

39 FERC P 62025 (F.E.R.C.), 1987 WL 451284

FEDERAL ENERGY REGULATORY COMMISSION

\*1 Office Director Orders

Olsen Power Project, Inc.

Project No. **8361**-001

ORDER ISSUING **LICENSE**, (MAJOR PROJECT - 5MW OR LESS)

(Issued April 7, 1987)

Fred E. Springer, Acting Director, Office of Hydropower **Licensing**.

Olsen Power Project, Inc. has filed a **license** application under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Olsen Water Power Project located in Shasta County, California, on Old Cow Creek, a tributary to the Sacramento River. The project would occupy lands of the United States administered by the U.S. Bureau of Land Management.

Notice of the application has been published. The motions to intervene that have been granted and the comments and protests filed by agencies and individuals have been fully considered in determining whether to issue this **license**, as discussed below.

*Recommendations of Federal and State Fish and Wildlife Agencies*

Section 10(j) of the Federal Power Act (FPA), as amended by the Electric Consumer Protection Act of 1986 (ECPA), [Pub.L. No. 99-495](#), requires the Commission to include **license** conditions, based on recommendations of federal and state fish and wildlife agencies for protection, mitigation, and enhancement of fish and wildlife. The environmental assessment for the Olsen Hydroelectric Project addresses the concerns of the federal and state fish and wildlife agencies, and makes recommendations consistent with those of the agencies.

*Comprehensive Plans*

Section 10(a)(2) of the FPA, as amended by ECPA, requires the Commission to consider the extent to which a project is consistent with comprehensive plans (where they exist) for improving, developing, or conserving a waterway or waterways affected by the project that is prepared by an agency established pursuant to federal law that has the authority to prepare such a plan or by the state in which the facility is or will be located. The Commission considers plans to be within the scope of Section 10(a)(2) only if such plans reflect the preparers' own balancing of the competing uses of a waterway, based on their data and applicable policy considerations (i.e., consider and balance all relevant public use considerations). With regard to plans prepared at the state level, such plans are within the scope of Section 10(a)(2) only if they are prepared and adopted pursuant to a specific act of the state legislature and developed, implemented and managed by an appropriate state agency.<sup>1</sup>

No comprehensive plans for the types referred to in Section 10(a)(2) of the FPA relevant to this project have been identified. Three resource plans<sup>2</sup> that touch on various aspects of waterway management were brought to our attention and have been reviewed in relation to the proposed project as part of our broad public interest examination under Section 10(a)(1) of the FPA. No conflicts were found.

*Summary of Findings*

An Environmental Assessment (EA) was issued for this project. Background information, analysis of impacts, support for related **license** articles, and the basis for a finding of no significant impact on the environment are contained in the EA attached to this order. Issuance of this **license** is not a major federal action significantly affecting the quality of the human environment.

\*2 The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if constructed, operated, and maintained in accordance with the requirements of this **license**. Analysis of related issues is provided in the Safety and Design Assessment attached to this order.

Based upon our review of the agency and public comments filed in this proceeding, and our independent analysis as discussed herein, we conclude that the Olsen Project is best adapted to a comprehensive plan for the Cow Creek, taking into consideration the beneficial public uses described in Section 10(a)(1) of the Federal Power Act.

*The Director orders:*

(A) This **license** is issued to Olsen Power Project, Inc. (licensee) for a period of 50 years, effective the first day of the month in which this order is issued to construct, operate, and maintain the Olsen Water Power Project. This **license** is subject to the terms and conditions of the Act, which is incorporated by reference as part of this **license**, and subject to the regulations the Commission issues under the provision of the Act.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G:

<i>Exhibit G</i>	<i>FERC No. 8361</i>	<i>Showing</i>
1	17	Vicinity and Boundary Maps

(2) Project works consisting of: (a) a 7.5-foot-high diversion dam at streambed elevation 2,381 feet; (b) a 54-inch-diameter, 16,750-foot-long low pressure conduit; (c) a 48-inch-diameter, 2,350-foot-long penstock; (d) a powerhouse containing one generating unit with a rated capacity of 5,000 kW; (e) a 2-mile-long, 60-kV transmission line connecting with an existing Pacific Gas and Electric Company transmission line; and (f) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F recommended for approval in the attached Safety and Design Assessment.

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibit G described above and those sections of Exhibits A and F recommended for approval in the attached Safety and Design Assessment are approved and made part of the **license**.

(D) This **license** is subject to the articles set forth in Form L-2 [reported at 54 FPC 1808] (October 1975), entitled "Terms and Conditions of **License** for Unconstructed Major Project Affecting Lands of the United States," except Article 20. The **license** is also subject to the following additional articles:

*Article 201.* The licensee shall pay the United States the following annual charge, effective the first day of the month in which this **license** is issued:

\*3 a. For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 6,670 horsepower.

b. For the purpose of recompensing the United States for the use, occupancy, and enjoyment of 1.25 acres of its lands, other than for transmission line right-of-way, a reasonable annual charge as determined by the Commission in accordance with its regulations, in effect from time to time.

*Article 202.* Pursuant to Section 10(d) of the Act, after the first 20 years of operation of the project under **license**, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One half of the project surplus earnings, if any, accumulated after the first 20 years of operation under the **license**, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the **license**, the amount of that deficiency shall be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account. The amounts established in the project amortization reserved account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the rate of return is the project of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return shall be calculated based on an average of 13 monthly balances of amounts properly includable in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rates for long-term debt and preferred stock shall be their respective weighted average costs for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

*Article 203.* The licensee shall clear and keep clear to an adequate width all lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which result from maintenance, operation, or alteration of the project works. All clearing of lands and disposal of unnecessary material shall be done with due diligence to the satisfaction of the authorized representative of the Commission and in accordance with appropriate federal, state, and local statutes and regulations.

**\*4 Article 301.** The licensee shall commence construction of project works within two years from the issuance date of the **license** and shall complete construction of the project within four years from the issuance date of the **license**.

*Article 302.* The licensee shall at least 60 days prior to start of construction, submit one copy to the Commission's Regional Director and two copies to the Director, Division of Inspections, of the final contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouse, and water conveyance structures. The Director, Division of Inspections, may require changes in the plans and specifications to assure a safe and adequate project.

*Article 303.* The licensee shall review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction and shall ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall submit to the Commission's Regional Director and Director, Division of Inspections, one copy each of the approved cofferdam construction drawings and specifications and the letter(s) of approval.

*Article 304.* The licensee shall within 90 days of completion of construction file, for approval by the Commission, revised Exhibits A, F and G to describe and show the project as built.

*Article 401.* The licensee, after consultation with the Resources Agency of California, the California Department of Fish and Game, and the County of Shasta Planning Department, and before starting any land-clearing or land-disturbing activities, shall file with the Commission a detailed and site-specific plan (substantiated by data from a geotechnical investigation for all areas of excavation) to control erosion, sedimentation, turbidity, and instability of slopes as a result of project construction and operation, including excavation and spoil disposal activities.

The plan shall include functional design drawings and topographic map locations of control measures, an implementation schedule, monitoring and maintenance programs for project construction and operation, and provisions for periodic review of the plan and for making any necessary revisions to the plan. The licensee shall include in the filing documentation of agency consultation on the plan and copies of any agency comments or recommendations.

In the event the licensee does not concur with any agency comments or recommendations, licensee shall provide a discussion of the reasons for not concurring based on actual site geological, soil, and groundwater conditions. The Commission reserves the right to require changes to the plan. Unless the Director, Office of Hydropower **Licensing**, directs otherwise, the licensee may commence land-clearing or land-disturbing activities at the project 60 days after filing this plan.

**\*5 Article 402.** The licensee shall discharge from the Olsen Project diversion structure, a continuous minimum flow of 30 cubic feet per second, as measured at the point of diversion, or inflow to the project, whichever is less for the protection of fish and wildlife resources in Old Cow Creek. This flow may be temporarily modified if required by operating emergencies beyond the control of the licensee and for short periods upon mutual agreement between the licensee and the California Department of Fish and Game.

*Article 403.* The licensee, in cooperation with the California Department of Fish and Game, shall develop a plan to install a streamflow gage in Old Cow Creek to monitor the minimum flow release required by Article 403. The plan shall include the location and design of the gage, a schedule for the installation of the gage, an identification of the method of flow data collection, and a provision for providing the flow data to the agencies. The Commission reserves the right to require modification to the plan. The plan shall be filed with the Commission for approval within 1 year from the date of issuance of this **license** and shall include comments from the consulted agencies on the plan.

*Article 404.* The licensee shall operate the Olsen Hydroelectric Project so that increases in the volume of water diverted for project operation do not exceed 30 percent of the total streamflow per hour. This diversion rate may be temporarily modified if required by operating emergencies beyond the control of the licensee or upon mutual agreement between the licensee and the California Department of Fish and Game.

*Article 405.* The licensee, after consultation with the California Department of Fish and Game, and within 6 months after the date of issuance of this **license**, shall file for Commission approval, functional design drawings of the fish screening structure for the Olsen Hydroelectric Project. The filing shall include documentation of consultation and comments of the consulted agencies on the drawings. The Commission reserves the right to require modifications to the design. The licensee shall file as-built drawings with the Commission within 6 months after completion of construction.

*Article 406.* The licensee, after consultation with the U.S. Fish and Wildlife Service, the Bureau of Land Management, and the California Department of Fish and Game, and within 9 months from the date of issuance of this **license**, shall file a transmission line design plan, prepared in accordance with the guidelines set forth in the publication, Suggested Practices for Raptor Protection on Power Lines, Raptor Research Report no. 4, issued by the Raptor Research Foundation, Inc., in 1981. The plan shall include detailed design drawings of the transmission line, clearly showing phase-spacing configuration, and grounding practices, a construction schedule, and agency comments on the adequacy of the design plan. Unless the Director of the Office of Hydropower **Licensing** instructs otherwise, the licensee may commence transmission line construction 90 days after filing the plan. The Commission reserves the right to require modification to the plan.

**\*6 Article 407.** The licensee, after consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game, shall file within 9 months from the date of issuance of this **license** a plan to mitigate for loss of wildlife habitat resulting from project construction. The plan shall include, but shall not be limited to the revegetation of disturbed land with browse and grass species beneficial to wildlife and the alignment of the pipeline and road routes to minimize the removal of oak trees. Documentation of agency consultation on the mitigative plan shall be included in the filing. The Commission reserves the right to require modification to the plan.

*Article 408.* The licensee, before starting any land-disturbing or land-clearing activities within the project boundaries, other than those specifically authorized in this **license**, shall consult with the State Historic Preservation Officer (SHPO). If the licensee discovers previously unidentified archeological or historic properties during the course of constructing or developing project works or other facilities at the project, the licensee shall stop all land-clearing and land-disturbing activities in the

vicinity of the properties and shall consult with SHPO. In either instance, the licensee shall file with the Commission a cultural resource management plan prepared by a qualified cultural resource specialist after having consulted with the SHPO. The management plan shall include: (1) a description of each discovered property indicating whether it is listed on or eligible to be listed on the *National Register of Historic Places*; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan. The licensee shall not begin land-clearing or land-disturbing activities, other than those specifically authorized in this **license**, or resume such activities in the vicinity of a property, discovered during construction, until informed by the Director, Office of Hydropower **Licensing**, that the requirements of this article have been fulfilled.

*Article 409.* (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

**\*7** (b) The types of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modifications of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

**\*8** (d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certificates or permits have been

obtained; (3) other pipelines that cross project lands or waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower **Licensing**, stating its intent to convey the interest and briefly describing the type of interest and location of lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identify of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) and (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

\*9 (4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(E) This order is issued under authority delegated to the Director and is final unless appealed under Rule 1902 to the Commission by any party within 30 days from the issuance date of this order. Filing an appeal does not stay the effective date of this order or any date specified in this order. The licensee's failure to appeal this order shall constitute acceptance of the **license**.

---Footnotes---

## Environmental Assessment

Division of Environmental Analysis, Office of

Hydropower **Licensing**

Federal Energy Regulatory Commission

Olsen Hydroelectric Project

FERC Project No. **8361**-001---California

Date: March 9, 1987

### I. Application

On May 6, 1985, Olsen Power Project, Inc. (applicant) applied for a major **license**, 5 megawatts (MW) or less, for the Olsen Hydroelectric Project. The application was supplemented on October 21, 1985, May 5, 1985, May 27, 1986, and June 13, 1986. The proposed project, situated on Old Cow Creek within the Sacramento River Basin, is located approximately 20 miles due east of Redding (Figures 1 and 2).

### II. Resource Development

#### A. Purpose

The proposed project would provide an estimated average of 14,000,000 kilowatt hours (kWh) of electrical energy per year for sale to the Pacific Gas and Electric Company (PG&E).

#### B. Need for Power

**\*10** Available data show that growth in the demand for electric power and energy will continue. Given load growth and an existing generating resource base, a need for additional generating resources can be projected to exist in the future for any power system. Additional resources would have to be obtained for any system at some time in order to meet project additional load requirements with the same degree of reliability required by an existing criterion for the system. Timing of the need would vary in different systems depending upon such factors as the rates of load growth, the load characteristics, the available existing power resources and the reliability criteria established for each system. A power generating facility, however, may be added to a system before a generating resource deficit exists, if, over its operating life, the generating addition provides benefits that would not be available through operation of the system without the addition.

The proposed project is located in the California-Southern Nevada (CSN) area of the Western Systems Coordinating Council (WSCC) region. In the April 1986, Regional Reliability Council Coordinated Bulk Power Supply Program, the CSN projects average annual growth rates of 1.9 percent for summer peak demand and 2.4 percent for annual energy requirements. As of January 1, 1986, existing generating resources in the CSN area included approximately 32,000 megawatts of thermal generating capacity. An additional 2,580 megawatts of thermal capacity are projected for installation in the next 10 years to meet load growth in the area.

Because of the small size of the proposed project in relation to the existing and projected generating capability in the CSN area, the traditional approach of linking project development with a forecasted need for a specific project is inapplicable to assessing need for the proposed project.

The small size of the project ensures that the project power would be integrated into the existing resources base without the temporary overbuilding commonly associated with bringing large power projects on-line (i.e., initiating commercial operation). Moreover, in accordance with the Federal Power Act, the schedule for the project can be made to accommodate uncertain market conditions to some extent by the licensee's delaying commencement of construction as much as 4 years

after the **license** is issued.

The power from the project would be useful in meeting a small part of the need for power projected by the WSCC. From the time the project goes on-line it will be available to displace fossil-fueled power generation in the WSCC region, thus conserving nonrenewable fossil fuels and reducing the emission of noxious byproducts caused by the combustion of fossil fuels.

### III. Proposed Project and Alternatives

#### A. Proposed Project

##### 1. Project Description

The proposed project would consist of the following: (1) a 7.5-foot-high diversion dam at elevation 2,381 feet; (2) a 54-inch-diameter, 16,750-foot-long low pressure conduit; (3) a 48-inch-diameter, 2,350-foot-long penstock; (4) a powerhouse containing a single 5,000-kW generating unit operating under a head of 660 feet; and (5) a 2-mile-long, 60-kV transmission line connecting with an existing Pacific Gas and Electric Company (PG&E) transmission line (Figure 3). The estimated cost of constructing the project is \$6,250,000. No recreational facilities are proposed. The application was filed pursuant to a 24-month preliminary permit issued to the applicant on January 17, 1985, [30 FERC ¶ 62,044 \(1985\)](#).

\*11 The project would operate in a run-of-the-river mode. Project features are depicted in Figure 3.

##### 2. Proposed Mitigative Measures

Treatment measures, such as utilizing rock cribs, fabric filter cloth barriers, cofferdams and culverts would be employed to control erosion, sedimentation turbidity, and slope stability during project construction. Top soil would be stockpiled during construction and redistributed at the end of construction for revegetation of disturbed lands. The applicant would use plant species native to the project area to revegetate the areas disturbed. Spoil material from excavation activities would be located in an area of less than 3 acres, not subject to concentrated drainage.

To protect the aquatic resources in the project area, the applicant proposes several mitigative measures. Specifically, the applicant would automatically release a 30-cubic feet per second (cfs) minimum flow from the diversion structure, measure the minimum flow with a stream gage, and implement appropriate ramping rates. In addition the applicant would provide fish screens at the project intake to prevent entrainment of fish.

The applicant would design the new transmission line, approximately 2 miles long, to prevent raptor electrocution.

#### B. Federal Land Management Terms and Conditions

The Bureau of Land Management (BLM) did not provide any conditions pursuant to Section 4(e) of the Federal Power Act for this project.

#### C. Alternatives to the Proposed Project

Because the applicant is not an electric utility, the available alternatives are to construct or not construct the project. If the **license** is not issued, the project would not be constructed, and the power that would have been developed from a renewable resource would be lost and eventually would have to be provided using nonrenewable fuels.

#### D. Alternative of No Action

No action would prohibit, without prejudice, the applicant from constructing the proposed project. No action would involve no alterations to the existing environment and would preclude the applicant from producing electrical power at the site.

### IV. Consultation and Compliance

*A. Agency Consultation*

Commission regulations require prospective applicants to consult with the appropriate resource agencies before filing an application for **license**. This consultation constitutes an initial step in compliance with the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Prefiling consultation must be complete and documented in accordance with the Commission’s regulations.

After the Commission accepts the application, formal comments may be submitted by concerned entities during the public notice period. In addition, organizations and individuals may petition to intervene and become a party to the subsequent proceedings. The comments provided by concerned entities are made part of the record and are considered during the review of the proposed project. The following entities commented on the application subsequent to public notice which was issued on January 23, 1986.

<i>Commenting entity</i>	<i>Date of letter</i>
County of Shasta Planning Department .....	March 21, 1986
	March 21, 1986
Department of the Interior .....	March 25, 1986
California Department of Fish and Game.....	April 25, 1986
	January 26, 1987
California Regional Water Quality Control Board - Central Valley Region.....	March 25, 1986
The Resources Agency of California .....	March 25, 1986

\*12 The applicant responded to the agency comments by letter dated June 13, 1987=6.

*Intervenors - Date of petition*

California Department of Fish and Game - March 24, 1986.

The applicant responded to the intervention by letter dated June 13, 1986.

*B. Water Quality Certificate*

On March 25, 1986, the California Regional Water Quality Control Board (CRWQCB) granted § 401 water quality

certification as required by the Clean Water Act.

## V. Environmental Analysis

### A. Proposed Project

The proposed project would have no significant impacts upon visual, cultural, and recreational resources and local socioeconomics.

#### 1. General Description of the Locale

The proposed project is located in Shasta County, California, approximately 20 miles due east of Redding. It is located on Old Cow Creek, which is within the Sacramento River basin. The project would extend along a 3 1/2-mile stretch of the Old Cow Creek canyon which is typified by relatively steep, rocky slopes. The climate of the area is characterized by warm, dry summers and cold winters with relatively heavy precipitation in the form of both rain and snow from October to April. Little or no precipitation occurs during July through September. Annual precipitation averages 60 to 70 inches and daily average temperatures range from 34 degrees F in January to 70 degrees F in July.

The proposed project lies within the upper Sonoran and Transition life zones. Botanical habitats within these life zones include yellow pine forest, foothill-woodland, oak-grassland, chaparral, riparian, and agriculture. Land in the area is primarily used for scattered home sites on privately owned land.

#### 2. Geology and Soils

**Affected Environment:** The project is underlain by bedrock exhibiting more of a sedimentary make up to the west and volcanic type to the east of the project area. The overlying bedrock layers include stream, landslide, and lake deposits. The surface soil depths are generally less than 2 feet and possess a moderate to high potential for erosion. The pipeline is situated almost entirely on terrain underlain by volcanic bedrock. The lower half of the pipeline route traverses slopes, with very strong sandy clay loam which are especially susceptible to erosion and slope instability: Slides and mass movement appear to be triggered on these slopes as a result of subsurface ground water movement. Areas of unstable rubble rock may also affect the stability of the pipeline and powerline features.

**Environmental Impacts and Recommendations:** Construction and operation of the project would cause increases in erosion, sedimentation, turbidity, and instability of slopes. Excavation activities, particularly during pipeline construction, would produce spoil material for disposal. Areas of excavation and cut-slope areas would be susceptible to slope instability and mass movement as a result of ground water intrusion from upslope sources. Areas of unstable rubble rock could also affect the stability of the pipelines. A site-specific geotechnical investigation should be conducted to assess the mitigation measures needed to dewater subsurface soil and rock, and to stabilize the proposed disturbed ground areas and its adjacent slopes from potential erosion and mass movement. The applicant states the spoil from excavation activities would be located in an area of less than 3 acres, not subject to concentrated drainage. The licensee, before starting any land-clearing or ground-disturbing activities, should file with the Commission a plan (substantiated by data from the geothermal investigation for all areas of excavation), to control erosion, sedimentation, turbidity, and instability of slopes as a result of the construction and operation of the project.

**\*13 Unavoidable Adverse Impacts:** Minor, adverse short-term increases in erosion, sedimentation, and turbidity would be unavoidable during project construction.

#### 3. Water Resources

**Affected Environment:** Old Cow Creek originates on the western slope of Huckleberry Mountain in a forested watershed. The drainage area above the diversion is 34 square miles. Average monthly streamflow in Old Cow Creek is highest from December through April and lowest from July through November (Table 1). The average annual flow is 71 cfs.

**Table 1. Average monthly stream flows for years 1961 to 1982, in Old Cow Creek downstream of the proposed Olsen Hydroelectric Project, (Source: The staff, as modified from Olsen Power Project, Inc., 1985, application, exhibit A).**

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<i>Month</i>	<i>Average monthly streamflow in cubic feet per second (cfs)</i>
January.....	93.8
February.....	124.0
March.....	111.0
April.....	125.0
May.....	100.0
June.....	59.6
July.....	31.3
August.....	25.5
September.....	22.0
October.....	27.2
November.....	49.7

December .....	83.0
Average .....	70.7

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Water quality in Old Cow Creek is excellent. The water generally has low concentrations of total suspended solids, with turbidity ranging from 1 to 8 Jackson Turbidity Units. Water temperature varies seasonally from 38 degrees F in December to 59 degrees F in August. The minimum recorded dissolved oxygen content in Old Cow Creek is 7.0 milligrams per liter. The pH, ranging from 7.2 to 7.5, remains fairly constant throughout the year (personal communication, Lee Gibson, Water Resource Engineer, Department of Water Resources, Redbluff, California, October 6, 1986).

*Environmental Impacts and Recommendations:* Ground-disturbing activities during project construction would temporarily increase the turbidity and sedimentation levels in Old Cow Creek. Increases in turbidity and sedimentation, with subsequent adverse effects on aquatic resources, are among the most significant construction related effects of hydroelectric development.

By letter dated March 25, 1986, the CRWQCB states that construction or operation of the proposed project would not cause a violation of applicable provisions of the Clean Water Act of 1977. The applicant proposes general measures to protect water quality during project construction, but should develop a detailed plan to minimize sedimentation and turbidity impacts during construction.

*Unavoidable Adverse Impacts:* Sedimentation and turbidity would temporarily increase in Old Cow Creek during project construction. Streamflow in the bypassed reach would be reduced from pre-project normal flow patterns during project operation.

#### 4. Fishery Resources

*Affected Environment:* Resident game species in Old Cow Creek include rainbow trout (*Salmo gairdneri*;) and brown trout (*Salmo trutta*). Steelhead trout occur in the creek 3 miles downstream of the project area below a 15-foot-high falls. In March 1985, the applicant electrofished a portion of the proposed bypassed reach and found rainbow trout and riffle sculpin (*Cottus gulosus*). The majority of trout captured were less than 4 inches in length. No brown trout were found. Records from the California Fish and Game Department (DFG) show that since 1920, only hatchery-reared rainbow trout have been stocked in Old Cow Creek above the proposed project area.

\*14 The Old Cow Creek throughout the bypassed reach is characterized by swift, turbulent water with a predominantly rubble-boulder substrate and few pools. Very little gravel suitable for spawning is available and the type of fish habitat most common is small pocket water.

### *Environmental Impacts and Recommendations:*

#### *Sedimentation and Turbidity*

Construction of the proposed project would temporarily increase the suspended sediment levels in Old Cow Creek. Construction-induced sedimentation and turbidity may reduce visibility, disrupt spawning and smother aquatic food organisms. Implementing the erosion and sediment control plan, as discussed under geology and soils, would minimize the amount of sediment introduced into Old Cow Creek and limit the disturbance to the resident fishery resource.

#### *Minimum Flow*

Diverting up to 120 cfs from Old Cow Creek during project operation would reduce streamflow and likely would reduce the available habitat for the fishery resource in the 3-mile-long bypassed reach. Decreases in streamflow in many western streams affect fish resources, primarily by reducing usable habitat (Loar and Sale, 1981).

The applicant conducted an instream flow study for the bypassed reach which related streamflow to the quantity of aquatic habitat available to fry, juvenile, spawning, and adult life stages of rainbow trout. Based on the study results, the applicant proposes a 30-cfs minimum flow in the bypassed reach of Old Cow Creek. The DFG agrees that this proposed minimum flow would protect existing fishery resources.

To ensure the continuous release of the minimum flow, the DFG recommends that the applicant monitor streamflow in the bypassed reach immediately downstream from the diversion site. The applicant did not comment on the gaging requirement.

To protect the resident fishery resources in Old Cow Creek during project operation, it would be necessary to maintain suitable streamflows in the bypassed reach. The 30-cfs minimum flow proposed by the applicant would adequately protect the fishery resource in Old Cow Creek. The licensee should install appropriate streamgages in the bypassed reach of Old Cow Creek to monitor the minimum flow release.

#### *Ramping Rates*

Rapid alteration in streamflows during project startup and shutdown would strand fish when submerged areas quickly drain. The DFG recommends that rapid changes in the volume of water released downstream of the proposed diversion structure should not exceed 30 percent of the total streamflow per hour. The applicant agrees to implement this ramping rate during project shutdown and project startup. To avoid stranding fish in the bypassed reach and downstream of the powerhouse during project operation, the licensee should implement a ramping rate that would assure that the maximum rate of diversion does not exceed 30 percent of the total streamflow per hour.

#### *Fish Movement*

Fish moving downstream and entering the project intake would be subject to turbine-induced injury or mortality. The flow of water into the intake could exceed the swimming speed of fry and juvenile salmonids inhabiting Old Cow Creek in the vicinity of the intake; these life stages consequently could be entrained. The DFG recommends screening the intake to prevent turbine-related injury or mortality of salmonids. The applicant agrees to screen the intake structure, according to the DFG criteria, to prevent entrainment of fish.

**\*15** Studies of Pelton turbine prototypes at Willamette Falls Project demonstrate that the passage of fish through the proposed Pelton turbines most likely would result in mortality and would adversely affect the fishery resources in Old Cow Creek (Turbak, et al., 1981). At Willamette Falls, the mortality of juvenile salmonids ranged from 7.7 to 11.8 percent. Screening of the intake would minimize mortality of fish during project operation. The licensee, therefore, should provide appropriately designed fish screens at the project intake to facilitate downstream movement and to prevent turbine-induced fish losses.

*Unavoidable Adverse Impacts:* Project operation would cause minor, long-term reductions in streamflow in the bypassed reach and minor, long-term reductions in available fish habitat.

#### *5. Vegetation Resources*

*Affected Environment:* Construction of the project would mainly affect a second-growth conifer forest. The diversion site is vegetated with a mixed conifer forest, dominated by white fir (*Abies concolor*), sugar pine (*Pinus lambertiana*), and incense-cedar (*Libocedrus decurens*). Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) are less common. The dense understory at the diversion site is made up of Pacific dogwood (*Cornus nuttallii*), red-osier dogwood (*C. stolonifera*), white alder (*Alnus rhombifolia*), manzanita (*Arctostaphylos spp.*), and numerous young white firs and incense-cedars (Olsen Power Project, Inc., 1985, application, exhibit E).

The pipeline/penstock corridor and the new road to the diversion site would be located in a forest dominated by ponderosa pine and Douglas-fir. The understory is dominated by California black oak (*Quercus kelloggii*). Other understory tree and

shrub species are bigleaf maple (*Acer macrophyllum*), Pacific dogwood, deerbrush ceanothus (*Ceanothus integerrimus*), and manzanita (Olsen Power Project, Inc., 1985 application, exhibit E).

The powerhouse site is vegetated with a yellow pine forest. Typical tree species are ponderosa pine, Douglas-fir, and incense-cedar. Incense-cedar is common in both the overstory and the understory. The sparse riparian vegetation along Old Cow Creek at the powerhouse site consists of white alder, willow (*Salix* spp.), and bigleaf maple (Olsen Power Project, Inc., application, exhibit E 1985).

*Environmental Impacts and Recommendations:* The applicant would clear a total of approximately 19 acres of vegetative cover, consisting largely of conifer forest, to build the proposed project. The new, 1-mile-long stretch of road to the diversion site would account for about 2 acres. Clearing a corridor, 20 to 40 feet wide, for the pipeline/penstock would affect about 8 acres of land. Since the project transmission line would share the penstock corridor for almost its entire length, the transmission line would require the clearing of only 0.7 acre within a new, 15-foot-wide right-of-way. Spoil disposal would require the clearing of less than 3 acres of land. The construction of the diversion and the powerhouse would account for the remaining 5.3 acres.

**\*16 Unavoidable Adverse Impacts:** Constructing the project would require the clearing of approximately 19 acres of vegetative cover. During project operation, a 9-acre area within the pipeline/penstock corridor and the transmission line right-of-way would be maintained in low-growing vegetation.

## 6. Wildlife

*Affected Environment:* Large mammal species found in the project area include black bear (*Ursus americanus*), mountain lion (*Felis concolor*), and mule deer (*Odocoileus hemionus*). Other mammal species that occur in the project area are bobcat (*F. rufus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), river otter (*Lutra canadensis*), badger (*Taxidea taxus*), beaver (*Castor canadensis*), and mink (*Mustela vison*) (Olsen Power Project, Inc., 1985, application, exhibit E, 1985).

Gamebirds are band-tailed pigeon (*Columba fasciata*), ruffed grouse (*Bonasa umbellus*), blue grouse (*Dendragapus obscurus*), mountain quail (*Oreortyx pictus*), chukar (*Alectoris chukar*), and mourning dove (*Zenaidura macroura*). Raptor species that may occur in the project area are osprey (*Pandion haliaetus*), golden eagle (*Aquila chrysaetos*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), great horned owl (*Bubo virginianus*), northern saw-whet owl (*Aegolius acadicus*), and northern pygmy-owl (*Glaucidium gnoma*) (Olsen Power Project, Inc., application, exhibit E, 1985).

*Environmental Impacts and Recommendations:* Increase noise (especially from the blasting needed to install the diversion structure and pipeline/penstock), human activity, and the loss of 19 acres of habitat because of the clearing of vegetation would cause wildlife to avoid the project area during the 16-month-long construction period.

During the life of the project, the periodic removal of trees and large shrubs from about 9 acres within the penstock/pipeline and transmission line rights-of-way would decrease the amount of food, cover, and nesting habitat available to some wildlife species. The applicant's proposal to raptor-proof the 2-mile-long transmission line would protect large raptors and other birds in the project area. DFG recommends that the applicant prepare a wildlife mitigative plan that includes measures such as the revegetation of disturbed land with browse and grass species beneficial to wildlife and the minimization of oak tree removal. The applicant agrees to prepare a wildlife mitigative plan and to minimize the loss of oak trees.

The applicant should mitigate the adverse effects of project construction on wildlife to the extent possible. Therefore, the licensee should file with the Commission a wildlife mitigative plan, prepared after consultation with the Fish and Wildlife Service, the BLM, and the DFG. The plan should include the revegetation of disturbed land with browse and grass species beneficial to wildlife and the minimization of oak tree removal.

**\*17 Unavoidable Adverse Impacts:** Wildlife would avoid the project area during the 16-month-long construction period. The long-term management of 9 acres of forest as right-of-way would decrease the amount of habitat available to some wildlife species.

### 7. Threatened and Endangered Species

*Affected Environment:* No federally listed or proposed threatened or endangered species is known to occur in the project area.

*Environmental Impacts and Recommendations:* The proposed project would not impact any federally listed or proposed threatened or endangered species (letter from Patricia Sanderson Port, Regional Environmental Officer, Department of the Interior, San Francisco, California, March 21, 1986).

*Unavoidable Adverse Impacts:* None.

### 8. Cultural Resources

*Affected Environment:* A cultural resources survey of the project area has been conducted. No properties have been identified in the area as listed on or eligible for listing on the *National Register of Historic Places* (letter from Kathryn Gualtieri, State Historic Preservation Officer, Sacramento, California, June 8, 1986).

*Environmental Impacts and Recommendations:* Land-clearing and land-disturbing activities could adversely affect archeological and historic properties not previously identified in the project area. Therefore, if the licensee encounters such properties during the development of project works or related facilities, the licensee should stop land-clearing and land-disturbing activities in the vicinity of the properties and consult with the SHPO on the eligibility of the properties and to design such measures as may be necessary to avoid or mitigate effects on the properties. In addition, before beginning land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in the **license**, the licensee should consult with the SHPO about the need to conduct an archeological or historical survey and the need for avoidance or mitigative measures. In these instances, 60 days before starting such land-clearing or land-disturbing activities, the licensee should file a plan and a schedule for conducting the appropriate studies along with a copy of the SHPO's written comments concerning the plan and the schedule. The licensee should not start land-clearing or land-disturbing activities, other than those specifically authorized in this **license**, or resume such activities in the vicinity of an archeological or historic property discovered during construction, until informed by the Director, Office of Hydropower **Licensing**, that the requirements discussed above have been fulfilled.

*Unavoidable Adverse Impacts:* None.

### B. Alternatives to the Proposed Action

No construction alternatives to the proposed project have been identified.

### C. Alternative of No Action

Implementation of the no-action alternative would not change the existing physical or biological components of the area. It would, however, preclude the opportunity to use the renewable water resource of Old Cow Creek to generate electricity.

### D. Recommended Alternative

**\*18** The proposed project is the preferred alternative because electricity generated from a renewable resource would be sold to the PG&E thus lessening the use of existing fossil-fueled, steam electric plants, and because the environmental impacts that would result from constructing and operating the project would be minor and adequately mitigated.

## VI. Finding of No Significant Impact

During the construction phase, there would be minor adverse impacts to water quality, wildlife habitat, and vegetation. Operation of the project would result in a decreased streamflow in the bypassed reach, and a minor loss of vegetation, fish habitat, and wildlife habitat. On the basis of this independent environmental analysis, issuance of a **license** for the project would not constitute a major federal action significantly affecting the quality of the human environment.

## VII. Literature Cited

1. Loar, J.M. and M.J. Sale. 1981. Analysis of environmental issues related to small-scale hydroelectric development: V. Instream flow needs for fishery resources. ORNL/TM-7861. Oak Ridge National Laboratory. Oak Ridge, Tennessee. 123 pp.
2. Olsen Power Project, Inc. 1985a. Application for **license** for major water power project, FERC Project No. **8361**, California.
3. \_\_\_\_\_. 1985b. Preliminary geotechnical evaluation of the Olsen Hydroelectric Project, FERC Project No. **8361**, California.
4. Turbak, S.C., D.R. Reichle, and C.R. Shriner. 1981. Analysis of environmental issues related to small-scale hydroelectric development: IV. Fish mortality resulting from turbine passage. ORNL/TM-7521. Oak Ridge National Laboratory, Oak Ridge, Tennessee. 112 pp.
5. Vande Sande, T. 1982. Potential impacts of hydropower development on upstream fish passage. *In: Hydropower development and fisheries impacts and opportunities*. American Fisheries Society and New York Department of Environmental Conservation, Ithaca, New York. pp. 37-44.

## VIII. List of Preparers

1. Einer S. Olsen - Environmental Assessment Coordinator (Environmental Protection Specialist; M.P.A., Environmental Administration).
2. Angelo Colianni - Geology and Soils (Soil Conservationist; B.S., Agriculture [Range Management, Soil Science]).
3. James T. Griffin - Cultural Resources (Archeologist; B.A., Anthropology, Master of Public Administration).
4. James Hastreiter - Water and Fishery Resources (Fishery Biologist; M.S., Natural Resources).
5. Annette Johnson - Typing (Secretary)
6. Mary Nowak - EA Editor (Writer/Editor; B.A., English).
7. Dianne Rodman - Vegetation and Wildlife Resources (Ecologist; M.S., Biology).
8. Martin Thorpe - Need for Power and Alternatives to the Proposed Project (Electrical Engineer; B.S., Electrical Engineering).

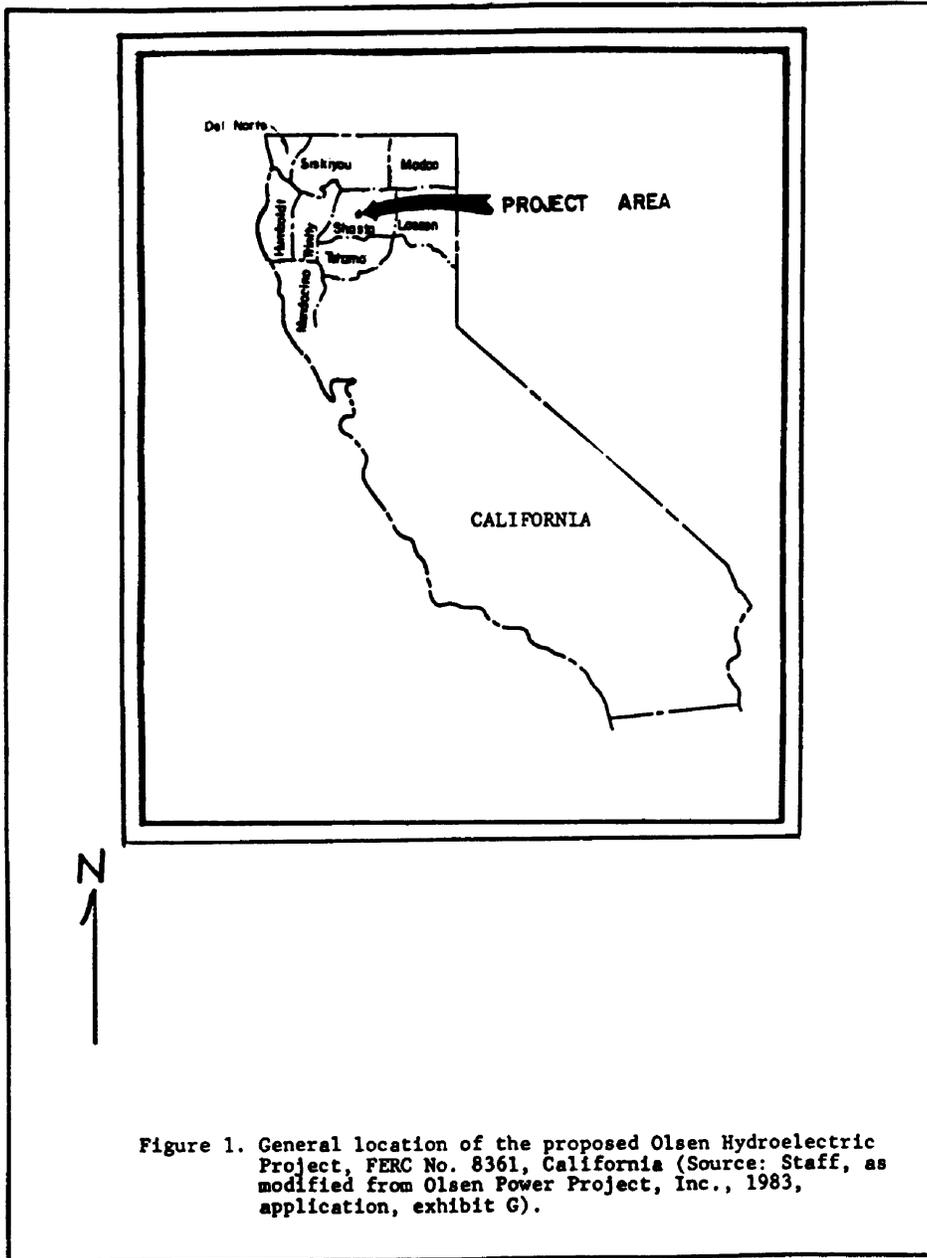


Figure 1. General location of the proposed Olsen Hydroelectric Project, FERC No. 8361, California (Source: Staff, as modified from Olsen Power Project, Inc., 1983, application, exhibit G).

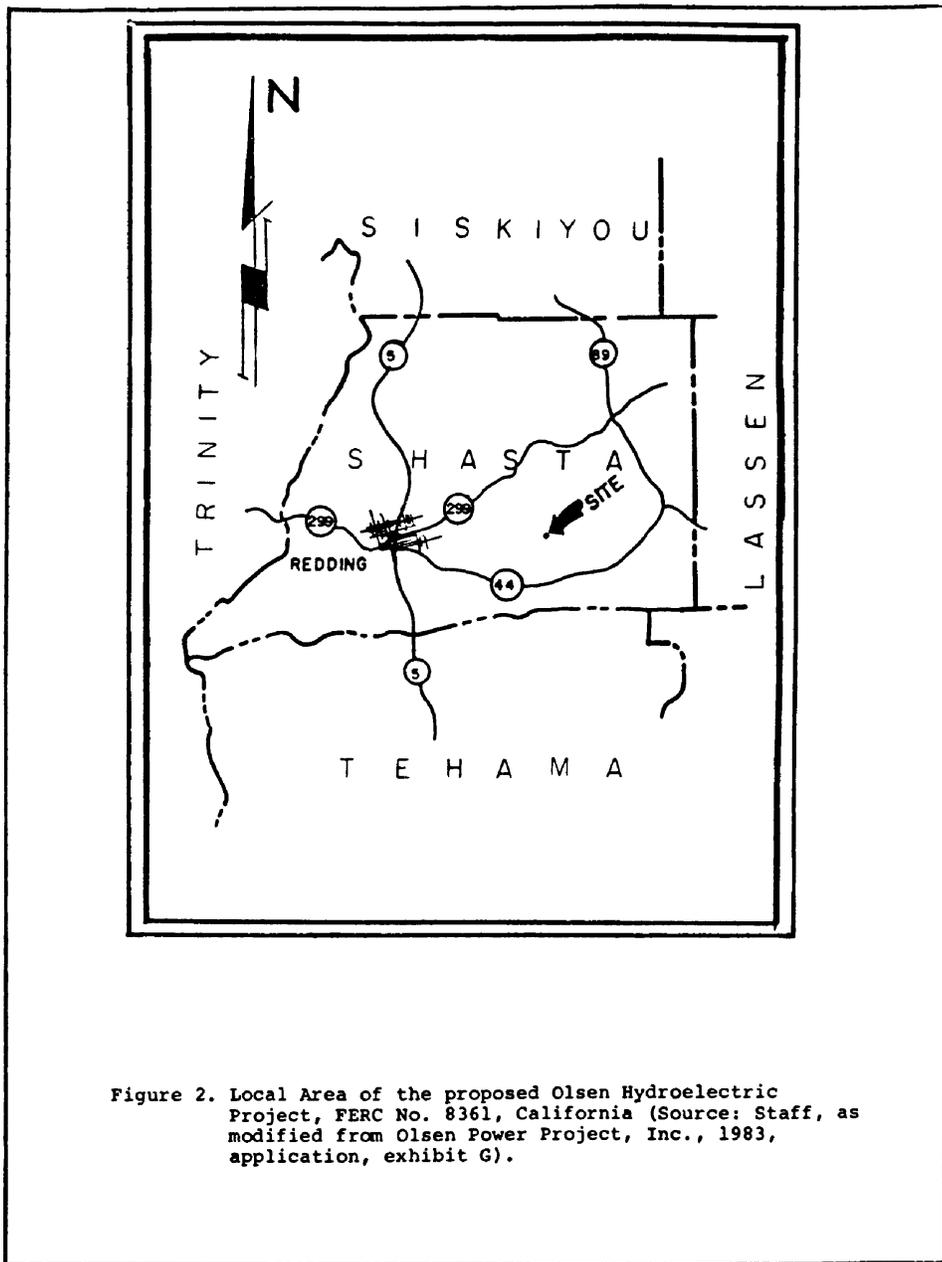


Figure 2. Local Area of the proposed Olsen Hydroelectric Project, FERC No. 8361, California (Source: Staff, as modified from Olsen Power Project, Inc., 1983, application, exhibit G).

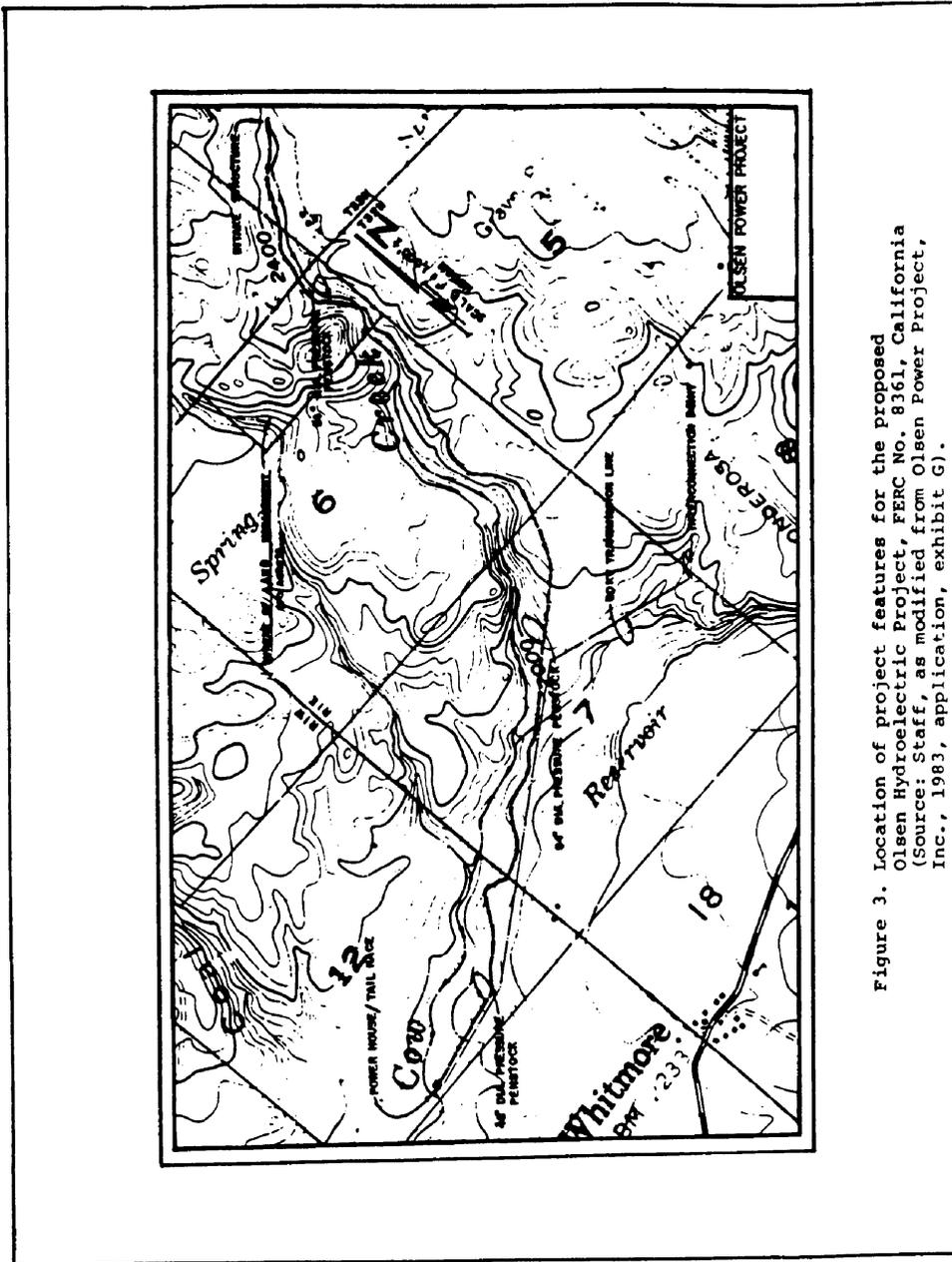


Figure 3. Location of project features for the proposed Olsen Hydroelectric Project, FERC No. 8161, California (Source: Staff, as modified from Olsen Power Project, Inc., 1983, application, exhibit G).

### Safety and Design Assessment

Olsen Power Project

FERC Project No. 8361 - California

#### Dam Safety

\*19 The proposed project would be located on Old Cow Creek and utilize a 7.5-foot-high intake structure.

The project structures would impound an insignificant amount of water and failure of the structures would not endanger downstream life or property. The project will be safe if constructed using sound engineering practices.

*Project Design*

The project would consist of an intake structure, a penstock, and a powerhouse. Project structures will be safe if constructed using sound engineering practices.

*Economic Feasibility*

A proposed project is economically feasible so long as its projected levelized cost is less than the long-term levelized cost of alternative energy to any utility in the region that can be served by the project. Staff has calculated the projected alternative energy cost in the region to be 112.2 mills per kilowatt hour which is based upon the cost of natural gas, as projected by the Energy Information Administration. Staff has estimated the cost of energy from the project under the proposed 1986 tax revisions. The levelized cost of energy from the Olsen Power Project is estimated to be 84.6 mills per kilowatt hour, therefore, the project is economically feasible.

On April 15, 1985, the applicant obtained a power purchase agreement with the Pacific Gas and Electric Company for a total levelized energy value of 119.6 mills/kWh based on Standard Offer #4. Therefore, the project would be potentially financially feasible to the applicant. Any further determination of the financial feasibility must be governed by the applicant's efforts to secure project financing.

*Water Resource Planning*

The project's single impulse turbine would have a total installed capacity of 5,000-kw. The plant would be operated run-of-river with a 32 percent plant factor under a net head of 161 feet. The turbine would be capable of utilizing flows ranging from approximately 45 cfs to 150 cfs. The project's hydraulic capacity would be exceeded approximately 12% of the time.

The California Department of Fish and Game recommends a minimum streamflow of 30 cfs or the natural flow of the stream, whichever is less for the protection of instream resources. The applicant's energy estimate of 14 GWh annually was prepared using a minimum streamflow of 30 cfs and is reasonable.

The 1996 Planning Status report for the Upper Sacramento River Basin includes the existing Pacific Gas and Electric Company Kilarc Project located on Old Cow Creek. The proposed Project would have no impact on the existing Kilarc Project which is approximately 6 miles upstream of the proposed point of diversion.

Staff considered the December 1983, California Water Plan developed by the State of California Department of Water Resources and state and federal agency comments. No specific comments or recommendations were made concerning flood control, navigation, water supply, or irrigation requirements for the basin that the proposed project would impact.

\*20 In summary, our study shows that the Olsen Power Project adequately develops the hydroelectric potential at the site and would not conflict with any existing or planned Water Resource developments in the basin.

*Exhibits*

The following sections of Exhibit A and Exhibit F drawings conform to the Commission's rules and regulations and should be included in the **license**.

*Exhibit A.* Sections (1)(i), (1)(ii), and (1)(vii) of the application filed on May 6, 1985.

<i>Exhibits</i>	<i>FERC No.</i>	<i>Description</i>
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F-1	<b>8361-1</b>	Plan, Section of Intake Structure
F-2	<b>8361-2</b>	Plan, and Profile of Pipeline
F-3	<b>8361-3</b>	Plan, and Profile of Pipeline
F-4	<b>8361-4</b>	Plan, and Profile of Pipeline
F-5	<b>8361-5</b>	Plan, and Profile of Pipeline
F-6	<b>8361-6</b>	Plan, and Profile of Pipeline
F-7	<b>8361-7</b>	Plan, and Profile of Pipeline
F-8	<b>8361-8</b>	Plan, and Profile of Pipeline
F-9	<b>8361-9</b>	Plan, and Profile of Pipeline
F-10	<b>8361-10</b>	Plan, and Profile of Pipeline
F-11	<b>8361-11</b>	Plan, and Profile of Pipeline
F-12	<b>8361-12</b>	Plan, and Profile of Pipeline
F-13	<b>8361-13</b>	Plan, and Profile of Pipeline
F-14	<b>8361-14</b>	Plan, and Profile of Pipeline
F-15	<b>8361-15</b>	Plan, and Profile of Pipeline
F-16	<b>8361-16</b>	Powerhouse Details

Federal Energy Regulatory Commission

Footnotes

- <sup>1</sup> 99 Cong.Rec. § 4140 (remarks by Senator McClure, April 11, 1986).
- <sup>2</sup> California Department of Parks and Recreation's California Recreation Plan---1982; California State Water Resources Control Board, Central Valley Region's Water Quality Control Plan Report---1975; California Department of Fish and Game's California Fish and Wildlife Plan---1986.

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**39 FERC P 62025 (F.E.R.C.), 1987 WL 451284**

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