

ORIGINAL



**Pacific Gas  
and  
Electric  
Company**

FILED  
OFFICE OF THE  
SECRETARY

L. Compass  
Cultural Resources Specialist  
Corporate Real Estate

Mailng Address  
5555 Florin Perkins Road,  
Bldg. 500  
Sacramento, CA 95826  
Tel: (916) 386-5451  
Fax: (916) 386-5388  
Email: L0C3@PGE.Com

2005 FEB 22 P 1: 08

FEDERAL ENERGY  
REGULATORY COMMISSION

February 9, 2004

Milford Wayne Donaldson, State Historic Preservation Officer  
California Office of Historic Preservation  
Department of Parks and Recreation  
P.O. Box 942896  
Sacramento, CA 94926

**RE: Canyon Dam Outlet Tower Gate Rehabilitation, Upper North Fork Feather River  
Hydroelectric Project (FERC No. 2105), Plumas County, California**

Dear Mr. Donaldson:

Pacific Gas and Electric Company (the Licensee) owns and operates the Upper North Fork Feather River (UNFFR) Hydroelectric Project (FERC No. 2105). The Licensee is proposing to replace the Canyon Dam Outlet Tower Gates. Attached you will find a Project Description for this work. The Canyon Dam Outlet Tower<sup>1</sup> is located at the southwest end of Lake Almanor in Plumas County, California, and has been found to be eligible for listing in the National Register of Historic Places (PAR 2001; SHPO letter dated July 29, 2003, FERC 920131A). The purpose of this letter is to initiate Section 106 consultation in accordance with 36 CFR 800.2(c)(4) of the regulations. We are requesting your concurrence with the Project Area of Potential Effects (APE) in accordance with 36 CFR 800.16(d), and seek your concurrence of a finding of no adverse affect in accordance with 36 CFR 800.5(b). *As work is scheduled to begin May 1, 2005, we are requesting expedited consultation in accordance with 36 CFR 800.2(d)(3)(g).*

Figures 1 and 2 show the Project vicinity and proposed APE. Briefly stated, the Canyon Dam Outlet Tower is situated within Lake Almanor and is partially submerged. Current flow releases are less than those being considered under the proposed relicensing conditions. Due to the proposed increase in flow releases, the Licensee is proposing to replace the existing composite box section gate stem on gate number 5 with a new 14 inch diameter steel pipe stem, new roller guides, re-align the gate in the existing guides to avoid binding during vertical travel, and restore the area after work is completed. This will facilitate proper flow releases. The gate is located below the water level and a team of divers will be used to repair the gate.

<sup>1</sup> Note: In previous documents, the Canyon Dam Outlet Tower has also been referred to as the Intake at Lake Almanor Dam; it is the same structure.

Access to the tower will be via a floating walkway anchored to the lake shore and bottom. Barges will be anchored next to the outlet. These will be used to store equipment and a to provide a platform for a crane. Buoys will be placed around the outlet to signal that it is off limits to recreational boaters. An unpaved parking area near the outlet tower will be used for temporary storage of material and parking. An existing boat launch located approximately ¼ mile north of the work site will be used to launch and remove vessels. The access road to and from the launch area is paved. The ground disturbance will be minimal and limited to the placement of anchors below the water for the walkway, buoys and barge. All equipment will be removed after construction and the area will be restored. This includes the unpaved parking area near the outlet.

As mentioned above, the Canyon Dam Outlet Tower was previously evaluated by PAR Environmental Services Inc. and was determined eligible for the National Register of Historic Places. It is eligible under Criteria A and C for its association with Lake Almanor Dam and as the only remaining example of the original intake tower style in the system (Gothic Revival), however, several water-release gates have been concreted shut (PAR 2001:47). The materials used for the current rehabilitation of the gate will not be replaced in-kind and the structure around the gate will not be modified. However, the gate is normally submerged and rehabilitation will not have a visible impact on the construction/architectural style of the outtake. As a result, and in accordance with 36 CFR 800.5(b), it is recommended that these minor changes to the gate will not have an adverse effect on the outlet structure.

An area in the vicinity of the south end of Lake Almanor was identified as a *potential* Traditional Cultural Property during the ethnographic study under taken for the current FERC relicensing project. The results of this study are included in *Native American Traditional Cultural Properties Identification and Description Upper North Feather River Project (FERC No. 2105), Volume I* by Albion Environmental, Inc. (2002). This area is described as a place where Earthmaker stopped on his creation trail, however, those interviewed noted no physical remains. The principal effect on the property occurred with the construction of the hydroelectric facilities. Although the specific area surrounding this property has been very disturbed as a result, the ethnographic report states that this past construction does not appear to have altered the significance of the location to Native Americans. In accordance with 36 CFR 800.5(b), it is therefore recommended that rehabilitation of the gate will also not have an adverse effect because the work will take place under water where it will not be visible and minimal ground disturbance will occur.

The boat launch and unpaved parking areas to be utilized for Canyon Dam Outlet Tower activities were both surveyed as part of cultural resource studies undertaken for the current FERC relicensing. The results of the cultural resource inventory can be found in *Cultural Resources Inventory For The PG&E Upper North Fork Feather River FERC Relicensing Project, Plumas County, California (FERC #2105)* by PAR Environmental Services, Inc. (2001). Both areas have been disturbed by construction and no archaeological resources were identified. In accordance with 36 CFR 800.4(d)(1), it is recommended that use of these areas will not affect historic properties.

The tribes listed on the following page have been sent copies of this letter in order to notify them of this project and to request their comments in compliance with Section 101(d)(6)(B) of the NRHPA and 36 CFR 800.2(a)(2). These Tribes are those who have recently been identified by the Federal Energy Regulatory Commission as Concurring Parties to the Draft Upper North Fork Feather River Programmatic Agreement (FERC letter dated November 23, 2004). As mentioned above, we request expedited consultation on this project; your review and comments within 30 days of the date of this letter would greatly be appreciated. If you have any questions, please feel free to call me.

Sincerely,



Lynn Compas,  
Cultural Resource Specialist

Enclosures (3)

cc: Tom Jereb, Pacific Gas and Electric Company  
Bill Zemke, Pacific Gas and Electric Company  
Alison Macdougall, Pacific Gas and Electric Company

Ms. Lorie Jaimes, Tribal Chair Greenville Rancheria P.O. Box 279 Greenville, CA 95974 (530) 284-7990	Mr. Farrell Cunningham, Stewardship Coordinator Maidu Cultural and Development Group P. O. Box 426 Greenville, CA 95947
Mr. Ron Morales, Tribal Chair Honey Lake Maidu 1101 Arnold Street Susanville, CA 96130	Ms. Stacy Dixon, Tribal Chair Susanville Indian Rancheria Drawer "U" Susanville, CA 96130
Honorable Magalie Roman Salas, Secretary Federal Energy Regulatory Commission 888 First Street, NE Washington, DC 20426	

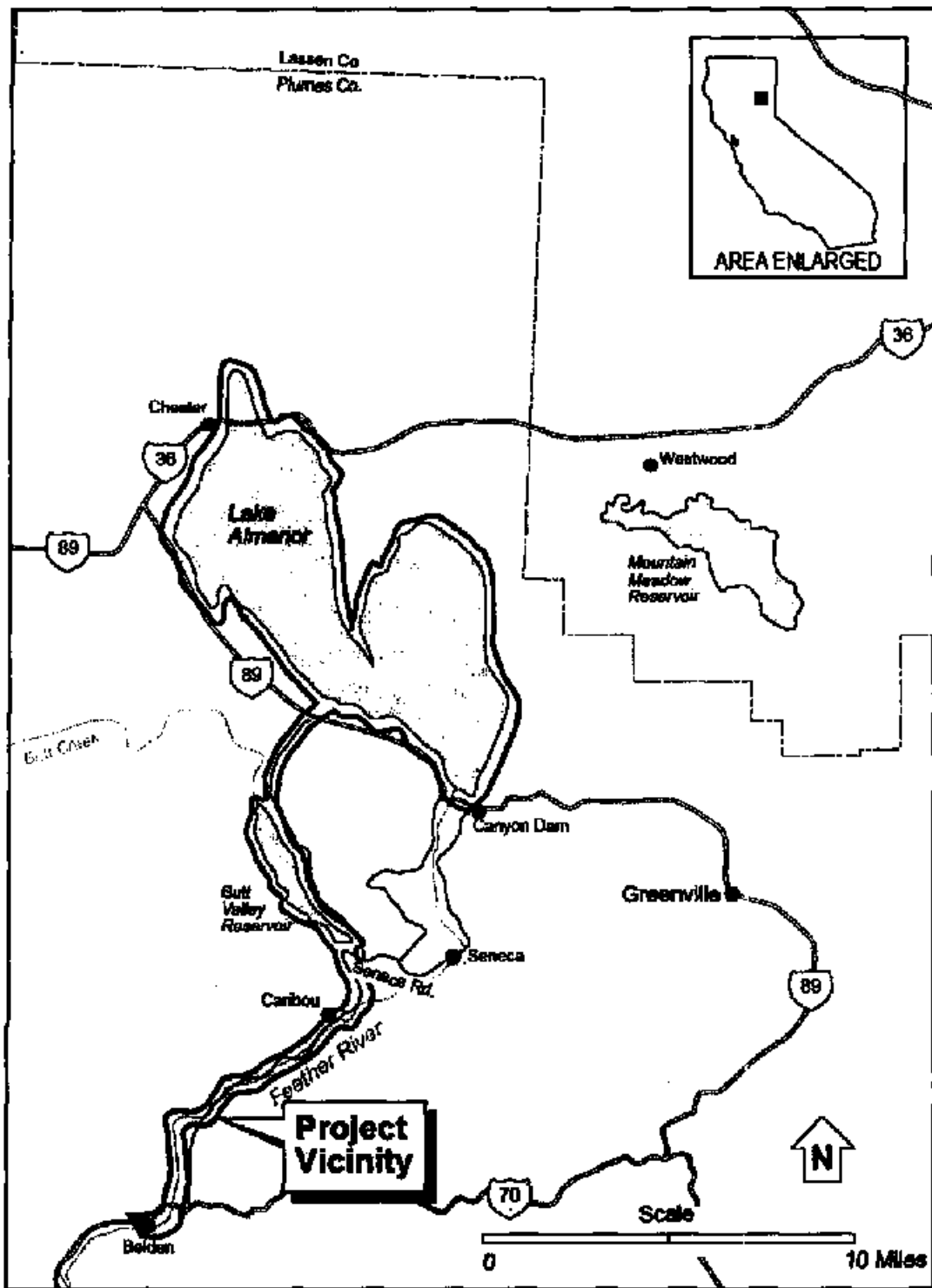
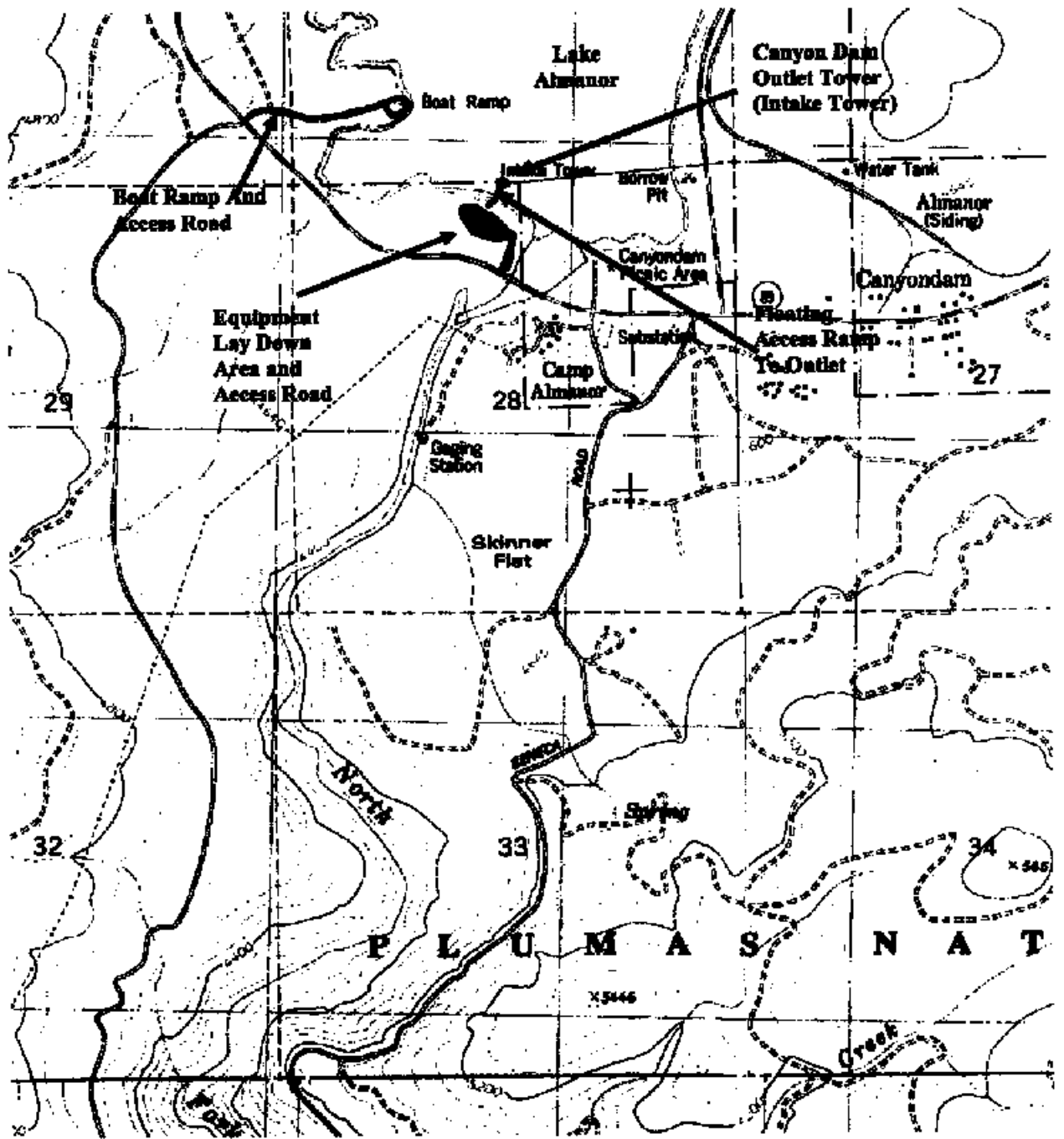


Figure 1. Project Vicinity Map



**Figure 2. Project Location And APE  
Canyon Dam 7.5 minute U.S.G.S. Quadrangle  
Scale**



Map Source: Maptech, Inc. 2002

---

**CANYON DAM  
OUTLET TOWER GATE REHABILITATION**

**FERC PROJECT NO. 2105  
STATE DAM NO. 93-3**

**PROJECT DESCRIPTION**

**POWER GENERATION DEPARTMENT**

**NOVEMBER 22, 2004**

---

# CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION

---

## BACKGROUND

A condition assessment of the Canyon Dam outlet gates was performed during December 2003 and early 2004. The condition assessment included underwater diving inspections in December 2003 and January 2004, a structural evaluation of the low-level outlet gate and components, and an evaluation of the gate operation system. The original purpose of the assessment was to determine the adequacy of the existing outlet gates and operating systems to support the proposed releases and operation condition under the proposed relicensing conditions. However, the assessment found damage to the lower splice connections and structural defects in the lower portion of the gate stems for the three lower gates. The three lower gates have been placed in the closed position, until repairs are made, to prevent further damage from operation.

Repairs to one or more of the three lower level gates are necessary to restore operation of the gates to meet FERC and DSOD's dam safety requirement, to provide adequate low level outlet discharge capacity to manage heavy runoff conditions, and to provide dewatering of the reservoir in the event of emergency.

## EXISTING PROJECT

Canyon Dam (also known as Lake Almanor Dam or Big Meadows Dam) is located at the upper reach of the North Fork Feather River. The dam impounds the Lake Almanor reservoir with storage of 1,142,000 acre-foot and surface area of 27,000 acres. The normal maximum reservoir elevation is 4,494 (PG&E Datum), six feet below the spillway crest. The existing outlet consists of a 110 feet tall freestanding reinforced concrete structure with five slide gates. Discharges are made through a combination of the five slide gates into a 1,356 feet long concrete lined tunnel.

Canyon Dam was originally constructed in the 1912 – 1914 period. The original outlet tower was approximately 65 feet tall with two tiers of outlet gates, two at the bottom of the tower (Gate Nos. 2 and 4) and three at EL 4422 (Gate Nos. 1, 3, and 5). The original maximum reservoir operating level was EL 4460.

During the period 1925-1928 the outlet tower was raised approximately 50 feet to the current configuration. The extended portion of the tower included a third level of two gates (Gate Nos. 6 and 7) at EL 4467. Maximum operating level of the reservoir was raised to EL 4494. The two bottom gates (Gates Nos. 2 and 4) were blocked off with concrete and are no longer used, leaving five gates.

## GATE OPERATION

All five gates are slide gates, 9'-0" high and 4'-3" wide. The stems are built up hollow box sections, assembled with rivets and/or bolts. When the tower was raised, the stems of the five lower gates (Gate Nos. 1, 3, and 5) were extended to the new operating deck level using field bolted splices between the original stem section and the new stem section. The stems are aligned and guided vertically by three levels of roller guides.

Details of the outlet tower and locations of the outlet gates are shown in Appendix 1.

The existing outlet has a capacity of 2,400 cfs at normal maximum reservoir elevation 4494 using a combination of the two upper gates and the three lower gates. The combined capacity of the two upper gates at normal maximum reservoir elevation 4494 is 2,000 cfs so one of the lower gates is needed to achieve a maximum discharge of 2400cfs. Discharge from the outlet is normally kept below 700 cfs to avoid vibrations in the outlet tunnel. In addition to the Canyon Dam outlet, the Butt Valley Powerhouse intake at Prattville,

# CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION

---

With an invert elevation of 4410, can also release up to 2,100 cfs from Lake Almanor, if needed.

Since 1959, releases from the Canyon Dam Outlet gates have been limited to approximately 35 cfs for the existing instream flow release. The instream flow releases are usually made by slight opening (up to 3-inches) of one of the three lower gates. The upper two gates have been the primary gates for releases during the past major flood events. The upper gates were operated to regulate the reservoir level during periods of high inflow in 1970, 1973, 1983, 1996 and 1997. During the 1997 storm event, both upper gates were fully opened and the lower Gate 3 was partially opened to pass over 2,000 cfs.

Current operating conditions require instream flow releases of approximately 35 cfs. These releases are usually made through Gate No. 3. The flow releases under the proposed relicensing conditions consist of: (1) a base flow ranging from 60 cfs to 150 cfs depending on the month and the water year type. The base flows are planned to be made by leaving one lower gate in the fixed position for 60 cfs flow and one of the upper gates will be regulated for the balance of the required flow; (2) A pulse flow of up to 1,200 cfs, once a month for a 24-hour period during January, February and March in a wet and average water year. The pulse flow can be made either using two upper gates or the combination of one upper and one lower gate; and (3) During September 1 to October 15 of each Fall the required flows will be made from the upper gate.

## PROPOSED MODIFICATIONS

Replace the existing composite box section gate stem on one gate (# 5) with a new 14" diameter steel pipe stem, new roller guides, re-align the gate in the existing guides to avoid binding during vertical travel, and restore the area after work is complete.

## CONSTRUCTION

This site is directly accessible to highway 70 for the delivery of materials over existing gravel roads to the laydown storage area. This project will involve the extensive use of divers for both the installation and removal of the gate stems, which extend downward below the deck of the gatehouse and connect to the existing gate operator shaft. No alteration to the existing structure is anticipated. Several barges and service vessels will be employed at various times to support the diving operations. Buoys or other markers will be placed to delineate the area around the outlet tower as off limits to recreational boats. An existing boat launch, approximately 1/4 mile from the work site will be used to launch and remove vessels from the water. Water vessels can be delivered to the launch area on existing paved roads.

### Mobilization

Access will be established using a floating walkway from the dam to the intake structure. Anchors will be installed to secure the walkway and barges to the intake structure. A work platform will be installed inside of the existing upper gate stem bay, an access stairway or ladders will be constructed from the gate stem bay platform to the floating walkway.

### Removal of existing gate stems

Existing gate stem removal will be accomplished using the existing gate stem operator and modifying the threaded section from the existing gate stem, the operator and modified threaded gate stem section will be used to raise and lower the existing gate stem. A clamp mechanism will be designed and constructed on the gate stem bay platform. The existing



# **CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION**

---

gate stem will then be lifted, clamped and cutoff in sections. Cutoff sections will be lifted out of the bay using the crane mounted barge.

## **Re-alignment of gates**

The re-alignment of gates will involve divers jacking the existing gate into a vertical alignment with the gate guide and temporarily shimming it in place until the new stem is attached and secured. All work is performed with the gate in the closed position.

## **Installation of new gate stems**

The new gate stem will be installed in reverse order of the removal process. The new stem sections will be lifted into the gate stem bay platform by the barge mounted crane. The sections will be held in place by the clamp mechanism, a gate stem section will be lifted into place using the modified threaded gate stem and operator. Each section will be aligned and welded, the sections will then be lowered and the process repeated until the new gate stem is complete. New gate stem guides will be installed and termination at the gate and operator will complete the installation.

## **Demobilization**

Demobilization will be sequenced removing the barges first followed by the barge anchors, clamp mechanism, gate stem bay platform, access stairway and floating walkway.

## **RESERVOIR OPERATION**

The reservoir operation will not be affected by this work.

## **MATERIAL**

All material for the project, including structural steel components will be imported. Old materials removed from the structure will be removed from the site.

## **EROSION CONTROL/DUST ABATEMENT**

Potential for erosion during construction is minimal at this site since most work will occur in the water. Parking and some temporary storage of material in the unpaved area adjacent to the outlet tower will be required. Erosion control measures will be implemented by using best management practices if needed.

## **WORK SHIFT/SCHEDULE**

The crew would work 50 hours per week. The scheduled shift is Monday through Friday, 10 hours per day. The crew is scheduled to mobilize on or about May 1, 2005 and would complete the modification around mid-July, 2005.

## **SITE RESTORATION**

The affected area will be restored after completion of construction. All construction debris and environmentally deleterious material will be removed from the dam site and the laydown areas. The laydown areas will be cleared, re-graded and restored to its pre-construction condition.

## **CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION**

---

Record (HAER) documentation of the structure to National Park Service standards. Such documentation may include:

An historic context of the structure;

Written descriptions of the physical appearance of the structure and modifications that have occurred since construction;

Large format archival quality photographs of the current condition of the structure prior to construction;

Large format archival quality photographic reproductions of a minimum of four historic photographs depicting upstream, downstream, and top views of the structure; and

Large format archival quality photographic reproductions of original plans and drawings of the structure.

### **ARCHAEOLOGICAL AND ETHNOGRAPHIC RESOURCES**

All equipment laydown areas and the boat launch were included in the cultural resource studies conducted for the UNFFR relicensing effort (Compas et al. 2001; Compas et al. 2002; Compas et al. 2003, Brickley and Blount, 2002). These areas are all located within a previously disturbed context and no archaeological sites were identified during the archaeological inventories undertaken for the relicensing. The Outlet Tower is in the water and is in a context that was heavily disturbed during its construction. No disturbance to the ground around the tower is expected to take place during the gate replacement other than placing anchors for the barge, floating walk way and buoys. Since the inundated ground around the tower has been heavily disturbed and since the amount of disturbance to be caused by this project will be minimal, no archaeological survey of this area is necessary.

During ethnographic studies undertaken for the UNFFR relicensing, two potential Traditional Cultural Properties (TCPs) were identified in the Canyon Dam outlet tower vicinity:

"TCP 6" is a fishing area that was used by one Maidu representative and his uncle over fifty years ago. The fishing area is a part of this individual's family history; however, its use has been discontinued and its condition is unknown. It was therefore recommended that the area does not meet the criteria of a potential NRHP-eligible TCP. No effects to this area were identified during the TCP study, and therefore no management for the location was proposed in the Licensee's Final License Application and none is proposed at this time.

"TCP 7" is a location that figures prominently in Maidu creation mythology and is currently located beneath hydroelectric Project features. Though hydroelectric facilities currently cover this location, it is still remembered and valued by the Maidu. It has been recommended that this location may still possess qualities of a potential NRHP-eligible TCP because the Maidu continue to ascribe traditional significance to the location despite the presence of the hydroelectric features. The principal effect on the property was the construction of the Upper North Fork Feather River Project facilities upon it. Continued operation and maintenance of the Project, however does not seem to have altered the significance of the site, and therefore no specific treatment was proposed in the Final License Application and none is proposed at this time.

# CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION

---

## BIOLOGICAL RESOURCES

The aquatic resources (fishery, amphibians, aquatic reptiles, and molluscs) of Lake Almanor and downstream of Canyon Dam in the North Fork Feather River (NFFR) were extensively surveyed as part of the relicensing effort for the upper NFFR Project (FERC 2105), and was reported in the application for new license (PG&E, 2002), and are described below

## Fisheries

### Lake Almanor

The coldwater fishery in Lake Almanor is primarily for rainbow trout, *Oncorhynchus mykiss*, brown trout, *Salmo trutta*, and chinook salmon, *O. tshawytscha*. A warmwater fishery also exists for smallmouth bass, *Micropterus dolomieu*, and largemouth bass, *M. salmoides*. Sacramento perch, *Archoplites interruptus*, a California Department of Fish and Game species of special concern (Class 3) also occurs in the reservoir. A few adult Sacramento perch were collected along the face of the dam in studies conducted 1996, but none have been collected in any subsequent studies in this area. Wakasagi, or Japanese pond smelt, *Hypomesus nipponensis*, serve as forage for gamefish in Lake Almanor; wakasagi discharged from Lake Almanor through Butt Valley Powerhouse also provide a major food source for the trout fishery in the Butt Valley Estuary. Other fish species present known to have special forage value to bald eagles include carp, *Cyprinus carpio*, brown bullhead, *Ictalurus nebulosus*, tul chub, *Gila bicolor*, Sacramento squawfish, *Ptychocheilus grandis*, and Sacramento sucker, *Catostomus occidentalis*.

### North Fork Feather River

The main fishery in the NFFR below Canyon Dam is for rainbow trout. Brown trout, *Salmo trutta*, occur in small numbers and Sacramento sucker and sculpin, *Cottus sp.*, are also present (PG&E 2002).

### Amphibians and Aquatic Reptiles

Six sensitive amphibians and aquatic reptiles were considered to have potential for occurring in the UNFFR watershed and were addressed in the relicensing studies conducted in 2001 (PG&E 2002). More than 70 sites in the UNFFR watershed were surveyed for sensitive amphibians and aquatic reptiles. Survey methods used U.S. Fish and Wildlife protocols, with one pre-approved modification. The six target species identified included: northern leopard frog, cascades frog, California red-legged frog, mountain yellow-legged frog, foothill yellow-legged frog, and western pond turtle. No sensitive amphibian or aquatic reptiles were documented occurring in either Lake Almanor or the NFFR in the studies conducted in 2001 (PG&E 2002).

### Molluscs

Thirty-five sites were surveyed for sensitive molluscs in the UNFFR watershed in 2001, and the original survey methods are described in the application for new license (PG&E 2002).

# CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION

---

Two aquatic mollusc species, the mussel *Anodonta californiensis* (California floater) and the snail *Juga occata* (scalloped juga), were targeted during the UNFFR relicensing surveys because of their sensitive status and the possibility that they might exist in areas affected by the project. No sensitive mollusc species were documented during the UNFFR relicensing effort (PG&E 2002).

## **Project Effects on Aquatic Resources**

### **Fisheries**

Laydown and storage areas and other land-based activities for the project are expected to have little impact on aquatic resources. No aquatic habitat would be crossed, and erosion control measures will be used as necessary to prevent turbidity and siltation impacts to Lake Almanor and the NFFR. In-water construction is expected to take approximately 75 days (July 1 to mid-September, 2005). Disturbance of juvenile and/or adult smallmouth bass, salmonids, and other fish species in the near vicinity of the dam is expected to be minimal during this period, resulting from increased boat/barge and diver activity near the intake tower. Due to the depth (approximately 100 ft) of the water in the vicinity of the intake tower, no spawning habitat will be affected. Given the large size of Lake Almanor, it is expected that fish will tend to redistribute to other nearby parts of the lake.

Turbidity may increase both in the lake and downstream in the NFFR by an unknown amount, but is expected to be minimal and will be monitored (see Water Quality/Discharge section). If turbidities can be held below 25 NTU during this period, no significant adverse effects are anticipated. The other main source of potential impact is from the spill of gasoline or other oil related items into the lake. All gasoline and oil related products will be handled and stored using best management practices. Appropriate spill control measures/devices will be maintained on site to minimize impacts if a spill does occur.

### **Threatened or Endangered Species**

No state or federally listed threatened or endangered fish, amphibian, aquatic reptile, or mollusc species were found during relicensing surveys conducted in the UNFFR project vicinity, which included both lake Almanor and the NFFR, consequently, no impacts are expected.

## **Botanical Resources**

Two native vegetation community types, mixed conifer forest and montane chaparral, occur in the general vicinity of the Project, though neither occurs within the Project's zone of potential effect. A brief discussion of these plant communities follows.

### **Mixed Conifer Series**

This habitat is common near Butt Valley Reservoir and Lake Almanor. Dominant species in the tree layer include ponderosa pine, Douglas fir, incense cedar (*Calocedrus decurrens*), white fir (*Abies concolor*), canyon live oak, black oak (*Quercus kelloggii*) and bigleaf maple. The shrub and herb layer is poorly developed in the dense shade of the forest, limited to leaf litter and widely scattered saprophytes. Openings in the dense forest canopy, such as road

## CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION

---

replacement project. Figure 1 shows the locations of two sensitive plant species found within the general vicinity of the Project near Canyon Dam. Neither species is currently listed under the state or federal Endangered Species Act, but both are considered locally rare.

**Geyer's sedge** (*Carax geyeri*) -- A perennial, rhizomatous sedge occurring in turf-like clumps in mixed conifer forest, Geyer's sedge is a CNPS and Forest Service watch list species. Four new and known populations of Geyer's sedge were located by GANDA botanists in the project area: two known occurrences at Skinner Flat, and two new occurrences in the North Fork Feather River drainage approximately one-half to one mile downstream of the Lake Almanor dam. The populations closest to Skinner Flat may have been affected by logging activities and tend to extend along both sides of the access road. Vegetation at this site is dominated by Douglas fir and ponderosa pine. *Carax geyeri* plants were growing in association with *Arctostaphylos patula* and *Ceanothus cordulatus* in moderately thick pine duff.

**Starry clarkia** (*Clarkia stellata*) -- An annual herb in the family Onagraceae, flowering from April to June, *Clarkia stellata* is a Forest Service sensitive species. It is locally abundant in the Almanor region. Starry clarkia is usually associated with Sierran mixed conifer forest of *Pinus ponderosa*, *Abies concolor* and *Pseudotsuga menziesii*, and is frequently found on sunny road embankments or other open areas with an understory of *Senecio integerrimus* and *Ribes roezlii*. *Clarkia stellata* was found in abundance on the southeast shore of Lake Almanor, and along Butt Valley Reservoir Rd. Populations ranged in size from a few individuals to over 300.

### Project Effects on Botanical Resources

The Project area includes existing access from State Highway 89 and other existing secondary service roads. These provide direct access to the work site, boat launch and materials storage/laydown area. No additional new access routes are proposed. The materials storage and laydown area selected for use is located on level ground atop the existing dam, and consists only of ruderal vegetation annually managed for dam safety and inspection purposes (see Figure 2). All construction activities related to the outlet tower gate replacement will occur below the lake water surface behind the existing dam, and no change from normal reservoir operations is proposed during the work period. No new ground disturbance or removal of native vegetation will occur. Some surface disturbance within the materials storage/laydown area will result, affecting previously disturbed ruderal plant types found on the dam structure. Standard best management practices for control of erosion and runoff will be observed to protect water quality.

No sensitive plant species are known from the area within the Project's zone of potential effect.

### Wildlife Resources

Wildlife habitat in the immediate vicinity of the Project is generally lacking or of very low suitability because of the developed nature of the site (see Figure 2). Picivorous birds, including the bald eagle and the osprey, utilize Lake Almanor for foraging and stands of timber along or near the shoreline for nesting. These two species are discussed in greater detail below.

# **CANYON DAM OUTLET TOWER GATE REHABILITATION PROJECT DESCRIPTION**

---

## **Sensitive Wildlife Species**

### **Bald Eagle.**

The bald eagle is listed as a federal threatened species and by the state as an endangered species. In 2004, eight bald eagle nesting territories occurred on Lake Almanor. Only one bald eagle nest is in close enough proximity to potentially be affected by the proposed project. This nest, the Rocky Point bald eagle nesting territory, occurs about one mile northwest of the dam, and about one half mile northwest of the boat ramp. These eagles typically forage on the shoreline in front and to the north and west of their nesting territory. Thus, most foraging occurs at distances of over one mile from proposed construction activities.

### **Osprey.**

Ospreys are not listed under either the state or federal endangered species act and are not considered a sensitive species by Region 5 of the U.S. Forest Service. They are, however, listed as a species of concern by the State of California. Approximately ten osprey nesting territories occur within one mile of the proposed construction area. Four of these territories are within one-half mile of the proposed construction site. Osprey nesting activity generally occurs between the months of March and July with birds migrating and leaving the area in September. Young typically fledge from active nests in July. In general, osprey are far more tolerant to human activity than are bald eagles.

## **Project Effects on Sensitive Wildlife**

The activities of the proposed project are concentrated near Canyon Dam and are relatively small in scale and related noise effects. Since the closest bald eagle nest occurs over one mile from this area, and no important foraging areas are near the dam, the proposed project will not adversely effect bald eagle nesting at Lake Almanor.

Depending on the timing of the project, one or more osprey nests could be adversely effected by the proposed project. These effects could result in disturbance at the nest site for one breeding season, but would not be expected to result in permanent loss of habitat or effects beyond the year of construction.

## **REFERENCES**

CDFG (California Department of Fish and Game). 2004. California Natural Diversity DataBase, Natural Heritage Division, Sacramento, CA. Database version July 2004.

Pacific Gas and Electric Company. 2002. Upper North Fork Feather River Project FERC No. 2105, Application for New License. Final: October 2002. 8 volumes

## **FIRE HAZARD PREVENTION**

Fire hazard at the site will be low due to the low fire hazard type of construction activities involved with the modifications.

**CANYON DAM  
OUTLET TOWER GATE REHABILITATION  
PROJECT DESCRIPTION**

---

**HAZARDOUS MATERIAL**

Material such as fuel (gasoline/diesel), hydraulic oil, and motor oil, will be used on the job site and will be confined to the work vessels supporting the diving operations in properly sealed containers. Material Safety Data Sheets for all substances used on the job site will be on file at the job headquarters, as required by the Hazard Communication Law, General Industry Safety Orders, Sec. 5194, and will be available as necessary.

Hazardous waste products such as grease cartridges and oil absorbents will be placed in proper containers and transported from the job site to an approved landfill or disposal site. Construction crews will employ spill prevention and containment measures to ensure that deleterious materials do not enter the waters.

Trucks and construction equipment will be refueled by a refueling truck at the site.

**PERMITS AND AGENCY APPROVALS**

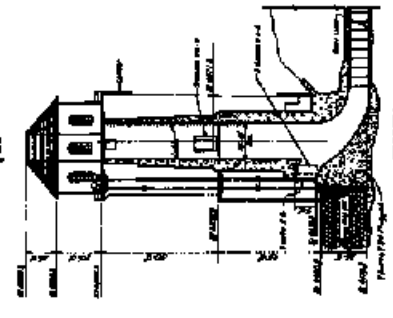
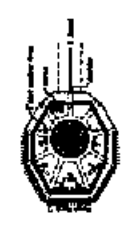
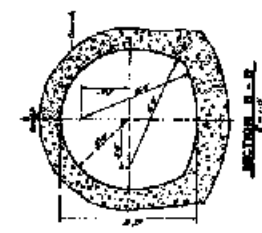
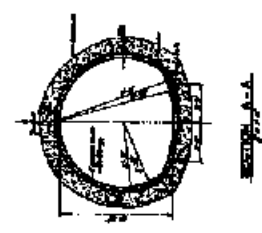
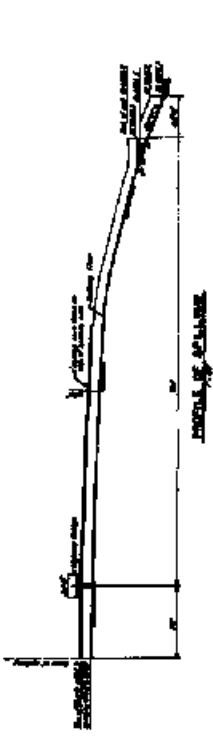
Permits will be acquired from the Federal Energy Regulatory Commission (FERC) and California Department of Water Resources Division of Safety of Dams (DSOD). A copy of this project description will be sent to the Regional Water Quality Control Board (RWQCB), US Forest Service (USFS), California Department of Fish & Game (CDFG), and Fish & Wildlife Service (FWS) for comments. FERC approval is required prior to start of any work.

---

**APPENDIX 1**

**Existing Drawing**





OUTLET TOWER

AS SHOWN ON THE OTHER SHEET

**EXHIBIT L-2**  
 ALLANBOR BRIDLEWAY AND OUTLET TUNNEL,  
 UPPER N. FORK TEAHEAR RIVER PROJECT  
 PACIFIC GAS AND ELECTRIC CO.

THIS DRAWING IS THE PROPERTY OF THE ENGINEER AND ARCHITECT. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER AND ARCHITECT.

*[Signature]*



Approved under the authority of the State of California, License No. 10000, State of California, Professional Engineer, State of California, License No. 10000, State of California, Professional Engineer, State of California, License No. 10000.

444883-1

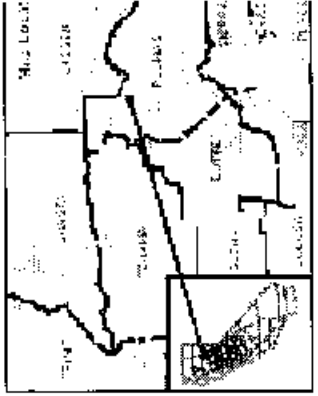
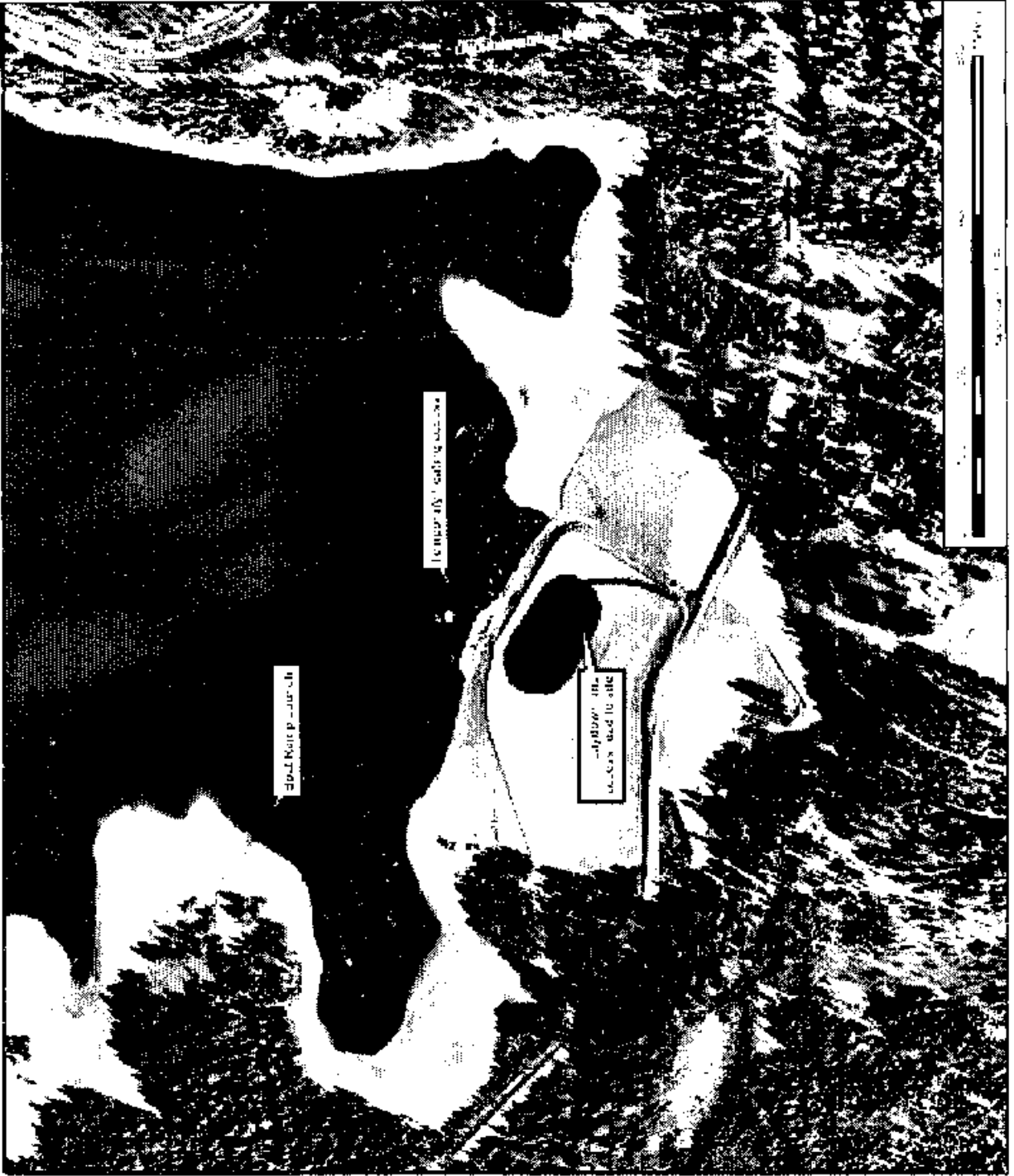
## **APPENDIX 2**

**Photographs of the existing outlet tower**

# **APPENDIX 3**

**Figures 1 and 2**





Carven Dam Outlet Lower Gate  
Rehabilitation Project

Figure 2  
Project Access