.C. 399, 1961 WL 3829

PACIFIC GAS AND ELECTRIC COMPANY,

PROJECT **NO. 2106**

ORDER CONSOLIDATING PROCEEDINGS AND ISSUING LICENSE (MAJOR)

August 18, 1961

****1 *399** Before Commissioners: Jerome K. Kuykendall, Chairman; Joseph S. Swidler and L. J. O'Connor.

Pacific Gas and Electric Company (Applicant) of San Francisco, California, has filed several applications for licenses under the Federal Power Act, (hereinafter referred to as the Act) for major projects to develop the power potential of the **McCloud** River and the lower **Pit** River, California.

The plan of development encompasses three separate developments: (1) the **Pit** No. 6 development, designated as Project No. 2104, and covered in application for license filed April 8, 1952 and later amended; (2) **McCloud-Pit** development, designated as Project **No. 2106**, and covered in application for license filed February 8, 1954 and later amended; and (3) **Pit** No. 7 development, designated as Project No. 2137, and covered in application for license filed July 13, 1953 and later amended.

The plan of development is to divert water from the **McCloud** River by means of a diversion dam and tunnel to a powerhouse located on **Pit** River. The water so diverted will be combined with **Pit** River flows and utilized through the proposed **Pit** Nos. 6 and 7 developments to be located on the lower **Pit** River just above the existing Shasta Lake. The water to be diverted from **McCloud** River makes it possible to increase the installed capacity at **Pit** Nos. 6 and 7 by 50,000 kilowatts, which is an increase of about 40 percent over capacity that could be installed if only **Pit** River flows are utilized through **Pit** Nos. 6 and 7.

The three proposed developments would be integrated both hydraulically and electrically and would be operated as a single project. In these circumstances, we believe the three developments should be placed under a single license, which we will designate as Project **No. 2106**.

***400** Proposed Project **No. 2106** would be located on **McCloud** and **Pit** Rivers, tributaries of Sacramento River and Shasta Reservoir navigable waters of the United States, and Iron Canyon Creek, tributary of **Pit** River, all within Shasta County, California, and will affect navigable waters of the United States and lands of the United States within Shasta National Forest and other lands of the United States.

In 1954 we permitted the City of Mt. Shasta, Town of Yreka City, the City of Dunsmuir, 11 service and recreation clubs, 2 chambers of commerce, and 6 other organizations-all in the State of California-to intervene in Project **No. 2106**. The principal grounds given in the petitions of those 22 parties are that the proposed project would impair recreational and industrial uses of the area involved. In 1957 we permitted the State of California, acting through its Department of Water Resources and its Department of Fish and Game, to intervene in Project Nos. 2104 and 2106.

In view of this opposition to Applicant's proposed developments, we believe it appropriate to note here that following public hearings on Applicant's State water right applications for the three proposed developments, the State of California State Water Rights Board on January 13, 1961 issued its Decision and **Order** approving Applicant's water right applications for the **McCloud-Pit** River project as proposed in Applicant's applications for licenses pending before us. In its Decision and **Order** the State Board discussed protests by organizations and others to construction of Applicant's project, and found that the flows to be released by Applicant for the preservation of fish life will adequately protect the recreational values and scenic qualities of the area involved and industrial uses thereof. The State Board's Decision recited also that the State of California Department of Fish and Game had withdrawn its protest to Applicant's State water right applications upon agreement with Applicant under which Applicant would withdraw its application to appropriate from Hawkins Creek (which it did) and contingent upon the State Board adopting an agreed schedule of releases for the maintenance of fish, as set forth in Article 31 hereinafter.

Finally, the State Board's Decision stated that the State of California Department of Water Resources had submitted its views and recommendations respecting Applicant's State water right applications, wherein the Department of Water Resources had concluded, among other things, that Applicant's project will develop the power resources to a reasonable extent, and that the project is not in conflict with the California Water Plan, but that any State water permits issued should be conditioned on the establishment of a priority for higher uses of water over the use for power by Applicant. The State Board agreed with the Department of Water Resources' conclusion, subject to a limitation not necessary to recite herein for the purposes of this **order**.

****2** In a recent letter, dated July 6, 1961, from the Deputy Attorney General of the State of California, we are advised, among other things, that the State of California Department of Fish and Game is still negotiating with Applicant in the matter of providing suitable structures for the control of temperatures below the **McCloud** Diversion Dam, the removal of barriers to fish in the stream which would occur because of reduced flows in the **McCloud** River, and the construction of a suitable barrier to the migration of rough fish from Shasta Lake into the **McCloud** River.

The Secretary of the Army and the Chief of Engineers have approved the plans of the project structures that may affect the interest of navigation, and it was stated that terms and conditions in the interest of navigation or flood control were not deemed necessary.

An Assistant Secretary of the Interior has recommended for inclusion in any license issued, several special conditions in the interest of fish, wildlife and ***401** archeological salvage, coordinated operation, and provision for reimbursement to the United States for reregulatory benefits to Project **No. 2106** from the Bureau of Reclamation's Shasta Reservoir on Sacramento River. Reregulation will be provided by Applicant by its **Pit** No. 7 afterbay dam, and the other subjects are covered by articles hereinafter set forth.

Two Assistant Secretaries and an Acting Secretary of Agriculture have recommended for inclusion in any license issued several special conditions in the interest of the Forest Service.

According to the applications for licensees, Applicant desires to commence construction of **Pit** No. 6 development as soon as practicable after final determination is made with respect to the **McCloud-Pit** development. It is expected that the construction period for **Pit** No. 6 would be three years. Applicant also states that construction of the **McCloud-Pit** development would commence in sufficient time to complete construction within two years after completion of **Pit** No. 6. Construction period for the **McCloud-Pit** development would be four years. Construction of **Pit** No. 7 would be coordinated with the construction of the other two developments.

The Commission finds:

- (1) The proposed project will affect navigable waters and lands of the United States.
- (2) The **Pit** No. 6, **McCloud-Pit** and **Pit** No. 7 developments will operate on an integrated basis both hydraulically and electrically and will constitute parts of a single project, within the meaning of Section 3(11) of the Act.
- (3) The proposed project would consist of:
 - (a) All lands constituting the project area and inclosed by the project boundary or the limits of which are otherwise defined, and/or interest in such lands or necessary or appropriate for the purposes of the project, whether such lands or interest therein are owned or held by the Licensee or by the United States; such project area and project boundary being more specifically shown and described by certain exhibits which formed part of the amended application for license and which are designated and described as follows:

****3** *Exhibit J-(FPC No. 2106-20)* General Map of **McCloud-Pit** Development;

(FPC No. 2106-32) General Map of Pit No. 6 Development;

(FPC No. 2106-38) General Map of Pit No. 7 Development;

Exhibit K-Detail maps showing project area and project boundary:

McCloud-Pit Development

FPC No. Description

2106 21 and 22 Sheets 1 and 2, Map of **McCloud**.

Diversion Reservoir.

2106 23 Sheet 3, Map of **McCloud** Tunnel.

2106 24 Sheet 4, Map of Iron Canyon Reservoir.

2106 25 Sheet 5, Map of Iron Canyon Tunnel, **McCloud-Pit**

Power House, Penstock, and Tailrace

Channel.

2106 26 Map of Transmission Lines,

Pit No. 6 Development

FPC No. Description

2106 33 and 34 Two sheets, Map of Reservoir.

2106 35 Map of Reservoir Including Dam, Power House,

and Transmission Lines.

*402 **Pit** No. 7 Development

2106 39 to 42, incl Four sheets, Map of Reservoir.

2106 43 Map of Reservoir Including Dam, Power House

and Transmission Lines.

2106 44 Afterbay Reservoir.

(b) Project works consisting of:

McCloud-Pit Development

McCloud Diversion Dam and Reservoir, a concrete arch dam in **McCloud** River about 500 feet upstream from Lizzard Creek, a six-foot diameter sluice pipe through the dam, a spillway with seven radial gates, and a reservoir with an area of 520 acres at maximum water surface elevation of 2680 feet and a gross capacity of 35,300 acre-feet of storage; **McCloud Tunnel**, a horseshoe and/or circular tunnel about 40,500 feet long and 17 feet in diameter extending from an intake in **McCloud** Reservoir to Iron Canyon Reservoir; **Iron Canyon Dam and Reservoir**, an earth fill dam on Iron Canyon Creek four miles north of **Pit** No. 5 plant on **Pit** River, a three-foot diameter sluice pipe through the dam, a side channel overpour spillway in the right abutment, and a reservoir with an area of 500 acres at elevation 2665 feet and a gross capacity of 24,400 acre-feet of storage; **Iron Canyon Tunnel**, a horseshoe and/or circular tunnel about 12,500 feet long and 19 feet in diameter extending from an intake in Iron Canyon Reservoir to the head of the penstock; a steel penstock varying from 10 to 12 feet in diameter about 2850 feet long branching at a wye to two 87-inch pipes extending about 200 feet to the powerhouse; a differential surge chamber 45 feet in diameter with a riser 16 feet in diameter near the downstream end of the Iron Canyon tunnel; the **McCloud-Pit Powerhouse**, located 1 1/2 miles upstream from **Pit** No. 5 power plant, housing two 107,000-horsepower turbines connected to two 77,850-kilowatt generators (86,500 kva @ 0.9 P.F.); a substation and switchyard; two single circuit 220 kv transmission lines extending about 6 miles from the switchyard to the licensee's interconnected transmission system; and appurtenant mechanical and electrical facilities;

Pit No. 6 Development

****4** A concrete gravity dam located in **Pit** River about 2 1/2 miles upstream from Marble Creek with an overflow gated spillway; three gated sluice conduits through the dam; a reservoir with normal water surface elevation at 1,445 feet (PG&E datum), and area of about 265 acres and a gross capacity of about 15,700 acre-feet of storage; a tunnel; steel penstocks; a powerhouse located 300 feet downstream from the dam containing two 51,000 horsepower turbines connected to two 36,900-kilowatt generators (41,000 kva @ 0.9 P.F.) installed therein; a substation and switchyard; two single circuit 220 kv transmission lines extending about 3.3 miles from the switchyard to the Applicant's interconnected transmission system; and appurtenant mechanical and electrical facilities;

Pit No. 7 Development

A concrete gravity dam, located in **Pit** River about 2 1/2 miles downstream from Montgomery Creek, with an overflow gated spillway; three gated sluice conduits through the dam; a reservoir with normal water surface at elevation 1290 (PG&E datum) and a total capacity of 34,000 acre-feet of storage; a tunnel about 560 feet long; steel penstocks; a powerhouse located 500 feet downstream from the dam containing two 68,000-horsepower turbines connected to two 49,950-kilowatt generators (55,500 kva @ 0.9 P.F.); a substation and switchyard; two single circuit 220 kv transmission lines extending 3 1/2 miles from the switchyard ***403** to the Applicant's interconnected transmission system; a low, slotted, concrete gravity afterbay dam located about two miles downstream from the main dam; and appurtenant mechanical and electrical facilities; the location, nature and character of which are more specifically shown and described by the exhibits hereinbefore cited and by certain other exhibits which also formed part of the amended application for license and which are designated and described as follows:

Exhibit L-General Design Drawings:

McCloud-Pit Development

FPC No. Description

2106 27 **McCloud** Diversion Dam

2106 28 **McCloud** Tunnel Intake

2106 29 Iron Canyon Dam, Intake and Tunnel

2106 30 Profile of **McCloud-Pit** Penstock and Surge Chamber

2106 31 **McCloud-Pit** Powerhouse

Pit No. 6 Development

FPC No. Description

2106 36 Dam and Penstocks

2106 37 Powerhouse

Pit No. 7 Development

FPC No. Description

2106 45 Dam, Penstocks, and Afterbay Dam

2106 46 Powerhouse

Exhibit M:

Two typewritten pages, 'General Descriptions and General Specifications of Mechanical, Electrical and Transmission Equipment' for the **McCloud-Pit** Development filed in the Commission April 1, 1957.

Two typewritten pages, 'General Descriptions and General Specifications of Mechanical, Electrical and Transmission Equipment' for **Pit** No. 6 Development filed in the Commission April 1, 1957.

****5** Two typewritten pages, 'General Descriptions and General Specifications of Mechanical, Electrical and Transmission Equipment' for **Pit** No. 6 Development filed in the Commission October 12, 1954.

(c) All other structures, fixtures, equipment or facilities used or useful in the maintenance and operation of the project and located on the project area, including such portable property as may be used or useful in connection with the project or any part thereof, whether located on or off the project area, if and to the extent that the inclusion of such property as a part of the project

is approved or acquiesced in by the Commission; also, all riparian or other rights, the use or possession of which is necessary or appropriate in the maintenance and operation of the project.

(4) The transmission facilities described in finding (3) above are parts of the project herein authorized within the meaning of Section 3(11) of the Act.

(5) Applicant is a corporation organized under the laws of the State of California and has submitted satisfactory evidence of compliance with the requirements of all applicable State laws insofar as necessary to effect the purposes of a license for the project.

(6) No conflicting application is before the Commission. Public notice of the applications has been given as required by the Act.

***404** (7) Except that the proposed project might affect the operation of Shasta Reservoir, the proposed project will not affect any Government dam, nor will the issuance of a license for the project, as hereinafter provided, affect the development of any water resources for public purposes which should be undertaken by the United States.

(8) The issuance of a license for the proposed project as hereinafter provided will not interfere or be inconsistent with the purposes of any reservation or withdrawal of public lands, or with the purposes for which the Shasta National Forest was created or acquired.

(9) The proposed project is best adapted to a comprehensive plan for improving and developing the **McCloud** and **Pit** Rivers for the use and benefit of interstate or foreign commerce, for the improvement and utilization of water power development, and for other beneficial public uses, including recreational purposes.

(10) The installed horsepower capacity of the proposed project, hereinafter authorized for the purpose of computing the capacity component of the administrative annual charge is 439,000 horsepower, and the energy to be generated by the proposed project will be distributed over Applicant's inter-connected transmission system and sold for public utility purposes.

(11) The amount of annual charges to be paid under the license for the purpose of reimbursing the United States for the cost of the administration of Part I of the Act, and for recompensing it for the use, occupancy, and enjoyment of its lands is reasonable as hereinafter fixed and specified.

(12) It is desirable to reserve for future Commission determination the question of what additional transmission lines and appurtenant facilities, if any, should be included in this license.

****6** (13) In accordance with Section 10(d) of the Act, the rate of return upon the net investment in the project, and the proportion of surplus earnings to be paid into and held in amortization reserves, are reasonable as hereinafter specified.

(14) The exhibits described in finding (3) above, appropriately redesignated in view of our finding (2) above, conform to the Commission's rules and regulations and should be approved as part of the license for the project.

(15) Before construction of any project structure is commenced, revised Exhibit L drawings for all project structures-in accordance with the Commission's rules and regulations-should be filed as hereinafter provided.

*The Commission **orders**:*

(A) The proceeding designated Project No. 2104 involving the application for license for the **Pit** No. 6 development, and the proceeding designated Project No. 2137 involving the application for license for the **Pit** No. 7 development, are consolidated with the proceeding designated Project **No. 2106** involving the application for license for the **McCloud-Pit** development; and

the proposed **Pit** No. 6 and **Pit** No. 7 and **McCloud-Pit** developments shall be considered as parts of a single project and shall be designated as Project **No. 2106**.

(B) This license is issued to Pacific Gas and Electric Company (hereinafter referred to as the Licensee) under Section 4(e) of the Federal Power Act for a period of 50 years, effective as of August 1, 1961, for the construction, operation, maintenance of major Project **No. 2106** located on the **McCloud** and **Pit** Rivers and affecting navigable waters and lands of the United States within Shasta National Forest and other lands of the United States, subject to the terms and conditions of the Act which is incorporated by reference as a part of this license, and subject to such rules and regulations as the Commission has issued or prescribed under the provisions of the Act.

(C) This license is also subject to the terms and conditions set forth in Form L-6 (December 15, 1953) entitled 'Terms and Conditions of License for *405 Unconstructed Major Project Affecting Navigable Waters and Lands of the United States' (16 **FPC** 1121), which terms and conditions, designated as Articles 1 through 27 are attached hereto and made a part hereof, except for Article 14 and the last sentence of Article 17 thereof; and subject to the following special conditions set forth herein as additional articles:

Article 28. The Licensee shall pay to the United States the following annual charges.

(i) For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, one (1) cent per horsepower on the authorized installed capacity (439,000 horsepower) plus two and one-half (2 1/2) cents per 1,000 kilowatt-hours of gross energy generated by the project during the calendar year for which the charge is made.

(ii) For the purpose of recompensing the United States for the use, occupancy and enjoyment of its lands, exclusive of those used for transmission line purposes only, \$2,613.58.

****7** (iii) For the purpose of recompensing the United States for the use, occupancy and enjoyment of its lands used exclusively for transmission line purposes, \$13.58.

Article 29. The Licensee shall construct, maintain and operate such protective devices and shall comply with such reasonable modifications of the project structures and operation in the interest of fish and wildlife resources, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may be prescribed hereafter by the Commission upon its own motion or upon recommendation of the Secretary of the Interior or California Department of Fish and Game after notice and opportunity for hearing and upon a finding that such modifications are necessary and desirable and consistent with the provisions of the Act: *Provided further,* That subsequent to approval of the final design drawings prior to commencement of construction no modification of project structures in the interest of fish and wildlife resources which involve a change in the location, height or main structure of a dam, or the addition of or changes in outlets at or through a dam, or a major change in generating units, or a rearrangement or relocation of a powerhouse, or major changes in a spillway structure shall be required.

Article 30. Whenever the United States shall desire, in connection with the project, to construct fish handling facilities or to improve the existing fish handling facilities at its expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such fish handling facilities or such improvements thereof. In addition, after notice and opportunity for hearing the Licensee shall modify the project operation as may be prescribed by the Commission, consistent with the primary purpose of the project, in **order** to permit the maintenance and operation of the fish handling facilities constructed or improved by the United States under the provision of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish handling facilities or to relieve the Licensee of any obligations under this license.

Article 31. The Licensee shall make minimum water releases at the **McCloud** and Iron Canyon Diversion Dams for the maintenance of fish life in accordance with the following schedules:

(i) Licensee shall release at the **McCloud** Diversion Dam an amount of water not less than 50 cfs from May through November, and 40 cfs from December through April.

(ii) Licensee shall make additional releases of water at the **McCloud** Diversion Dam to the extent necessary to maintain the following minimum flows at the *406 Ah-Di-Na stream gaging station within SW 1/4 of Section 33, T. 38 N., R. 2 W., M D B & M:

Minimum Flows at Ah-Di-Na in Cubic Feet per Second

Normal year Dry year¹

January 160 160

February 160 160

March 170 170

April 170 170

May 1 15 170 160

May 16 31 200 160

June 200 160

July 200 160

August 200 160

September 210 180

October 210 180

November 210 180

December 1 15 210 180

December 16 31 170 170

**8 (iii) Licensee shall release at the Iron Canyon Diversion Dam an amount of water not less than 3 cfs at all times.

Article 32. The Licensee shall, during project construction, prevent the release of debris from any gravel washing activities directly into **Pit** and **McCloud** Rivers or any of their tributaries.

Article 33. The Licensee shall notify the University of California Archeological Survey of the proposed construction of the project and the extent of the reservoir areas and negotiate with the University for archeological survey and salvage in the affected areas. Cost to the Licensee of the archeological survey and salvage shall not exceed \$8,000.

Article 34. The Licensee shall operate the **Pit** Nos. 6 and 7 reservoirs to maintain minimum pools of not less than 1,000 acre-feet, except when it is necessary to drain the reservoirs for repair purposes at which time adequate notice shall be given to the California State Department of Fish and Game.

Article 35. The annual accumulation of driftwood, snags, and similar material shall be disposed of within or adjacent to the reservoirs and shall not be discharged over the spillways or otherwise into Shasta Lake or the river channels below the dams.

Article 36. The Licensee shall provide a flat area for recreational purposes of not less than 2.25 acres at grade elevation of 1,087 feet (PG&E datum) by means of a fill or otherwise at Fender Ferry Flat adjacent to the **Pit** No. 7 Afterbay reservoir, as designated by the Regional Forester or his representative.

Article 37. The Licensee shall replace the existing boat launching area at Fender Ferry and provide an access road connection to the Fender Ferry road near the mouth of Potem Creek. The new launching area shall be of sufficient size to accommodate several boats and shall consist of a suitable earth ramp extending between approximate elevations 1,065 and 1,050 feet (USGS datum). The access road shall be single lane constructed on appropriate standards. The location and construction of the launching area and access road shall be subject to the approval of the Regional Forester or his representative.

***407** *Article 38.* The Licensee shall, prior to impounding water in any project reservoir, clear all lands in the bottom and margin of such reservoir between the normal water elevation and a plane five feet below the spillway crest elevation, and shall cut all trees and brush within the area below the minimum elevation so that no brush or trees will protrude above the minimum elevation; and shall dispose of all temporary structures, unused timber, brush, refuse or inflammable material resulting from the clearing of the lands or from the construction and maintenance of the project works. In addition, all trees along the margin of the reservoirs which may die during the operation of the project shall be removed. The clearing of the lands and the disposal of the material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission.

****9** *Article 39.* The Licensee shall commence construction of the project, comprised of the **McCloud-Pit, Pit** No. 6 and **Pit** No. 7 developments, not later than June 1, 1962, shall thereafter in good faith and with due diligence prosecute the construction, and shall complete the entire project on or before December 1, 1965.

Article 40. The Licensee shall, for the protection of navigation, construct, maintain and operate at its own expense such lights and other signals on fixed project structures in or over navigable waters of the United States as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 41. The Licensee shall submit in accordance with the Commission's rules and regulations, revised Exhibit L drawings showing the design of structures for all developments, and the Licensee shall not commence construction of any project structure until the Commission approves the exhibit.

Article 42. The Licensee shall be everything reasonably within its power and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon request of officers of the agency of the United States concerned, to prevent, make advanced preparations for suppression, and suppress fires on lands occupied under the license. Licensee is not hereby required to assume the responsibilities of others, especially in nonproject areas, nor estopped from recovery of its expenses or damages when appropriate.

Article 43. The Licensee shall provide additional generating capacity at the project at such time as the Commission may direct and to the extent that it is economically feasible to do so, after notice and opportunity for hearing.

Article 44. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project with such other power systems as the Commission may direct in the interest of power and other beneficial public uses of water resources, the benefits of which shall be shared equitably by the participants in such coordination.

Article 45. The Licensee shall provide structures for the control of temperatures below the **McCloud** diversion dam in the interest of fish life, remove barriers to fish in the **McCloud** River which would occur because of reduced flows, and construct a barrier to the migration of rough fish from Shasta Lake into the **McCloud** River, as may be prescribed hereafter by the Commission upon the recommendation of the California Department of Fish and Game or the Secretary of the Interior, after notice and opportunity for hearing.

Article 46. The Commission reserves the right to determine at a later date what additional transmission facilities, if any, shall be included in this license.

(D) The exhibits described in finding (3) above are approved as part of this license.

***408** (E) This **order** shall become final 30 days from the date of its issuance unless application for rehearing shall be filed as provided in Section 313(a) of the Act, and failure to file such an application shall constitute acceptance of this license. In acknowledgment of the acceptance of this license, it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this **order**.

FEDERAL POWER COMMISSION

Footnotes

- 1 A dry year is hereby defined as one in which the California Department of Water Resources April forecast of the April-July runoff of the **McCloud** River into Shasta Lake is 300,000 acre-feet or less, except that not more than 2 years in succession shall be considered dry regardless of forecast.

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