LATHAM & WATKINS LLP

850 Town Center Drive, 20th Floor
Costa Mesa, California 92626-1925
Tel: (714) 540-1235 Far: (714) 7556290
www.lw.com

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File No. 030137-0008

January 11,2008

VIA FEDEX

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 06-AFC-9
1516 Ninth Street, MS-4
Sacramento, California 95814-5512

Re: Colusa Generating Station Project: Docket No. 06-AFC-9

Dear Sir/Madam:

Pursuant to California Code of Regulations, title 20, sections 1209,1209.5, and 1210, enclosed herewith for filing please find a letter from Mark Hale, URS Corporation, to Brian Vierria, U.S. Army Corps of Engineers, dated October 22, 2007.

Please note that the enclosed submittal was filed today via electronic mail to your attention and to all parties on the CEC's current electronic proof of service list.

Very truly yours,

Paul E. Kihm
Senior Paralegal

Enclosure

cc: CEC 06-AFC-9 Proof of Service List (w/ encl. via e-mail)
Michael J. Carroll, Esq. (w/ encl.)

URS

October 22, 2007

Brian Vierria
United States Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Dear Mr. Vierria:

Application for Certification
Colusa Generating Station

E&L Westcoast, LLC (E&L Westcoast) has recently submitted an Application for Certification (AFC) with the California Energy Commission (CEC) for the development of a new power plant. The AFC is part of the CEC's licensing process that is equivalent to an Environmental Impact Report prepared under the California Environmental Quality Act (CEQA).

The proposed project is for the construction and operation of a nominal 660-megawatt combined cycle power plant in Colusa County, California. The site is located approximately 4 miles to the west of Interstate 5 and approximately 72 miles north of the city of Sacramento.

A cultural resources team from URS Corporation was retained by E&L Westcoast to identify historic resources within the project's Area of Potential Effects (APE) and assess potential impacts/project effects to historic properties resulting from project implementation. These efforts included archival research, consultation with local Native American groups and historical societies, intensive archaeological pedestrian surveys, and field surveys for historic architectural resources.

No National Register of Historic Places or California Register of Historic Resources eligible cultural resources were identified within the project's APE. As such, for purposes of CEQA, it was determined that the proposed project would not result in significant impacts to historic resources. Consequently, for purposes of Section 106 of the National Historic Preservation Act, we are requesting your concurrence with our recommendation that implementation of the

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1917
Tel: 415.896.5858
Fax: 415.882.9261

URS

proposed project will have no significant impact to historic resources and thus no effect to historic properties.

Submitted with this request are a number of attachments documenting our efforts and findings. These include the cultural resources section from the Preliminary Staff Assessment recently completed by the staff of the CEC for the currently proposed project, the cultural resources section from the current AFC, and the cultural resources section from an earlier submitted AFC also completed by URS for a similar project occupying the same project area. Associated with both these AFC sections are data requests from the CEC as well as our subsequent responses. This comprehensive package should adequately demonstrate how we arrived at our conclusion that implementation of the proposed project will have no effect to historic properties (i.e., no significant impacts to historic resources).

If you have any questions or concerns, please call me directly at (415)-243-3826 or contact me by e-mail at mark_hale@urscorp.com.

Very truly yours,

URS CORPORATION

Mark Hale
Senior Project Archaeologist

LIST OF ATTACHMENTS

Attachment 1	Cultural Resources Section, Preliminary Staff Assessment, Colusa Generating Station, California Energy Commission, July 2007
Attachment 2	Cultural Resources Section, Application for Certification, Colusa Generating Station, URS Corporation, November 2006
Attachment 3	Responses to CEC Data Requests of January 11, 2007, Data Requests 63 through 76, Colusa Generating Station, URS Corporation, February 12, 2007
Attachment 4	Responses to February 21, 2007 CEC Workshop Questions, Data Requests 28 through 30, Colusa Generating Station, URS Corporation, March 23, 2007
Attachment 5	Cultural Resources Section, Proposed Bridge Design Modification, Colusa Generating Station, URS Corporation, August 2007
Attachment 6	Responses to CEC Data Requests of September 20, 2007, Data Request 134, Colusa Generating Station, URS Corporation, October 12, 2007
Attachment 7	Cultural Resources Section, Application for Certification, Colusa Power Plant, URS Corporation, June 2001
Attachment 8	Responses to CEC Data Requests of August 22, 2001, Data Requests 49 through 60, Colusa Power Plant Project, URS Corporation, September 2001

ATTACHMENT 1

CULTURAL RESOURCES SECTION PRELIMINARY STAFF ASSESSMENT, COLUSA GENERATING STATION, CALIFORNIA ENERGY COMMISSION, JULY 2007

CULTURAL RESOURCES

Dorothy Torres

SUMMARY OF CONCLUSIONS

Staff has determined that the Colusa Generating Station project (CGS) would have no impact on known significant archaeological resources, historic standing structures, or ethnographic resources. Adoption and implementation of the proposed Conditions of Certification **CUL-1** through **CUL-7** would mitigate any impacts to newly discovered archaeological sites to below a level of significance. Staff's proposed Conditions of Certification would ensure that the proposed project's incremental effect is not cumulatively considerable.

INTRODUCTION

This cultural resources assessment identifies the potential impacts of the CGS to cultural resources. Cultural resources are defined under state law as buildings, sites, structures, objects, and historic districts Three kinds of cultural resources are considered in this assessment: prehistoric, historic, and ethnographic.

Prehistoric archaeological resources are those materials relating to prehistoric human occupation and use of an area. They may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human behavior. The prehistoric period began over 11,500 years ago and extended through the eighteenth century until 1769, the time when the first Spaniards settled in Alta California which is now called California.

Historic-period resources are those materials, both archaeological and architectural, usually associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, structures, trails or roads, artifacts, or other evidence of human activity. Under federal and state requirements, historical cultural resources must be more than 50 years old to be considered of potential historic importance; however, a resource less than 50 years may be historically important if the resource is of exceptional significance.

Ethnographic resources are those materials important to the heritage of a particular ethnic or cultural group, such as African Americans, Mexican Americans, Native Americans, or European, Asian, or Latino immigrants and their descendants. They may include traditional resource collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures.

For the CGS analysis, staff provides an overview of the environmental setting and history of the project area, an inventory of the cultural resources identified in the project vicinity, a consideration of the significance of those cultural resources, and an analysis of the effects of possible project impacts on those cultural resources, using significance criteria from the California Environmental Quality Act (CEQA). Where significant impacts to significant cultural resources, both known and not yet discovered, cannot be avoided, measures to mitigate the adverse effects on or loss of the resources are proposed. The

primary concerns are to ensure that all potential impacts to cultural resources are identified and that conditions are imposed on the project to ensure that any significant impacts are reduced to a less than significant level.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Projects licensed by the Energy Commission are reviewed to ensure compliance with all applicable laws. For this project, in which there is no federal involvement,[1] the applicable laws are primarily state laws, namely CEQA. Although the Energy Commission has pre-emptive authority over local laws, it typically ensures compliance with local laws, ordinances, regulations, standards, plans, and policies.

CULTURAL RESOURCES Table 1
Laws, Ordinances, Regulations, and Standards

Applicable Law	Description
State	
Public Resources Code, section 21083.2	The lead agency may require reasonable steps to preserve a unique archaeological resource in place. Otherwise, the project applicant is required to fund mitigation measures to the extent prescribed in this section. This section also allows a lead agency to make provisions for archaeological resources unexpectedly encountered during construction, which may require the project applicant to fund mitigation and delay construction in the area of the find (CEQA).
California Code of Regulations, Title 14, section 15064.5, subsections (d), (e), and (f)	Subsection (d) allows the project applicant to develop an agreement with Native Americans on a plan for the disposition of remains from known Native American burials impacted by the project. Subsection (e) requires the landowner [possibly the project applicant] to rebury Native American remains elsewhere on the property if other disposition cannot be negotiated within 24 hours of accidental discovery and required construction stoppage. Subsection (f) directs the lead agency to make provisions for historical or unique archaeological resources that are accidentally discovered during construction, which may require the project applicant to fund mitigation and delay construction in the area of the find (CEQA Guidelines).

[1] Cultural resources are indirectly protected under provisions of the federal Antiquities Act of 1906 (Title 16, United States Code, Section 431 et seq.) and subsequent related legislation, policies, and enacting responsibilities, e.g., federal agency regulations and guidelines for implementation of the Antiquities Act.

California Code of Regulations, Title 14, section 15126.4(b)	This section describes options for the lead agency and for the project applicant to arrive at appropriate, reasonable, enforceable mitigation measures for minimizing significant adverse impacts from a project. It prescribes the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project's impact on a historical resource; discusses documentation as a mitigation measure; and advises mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan (CEQA Guidelines).
Public Resources Code 5024.1	The California Register of Historic Resources (CRHR) is established and includes properties determined eligible for the National Register of Historic Places (NRHP)(criteria: A. events, B. important persons, C. distinctive construction, and D. data), State Historic Landmark No. 770 and subsequent numbered landmarks, points of historical interest recommended for listing by the State Historic Resources Commission, and historical resources, historic districts, and landmarks designated or listed by a city or county under a local ordinance. CRHR criteria are 1) events, 2) important persons, 3) distinctive construction, and 4) data.
Public Resources Code 5020.1 (h)	"Historic district" means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.
California Health and Safety Code, section 7050.5	This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
Local	
Colusa County General Plan	The Colusa County General Plan calls for the preservation of cultural and historical resources throughout the county. To promote preservation of these resources, the general plan establishes several objectives, including the preservation of historical buildings, landmarks, and places of historical significance; conservation of historical resources, including archaeological sites; and appreciation of the county's heritage through preservation of locally important historical sites. To meet these objectives, the county has adopted a series of policies related to the management of cultural resources.
Colusa County General Plan Policy CO-22	This policy calls for the preservation and re-use of historical sites and structures.
Colusa County General Plan Policy CO-23	This policy refers to application for landmark status or National Register listing of potentially eligible historical sites

Colusa County General Plan Policy CO-24	This policy requires cooperation with cities, agencies, and landowners in the preservation of cultural resources.
Colusa County General Plan Policy CO-25	This policy requires an archaeological survey prior to approval of any project that would involve ground disturbances where archaeological resources are known to be present.

SETTING

REGIONAL SETTING

The project area is located in the western Sacramento Valley approximately 70 miles north of the City of Sacramento. The Sacramento River is about 12 miles to the east of the project area, and low, north-south trending ridges that comprise foothills of the Coast Range begin about 8 miles to the west.

PROJECT, SITE, AND VICINITY DESCRIPTION

The proposed power plant, associated fuel, water, and electrical transmission lines, access road, and construction staging areas will be located in the northern part of rural unincorporated Colusa County. The site is approximately 7 miles north of the rural, farm community of Maxwell and 14 miles north of the community of Williams. The proposed site is adjacent to an existing Pacific Gas and Electric Company (PG&E) natural gas compressor station located four miles west of Interstate 5 and one mile west of the junction of Delevan Road and Dirks Road. The area reflects intensive agricultural activity characteristic of the western Sacramento Valley. The site lies between the Glenn-Colusa Canal, located 0.75 mile to the west, and the Tehama-Colusa Canal, located 0.5 mile to the east. Minor natural streams such as Hunters Creek and Funks Creek drain seasonal runoff from the foothills of the Coast Range eastward toward marshy lowlands of the Colusa Basin in the Sacramento Valley. Soils in areas proposed for new construction have been used historically for grazing and are otherwise largely undisturbed.

Refer to the **Project Description** section of this Preliminary Staff Assessment for additional information and maps of the project development region and the project area.

Prehistoric Setting

The project area lies near the prehistoric cultural area designated as the Delta subregion of the Central Valley, which is characterized by marshes and sloughs radiating from the confluence of the Sacramento and San Joaquin Rivers (Moratto 1984). The cultural sequence in this region includes three broad archaeological patterns. The earliest known sites belong to the Windmiller Pattern and date from 5,000 to 2,500 years ago. (Sites from earlier periods are probably buried under alluvial deposition brought on by warmer Holocene conditions and rising sea and stream levels.) Sites from between 2,500 and 1,500 years ago define the transitional Berkeley Pattern. Dating from 1,500 to about 120 years ago, the Augustine Pattern is the central California manifestation of the Late Period and represents the archaeological signature of speakers of the Wintuan language, such as the Patwin of the lower Sacramento Valley where the project area is located. Arrow points, harpoons, shell beads, and

ceramic items mark Augustine sites (Moratto 1984). Habitation sites would most likely be found along rivers and streams, with short-term camps and activity locations possible in any areas not subject to inundation.

Ethnographic Setting

California anthropologist Alfred Kroeber (1925, 1932) prepared the most complete ethnographic analyses of the Patwin, with a shorter synthesis later provided by Patti Johnson (1978). Journalist Stephen Powers recorded early, first-hand observations of the Patwin, referring to them by the group's term *pat-win* for man or person (Powers 1877).

The Patwin were organized into politically independent tribelets, each anchored by a permanent village and a number of smaller camps, most located along perennial streams. The closest known Patwin villages were situated along the banks of the Sacramento River approximately 14 miles east of the project area (Johnson 1978). Villages were located on high ground to avoid seasonal flooding and consisted of dome-shaped, earth-covered structures.

The Patwin were hunter-gatherer-fishers who depended on seasonally available plant foods (chiefly acorns) and a range of terrestrial and riverine animals. Salmon and sturgeon were caught with weirs; smaller fish were netted or speared. Hunters sought deer, elk, antelope, waterfowl, and turtles. Freshwater shellfish were collected along the edges of streams. Patwin material culture featured skillful basketry, tule balsa boats, flaked and ground stone tools, and items fashioned from shell, wood, and bone (Johnson 1978).

Historical Setting

The Spanish began to establish missions in Alta California in 1769, starting with Mission San Diego de Alcalá and ending in 1823 with Mission San Francisco Solano in Sonoma, the mission closest to the project area. After Mexico became independent from Spain in 1821, the missions were secularized (removed from Church control) by the Mexican government during the early 1830s. Former mission lands were granted to soldiers, prominent Mexican citizens, and other individuals for use as cattle ranches. However, neither Spanish nor Mexican control over the region resulted in substantial settlements near the project area. The earliest land grant in the area, known as the Larkin Children's Rancho, was located along the west bank of the Sacramento River and was conferred in 1844.

California became part of the United States in 1848 when the territory was formally ceded by Mexico in the Treaty of Guadalupe Hidalgo. The State of California was admitted to the Union in 1850, and Colusa County and the town of Colusa were founded that year. The town of Colusa (the county seat) was located on the Sacramento River, the principal means of transportation in the region prior to the arrival of the railroad in the 1870s. Barges and steamboats traveled the Sacramento River, bringing goods to rural stores and Gold Rush miners and returning to Sacramento with wheat and other produce (Marschner 2000). The arrival of the Southern Pacific Railroad spurred the founding of towns away from the river, such as Williams (1876) and Maxwell (1878).

Agriculture in the western Sacramento Valley prior to 1900 consisted mostly of wheat farming and was dependent on seasonal rainfall. Attempts at building an irrigation system in Colusa County began in 1887 with the formation of the Central Irrigation District. However, this district and its successors, the Central Canal and Irrigation Company and the Sacramento Valley Westside Canal Company, met with financial difficulties, and only a few miles of canals and other facilities were built. Construction of a major irrigation system was not successful until the early 1920s when the Glenn-Colusa Irrigation District purchased the assets of the Sacramento Valley Westside Canal Company and completed the 65-mile Glenn-Colusa Canal. The availability of abundant water along with relatively impermeable clay subsoil made rice farming practical. Rice is still the principal crop in the area.

The 1920s also saw development of large-scale hydroelectric transmission line systems in northern California, including the 140-mile-long Pacific Gas and Electric (PG&E) Pit-Vaca Dixon line that passes through the project area. This line brought hydroelectric power produced in Shasta County to the San Francisco Bay Area. This system was the first in the country designed to operate at 220-kV, rather than 110-kV.

The northern Colusa County region remains intensively agricultural today. Archaeological sites from the historical period that could be significant would include subsurface physical remains associated with occupation or operation of nineteenth century farms, ranches, and related features. Above-ground historical resources that could be significant include canals, transmission lines, and farm structures.

Resources Inventory

Methods: Literature/Records Search and Native American Contacts

Prior to preparation of the AFC, consultants to the applicant conducted a literature search and reviewed site records and maps at the Northwest Information Center of the California Historical Resources Information System (CHRIS) (Reliant 2001a). The records searches did not identify any previously recorded prehistoric or historic archaeological resources within one mile of the proposed project (the power plant and associated linear routes) (Hale 2001). The records search indicated that three previous cultural resources investigations have been conducted in or near the project area.

Consultants to the applicant also carried out research to identify historical resources more than 45 years old in the vicinity of the project. The Office of Historic Preservation recommends that 45 years should be used as a time frame for evaluating cultural resources rather than 50 years because some projects take several years to complete after they are permitted (OHP 1995).Their research included consulting local and state-wide record databases and contacting local libraries, historical organizations, and individuals at various Colusa and Glenn County offices, departments, and utility companies (E&L 2006a, p. 8.3-1; Reliant 2001a, p. 8.3-9).

Reliant Energy sent letters to Native Americans listed by the Native American Heritage Commission (NAHC) on February 28, 2001. The NAHC was contacted again on January 19, 2007, to request an updated list of Native Americans who may have heritage concerns in the project area. The NAHC was also asked to search their Sacred Lands File for any sites of cultural significance to the Native American community in the

vicinity of the CGS. A list of nine Native American groups or individuals was provided to the consultants on January 27, 2007, along with a negative search result of its Sacred Lands Files.

On February 7, 2007, an informational letter describing the proposed project was sent to each of the nine Native American groups or individuals listed by the NAHC. To date, one response has been received. Ren Reynolds of the Enterprise Rancheria of the Butte Tribal Council of the Estom Yumeka Maidu Tribe in Oroville, California, identified the project area as a known tribal traveling area and homeland. The Butte Tribal Council offered to provide tribal monitors, if needed, and requested that if any cultural resources are uncovered, all work cease until the find is examined by a professional archaeologist and tribal monitor.

On March 7, 2007, URS archaeologists, consultants to the applicant, made follow-up telephone calls to each of the groups and individuals on the list provided by the NAHC. When the individual was not available, a detailed voicemail was left describing the project and providing the name and contact information of URS archaeologists (URS 2007b, pp. 63-1, 64-1). As additional responses are received from the Native American community, they will be documented and provided to the Energy Commission.

The Energy Commission staff requested a list of Native American tribes and individuals that might have heritage concerns in the project area from the Native American Heritage Commission (NAHC) on December 18, 2006. The NAHC responded on December 21, 2006, with a list of 12 contacts for Colusa County. A sacred lands search of the project area failed to identify Native American cultural resources in the immediate project area. Energy Commission staff sent out letters to all 12 contacts on the NAHC list on December 26, 2006.

Ren Reynolds, EPA Site Monitor for Enterprise Rancheria, sent a letter dated January 22, 2007 responding to staff's letter. Mr. Reynold's letter identified the project site as a known tribal traveling area and homeland and offered tribal monitors to assist the project (Reynolds 2007).

At an Energy Commission Workshop on February 21, 2007, Steve Hackney, Colusa County Department of Planning and Building, indicated that Senate Bill 18 (SB18) should be considered because the project will require a general plan amendment. SB18 contains provisions that codify the participation of California Native American tribes in local land-use planning decisions through public hearings and consultation. Project planners therefore need to be aware of time considerations that may be triggered by SB18 regulations (URS 2007g, p. 28-1). SB 18 provides specific time frames that are necessary for the County to fulfill its obligations under the law. These time frames may slow the AFC process because the approval of the land use entitlements needs to occur before the Energy Commission certifies the project. For a more detailed discussion on the land use entitlements for the project read the **Land Use** section in this Preliminary Staff Assessment.

Methods: Field Surveys

The applicant conducted archaeological field surveys of the areas that could be directly impacted by construction of the CGS project and linear features such as transmission

lines, water supply pipeline, natural gas pipeline, and roadway improvements (E&L 2006a; Reliant 2001a). Staging areas were also surveyed. The surveys were conducted in March 2001 and October 2006. Soils within the area that may be affected or impacted other than those associated with the existing PG&E natural gas compressor station, are largely undisturbed, having been used historically for grazing. Ground visibility was characterized as excellent. No archaeological resources were identified as a result of the surveys (E&L 2006a, p. 3-13; Reliant 2001a, p. 8.3-13).

The applicant also performed an historic architectural resources survey (E&L 2006a, p. 8.3-13). The area that may be affected or impacted and included in the historic architecture survey consisted of all parcels within an approximate one-half-mile radius of the proposed power plant location and was conducted in August 2006 by Toni Webb, JRP Historical Consulting (JRP) Architectural Historian.

As a result of the survey for historic architectural resources and a previous survey in 2001, six resources were identified that appeared to be more than 45 years old (E&L 2006a, p. 8.3-15; E&L 2006a, Appendix J, p. 1 ; Reliant 2001a, p. 8.3-15; and Reliant 2001a, Appendix J). These consist of

- Two 230-kV transmission lines,
- the Glenn-Colusa Canal, part of the Delevan Unit of the Glenn-Colusa Irrigation District,
- ranch buildings in Assessor's Parcel Number (APN) 11-14-4,
- a farmstead in APN 11-22-1,
- the Teresa Creek Bridge, and
- a small animal feeder in APN 11-14-21.

The Tehama-Colusa Canal also runs through the area that may be affected or impacted, but was constructed circa 1965 (E&L 2006a, p. 8.3-9). It is less than 45 years old and is not a historical resource. The Tehama-Colusa Canal is not part of the Glenn-Colusa Irrigation District and is operated by the Tehama-Colusa Canal Authority.

The two 230-kV transmission lines run north to south through the project area and are owned by PG&E. The easternmost of the two lines is known as the Cottonwood-Vaca section of the Pit-Vaca Dixon 220-kV line, completed in 1922. The westernmost of the two lines is known as the Cottonwood-Vaca Dixon 220-kV line, completed in 1945. Both lines transmit electricity from the Pit 1 Powerhouse in Shasta County to the Vaca-Dixon substation located about 70 miles south of the project area. The 1922 transmission line was built by the Mount Shasta Power Company (which became a subsidiary of PG&E) and was designed by engineer Frank Baum. This transmission line was the first in the nation designed to operate at 220 - rather than 110-kV. The lines consist of steel towers, insulators, and conductors (connecting cables). The base of each tower flares outward and is supported by four legs. The upper vertical part of each tower supports three cross-arms with a hanging insulator at each end of each arm. Both lines were originally built as 220 - but JRP reports that the Cottonwood-Vaca line was structurally changed and reconductored in 1956. The Cottonwood-Vaca Dixon line has not been changed (URS 2007b, p. 69-1). Currently both lines appear to be 230-kV lines.

The Glenn-Colusa Canal is the main distribution canal for the Glenn-Colusa Irrigation District that provides water to 175,000 acres of farmland in the two counties. Most of the canal system was completed by the end of 1920. The canal begins near the town of Artois in Glenn County, where water is diverted from the Sacramento River, and runs south for about 65 miles, ending near the town of Williams. A segment comprising somewhat less than two miles of the Glenn-Colusa Canal is within the project area. The canal is unlined, and there is an earthen levee on either side. Unpaved maintenance roads run along the tops of both levees.

The project area is located within the Delevan Unit of the Glenn-Colusa Irrigation District. Infrastructure for the Delevan Unit that is in the project area includes interconnections, ditches, valves, concrete turnouts and gates, and a bridge across the canal at Dirks Road. Except for the Dirks Road bridge (built circa 1960), most of the infrastructure dates to the 1920s when the district was originally formed. It is likely that the Glenn-Colusa Irrigation District and the Glenn-Colusa Canal would be eligible for listing on the California Register based on the development of irrigation districts for the irrigation infrastructure of the Sacramento Valley. It is likely that they would be eligible under criteria 1 and 3, and a period of significance would need to be established (E&L 2006a, Appendix J). The proposed CGS project would replace the existing Teresa Creek Bridge, the Glenn-Colusa Canal Bridge and widen the Delevan/McDermott Intersection (E&L 2006a, pp. 3-20 to 3-21). These minimal changes would not cause a significant impact to the canal.

The ranch buildings on APN 11-14-4 are on a 360-acre parcel in Section 1. Structures and features on the property consist of three buildings, one collapsed building, one manufactured home, one water tank, and one abandoned truck with a mounted water tank. These buildings are not shown on a 1958 USGS quadrangle map, and no buildings are shown on this property on earlier maps, indicating that the structures were built circa 1960 or later. The applicant asserts that there is no evidence that the property would meet criteria for consideration G for resources that are less than 50 years old, but possess exceptional significance. Staff agrees with this assertion.

The farmstead at APN 11-22-1 consists of two houses, a barn, an automobile garage, a farm-vehicles garage, and a bunkhouse. This cluster of structures is located near the center of Section 6 southeast of the project site. Based on stylistic characteristics, all structures except the automobile garage appear to have been built circa 1945. The automobile garage appears to be less than 45 years old. It is likely that the farmstead was established in the 1940s for rice farming, as were many farms in the area. Many similar farms survive today (E&L 2006a, Appendix J). The applicant has recommended that the farmstead does not appear to be eligible for listing on the CRHR. Staff agrees with this recommendation.

The Teresa Creek Bridge is a wood bridge with concrete abutments on McDermott Road southeast of the project area. The wooden planks are paved with asphalt. The bridge was built in 1940 and repaired in 1959. The Teresa Creek Bridge would be demolished as a result of this project and a new bridge would be built in its place. The bridge is indirectly associated with rice farming and does not meet the criteria for category 1. No evidence was found that it would meet criteria for category 2 and it was built using a construction type that is commonplace and does not meet criteria for

category 3. The applicant asserts that there is no evidence to suggest that the bridge would meet eligibility criteria for CRHR listing (E&L 2006a, Appendix J, p. 14). Staff agrees with this recommendation.

The animal feeder is a portable wooden structure built on skids and located in parcel APN 11-14-21 in Section 1. It was likely to have been used to feed small animals because it appears to be the right size for calves or sheep (E&L 2006a, Appendix J). There is no evidence that the animal feeder would be eligible for CRHR listing.

Findings: Prehistoric and Historical Archaeological Resources Identified and Evaluated for Historical Significance

There are no recorded or known archaeological sites within the project area. The applicant's attempts to learn of locations of additional archaeological sites or historic structures from the California Historical Resources Information System, Colusa County Historical Society, and the Colusa County Historical Records Commission were negative (URS 2007b, Attachment 68-1).

The applicant's 2001 survey of the proposed CGS project area found no archaeological resources in those locations. Based on the negative results of the field survey for archaeological deposits and of the archaeological literature search, no known significant archaeological resources need to be considered when evaluating the impacts of the construction of the CGS.

Findings: Historic Structures Identified and Evaluated for Historical Significance

The applicant's 2001 and 2006 historical architectural surveys identified and recorded six historic-period architectural resources more than 45 years old in the vicinity of the proposed plant site including the two 230 kV transmission lines, the Glenn-Colusa Canal, a small animal feeder, a ranch building in Section 1, a farm in Section 6, and the Teresa Creek Bridge. With the exception of the transmission line and the canal, JRP has recommended that these resources are not eligible for CRHR listing (E&L 2006a, Appendix J p. i). Staff agrees with this recommendation.

JRP recommended that two resources, the segment of Pacific Gas & Electric Company's 230-kV transmission line and the Glenn-Colusa Canal and Irrigation District (GCID) resources have potential to meet National Register Criterion A and Criterion C. Both the transmission line and GCID features appear to be historical resources for the purposes of CEQA (E&L 2006a, Appendix J2, p. i). Based on JRP's findings, staff concurs that these historical resources would also be eligible for CRHR listing.

Findings: Ethnographic Resources Identified and Evaluated for Historical Significance

The NAHC informed the applicant that no known Native American cultural resources in the project area were found in the NAHC's sacred lands database. On February 7, 2007, the applicant sent letters (with maps of the project) to nine Native Americans the NAHC identified as concerned about development projects in Colusa County. The applicant also stated they would make follow-up telephone calls to the individuals or groups who had not replied.

To date, representatives of one group responded to the applicant's letters and/or telephone calls. The responding Native Americans did not identify any previously unknown ethnographic or archaeological resources in the vicinity of the project. The responses expressed the following (Enterprise Rancheria 2007):

- concern that the project area is a known tribal traveling area and homeland;
- desire to be notified if artifacts are found; and
- advice that, by law, the county coroner must be contacted if human remains are found.

LOCAL GOVERNMENT LAND USE ENTITLEMENT AND NATIVE AMERICAN TRIBE CONSULTATION – Senate Bill 18 (Chapter 905, Statutes of 2004) is an act that amended sections of the Civil and Government Codes.

The proposed project requires the following land use entitlements from the County of Colusa to be consistent with land use laws, ordinances, regulations, and standards:

- approval of a parcel map to create a 100-acre parcel from an existing 456-acre property;
- approval of a General Plan Amendment on the proposed 100-acre parcel to change the existing General Plan land use designation from Agriculture-General (AG) to Industrial (I);
- approval of a change of zone district on the proposed 100-acre parcel from Exclusive Agriculture (EA) to Industrial (M); and
- advise the Energy Commission, regarding the County's position concerning whether the County would approve a use permit to allow the operation of the power plant in the its M-Zone, and a height variance to the M-Zone's 50-foot height limitation to allow for the project's two175-foot tall heat recovery steam generator stacks (C of C 1989).

The Colusa County Planning Commission and Board of Supervisors are the preliminary and final county decision-making bodies on the general plan amendment, the change of zone district, and the parcel map requests, respectively. The approval of the land use entitlements needs to occur before the Energy Commission certifies the project. For a more detailed discussion on the land use entitlements for the project read the **Land Use** section in this Preliminary Staff Assessment.

Colusa County is required by statute to consult with Native American tribes as part of the General Plan Amendment process in accordance with General Plan Guidelines. Senate Bill 18, (Chapter 905, Statutes 2004) effective January 1, 2005, requires local governments to consult with tribes prior to making certain planning decisions, and to provide notice to tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of general plans and specific plans. The Governor's Office of Planning and Research has prepared "Tribal Consultation Guidelines," dated November 14, 2005, as a supplement to General Plan Guidelines. The Tribal Consultation Guidelines are available online at [http://www.opr.ca.gov/SB182004.html].

Unless further communication with Native Americans discloses sites of ethnographic concern, at this time no significant ethnographic sites have been identified.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

Various laws apply to the evaluation and treatment of cultural resources. CEQA requires the Energy Commission to evaluate resources by determining whether they meet several sets of specified criteria. These evaluations then influence the analysis of potential impacts to the resources and the mitigation that may be required to ameliorate any such impacts.

The CEQA Guidelines provide a definition of a historical resource as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR," or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." (Cal. Code Regs., tit. 14, § 15064.5 (a)). Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the NRHP and California Registered Historical Landmarks from No. 770 onward (Pub. Resources Code, § 5024.1 (d)).

Under the CEQA Guidelines, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old,[2] a resource must meet at least one of the following four criteria: is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, is associated with the lives of persons significant in our past (Criterion 2); or, that embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3); or, that has yielded, or may be likely to yield, information important to history or prehistory (criterion 4) (Public Resources Code section 5024.1). In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code of Regs., tit. 14, § 4852 (c)).

Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource as defined in Public Resources Code, section 5020.1 (j) or 5024.1. Whether a proposed project would cause a substantial adverse change in the significance of historical resources is the issue that staff analyzes to determine if the project may have a significant effect on the environment.

[2] The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

DIRECT/INDIRECT IMPACTS AND MITIGATION

In the abstract, direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic standing structures when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and when the new structures produce something harmful to the materials or structural integrity of the historic structures, such as emissions or vibrations.

Generally speaking, indirect impacts to archaeological resources are those that may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts when project construction creates improved accessibility, and vandalism and/or greater weather exposure become possible.

Ground disturbance accompanying construction at the proposed plant site and along the proposed linear facilities has the potential to directly impact archaeological resources, unidentified at this time. The potential direct, physical impacts of the proposed construction on unknown archaeological resources are commensurate with the extent of ground disturbance entailed in the particular mode of construction. This varies with each component of the proposed project. Placing the proposed plant into this particular setting could have a direct impact on the integrity of association, setting, and feeling of nearby standing historic structures.

Construction Impacts and Mitigation

Direct Impacts on Archaeological Resources and Proposed Mitigation

The applicant's record search revealed that there were no previously recorded properties located within 0.5 mile of the study area, and considered the area to have a low probability for archaeological resources. However, it is not clear whether archaeological resources have not been identified because there have been no surveys or whether there has been little human activity in the project area (E&L 2006a, p. 8.3-9). Native Americans, contacted for information regarding heritage concerns in the vicinity of the project, disclosed no archaeological sites in the project area, and the applicant's field survey of CGS impact areas found no archaeological resources.

Thus, staff agrees with the applicant that no significant known archaeological resources have been identified in any of the areas where the proposed project would be built. Consequently, no project-related construction impacts from the CGS that would materially impair the significance of known archaeological resources have been identified, and no mitigation would be required for impacts to known archaeological resources.

In recognition of the possibility that prehistoric archaeological deposits could be encountered during construction, CEQA advises a lead agency to make provisions for archaeological resources unexpectedly encountered during construction, and the project owner may be required to train workers to recognize cultural resources, fund mitigation, and delay construction in the area of the find (Pub. Resources Code, § 21083.2; Cal. Code Regs., tit. 14, §§ 15064.5(f) and 15126.4(b)). Consequently, staff recommends that procedures for identifying, evaluating, and possibly mitigating impacts to newly discovered archaeological resources be put into place by means of staff's proposed Conditions of Certification to reduce those impacts to a less than significant level.

Despite the expectation that the project area would be of low sensitivity for archaeological resources (URS 2007b, p. 74-1), the applicant has proposed a number of mitigation measures providing for the treatment of previously unknown archaeological resources discovered during CGS construction (E&L 2006a, pp. 8.3-18 to 8.3-19). These measures would include:

- The project would retain a qualified archaeologist prior to ground disturbance. The archaeologist would be a cultural resources specialist (CRS) responsible for implementation of **CUL-2**, **CUL-3**, and **CUL-4**.
- Prior to ground disturbance, the CRS would prepare a Cultural Resources Monitoring and Mitigation Plan (CRMMP).
- Prior to ground disturbance the CRS would prepare and conduct an employee training program.
- Construction monitoring would occur during ground disturbance as the CRS deems appropriate.

Although staff concurs with many of the applicant's suggested mitigation measures, staff has added additional recommendations or has expanded upon the applicant's recommendations to ensure that any and all impacts to cultural resources are mitigated below a level of significance. The applicant's proposed mitigation measures and staff's additional recommendations are incorporated into proposed Conditions of Certification **CUL-1** through **CUL-7**.

Direct Impacts on Historic Structures and Proposed Mitigation

No significant standing historic structures would be demolished for this project. The only significant historic structure located within the project impact area is the Cottonwood-Vaca Dixon transmission line. Construction of the power plant would affect the transmission line because the proposed project requires the removal of two, and alteration of up to four transmission towers.

The applicant states that the proposed CGS would not significantly affect either the integrity of setting or the integrity of material of the transmission line because the historic setting has already been altered and because the impact on the material condition of the line (replacing or removing at most four towers out of a total of 1,491) towers on the line, would be negligible. Staff agrees with the applicant's assessment, and concurs that the CGS construction and operation would not significantly affect the transmission line.

No project-related construction impacts to standing historic structures that would materially impair their significance have been identified, so no mitigation would be required for this class of cultural resources.

Direct Impacts on Ethnographic Resources and Proposed Mitigation

No ethnographic resources, either previously recorded or newly disclosed in the communications with Native Americans, were identified in the vicinity of the project. Consequently, no mitigation measures would be required for identified ethnographic resources.

Indirect Impacts

Indirect impacts to archaeological resources are those that may result from increased erosion due to site clearance and preparation, or additional access to an area that leads to vandalism or increased weather exposure. Neither the applicant nor staff identified any indirect impacts to cultural resources in the impact area of the proposed project, and so no mitigation of indirect CGS impacts would be required for any class of cultural resources.

Cumulative Impacts and Mitigation

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065(c), 15130, and 15355.) The construction of other projects in the same vicinity as the proposed project could affect unknown subsurface archaeological deposits (both prehistoric and historic). According to the Colusa County Planning Department, there are no known projects proposed or under construction within 0.5 mile of the proposed project site (URS 2007b, p. 73-1).Therefore, it does not appear that CGS would contribute to a cumulative impact. Project proponents for future projects in the area can mitigate impacts to as yet undiscovered subsurface archaeological deposits to less than significant by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated as significant (eligible for the CRHR or NRHP).

COMPLIANCE WITH APPLICABLE LORS

Implementation of staff's Conditions of Certification in this document will ensure that this project complies with all applicable state laws with respect to cultural resources. The County of Colusa has specific LORS that relate to cultural resources management, but they are not triggered by the resource findings for this project other than conducting an archaeological survey and compliance with CEQA. SB18 (Chapter 905, Statutes 2004) may trigger certain time considerations in the process of seeking a General Plan Amendment. As a result, the applicant should be aware of potential time constraints as the County complies with SB18.

The federal laws are applicable to permits or other actions that might be required by a federal agency. For example, federal laws would apply to the U.S. Army Corps of

Engineers permit process during replacement of the Teresa Creek Bridge because fill would be placed in potential non-wetland waters of the United States. The Corps of Engineers will ensure the application of federal laws as part of their permit process.

CONCLUSIONS

No archaeological resources were identified in the project area as a result of a records search and field survey. However, there is the potential for encountering as yet unidentified subsurface cultural resources during project construction. One above-ground CRHR-eligible resource, the Cottonwood-Vaca section of the Pit-Vaca Dixon 230-kV transmission line, will be impacted by the project, but the impact of removing two towers and replacing four towers and associated conductors will be less than significant.

Staff recommends that the Energy Commission adopt the following proposed cultural resources Conditions of certification **CUL-1** through **CUL-7**, These conditions are intended to facilitate the identification and assessment of previously unknown archaeological resources encountered during construction and to mitigate any significant impacts from the project on any newly found resources assessed as significant. To accomplish this, the conditions provide for:

- The hiring of a Cultural Resources Specialist, Cultural Resources Monitors, and Cultural Resources Technical Specialists;
- Cultural resources awareness training for construction workers;
- The archaeological and Native American (if needed) monitoring of ground-disturbing activities;
- The recovery of significant data from discovered archaeological deposits;
- The writing of a technical archaeological report on monitoring activities and findings; and
- The curation of recovered artifacts and associated notes, records, and reports.

When properly implemented and enforced, these Conditions of Certification will mitigate any impacts to unknown significant archaeological resources newly discovered in the project impact areas to a less than significant level.

PROPOSED CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, the project owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternates, if alternates are needed. The CRS shall manage all monitoring, mitigation, curation, and reporting activities required in accordance with these conditions of certification (conditions). The CRS may elect to obtain the services of Cultural Resource Monitor(s) (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes

recommendations regarding the eligibility to the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner (Discovery). No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction shall occur prior to CPM approval of the CRS, unless specifically approved by the Energy Commission Compliance Project Manager (CPM). Approval of a CRS may be denied or revoked for non-compliance issues.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in the Code of Federal Regulations, 36 CFR Part 61. In addition, the CRS shall have the following qualifications:

1. The CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field; and

2. at least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California

3. at least one year of experience in a decision-making capacity on cultural resources projects in California, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The resume(s) of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects. The resume(s) shall demonstrate to the satisfaction of the CPM that the CRS and alternate CRS have the appropriate education, and experience to accomplish the cultural resources tasks that must be addressed during pre-construction, site mobilization, ground disturbance, grading, construction, and operation.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. a BS or BA degree in anthropology, archaeology, historical archaeology, or a related field and one year experience monitoring in California, or

2. an AS or AA degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California, or

3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS
The resume(s) of any additional technical specialists, for example, historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

Verification:

1. At least 45 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.

2. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the approved new CRS the AFC and all cultural documents, field notes, photographs, and other cultural materials generated by the project.

3. At least 20 days prior to preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resource monitoring required by this condition. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to their qualifications at least five days prior to the CRMs beginning on-site duties.

4. At least 10 days prior to beginning tasks, the resume(s) of any additional technical specialists shall be provided to the CPM for review and approval.

5. At least 10 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources Conditions of Certification.

CUL-2 Prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, and confidential cultural resources reports for the project. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (for example, 1:2000 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities.

If construction of the project would proceed in phases, maps and drawings, not previously provided, shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week until ground disturbance is completed.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases. No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction shall occur prior to CPM approval of maps and drawings, unless specifically approved by the CPM.

Verification:

1. At least 40 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, the project owner shall provide the AFC, data responses, and confidential cultural resource documents to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

2. If there are changes to any project-related footprint, revised maps and drawings shall be provided at least 15 days prior to start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction for those changes.

3. If project construction is phased, if not previously provided, the project owner shall submit the subject maps and drawings 15 days prior to each phase.

4. On a weekly basis during preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, email, or fax.

5. Within five days of identifying changes, the project owner shall provide to the CPM written notice of any changes to scheduling of construction phase.

CUL-3 Prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching;, and construction, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CPM shall provide the project owner with a model CRMMP to adapt for project use. The CRMMP shall be provided in the Archaeological Resource Management Report (ARMR) format, and, per ARMR guidelines, the author's name shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner.

Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's onsite construction manager. No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. A proposed general research design that includes a discussion of archaeological research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention or disposal, and curation policies as related to the research questions formulated in the research design. A prescriptive treatment plan may be included in the CRMMP for limited resource types. A refined research design will be prepared for any resource where data recovery is required.

2. The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the conditions in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A."

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during ground disturbance, construction, and post-construction analysis phases of the project.

4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.

5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.

6. A description of all impact avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of construction and how long they would be needed to protect the resources from project-related effects.

7. A statement that all cultural resources encountered shall be recorded on a Department of Parks and Recreation (DPR) form 523 and mapped and

photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum.

8. A statement that the project owner shall pay all curation fees and a copy of an agreement with, or other written commitment from, a curation facility to accept artifacts from this project. Any agreements concerning curation shall be retained and available for audit for the life of the project.

9. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are encountered during construction and cannot be treated prescriptively.

10. A description of the contents and format of the Cultural Resource Report (CRR), which shall be prepared according to ARMR Guidelines.

Verification:

1. At least 30 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, the project owner shall submit the subject CRMMP to the CPM for review and approval. Preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; or construction may not commence until the CRMMP is approved, unless specifically approved by the CPM.

2. At least 30 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, a letter shall be provided to the CPM indicating that the project owner agrees to pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for approval. The CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. The CRR shall report on all field activities including dates, times and locations, findings, samplings, and analyses. All survey reports, DPR 523 forms, and additional research reports not previously submitted to the California Historical Resources Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as an appendix to the CRR.

If the project owner requests a suspension of construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension or extension request. The draft CRR shall be retained at the project site in a secure facility until construction resumes or the project is withdrawn. If the project is withdrawn,

then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification:

1. Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

2. Within 10 days after CPM approval, the project owner shall provide documentation to the CPM that copies of the CRR have been provided to the SHPO, the CHRIS, and the curating institution, if archaeological materials were collected.

3. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

CUL-5 Prior to and for the duration of preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training shall include:

1. a discussion of applicable laws and penalties under the law,

2. samples or visuals of artifacts that might be found in the project vicinity,

3. instruction that the CRS, alternate CRS, and CRMs have the authority to halt construction in the area of a Discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;

4. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources Discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

5. An informational brochure that identifies reporting procedures in the event of a Discovery;

6. An acknowledgement form signed by each worker indicating that they have received the training; and

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; or construction, shall occur prior

to implementation of the WEAP program, unless specifically approved by the CPM.

Verification:

1. At least 30 days prior to the beginning of preconstruction site mobilization, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval, and the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

2. On a monthly basis, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The project owner shall ensure that the CRS, alternate CRS, or CRMs monitor preconstruction site mobilization; construction ground disturbance; construction grading, boring, and trenching; and construction, full time at the project site and linear facilities, and ground disturbance full time at laydown areas or other ancillary areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner (Discovery).

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all earth-moving activities on the construction site or along the linear facility routes for as long as the activities are ongoing. Full-time archaeological monitoring shall require one monitor per active earth-moving machine working in archaeologically sensitive areas, as determined by the CRS in consultation with the CPM.

In the event that the CRS determines that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided or e-mailed by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resource activities and any instances of noncompliance with the Conditions and/or applicable LORS. Copies of the daily logs shall be provided to the CPM by the CRS if requested by the CPM. The CRS shall use these logs to compile a monthly summary report on the progress or status of cultural resources-related activities. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended. The CRS or alternate CRS shall report daily to the CPM on the status of cultural resources-related activities at the construction site and during ground disturbance for linears and other appurtenant facilities, unless reducing or ending daily reporting is requested by the CRS and approved by

the CPM. The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered noncompliance with these Conditions.

Upon becoming aware of the situation, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours of any incidents of noncompliance with the Conditions and/or applicable LORS. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Informational lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored.

Verification:

1. At least 30 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring and trenching; and construction; the CPM will provide or e-mail to the CRS reproducible copies of forms to be used as daily monitoring logs.

2. Each day that no Discoveries are made, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an email or in some other form acceptable to the CPM, unless the CPM has agreed to suspend reporting.

3. On a monthly basis, while monitoring is ongoing, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS. The summary report shall specify why monitoring has been suspended.

4. At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.

CUL-7 The project owner shall grant authority to halt construction to the CRS, alternate CRS, and the CRMs in the event of a Discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event that cultural resources over 50 years of age or, if younger, considered exceptionally significant are found, or impacts to such resources can be anticipated, construction shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. The halting or redirection of construction shall remain in effect until the CRS has visited the Discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the Discovery, or by Monday morning if the cultural resources Discovery occurs between 8:00 a.m. on Friday and 8:00 a.m. on Sunday morning, including a description of the Discovery (or changes in character or attributes), the action taken (that is, work stoppage or redirection), a recommendation of eligibility, and recommendations for mitigation of any cultural resources Discoveries, whether or not a determination of significance has been made.

2. The CRS has completed field notes, measurements, and photography for a DPR 523 primary form. The "Description" entry of the DPR 523 form shall include a recommendation on the significance of the find. The project owner shall submit completed forms to the CPM.

3. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the Discovery and has approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation and any necessary data recovery and mitigation have been completed.

Verification:

1. At least 30 days prior to the start of preconstruction site mobilization; construction ground disturbance; construction grading, boring and trenching; and construction, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt construction activities in the vicinity of a cultural resources Discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a Discovery, or by Monday morning if the cultural resources Discovery occurs between 8:00 a.m. on Friday and 8:00 a.m. on Sunday morning.

2. Completed DPR form 523s shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever is more appropriate for the subject cultural material.

REFERENCES

COC2007j - (County of Colusa General Plan). 1989. Colusa County Department of Planning and Building Administration.

E&L2006a - E&L, LLC / A. Welch (tn: 38511). Submittal of AFC for the Colusa Generating Station. Submitted to CEC/Docket Unit on 11/6/2006.

Hale, M. 2001. Report of Conversation. Submitted to the California Energy Commission, September 27, 2001. Docketed October 2, 2001.

Kroeber, A. L. 1925. *Handbook of the Indians of California.* Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C.

Kroeber, A. L. 1932. The Patwin and Their Neighbors. *University of California Publications in American Archaeology and Ethnology* 29(4):253-423. Berkeley.

Johnson, P. J. 1978. Patwin. In: *Handbook of North American Indians*, Vol. 8, California, edited by Robert F. Heizer, pp. 350-360. Smithsonian Institution, Washington, D.C.

Marschner, J. 2000. *California 1850: A Snapshot in Time.* Coleman Ranch Press, Sacramento.

Moratto, M. J. 1984. *California Archaeology.* Contributions by David A. Fredrickson, Christopher Raven, and Claude N. Warren. Academic Press, San Diego.

OHP – Office of Historic Preservation, Instructions for Recording Historical Resources. March 1995.

Powers, S. 1877. *Tribes of California.* Contributions to North American Ethnology 3. U.S. Geographic and Geological Survey of the Rocky Mountain Region, Washington.

Reliant2001a - (Reliant Energy Colusa County, LLC). Reliant 2001a. Application for Certification, Colusa Power Plant Project (01-AFC-10). Docketed July 6, 2001.

Reliant2001j (Reliant Energy Colusa County, LLC). Reliant 2001j. Responses to Data Requests of August 22, 2001. Dated September 12, 2001, and docketed September 13, 2001.

Reynolds2007 - Enterprise Rancheria/R. Reynolds, Response to Letter dated January 22, 2007. Submitted to CEC/Docket Unit on 2/1/07.

URS2007b - URS/D. Shileikis (tn: 39247). Data Responses to data requests, attachment 103-1, air quality-public health modeling files. Submitted to CEC/Docket Unit on 2/13/2007.

URS2007g - URS/ D. Shileikis (tn: 39765). Responses to Questions from 2-21-07 I.R. Workshop and Responses to Emerald Farms 2-21-07 Petition to Intervene. Submitted to CEC/ Docket Unit on 3/23/2007.

ATTACHMENT 2

CULTURAL RESOURCES SECTION
APPLICATION FOR CERTIFICATION, COLUSA GENERATING STATION, URS CORPORATION, NOVEMBER 2006

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8.3 CULTURAL RESOURCES

This section evaluates the effects of the proposed project on cultural resources. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect and target the management of cultural resources. These include:

- Antiquities Act of 1906;
- Historic Sites Act of 1935;
- Reservoir Salvage Act of 1960;
- National Historic Preservation Act of 1966;
- National Environmental Policy Act of 1969;
- Executive Order 11593 (Projection and Enhancement of the Cultural Environment, 5/13/1971);
- 36 CFR 800 and CFR 60 (Advisory Council on Historic Preservation: Protection of Historic and Cultural Properties, Amendments to Existing Regulations, 1/30/1979, National Register of Historic Places, Nominations by States and Federal Agencies, Rules and Regulations, 1/9/1976);
- Revisions to 36 CFR 800 (Protection of Historic Properties, 1/10/1986);
- Archaeological and Historical Preservation Act of 1974;
- American Indian Religious Freedom Joint Resolution of 1978;
- Archaeological Resources Protection Act of 1979;
- California Environmental Quality Act of 1970;
- Native American Graves Protection and Reparation Act of 1990.

Collectively, these regulations and guidelines establish a comprehensive program for the identification, evaluation, and treatment of cultural resources.

8.3.1 Affected Environment

An archaeological survey of the facility and all infrastructure routes was completed for the originally proposed facility in 2001 (URS, 2001). A subsequent archaeological survey was conducted of areas containing additional project components not included in the original inventory efforts in 2006 (Appendix J2). Consultation with the Colusa County Historic Records Commission, the State of California's Native American Heritage Commission (NAHC), and subsequent contact with Native American individuals identified by the NAHC was also completed. No significant archaeological resources were identified within the proposed project's Area of Potential Effects (APE). The specific boundaries of the archeological APE are shown on Figure 8.3-1.

A survey was conducted within the historic architectural APE to identify all historic architectural properties that were greater than 45 years of age for the originally proposed facility in 2001 (URS, 2001).

A subsequent survey for historical architectural properties was conducted of areas containing additional project components not included in the original inventory efforts in 2006 (Appendix J2). The historic architectural APE for this project was established in consultation with Gary Reinoehl (California Energy Commission), Denise Heick (URS Corporation), and Denise Bradley (Senior Landscape Historian, URS Corporation) on April 3, 2001. The APE consists of parcels of land that either border or contain project actions. Additionally, the project area was reviewed to identify any properties pre-dating 1957 that were within a one-mile radius of the proposed project site and that would have views of the proposed project facility; this was done to consider visual effects to historic architectural properties. See Figure 8.3-1 for the location of the historic architectural APE. A small area of land in the vicinity of the modern bridge over the Glenn-Colusa Canal was added to the original APE to encompass the bridge replacement as well as inventory potential historic architectural resources adjacent to the bridge. The area added to the APE is comprised of the parcels bordering the bridge replacement and road improvements.

8.3.1.1 Natural Environment

For a detailed description of the natural environment within which the facility is situated, the reader is referred to the appropriate sections of this document (e.g., Sections 8.2, Biological Resources, and 8.14, Water Resources).

8.3.1.2 Prehistoric Background

The CGS vicinity lies directly adjacent to one of the most intensively studied areas in California, the Sacramento/San Joaquin River Delta and adjoining sections of the Sacramento and San Joaquin valleys. Beginning in the last decade of the nineteenth century, avocational archaeologists recovered thousands of artifacts from numerous sites in the Delta vicinity. A general synthesis of these early works is found in Schenk and Dawson (1929).

The next series of excavations in the general region were conducted by student crews from Sacramento Junior College (SJC). Beginning in 1931, various sites adjacent to the Cosumnes River and Deer Creek confluence were excavated. Joined a few years later by crews from the University of California (UC), the SJC archaeologists continued their excavations within the Delta region. These efforts culminated in the milestone works of Lillard and Purves (1936) and Lillard, Heizer, and Fenenga (1939), both of which identified a sequence of cultural change within the Delta and adjacent vicinities.

The cultural sequence identified by Lillard and his colleagues (1936; 1939) contained three cultural periods (Early, Intermediate/Transitional, Late), which were based upon changes observed within the mortuary patterns and grave furniture recovered from their sample of sites. Lillard, Heizer, and Fenenga (1939) believed that the sequence represented a single cultural progression, the Early Period evolving into the Transitional Period, the Transitional Period evolving into the Late Period.

Nearly simultaneous with the early work in the Delta, archaeologists from UC began conducting excavations of sites located farther northward in the Sacramento Valley. Among the earliest of these was a series of excavations at three sites (CA-COL-1, -2, and -3) in Colusa County (Heizer, 1936; Heizer and Fenega, 1938; Heizer and Krieger, 1935-1936).

As more archaeological work was conducted within central California during the 1940s and 1950s, the cultural sequence developed by Lillard and his colleagues (1936; 1939) was refined and expanded to accommodate the additional data including that collected from COL-1, -2, and -3. The most significant of these revisions was Beardsley's (1954) Temporal and Areal Relationships in Central California Archaeology, in which the Central California Taxonomic System (CCTS) was formally developed.

Of relevance to the current investigation was Beardsley's supposition that "the flow of traits was northward from Cosumnes Province" to the inhabitants of the Colusa Province (1954:78). Beardsley was

not alone in this belief for in 1978 Elsasser made a similar statement when he claimed that the "Colusa District . . . seemed to be chiefly on the receiving end of influences exchanged back and forth between it and the Cosumnes District" (1978:45).

As archaeologists in central California began trying to incorporate their data into the CCTS, the limitations of Beardsley's system became apparent. Alterations to the CCTS began appearing in the literature of the discipline, with the doctoral dissertation of Fredrickson (1973) being of the most consequence.

After many debates and numerous revisions, the cultural sequence for the central California region, first defined by Lillard and his colleagues (1936; 1939), currently stands as follows:

Windmiller Pattern (ca. 3000 B.C. – 500 B.C.)

The artifact assemblage characteristic of this cultural manifestation includes a variety of flaked stone, ground stone, baked clay, and shell items reflecting exploitation of diverse subsistence resources and acquisition of materials from distant geographic areas through trade. The burial pattern of Windmiller cemeteries and grave plots is unique in that virtually all of the interments are ventrally extended, with the head oriented to the west. The primary exception to this burial pattern is that aged females were buried in a flexed position. Social stratification can be inferred from the burial practices of Windmiller peoples. Males appear to generally have higher status than females, as evidenced in their deeper and artifactually richer graves. Social status may have been at least partially inherited, for some female, child, and infant burials contained elaborate grave furniture, while others lacked such wealth (Moratto, 1984:201-207).

Berkeley Pattern (ca. 500 B.C. – A.D. 500)

The Berkeley Pattern represents a gradual shift in adaptation and material culture that appears to have originated within the San Francisco Bay region. The subsistence practices of Berkeley peoples differ from those of the Windmiller peoples in that the utilization of acorns for food seems to have increased dramatically. The reliance on acorns is evidenced in the increase in mortars and pestles recovered from Berkeley Pattern sites. Other differences in material culture include the occurrence of an extensive bone tool kit, unique knapping techniques, and certain types of shell beads and pendants within Berkeley Pattern sites. Burial practices of Berkeley peoples also differed from those of Windmiller Pattern sites. No longer were corpses placed into graves extended towards the west. Instead, Berkeley Pattern burials are flexed with variable orientation (Moratto, 1984:207-211).

Augustine Pattern (ca. A.D. 500 – A.D. 1880)

The Augustine Pattern reflects local innovation in technology, as well as the incorporation of new developments with traits of the Berkeley Pattern. The artifact assemblages of Augustine Pattern sites indicate an increased reliance on hunting, gathering, and fishing. Acorns appear to have become particularly important. Many burials continue to be flexed; however, cremation becomes the mortuary practice for high-status burials. Extensive trade networks developed to accommodate the resource and social needs of the burgeoning populations (Moratto, 1984:211-214).

8.3.1.3 Ethnographic Background

The present project area is situated within the ethnographic territory of the Patwin, who inhabited the western half of the lower Sacramento Valley and adjoining portions of the Coast Range (Figure 8.3-2). Their territory included the northern shores of Suisun Bay, the lower reaches of the Napa River, nearly the entire lengths of Cache and Putah creeks, and the Sacramento River between the present communities of Knights Landing and Princeton (Johnson, 1978; Kroeber, 1932, 1976).

Kroeber (1932, 1976) has provided the most complete ethnographic analyses of Patwin lifeways, while a very early account of the Patwin is found within Powers' (1877) study of California Indians. Johnson (1978) has synthesized the existing data and written a general account of this particular Native American group.

Powers stated that the Patwin were one of the largest nations of the state, yet they have no common government, and not even a name for themselves (1877:218). Typical of aboriginal California, among the Patwin the largest recognized political unit was the triblet. In general, a Patwin triblet consisted of a single primary and several auxiliary villages situated within a definable territory. Powers utilized the term *pat-win*, as it was a word which they all employed to signify man or person (1877:218).

Johnson (1978:350) does not identify any named villages within the general vicinity of the project area. The closest Patwin villages to the project area are situated approximately 14 miles to the east along the banks of the Sacramento River (Johnson, 1978:350).

Similar to other native Californians, the Patwin groups who inhabited the valley floors placed their primary villages atop high ground along the major watercourses. Structures in this region were generally dome-shaped and covered with earth (Kroeber, 1976; Powers, 1877).

A broad spectrum of plant and animal resources were consumed by the Patwin. Important plant foods included the ubiquitous acorn, various seeds, buckeye, pine nuts, numerous berries, wild grapes, roots, and bulbs. Many animals were hunted, including tule elk, deer, bear, numerous small mammals, turtles, waterfowl, and various other bird species. Among the animals not considered to be dietary fare were canines (dog and coyote), various raptors, frogs, reptiles, caterpillars, grizzly bears, and predator animals in general (Johnson, 1978:355).

Among the Patwin inhabiting the larger watercourses, fishing played a significant subsistence role. Anadromous runs of salmon and steelhead, as well as resident fish were taken. It is reported (Johnson, 1978:355) that the Patwin erected at least two fish weirs across the Sacramento River in the vicinities of the modern communities of Colusa and Grimes.

8.3.1.4 Historic Background

8.3.1.4.1 The Hispanic Period

As a result of the Cabrillo expedition of 1542-1543, the southbound passage of the Manila Galleon along the coast after 1565, and subsequent voyages of exploration by Drake in 1579, Cermmenho in 1597 and Vizcaino in 1602, the California coastline was familiar to navigators by the end of the sixteenth century (Donely et al., 1979). Conversely, exploration of the interior did not commence until the late eighteenth and early nineteenth centuries.

The Spanish annexation and colonization of Alta California, as manifested in the religious-military mission system, produced profound changes in the cultures of the indigenous population. Missions were established in Northern California at San Jose, San Francisco (San Francisco de Asis), San Rafael, and Sonoma (San Francisco Solano). The missions resettled and concentrated the aboriginal hunter-gatherer population into agricultural communities. The Mission tribes were christianized and converted to a form of peasantry which was in rapid decline in Europe.

Following the depletion of the local coastal aboriginal groups, the missionaries turned to Northern California's interior for neophytes. Among the groups recruited during this second wave of proselytization were the Patwin. Patwin neophytes have been identified within the baptismal records of the missions at San Francisco, San Jose, and Sonoma (Johnson, 1978).

Jurisdiction over Alta California was established by Mexico in April 1822. During the Mexican Period (1822-1848), control over this remote area by the central and local Mexican authorities was never strong. Rather, the Mexican Period was one of a slow disintegration of control by the Mexican government. In 1833, the mission lands were secularized, expropriated, and given out as private ranches during the next decade in the form of land grants (Donely et al., 1979). The project area does not appear to have been part of any Mexican land grant, the closest being the Larkin Children's Rancho which was established in 1844 along the western bank of the Sacramento River (Hoover et al., 1990:47).

8.3.1.4.2 The American Period

A major factor leading to the disintegration of Mexican control of California was pressure from the United States. Initial contacts were made by private citizens, such as the November 1826 visit by Jedediah Smith to the San Gabriel Mission, the 1827 trek of James Ohio Pattie, and the 1832 stop by Ewing Young at Los Angeles. These and other sojourners brought the news of California back to the United States, helping trigger the immigration of U.S. citizens into California. The Mexican Government became increasingly agitated by the continued influx of U.S. citizens into California. The semi-official 1844 and 1845 expeditions into California by John Charles Fremont further distressed the Mexican Government (Beck and Haase, 1974).

The Patwin were also greatly impacted by these early American intrusions into the region. In 1827, Jedediah Smith led a party of trappers through the Patwin territory before embarking upon his famous journey across the Sierra Nevada (Beck and Haase, 1974). Smith was quickly followed by others, including a group of trappers from the Hudson Bay Company who entered the region in 1832. Infected by malaria, these trappers spread the disease among the aboriginal communities of the region. It is reported that this pestilence often killed the inhabitants of entire villages (Cook, 1955; Powers, 1877). Cook (1955) estimates that up to 75 percent of the population perished as a result of diseases introduced by nonnative peoples.

Those Patwin who survived the epidemics were then subjected to the mass incursion of Euro-Americans into the region following the discovery of gold at Sutter's Mill in 1848. In response to a lumber shortage, John Sutter opened a sawmill in the Sierra Nevada foothills, operated by John Marshall. Marshall selected a location for the sawmill on the South Fork American River, about 45 miles northeast of Sutter's Fort. During final stages of completion of the mill's tailrace, Marshall discovered gold. Attempts to keep the discovery silent were unsuccessful (Hoover et al., 1990:72). By the middle of 1848, word of the find was spreading like wildfire and the rush for gold was on, changing forever the character of the state. From a non-Indian population of about 14,000 in 1848, California's population jumped to nearly 100,000 by the close of 1849, and to over 220,000 by late 1852 (Paul, 1965:17-21, 25).

Native peoples were no longer viewed as a source of labor as during the mission era, but instead as obstacles to progress. During the gold rush period, the wholesale removal of the Patwin from their lands began (Johnson, 1978; Schwaderer, et al., 1979). Subsequently, the Patwin living in the southern portion of their territory became so overwhelmed by the diseases and encroachment of the Euro-Americans, that by 1923-1924 Kroeber could not identify any living members in this region (Johnson, 1978:352).

The continued friction between Mexico and the United States ultimately led to the Mexican War of 1846-1847. California became part of the United States in 1848 when the territory was formally ceded in the treaty of Guadelupe Hidalgo following the U.S. victory over Mexico (Beck and Haase, 1974; Bethel, 1969).

The State of California was admitted to the Union in 1850, and by 1851, 27 counties were established. Among the original counties was Colusa County, in which Monroeville was the original county seat. Monroeville was established on the ranch of Uriah P. Monroe, on the old Rancho Capay. Monroe settled here during the early years of the Gold Rush, and in 1851, Monroeville was selected as the seat of Colusa

County. By 1853, the seat was moved to Colusa and Monroeville was abandoned to become agricultural land (Francis and Huberland, 1999:13; Hoover et al., 1990:80).

The development of the mining industry in California, along with the rapid population growth, led to shortages of raw materials and food. Besides mining, other industries soon developed to meet the needs of the miners and growing population centers, including lumbering, ranching, and agriculture. Much of the Sacramento Valley and surrounding foothills consisted of open range upon which large herds of cattle and sheep could be raised. At first, uncontrolled grazing was common; however, the prime agricultural land was soon fenced, and livestock was moved to higher ground.

Among the early American agriculturalists in the project vicinity was Dr. Hugh J. Glenn, who came in 1849 to California from Missouri. Glenn worked the gold camps of the American River for a time, returned home, and brought his family to California. In 1867, Glenn purchased 7,000 acres of Rancho Jacinto from Isaac Sparks. He added more property to his holdings, and by 1874 owned some 55,000 acres, including 41,000 acres planted in wheat. Glenn ultimately became known as the "Wheat King of the West" (Hoover et al., 1990:95).

In March 1891, a portion of Colusa County was removed to become Glenn County, with the county seat established at Willows. Glenn County was named in honor of Dr. Glenn, while Willows was named for a willow pond or spring that represented one of the few watering places in the plains east of Stoney Creek (Gudde, 1969:365). This stand of willow trees grew along a portion of Willow Creek and was visible from a great distance, serving as a landmark for travelers in the area. The town of Willows was established in 1876 by W. Johnson and M. Hickheimer, who built a store at the watering place. In 1878, the Southern Pacific Railroad was built to Willows, and a post office was established in 1880 (Francis and Huberland, 1999:13; Hoover et al., 1990:97; White, 1979).

Closer to the project area is the small agricultural community of Maxwell. This town, established in 1878, was named for early resident George Maxwell (Gudde, 1969:196). Also situated nearby are the remnants of the community of Sites. According to Gudde (1969:312), the town was named in 1887 by C. E. Grunsky after local landholder John H. Sites.

8.3.1.4.3 Irrigation and the Development of Colusa County

The project area is located to the west of the small town of Delevan. The history of this area is also related to the development of ranching, farming, and irrigation within the west Sacramento Valley. In 1849, the gold rush brought miners to the area, many of whom stayed once they were unable to make a living searching for gold. They found that the climate made the Sacramento Valley amenable to farming, but seasonal water supplies limited the crops to dry farming, primarily wheat, and ranching.

By the 1880s, wheat farming had become less profitable for several reasons. First, the intensive dry farming was beginning to deplete the soil, and crops were thinning. Second the completion of the transcontinental railroad reduced the West's dependence on locally grown wheat. Finally, a drought in 1898 drove many farmers to abandon farming and the Sacramento Valley.

William S. Green, one of the founders of Colusa, envisioned revolutionizing agriculture in the area by constructing a major canal that would divert water from the Sacramento River to the farms along the western side of the Sacramento Valley. Not all landowners in the area were convinced of the need for a canal, but the passage of the Wright Irrigation District Act on March 7, 1887 by the state legislature encouraged the formation of irrigation districts by giving them powers similar to those of municipalities. On November 22, 1887, the Central Irrigation District was founded in Colusa County (as described above, Glenn County was part of Colusa County until 1891) and construction on the Central Canal began.

Litigation over rights-of-way soon hampered the project, construction stopped, and portions of the canal were not built. The fate of the Central Irrigation District was not unique; most of the forty-nine districts proposed under the Wright Act were never completed (Davis, 1984: 13-15). In 1897 a new law, the Bridgeford Act, was adopted that made forming irrigation districts easier. In 1903 the Central Canal and Irrigation Company purchased the works, with the hopes of irrigating a smaller area. Despite its progress on the canal, the Central Canal and Irrigation Company had financial troubles similar to those of the Central Irrigation District (JRP and Caltrans, 2000: 23).

On June 15, 1909, the Kuhn banking firm from Pittsburgh founded the Sacramento Valley Irrigation Company, which purchased the Central Canal and Irrigation District (Davis, 1984: 30). After the Kuhn bank failed in 1915, the Sacramento Valley West Side Canal Company was in receivership with the State Railroad Commission fixing the rates. During these years farmers discovered that rice could be grown on the alkaline and heavy clay soils. However, the fields had to be flooded during the growing season, a practice that required massive amounts of water.

Although it demanded lots of water, rice farming was attractive to many farmers, because prices were high due to a tremendous demand caused by World War I. Unfortunately, the existing irrigation system was inadequate to meet the increased demand, and the State Railroad Commission would not increase rates to pay for expansion (Davis, 1984:63).

During this period, several other counties in the Sacramento Valley were organizing irrigation districts. By 1929, there were 15 irrigation districts in the valley between Sacramento and Redding. Over half of these were constructed between 1916 and 1919 during the years of the great expansion of the rice industry (Supplement Report). Landowners within the boundaries of the Central Irrigation District also organized and had the goal of purchasing and then expanding the system. A committee named the organization the Glenn-Colusa Irrigation District. Although some landowners protested the purchase (and the fees that would be levied), the organization overcame opposition through legal means and purchased the system from the Sacramento Valley West Side Canal Company for $1,000,000 in 1920 (JRP and Caltrans, 2000:23).

The canal was finally finished, but the weather and the economy combined to deal the district a serious blow. In 1920, rice crops were lost due to an early and continuous rain that resulted in the "Crash of 1920." Ten years later, the Great Depression further devastated farmers. Holders of poorer lands increasingly were delinquent on their payments to the irrigation district, Reclamation District 2047, and taxes to the county. Those unable to pay lost their land. The irrigation and reclamation districts became rich in land but poor in fees. In the late 1930s, Charles Lambert headed the reorganization of district lands and the sale of the property back to farmers at low prices. Options to buy went first to those who had lost their lands. World War II increased demand for grains, and once again rice was a profitable crop. The war years were a period of growth for the towns of Colusa County. Many of the farming structures with the project area were built at that time.

In the 1950s, the Bureau of Reclamation constructed the Shasta Dam and questioned Glenn-Colusa Irrigation District's water rights. Litigation ensued and the Secretary of the Interior finally settled the disagreement in 1964 in favor of the district. In the 1960s, agriculture continued to be the major industry in Glenn and Colusa counties. Gross receipts in Colusa County in 1965 were $29,786,500 from field crops, followed by fruits and nuts at $6,123,000, and livestock at $5,431,000 ("Map of Colusa County California, Colusa County Chamber of Commerce" 1966). Today the land surrounding the project area is used for rice farming and for growing all types of vegetables.

8.3.1.4.4 Electric Power Transmission

The earliest hydroelectric generating plants in the United States were built in the 1880s and 1890s. These were generally of two different types. In the eastern United States, steam-powered generating plants

provided most of the power, with the remainder provided from hydroelectric facilities. Both types of plants were located near the consumers of electricity and required short transmission lines with low voltages. In the west, hydroelectric plants provided a much greater share of electric power. However, these hydroelectric plants were located far from cities — in California, they were in the Sierra Nevada — and required long transmission lines with high voltages. For new transmission lines to operate successfully at greater distances, new technologies were developed.

In the 1890s, systems were built that were generally 10 to 20 miles long. In 1899, an 83-mile-long line was built in southern California, and in 1900, a 142-mile-long system was built from the Sierra Nevada to Oakland. By 1915, at least two lines were over 200 miles long. This early period of hydroelectric development culminated in more efficient transmission systems in the early 1920s, among the first of which was the transmission line from the Pit 1 power plant in Shasta County to the Vaca-Dixon substation in Solano County. This line was built southwest from Pit 1 to the Cottonwood substation near Redding. From Cottonwood, it ran south, through the APE for this project in Glenn and Colusa counties to Vaca-Dixon.

At Vaca-Dixon, the power was fed into the San Francisco Bay area distribution systems.

> "To carry power from the Pit River to users in the San Francisco Bay Area, engineer Frank G. Baum designed a 220,000 volt transmission system. It is more efficient to transmit electricity over long distances at high voltages, but the power is also more difficult to control. Baum designed PG&E's Pit River project as a 220 kV system from the outset with all of its components arranged to handle voltages that had not yet been tested commercially. When Pit 1 first went on line its output, combined with that of the Hat Creek plants, went out at 110 kV, matching the voltage of existing PG&E high tension lines. Voltage was stepped up to 175 kV in 1923 (?) [sic], to 220 kV after the 70,000 kw line went in. At the time it started up, its machinery was similar to that of scores of other plants built throughout the country in the late 1910s and 1920s, except in one respect — it was larger than most, and in particular, its transmission system operated at a record voltage.
>
> Since it was completed, changes to Pit 1 and its parts have been relatively minor. The most significant changes were made in 1946 when a new dam and a second intake were built creating a forebay to store water for use in times in high demand.
>
> The larger Pit River system was expanded with the construction of Pit 3 in 1925, followed by several other plants, all downstream of Pit 1. In 1967, a new substation was built at Round Mountain in the lower Pit River valley as part of the development of an intertie system linking northern and southern California with transmission lines of increased capacity. This ended the original relationship between Pit 1 and the Vaca-Dixon substation" (Hay and Corbett 1992, Appendix Historic Resources Inventory Form for the Pit No. 1 Power Plant: 4-5)."

8.3.1.5 Resources Inventory

The methods utilized to inventory the CGS project area for archaeological resources consisted of archival research, Native American consultation, and a pedestrian reconnaissance of the entire project APE (Figure 8.3-1). Appendix I contains Native American consultation correspondence.

The methods utilized to inventory the CGS project area for historic architectural resources consisted of archival research, contact with local agencies, and a site survey of the entire project APE (Figure 8.3-1). Appendix J contains a Historic Architecture Report prepared in 2001 and an update prepared in 2006.

8.3.1.5.1 Archival Research

8.3.1.5.1.1 Archaeological Resources

Archival research included a literature review and record search of ethnographic and historic literature and maps, federal, state, and local inventories of historic properties, archaeological base maps and site records, and survey reports on file at the Northwest Information Center at Sonoma State University. The Information Center serves as a regional office of the State Historic Preservation Office. The purpose of the record search was to ascertain whether any cultural resources had been previously identified within or adjacent to the project area and to identify any previous archaeological investigations that may have included the current APE.

The record search revealed that no archaeological resources have been previously recorded within the current APE. It appears that various portions of the CGS project APE have been subjected to archaeological investigations on three previous occasions (Figure 8.3-3). Unfortunately, the exact portions and to what extent is unclear. It is also unclear whether the lack of archaeological resources within the APE is the result of not having been previously inventoried or due to a lack of past human activities within the general vicinity.

This confusion is the result of the lack of detailed project area descriptions, survey methodologies, and/or project maps in two mid-1960 inventory reports. The initial investigation was completed by Brigham Arnold in 1964 in association with the construction of the PG&E Canadian Gas Line through California. The records on file at the information center warn that the boundaries of this study, as depicted on their base maps, are approximate and that it is unclear whether the survey included all sections of the gas line. Furthermore, it is unclear whether the current APE was included in the Arnold (1964) inventory. If the current project area was a part of that investigation, a corridor approximately 800 feet wide within the eastern portion of the APE was previously inventoried for archaeological resources.

A second, nearly contemporaneous survey, was completed in 1965 by Treganza, Edwards, and King in advance of construction of the Tehama-Colusa Canal. Much of the current APE may have been inventoried for archaeological resources during this investigation; however, similar to the Arnold (1964) study, project boundaries on the information center base maps are approximate as a result of the small scale of the project maps included in the original report. It is also unclear whether the entire canal corridor or just select areas were examined. If the Treganza, Edwards, and King (1965) study did include the current project vicinity, the western half of the current APE was inventoried for archaeological resources.

Most recently, a small portion of the current APE was inventoried for archaeological resources by Infotec Research, Incorporated and Biosystems Analysis, Inc. (IRI and BAI, 1990) during their survey of the PGT-PG&E Pipeline Expansion Project. Specifically, the extreme southern end of the utility corridor extending southward from the southeast corner of the PG&E Compressor Station to the southern edge of the APE was included in the IRI and BAI investigation.

As mentioned above, no archaeological resources have been previously identified within the current APE.

8.3.1.5.1.2 Historic Architectural Resources

Research was conducted for three different purposes: preliminary research, research for the historical overview, and research on the individual properties. Historic research conducted by URS in March and April 2001 (Appendix J1) was supplemented by historic research conducted by JRP Historical Consulting in August and September 2006 (Appendix J2).

Preliminary research included a literature review and record search of historic literature and maps, federal, state, and local inventories of historic properties. The following list includes libraries, other repositories, and sources of information that were consulted or contacted and the subjects that were researched:

- Colusa County Agricultural Agency for rice farming history.
- Colusa County Assessor's Office, Colusa, California for APN maps and information.
- Colusa County Historical Commission (Kathy Moran) for Colusa County history.
- Colusa County Planning Department, Colusa, California for building permits.
- Colusa County Public Records, Colusa, California for background information on area and the Glenn-Colusa Canal.
- Colusa County Public Works Department (Jon Wrysinski) for Colusa County history, including bridges and rice farming.
- Colusa County Recorder (Wylie Anderson) for survey and subdivision maps.
- Christopher Doerr (Garcia & Associates) for a report on an evaluation of a portion of the transmission line from Pit 1
- Earth Sciences Library, University of California, Berkeley for historic maps.
- Glenn-Colusa Irrigation District, Willows, California (Ben Tennock) for information on the Glenn-Colusa Canal and Glenn-Colusa Irrigation District (GCID) and general history of the region and a map of the Delvan Unit of the GCID
- Glenn County Assessor's Office, Willows, California for APN maps and information.
- Glenn County Planning Department, Willows, California for building permits.
- Pacific Gas & Electric Company (Stan Mishoika) for history of transmission lines.
- San Francisco Public Library for information on Colusa County history.
- State Board of Equalization Assessors Office for information on transmission lines.
- Water Resources Archives, University of California, Berkeley for information on the Glenn-Colusa Canal.

The following list includes persons or agencies that were contacted but from which a reply was not received:

- Depue Warehouse Company (Kevin Dennis), for a history of the rice warehouse in Delevan.
- Emerald Farms (Allan Etchepare), for information on the farm located within the APE.
- Holthouse Water District, for district history.

- Pacific Gas & Electric Company (Jim Clausen), for information on the bridge over the Glenn-Colusa Canal at Dirks Road.

Additionally, the book *Where Water Is King: The Story of Glenn-Colusa Irrigation District* by Cynthia F. Davis (1984) provided an excellent source of information and contextual history for the development of the area and the Glenn-Colusa Irrigation District. The newly revised *Water Conveyance Systems in California, Historic Context Development and Evaluation Procedures* prepared jointly by JRP Historical Consultants and the California Department of Transportation (2000) was consulted for contextual information on irrigation districts and for the evaluation of the Glenn-Colusa Canal and GCID.

The portions of the 230 kV transmission lines that are located within the APE for this project are part of a larger system that historically delivered electricity from the Pit 1 Power Plant to the San Francisco Bay area via transmission lines that ran from Pit 1 to the Cottonwood Substation and then to the Vaca-Dixon Substation. This line was online by 1922. *National Register of Historic Places and California Register of Historical Resources Evaluation of CA-SHA-2939-H and CA-SHA-2920-H, Shasta County, California* (Hair, 2000) evaluated a segment of the 230 kV transmission line (Trinomial CA-SHA-2939-H) that runs from the Pit 1 Power Plant to the Cottonwood substation, approximately 59 miles away. This report was consulted for information on its historical context, evaluation of the transmission line, and references and for information on the plans for the original transmission towers used in the ca. 1920 construction, contained in Appendix C and labeled as "Pit River 220,000 Volt Transmission Line, Mt Shasta Power Corp (PG&E Co)." These plans were designed by Frank G. Baum, Chief Engineer with PG&E. Two of the plans — "Standard Tower, 220 K.V. Transmission Line" and " "Type 'M' Tower, 222K.V. Line" — appear similar to the towers located within the APE for the CGS project.

The transmission line from Pit 1 to the Cottonwood Substation (Trinomial CA-SHA-2939-H) was found to be significant under National Register of Historic Places (NRHP) Criterion A and California Register of Historical Resources (CRHR) Criterion 1 "because of the significant effect the Pit 1 Hydroelectric Development had on the development of the San Francisco Bay region" and under NRHP criterion C and CRHR Criterion 3 "for its revolutionary engineering feat of transmitting high voltage electricity over a great distance" (Hair, 2000: 12). No period of significance was established. The transmission line does not retain its integrity because "Most of the original towers have been replaced...," and it is not eligible for NRHP or CRHR (Hair, 2000: 13).

A report by Duncan Hay and Michael Corbett, *Historic Resources Assessment Report for the Pit 1 Hydroelectric Project, Shasta County, California, revised draft* (1992), was reviewed for its historical context on the development of electrical generation and transmission and the evaluation of the Pit 1 Power Plant. Hay and Corbett found the Pit 1 Power Plant eligible for the NRHP under criteria A and C:

> "Under Criterion A, it is significant at the local level for its impact on local economic and social life, replacing much of the old agricultural economy and ending the isolation of the area from the mainstream of the State. And it is significant at the State level for its place in the hydroelectric development of the State, representing the beginning of the hydroelectric development of a major river by PG&E and the confidence of an era of growth. Under Criterion C, it is significant at the national level for its engineering and architecture, with one of the largest generating capacities of its day and an unusual degree of embellishment of its plant, in comparison with hydroelectric plants around the country. The whole system was unified by an architectural idea, focused on the power house. The result was a powerful visual image that represented the importance of Pit 1 to PG&E and to the development of hydroelectric power in California. In addition, it represents the work of Frank Baum, one of the leading hydroelectric engineers of his day in the United States.

> "The following features of the Pit 1 Hydroelectric Plant appear to be contributors to its significance: the transformer yard, power house, generating machinery, Fall River diversion dam, Intake No. 1, canal, tunnel, surge tank and spillway, valve house, penstocks, tail race, and towers for transmission lines A and B. The following appear to be non-contributors: the forebay dam, intake, forebay, transformers, and towers for transmission line C." (Hay and Corbett 1992, Appendix Historic Resources Inventory Form for the Pit No. 1 Power Plant: 5).

It should be noted that the transmission towers that contribute to Pit 1's significance are those located immediately adjacent to the Pit 1 Power Plant.

Standard references were consulted in the preparation of this report: National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation was used in evaluating properties under NRHP criteria; CEQA Guideline Summary: Historical Resource Sections 15064.5, 15126.4, 15325, 15332, Appendix G (California Office of Historic Preservation, 1999) was used in applying the California Register of Historical Resources criteria; and Instructions for Nominating Historical Resources to the California Register of Historical Resources (California Office of Historic Preservation, 1997) was used in preparing the Historical Resources Inventory (DPR 523) records.

Jody Stock (Architectural Historian, B.S., Architectural Studies, Preservation, 1995, University of Utah) and Roxana Khakpour (Architect, URS Corporation; B.A., Architecture, 1996, University of California Berkeley) conducted research. Stock also prepared the historical context for irrigation and Colusa County.

Michael Corbett (Senior Architectural Historian) evaluated the properties within the APEs, prepared the DPR 523 records and wrote the historical context on transmission lines. Corbett (Ph.D. Candidate, History of Architecture, University of California Berkeley and A.B., 1973, Anthropology and American Studies, Princeton University) has over 27 years of experience as an architectural historian and has particular expertise in the history of the built environment in California. He meets the Secretary of the Interior's standards for professionals for historians and architectural historians.

Denise Bradley (Senior Landscape Historian) assisted Corbett in the evaluation of the Glenn-Colusa Canal and GCID and prepared the technical report for historic architecture. Bradley (Master of Landscape Architecture, 1986, Louisiana State University and B.S. in Agriculture, 1979, University of Tennessee) has over 15 years of experience in historic resources analysis and has worked in California since 1993. She meets the Secretary of the Interior's standards for professionals for historians and historical landscape architects.

Toni Webb (JRP Architectural Historian) conducted the fieldwork and authored the historic properties inventory and evaluation for the project. Ms. Webb received a B.F.A. in Historic Preservation from the Savannah College of Art and Design and has over 7 years of experience in public history and historic preservation.

Shawn Reim (JRP research assistant) assisted Ms. Webb. Mrs. Reim participated in the fieldwork effort and contributed to the preparation of forms and historic context. Mrs. Reim holds a B.A. in History from California State University, Sacramento, and is currently completing her M.A. in Public History from California State University, Sacramento.

8.3.1.5.2 Native American Consultation

To further assist in securing information regarding potential cultural resources located in or near the project location, a request for information was submitted to the Native American Heritage Commission (Appendix I).

The NAHC provided a list of contacts, all of whom were notified about the project and questioned about their concerns and/or knowledge of resources in the area (Appendix I).

Responding by telephone to our request was Mr. Kesner Flores of the Cortina Rancheria of Wintun Indians of California. Mr. Flores had no specific knowledge of resources within the APE; however, he indicated that a number of archaeological sites had been identified to the south in the Sites vicinity and along the PG&E gas pipeline.

In addition, Mr. Flores, as a representative of the Cortina Rancheria Environmental Protection Agency, had questions about air quality issues. Mr. Flores was put in contact with the appropriate individuals, who addressed his questions. Because these discussions did not concern cultural resources, they are not included in this section.

No other responses were received.

8.3.1.5.3 Field Reconnaissance

8.3.1.5.3.1 Archaeological Resources

The archaeological field reconnaissance of the archaeological APE commenced on March 7, 2001 and was completed on March 23, 2001. Specifically, the project APE was visually inspected utilizing approximately 20-meter-wide parallel transects. Although surface visibility was excellent throughout the APE, no archaeological resources were identified during the course of the current investigation. A subsequent archaeological reconnaissance was conducted in October 2006 for proposed improvements to Dirk Road and the bridge over the Glenn-Colusa Canal.

Mr. Mark Hale (Project Archaeologist, URS Corporation) conducted the pedestrian reconnaissance of the project's APE in 2001 as well as the subsequent effort in 2006. Mr. Hale holds a B.A. in anthropology from the University of California, Berkeley, and has completed his course work and defended his thesis for a M.A. in cultural resources management from Sonoma State University. He has over 20 years of professional experience in conducting and managing cultural resource investigations in California and elsewhere in western North America and Pacific Islands.

Mr. Hale was assisted by Mr. Russell Bevill (Project Archaeologist) in 2001. He received his B.A. in anthropology from California State University Chico where he is also pursuing a M.A. in anthropology. Mr. Bevill has over 10 years of professional experience in conducting cultural resource investigations in California and elsewhere in western North America and the Pacific Islands.

8.3.1.5.3.2 Historic Architectural Resources

Brian Vahey photographed the properties within the APE and surrounding vicinity March 8 and 11, 2001. A survey of the APE and surrounding area was conducted by Jody Stock (Architectural Historian) on March 13, 14, and 20, 2001 to take field notes used in the preparation of the DPR 523 records. A survey of the APE was conducted by Michael Corbett (Senior Architectural Historian, URS Corporation) and Denise Bradley (Senior Landscape Historian, URS Corporation) on April 6, 2001. Additional field notes and photographs were taken on that date. Ms. Toni Webb conducted an additional survey of the APE and surrounding area on August 16 and 17, 2006. Additional field notes and photographs were also taken on that date.

8.3.2 Environmental Consequences

CEQA requires that the significant impacts to archaeological or historical resources be determined. Archaeological and historic resources are those that are listed in or determined eligible for listing in the

CRHR, or are included in a local register of historical resources. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource has integrity and meets the criteria for listing on the CRHR. Resources already listed or determined eligible for the NRHP or CRHR Landmarks 770 or higher, are also by definition eligible for the California Register. Historic resources included in historic resource inventories prepared according to California State Office of Historic Preservation guidelines (and thus included in the State Inventory of Historic Resources) or designated under county or city historic landmark ordinances may be eligible if the designation occurred during the previous five years.

For a resource to be eligible for the California Register, it must satisfy ***all*** of the following three standards:

1. A property must be significant at the local, state or national level, under one or more of the following criteria:

    a. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.

    b. It is associated with the lives of persons important to the nation or California's past.

    c. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

    d. It has yielded, or may be likely to yield, information important to the prehistory or history of the State or the Nation;

2. A resource must retain enough of its historic character or appearance to be recognizable as a historic property, and to convey the reasons for its significance; and

3. It must be fifty years old or older (except for rare cases of structures of exceptional significance).

The California Register regulations define "integrity" as "the authenticity of an historic resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance" (California Office of Historic Preservation, 1990:17). That is, it must retain enough of its historic character or appearance to be recognizable as a historical resource. California Register regulations specify that integrity is a quality that applies to historic resources in seven ways: location, design, setting, materials, workmanship, feeling, and association. A property must retain most of these qualities to possess integrity.

A project is considered to have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource. Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.

8.3.2.1 Archaeological Resources

As a means to determine the potential effects of the proposed project to archaeological resources, a number of tasks were completed, including archival research, Native American consultation, and a field reconnaissance. The project APE for archaeological resources is shown on Figure 8.3-1. No

archaeological resources were identified within the project APE during the course of these efforts. Therefore, there will be no effect to known cultural resources with project implementation.

Although no archaeological resources were identified on the surface of the project's APE, it is possible that with project implementation previously undiscovered archaeological resources may be exposed during construction activities. Unless properly evaluated and managed, this could result in a potentially significant impact to cultural resources.

Indirect impacts to archaeological resources of the proposed project are not expected because archaeological sites are typically only affected by direct (physical) impacts (Caltrans, 1991:5-2). Once the proposed project is in place, further impacts to archaeological resources due to operation or maintenance are not anticipated.

8.3.2.2 Historic Architectural Resources

To determine the potential effects of the proposed project on historic architectural resources, a number of tasks were completed, including archival research, field survey, preparation of historical contexts, and evaluation of significance of all properties 45 years of age or older under NRHP and CRHR criteria.

Within the APE, there are six properties that are at least 45 years of age. The locations of these properties are shown on Figure 8.3-1. All of these properties have been previously evaluated for significance under NRHP or CRHR criteria (URS, 2001; Appendix J1). These properties were re-evaluated by JRP for the current undertaking (Appendix J2)

Of the six properties evaluated for NRHP and CRHR significance, four do not appear be eligible for the NRHP or have significance under CRHR criteria. These consist of the following:

- A small animal feeder located on APN 11-14-21;
- A group of ranch buildings located on Section 1 (APN 11-14-4);
- A farmstead located on Section 6 (APN 11-22-1); and
- Teresa Creek Bridge.

For the purposes of CEQA, these four properties are not historic resources.

The two remaining properties within the APE are small sections of larger properties, and for both more research would be required in order to provide a complete evaluation. These properties are: (1) the 230 kV transmission line owned by PG&E, and (2) the Glenn-Colusa Canal and Glenn-Colusa Irrigation District. These properties are described below.

8.3.2.2.1 Two 230 kV Transmission Lines

A small portion of these two 230 kV transmission lines — approximately 2 miles — is located within the APE for this project. They consist of two parallel north-south high voltage (230 kV) electrical power transmission lines, each consisting of steel towers, insulators, and conductors (connecting cables). Each tower carries two circuits (Mishioka, pers. comm., 2001). The towers in the two parallel lines are similar but not identical. The base of each tower flares outward to four legs. The upper part of each tower is vertical and supports three crossarms, each of which carries a hanging insulator at each end. The conductors are strung from the insulators.

From the PG&E Compressor Station, located within the APE, the transmission lines run north to the Cottonwood Substation (approximately 72 miles away) and south to the Vaca-Dixon Substation (approximately 70 miles away) (Mishioka, pers. comm., 2001).

During the early 1920s, a transmission line was built from the Pit 1 Power Plant in Shasta County to the Vaca-Dixon substation in Solano County. This line was built southwest from Pit 1 to the Cottonwood substation near Redding. From Cottonwood, it ran south, through the APE for this project in Glenn and Colusa counties to Vaca-Dixon.

Because significant portions of the line have been rebuilt, it is not clear whether the section that is located within the APE for this project is original.

The sections of the two 230 kV transmission lines that are located within the APE are part of a larger system that transmitted power from the Pit 1 Power Plant to the Bay Area. Specifically, the sections of the two 230 kV transmission lines that are located within the APE are part of the transmission lines between the Cottonwood and Vaca-Dixon substations. The sections of the transmission lines within the APE are not individually significant. However, if either of the transmission lines between the Cottonwood and Vaca-Dixon substations were significant, then these sections may have significance as contributing features to the larger property.

An evaluation of the entire transmission line between the Cottonwood and Vaca-Dixon substations has not been done. However, both JRP's recent analysis and that of URS in 2001 (Appendix J1) found that this system would appear to have the potential to be significant under NRHP Criteria A and/or C. Potential areas of significance would be in the development of electrical power in northern California, its impact on the development of the economy, as an example of transmission line engineering in the 1920s, and as an example of the work of engineer Frank Baum, one of the leading hydroelectric engineers of his day in the United States. Before the eligibility of either of the transmission lines could be determined, more research would be required to more fully assess the significance within the appropriate historical contexts, to document the history of the properties, to establish a period of significance, and to document the integrity of the character-defining features. Following this, the contributing status of the sections of the transmission lines within the APE could then be established.

The proposed project will involve an electrical transmission line interconnection to the existing 230 kV transmission lines. The proposed interconnection evaluated in this AFC represents a likely description of this project component. It may, however, be modified during final design.

At this time the status of the two 230 kV transmission lines as historic resources is not known. However, if these were to be shown to be contributors to NRHP-eligible properties, the addition of electrical line interconnections and the removal of a small portion of the conductors (connection cables) would be expected to have a less-than-significant impact. This would be a small change within the larger overall system (between the Cottonwood and Vaca-Dixon substations). These changes would not alter the transmission within the APE such that their significance would be materially impaired. These changes would not alter any individual towers which appear to be an original design feature of the transmission lines nor would they alter the transmission lines alignment or location — both of which would likely be character defining features of a historic system.

8.3.2.2.2 Glenn-Colusa Canal and Glenn-Colusa Irrigation District

A portion of the GCID's Delevan Unit irrigation infrastructure, including laterals, ditches, valves, concrete turnouts and gates, and a bridge at Dirks Road, are located within the APE for this project. The laterals, ditches, and various concrete diversion structures appear to date from the original irrigation district construction (ca. 1920s). The bridge at Dirks Road dates from ca. 1960 when it was built or

renovated at the same time that the gas pipeline was built to the PG&E Compressor Station (Wrysinski, pers. comm., 2001).

A one-and-a-half to two-mile portion of the Glenn-Colusa Canal is located within or borders the APE for this project. The canal is dirt lined with rock or rubble riprap at the bridge abutment at Dirks Road. There is a levee on either side of the canal and a dirt maintenance road on top of each levee.

The GCID provides irrigation water to 175,000 acres of farmland in Glenn and Colusa counties. The Glenn-Colusa Canal, the main water distribution canal for the GCID, diverts water from the Sacramento River at a point just east of the town of Artois. Water travels southwesterly through the roughly 65-mile canal. The canal finally terminates just south of the town of Williams near Interstate 5.

The portions of the Glenn-Colusa Canal and other GCID features that are within the APE are part of a larger property — the GCID. The portions of the canal and irrigation system within the APE are not individually significant. However, if either the Glenn-Colusa Canal or the GCID were significant, then these portions may have significance as contributing features to the overall canal or irrigation system.

An evaluation of the entire GCID or Glenn-Colusa Canal has not been done. However, both JRP's recent analysis and that by URS in 2001 found that the GCID and the Glenn-Colusa Canal would appear to have the potential to be significant under NRHP Criteria A and/or C. Potential areas of significance would be in the development of irrigation districts and irrigation infrastructure in the Sacramento Valley, development of twentieth-century farming in Colusa County, and/or as an example of early twentieth-century irrigation engineering. Before the NRHP eligibility of either the GCID or Glenn-Colusa Canal could be determined, more research would be required to more fully assess the significance of these properties within appropriate historical contexts, to document the history of the properties, to establish a period of significance, and to document the integrity of the features of the properties. Following this, the contributing status of the portions the GCID system within the APE could then be established.

Within the APE, the proposed project's roadway access crosses over the Glenn-Colusa Canal via the bridge (ca. 1960) at Dirks Road. The currently proposed project calls for the replacement of the existing bridge. The proposed project, however, does not involve any portions of the canal itself and would not alter or change the canal in any material way.

However, within the APE, the proposed project intersects other features of the GCID on McDermott Road in two places:

- At Teresa Creek Bridge, the project intersects a GCID ditch that is labeled "D-8b" on the GCID map (Tennock, pers. comm., 2001). The Teresa Creek Bridge, which is not a historic resource, will be replaced. This proposed bridge replacement will not alter or change the irrigation ditch in any way.

- At the intersection of McDermott Road and Delevan Road, the intersection on the northeastern and southeastern corners will be widened. A GCID ditch that is labeled "41-1c" on the GCID map (Tennock, pers. comm., 2001) is located to the east of McDermott Road. A GCID ditch that is labeled "D-5a 3" on the GCID map (Tennock, pers. comm., 2001) is located to the south of Delevan Road. However, the proposed intersection widening will not alter or change the irrigation ditches in any way.

The proposed project would have no impact to the portion of the Glenn-Colusa Canal and other features of the GCID that are located within the APE.

8.3.3 Cumulative Impacts

8.3.3.1 Archaeological Resources

Given that project implementation would not result in effects to known important cultural resources, it is unlikely that the proposed project could have significant cumulative effects to cultural resources. As noted above, however, it is possible that previously undiscovered archaeological resources may be exposed during construction activities. Unless properly evaluated and managed, this could result in a cumulative effect to such inadvertently exposed resources.

8.3.3.2 Historic Architectural Resources

Given that the proposed project implementation will not affect any historic architecture resources, there will be no significant cumulative effects to historic architecture resources.

8.3.4 Mitigation Measures

The California Environmental Quality Act of 1970 requires that if project implementation results in significant impacts to important cultural resources, then alternative plans and/or mitigation measures must be considered.

8.3.4.1 Archaeological Resources

Although no cultural resources have been identified within the APE, there is a possibility that buried archaeological resources occur within the confines of the archeological APE. Unless properly identified, evaluated, and managed, construction of the proposed project could result in a significant impact to the resource(s). With appropriate consultation by a qualified archaeologist, this impact would be mitigated to a less-than-significant level.

The following measures are recommended for implementation as part of the construction program.

CULT-1 Retain a Qualified Archaeologist

Prior to the start of project-related vegetation clearance, earth-disturbing activities, or project site preparation, a qualified professional archaeologist will be retained as the cultural resources specialist (CRS) who will be responsible for implementation of mitigation measures CULT-2, CULT-3, and CULT-4.

CULT-2 Cultural Resources Monitoring and Mitigation Plan

Prior to the start of project-related vegetation clearance, earth-disturbing activities, or project site preparation, the CRS shall prepare a Cultural Resources Monitoring and Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts to sensitive cultural resources.

CULT-3 Worker Training

Prior to the start of earth-disturbing activities, the CRS shall prepare and implement an employee training program for the protection of cultural resources.

The CRS will provide cultural resources training to all project managers, construction supervisors, and workers. The designated trainer will provide the workers with a set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during construction. Initial training will occur prior to the start of project-related vegetation

clearance, earth disturbing activities, or project site preparation and continue throughout the project construction period as needed for all new employees.

Training at the project site may be discontinued after all foundations at the site are completed and the CRS has inspected the site and determined that no cultural resources will be impacted. Training shall continue for project personnel working in the vicinity of other project components that will disturb native soils.

CULT-4 Construction Monitoring

The CRS or their delegated monitor shall be present at times the specialist deems appropriate to monitor construction-related ground disturbance, including grading, excavation, trenching, and/or augering in the locations specified in the CRMMP.

8.3.4.2 Historic Architectural Resources

There would be no significant impacts to historic architecture resources within the APE. For this reason, no mitigation measures are required.

8.3.5 Cultural Resources Laws, Ordinances, Regulations, and Standards

The proposed project will be implemented in accordance with the applicable laws, ordinances, regulations, and standards identified below. These LORS are also listed in Table 8.3-1.

Because the Lead Agency for the project is the CEC, CEQA is the regulation of most consequence. CEQA requires that public or private projects financed or approved by the State of California must assess the effects of the undertaking upon cultural resources. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance.

In addition to CEQA, Section 7050.5 of the California Health and Safety Code would become applicable if human remains associated with the Native American occupation of the vicinity were discovered. This regulation requires that a County Coroner examine any discovered human remains and contact the NAHC if the remains are determined to be both archaeological and Native American. In compliance with Public Resources Code Section 5097.98, The NAHC would then be responsible for identifying a most likely descendent (MLD) to inspect the remains and make recommendations for their treatment.

If the project ultimately requires some level of federal involvement (e.g., Section 404 permit) compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, would become necessary. Section 106 requires federal agencies to identify cultural resources that may be affected by any undertaking involving federal lands, funds, or permitting. In addition, the significance of the resources that may be affected by that action must be addressed using established criteria (36 CFR 60.4) for the NRHP. The criteria for NRHP eligibility are listed in 36 CFR 60 as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and
>
> (a) That are associated with events that have made significant contributions to the broad pattern of our history; or
>
> (b) That are associated with the lives of persons significant in our past; or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded, or may be likely to yield, information important in prehistory or history.

If a resource is determined to be eligible to the NRHP, Section 106 of the NHPA (80 Stat. 915; 16 U.S.C. 470) and its implementing regulations (36 CFR 800) require that effects of the proposed project to that resource be determined. If NRHP eligible resources are identified, that would be adversely affected by the implementation of the project, then prudent and feasible measures to avoid or reduce these adverse impacts must be taken. In addition, the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) must be provided an opportunity to review and comment on these measures. The ACHP has adopted regulations (36 CFR 800) that implement this commenting authority.

On the local level, compliance with the Colusa County General Plan (CCGP) may be necessary. According to the CCGP, relevant goals of the County include:

- Community Character "Objective g": To preserve historic buildings, landmarks, and places of historical significance;
- Resource Conservation "Objective p": To conserve and explore historical resources, including archaeological sites; and
- Human Resources "Objective o": To encourage appreciation of the county's heritage by preserving reminders of our past, such as the Princeton Fairy, the Stone Corral, and the Grand Island Shrine.

To achieve these objectives, a number of Resource Management Policies targeting the management of cultural resources have been adopted by the County. The Cultural Resource Policies that have been adopted include:

- CO-22: The preservation and re-use of historical sites and structures in the county should be encouraged;
- CO-23: The county should apply for landmarks status or national register listing for any historic sites which may be eligible;
- CO-24: The county shall encourage and cooperate with cities, special districts, state and federal agencies, and private landowners in acknowledging and preserving the county's cultural heritage, historical and archaeological structures, sites, and landmarks;
- CO-25: An archaeological survey should be required prior to approval of any project which would require excavation in an area known to contain archaeological resources.

As the proposed project will not result in impacts to known cultural resources (important or otherwise), and does not involve the issuance of a discretionary permit from the county, none of these policies and measures currently apply. In the event that this status changes, however, compliance with CEQA, Section 106, and/or the implementation of the mitigation measures discussed within Section 8.3.4 will satisfy the County's concerns for cultural resources.

8.3.6 Involved Agencies and Agency Contacts

Unless consultation with SHPO becomes necessary, the NAHC is the only agency involved with the management of cultural resources for this project. Appendix I contains the correspondence with the NAHC concerning this particular project.

In addition, the Colusa County Planning Department will review and comment on this AFC. Specific contact information for this agency is also listed below, should the need for consultation arise.

Issue	Agency/Address	Contact/Title	Telephone
Native American traditional cultural properties	Native American Heritage Commission	Ms. Debbie Treadway, Associate Government Program Analyst	(916) 653-4038
Federal agency NHPA Section 106 compliance	California Office of Historic Preservation 1416 9th Street, Room 1442 Sacramento, CA 95814	Milford Wayne Donaldson, SHPO	(916) 653-6624
Colusa County General Plan Compliance	Colusa County Department of Planning and Building 200 12th Street Colusa, CA 95932	Mr. Steve Hackney	(530) 458-0480

8.3.7 Permits Required and Permit Schedule

Other than certification from the CEC, no state, federal, or local permits are required by the project for the management of cultural resources. As described previously, consultation with SHPO and ACHP would be required under Section 106 if federal involvement is to occur and significant cultural resources were to be affected by the project.

8.3.8 References

Adams, Frank
1929 *Irrigation Districts in California, Bulletin No 21.* Sacramento: State of California Department of Public Works.

Arnold, Brigham
1964 A Survey of Archaeological Resources Along the Pacific Gas and Electric Company's Canadian Gas Line in California. Report on file Northwest Information Center, Sonoma State University, Rohnert Park, California.

Baum, Frank G.
1923 "The Pit River Power and 220,000-Volt Transmission Problem." *Electrical World*, 27 January 1923, 81: 205-12.

Beardsley, Richard K.
1954 Temporal and Areal Relationships in Central California Archaeology. 2 Pts. *University of California Archaeological Survey Reports* 24-25. Berkeley.

Beck, Warren A. and Ynez D. Haase
1974 *Historical Atlas of California.* University of Oklahoma Press. Norman, Oklahoma

Bethel, John P., ed.
1969 *Webster's Geographical Dictionary.* G. & C. Merriam Co. The Collegiate Press Menasha, Wisconsin.

Blair, Lynda
1994 *An Evaluation of Eighteen Historic Transmission Line Systems That Originate from Hoover Dam, Clark County, Nevada.* Prepared for Los Angeles Department of Water and Power.

"Blueprint Bridge Plans & Specifications"
1915 Index located at Colusa County Archives.

Bradley, Denise, and Michael Corbett
1996 *Rural Historic Landscape Report for Reclamation District 1000.* Chico, CA: Dames & Moore, Inc., January 1996.

Burgan, R.W., P.E. (C.E. #9268)
1980 Bridge Report on Bridge No. 15C-167. California Department of Transportation. 31 January 1980.

California Department of Transportation (Caltrans)
1991 *Guidance for Consultants: Procedures for the Protection of Historic Properties, the Section 106 Process.* Division of State and Local Project Development. Office of Environmental Analysis, Environmental Studies Branch. Sacramento, CA. Revised June 1991.

California Office of Historic Preservation
1990 *California Historical Landmarks.* California Department of Parks and Recreation.

1997 *Instructions for Nominating Historical Resources to the California Register of Historic Resources.* Sacramento, CA. August 1997.

1999 *CEQA Guideline Summary: Historical Resources Sections 15064.5, 15126.4, 15325, 15332, Appendix G.* Sacramento, CA. January 1999.

Coleman, Charles M.
1952 *PG&E of California.* New York: McGraw Hill.

Cook, Sherburne F.
1955 The Epidemic of 1830-1833 in California and Oregon. *University of California Publications in American Archaeology and Ethnology.* 43(3): 303-326. Berkeley.

Cope, Rand, Means Co.
1922 "Report on Proposed Contract between Williams Irrigation District and Glenn-Colusa Irrigation District." 1922. Manuscript. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. January 1922.

1921 "Report to the Board of Directors of the Glenn-Colusa Irrigation District," 1921. *Project Report 20 No. 118,* June 1921. Part of Means Collection at the Water Resources Archives, University of California, Berkeley.

1922 "Supplement Report: Connection between Glenn-Colusa Main Canal and Williams Irrigation District," 1922. Manuscript. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. April 24, 1922.

Cramer, Cecile B.
1993 "Water History in the Making." *Wagon Wheels* 1 (1983): 4.

Davis, Cynthia F.
1984 *Where Water is King.* Willows, CA: Glenn-Colusa Irrigation District.

Davis, Edwin F.
1960 "Charles F. Lambert, and Irrigation in the Sacramento Valley." *Wagon Wheels* IX:1 (1960): 1.

Donely, Michael W., Stuart Allan, Patricia Caro and Clyde P. Patton
1979 *Atlas of California.* Pacific Book Center, Culver City, California.

Donohoe, Charles L. and Frank Freeman
no date "Petition of Central Canal and Irrigation Company to the War Department of the United States for Permission . . ." Willows, California.

Elsasser, Albert
1978 Development of Regional Prehistoric Cultures. In *Handbook of North American Indians, Volume 8, California*, edited by Robert F. Heizer, pp. 37-57. Smithsonian Institution, Washington, D.C.

Flores, Kesner, Cortina, Rancheria of the Wintun Indians of California
2001 Personal communication with Mark Hale, URS Corporation, March 29 and April 2, 2001.

Francis, Charla Meacham, and Amy Huberland
1999 *Cultural Resources Survey Report for the Level (3) Fiber Optic Project, Glenn County, California.* Sycamore Environmental Consultants, Sacramento. Submitted to California Public Utilities Commission, San Francisco.

Fredrickson, David A.
1973 *Early Cultures of the North Coast Ranges, California.* Ph.D. Dissertation, University of California, Davis; Department of Anthropology.

Gudde, Erwin G.
1969 *California Place Names.* Third Edition. University of California Press, Berkeley.

Hair, Jennifer M.
2000 *National Register of Historic Places and California Register of Historical Resources Evaluation of CA-SHS-2939-H and CA-SHA-29020-H, Shasta County, Californ*ia. Prepared by Garcia and Associates for Ogden Environment and Energy Services. October 2000.

Hanna, Phil Townsend
1946 *The Dictionary of California Land Names.* Los Angeles: Automobile Club of Southern California.

Hay, Duncan
1991 *Hydroelectric Development in the United States, 1880-1940.* Washington, D.C.: Edison Electric Institute.

Hay, Duncan and Michael R. Corbett
1992 *Historic Resources Assessment Report for the Pit 1 Hydroelectric Project, Shasta County, California*, revised draft. Prepared for the Pacific Gas & Electric Company by Dames & Moore.

Heizer, Robert F.
1936 Notes and Manuscripts on the Miller Mound, Site CA-Col-1. *University of California Archaeological Survey Manuscripts* 94. Berkeley.

Heizer, Robert F. and Franklin Fenenga
1938 Archaeological Notes on the Sandhill Site (Ca-Col-3). *University of California Archaeological Survey Manuscripts* 57. Berkeley.

Heizer, Robert F. and A.D. Krieger
1935
1936 Colusa County Sites: Miller Mound, (CA-Col-1), Sandhill Mound (Ca-Col-2), Howells Point Mound (Ca-Col-3). *University of California Archaeological Survey Manuscripts* 383. Berkeley.

Hoover, Mildred B., Hero E. Rensch, and Ethal G. Rensch
1990 *Historic Spots in California.* Fourth Edition Revised by Douglas E. Kyle. Stanford University Press. Stanford, California.

Infotec Research, Inc. and Biosystems Analysis, Inc. (IRI and BAI)
1990 Cultural Resources Assessment Report. PGT-PG&E Pipeline Expansion Project Idaho, Washington, Oregon, and California. Report submitted to Pacific Gas & Electric Company, San Francisco.

Johnson, Patti J.
1978 Patwin. In *Handbook of North American Indians, Volume 8, California*, edited by Robert F. Heizer, pp. 350-360. Smithsonian Institution, Washington, D.C.

Jollyman, J.P.
1922 "The Purpose and Problems of 220,000-Volt Transmission." *Journal of Electricity and Western Industry*, 15 August 1922, 49: 131-33.

JRP Historical Consulting Services and California Department of Transportation
2000 *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures.* Davis and Sacramento, CA, December 2000.

Kelley, Robert
1989 *Battling the Inland Sea.* Berkeley and Los Angeles, CA: University of California Press.

Knowlton, Archer E., editor
1957 *Standard Handbook for Electrical Engineers*, 9th edition. New York: McGraw Hill.

Kroeber, Alfred L.
1932 The Patwin and Their Neighbors. *University of California Publications in American Archaeology and Ethnology*. 29(4): 253-423. Berkeley.

1976 *Handbook of the Indians of California.* Reprinted. Dover Publications, Inc., New York. Originally published 1925, Bureau of American Ethnology Bulletin 78, Washington, D.C.

Lillard, Jeremiah B., and W.K. Purves
1936 The Archaeology of the Deer Creek-Cosumnes Area, Sacramento County, California. *Sacramento Junior College, Department of Anthropology Bulletin* 1. Sacramento.

Lillard, Jeremiah B., Robert F. Heizer and Franklin Fenenga
1939 An Introduction to the Archaeology of Central California. *Sacramento Junior College, Department of Anthropology Bulletin* 2. Sacramento.

Matthew, Raymond, Manager
no date. "Report to the Honorable Board of Directors of the Glenn-Colusa Irrigation District on Operation Maintenance and Construction Work 1922-1923." Manuscript. Available at the Water Resources Archives, University of California, Berkeley.

Merriman, Thaddeus, editor
1930 *American Civil Engineers' Handbook,* fifth edition. New York: John Wiley & Sons.

Mikesell, Stephen D.
1990 *Historic Bridges of California.* [Sacramento]: California Department of Transportation.

Moratto, Michael J.
1984 *California Archaeology.* Academic Press, New York.

Northern California Atlas & Gazetteer
1986 Freeport, Maine: DeLorme Publishing Company.

"Orland Project California"
2001 http://dataweb.usbr.gov/html/orland.html. March 2, 2001.

Paul, Rodman W.
1965 *California Gold: The Beginning of Mining in the Far West.* University of Nebraska Press, Lincoln and London. Reprint.

Pisani, Donald J.
1984 From the Family Farm to Agribusiness: The Irrigation Crusade in California and the West, 1850-1931. Berkeley and Los Angeles, CA: University of California Press.

Powers, Stephen
1877 Tribes of California. *Contributions to North American Ethnology* 3. U.S. Geographic and Geological Survey of the Rocky Mountain Region, Washington.

"Pumping Plant Dedication and Water Rights Centennial"
1985 *Wagon Wheels* 1 (1985): 24.

"Report on Proposed Contract between Williams Irrigation District and Glenn-Colusa Irrigation District."
1922 Manuscript. Cope, Rand, Means Co. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. January 1922.

"Report to the Board of Directors of the Glenn-Colusa Irrigation District," 1921. *Project Report 20 No. 118*
1921 Part of Means Collection at the Water Resources Archives, University of California, Berkeley.

Rogge, A.E. (Gene), Michael Corbett, and Lori Hunsaker
1997 *Cultural Resources Survey for the McCullough-Liberty Fiber Optics Project.* Dames & Moore. International Cultural Resource Services Research Paper No. 41. Phoenix.

Schenck, W. Egbert, and Elmer J. Dawson
1929 Archaeology of the Northern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 25(4):289-413. Berkeley.

Schwaderer, R., R.A. Stradford, and D.A. Fredrickson
1979 An Archaeological Study of the Suscol Village, CA-Nap-15, Napa County, California. Cultural Resources Facility, Sonoma State University. Report submitted to the California Department of Transportation.

Scott, W.A.
1922 "202 Miles of Transmission Lines to Operate at 220,000 Bolts." *Engineering World*, March 1922.

Stene, Eric A.
1994 "Central Valley Project: Sacramento River Division." Bureau of Reclamation History Program. http://dataweb.usbr.gov/html/sacriver.html.

"Supplement Report: Connection between Glenn-Colusa Main Canal and Williams Irrigation District"
1922 Manuscript. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. April 24, 1922.

Treganza, A.E., R. Edwards, and T. King
1965 Archaeological Survey Along the Tehama-Colusa Canal, Central California. Report on file Northwest Information Center, Sonoma State University, Rohnert Park, California.

Urquhart, Leonard Church, editor
1950 *Civil Engineering Handbook*, third edition. New York: McGraw-Hill.

URS Corporation
2001 Application for Certification for Colusa Power Plant Project, Colusa County, California. June 2001.

White, Lester O.
1979 *Archaeological Reconnaissance of Phase 2 and 3 Irrigation Pipeline Installation, Kanawha Water District, Willows, Glenn County, California.* On file, Northeast Information Center, Department of Anthropology, California State University

Maps

"Assessor Parcel Map." Maps. 14-18-0-011-00. Glenn County Assessors Office, Willows, CA.

"Assessor Plat Maps for Colusa County." Maps. Book 11 pages 4, 5, 14, and 22. Glenn County Assessors Office, Willows, CA.

"Assessor Plat Maps for Glenn County." Maps. Book 14 pages 16-18. Glenn County Assessors Office, Willows, CA.

Delevan Unit of the Glenn-Colusa Irrigation District." n.d. Photocopy of portion of larger map provided by Ben Tennock, Glenn-Colusa Irrigation District.

"Map of Colusa County California, Colusa County Chamber of Commerce." Map. 1966. Earth Sciences Library, University of California, Berkeley.

"Map of the Glenn-Colusa Irrigation District: Glenn & Colusa Counties, California." Map. 1956. Water Resources Archives, University of California, Berkeley.

"Metsker's Map of Colusa County California." Map. 1960. Earth Sciences Library, University of California, Berkeley.

"Official Chamber of Commerce Map of Colusa County and Its Communities." Map. 1988. Earth Sciences Library, University of California, Berkeley.

"Rand McNally Map of Colusa County." Map. 1962. Earth Sciences Library, University of California, Berkeley.

"State of California, The Resources Agency, Department of Conservation, Division of Forestry, Colusa County." Map. 1947. Earth Sciences Library, University of California, Berkeley.

"Thomas Bros. Map of Colusa County California." Map. 1946. Earth Sciences Library, University of California, Berkeley.

"Title Insurance and Trust Map of Colusa County and Its Cities." Map. 1978. Earth Sciences Library, University of California, Berkeley.

United States Geological Survey. "Sites Quad." Map. 1904 revised.

United States Geological Survey. "Colusa Quad." Map. 1907.

United States Geological Survey. "Sites Quad." Map. 1917 revised.

United States Geological Survey. "Colusa Quad." Map. 1973.

United States Geological Survey. "Lodoga Quad." Map. 1943.

United States Geological Survey. "Lodoga Quad." Map. 1958 revised.

United States Geological Survey. "Lodoga Quad." Map. 1960.

United States Geological Survey. "Maxwell Quad." Map. January 1906 reprinted 1936.

United States Geological Survey. "Maxwell Quad." Map. 1952.

United States Geological Survey. "Maxwell Quad." Map. 1952-1954.

United States Geological Survey. "Maxwell Quad." Map. 1973.

United States Geological Survey. "Maxwell Quad." Map. 1994 revised.

"WAC-96CA." Aerial photograph. 6 April 1996.

Personal Communications

Anderson, Wylie (Colusa County Assessors Office). Interview with Roxana Khakpour. 12 and 20 April 2001.

Anderson, Wylie (Colusa County Assessors Office). Telephone conversation with Roxana Khakpour. 20 April 2001.

Colusa County Agricultural Agency. Telephone conversation with Roxana Khakpour. 20 April 2001.

Doerr, Christopher (Garcia & Associates). Telephone conversation with Michael Corbett. 26 April 2001.

Etchepare, Jean. Telephone conversation with Michael Corbett. 25 April 2001.

Mishioka, Stan (PG&E). Telephone conversation with Roxana Khakpour. 26 April 2001.

Mishioka, Stan (PG&E). Telephone conversation with Michael Corbett (URS Corporation), 1 and 2 May 2001.

Moran, Kathy (Colusa County Historical Commission). Interview with Jody Stock. 20 March 2001.

Moran, Kathy (Colusa County Historical Commission). Interview with Roxana Khakpour. 20 April 2001.

Tennock, Ben (Glenn-Colusa Irrigation District). Telephone conversation with Roxana Khakpour. 12 April 2001.

Thuemler, Nancy (Colusa County Assessors Office). Interview with Jody Stock. 14 March 2001.

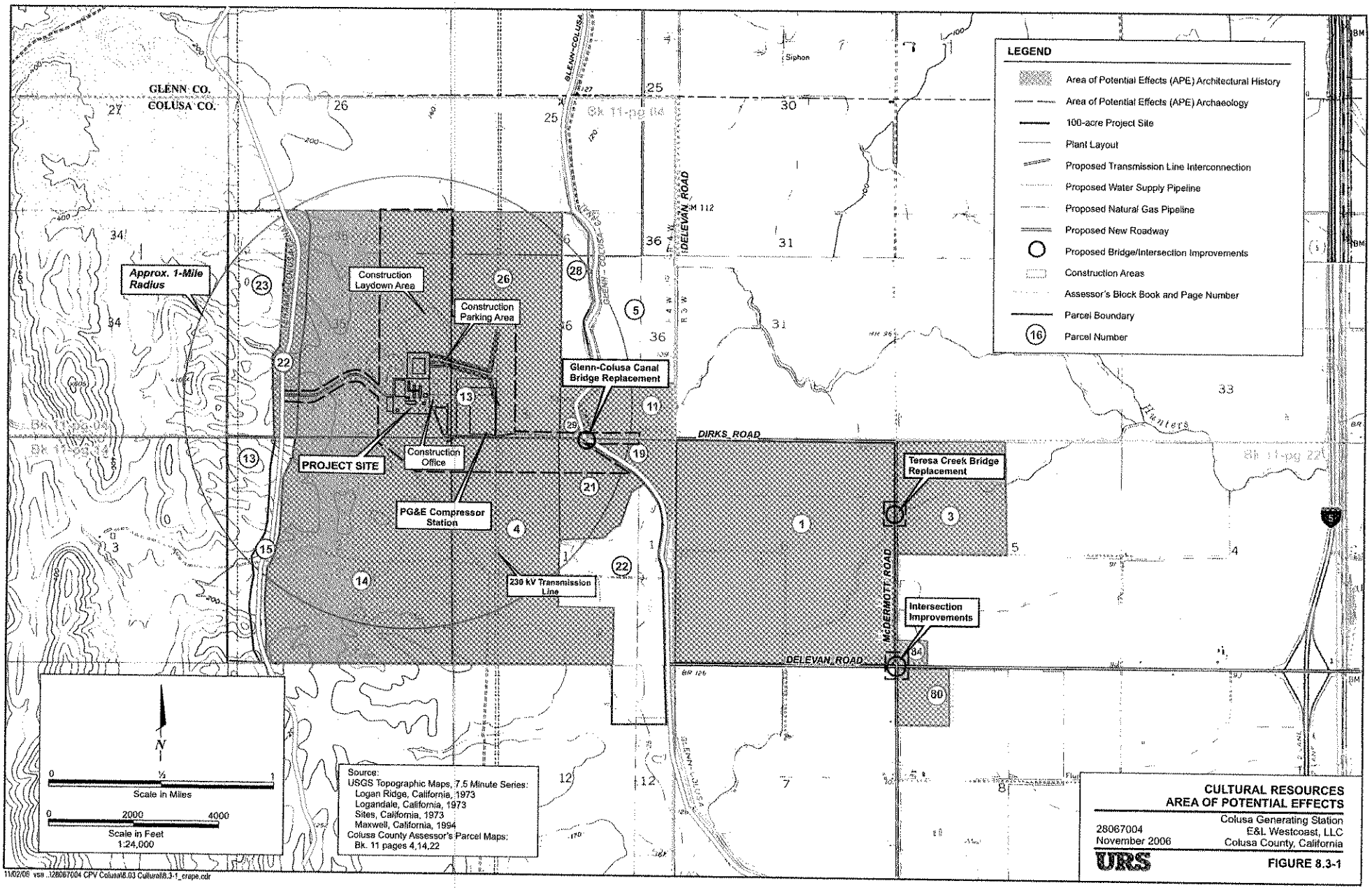
Wrysinski, Jon (Colusa County Department of Public Works). Interview with Jody Stock. 14 March 2001.

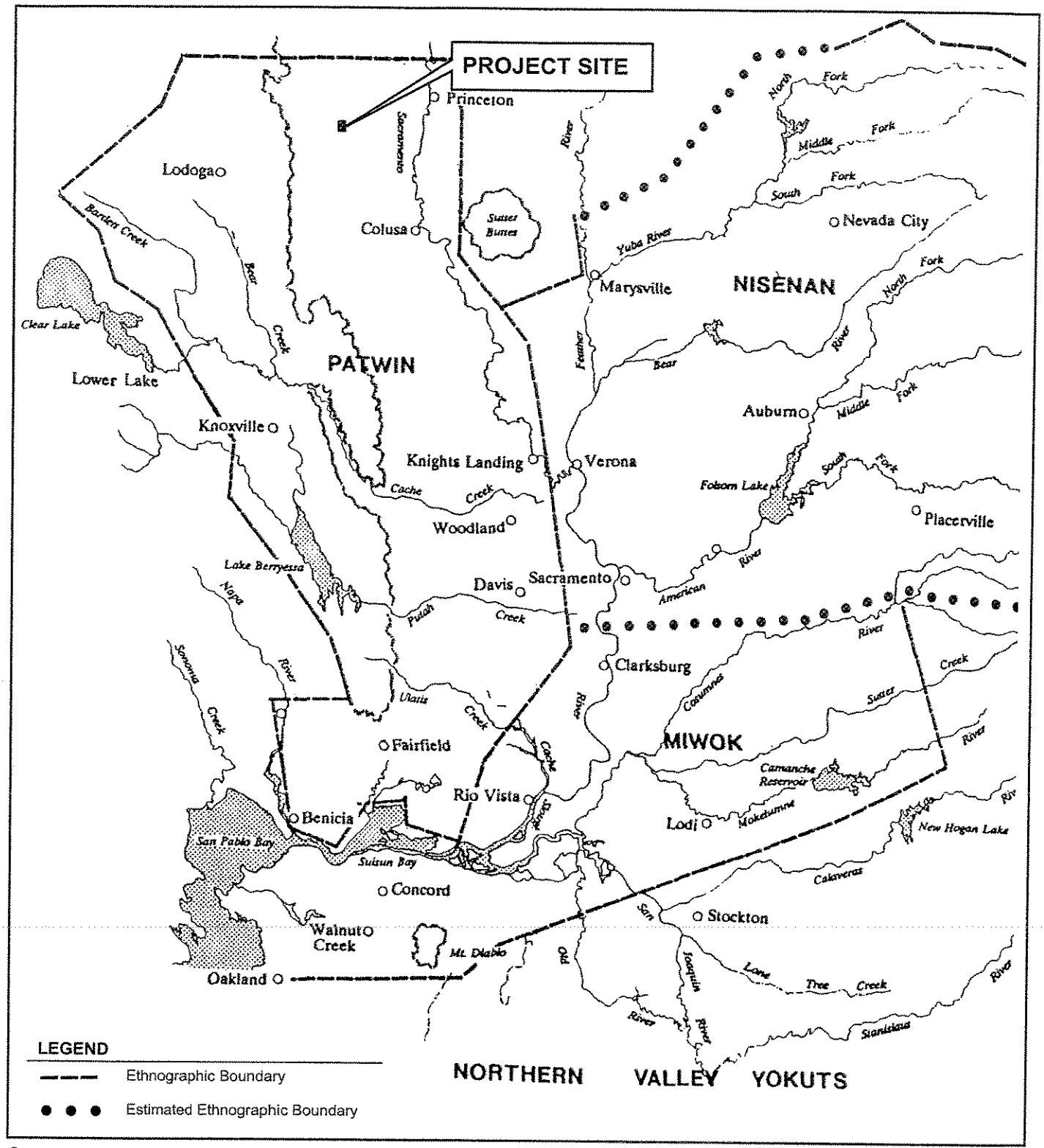
Wrysinski, Jon (Colusa County Department of Public Works). Interview with Roxana Khakpour. 12 April 2001.

Wrysinski, Jon (Colusa County Department of Public Works). Telephone conversation with Roxana Khakpour. 23 April 2001.

Table 8.3-1
Applicable Cultural Resources Laws, Ordinances, Regulations, and Standards

Law, Ordinance, Regulation, or Standard	Applicability	AFC Reference
CEQA	Project construction may encounter archaeological resources	Section 8.3.5
Health and Safety Code Section 7050.5	Construction may encounter Native American graves, Coroner calls NAHC	Section 8.3.5
Public Resources Code Section 5097.98	Construction may encounter Native American graves, NAHC assigns Most Likely Descendent	Section 8.3.5
Colusa County General Plan	Colusa County Goals; Community Character "Objective g" To preserve historic buildings, landmarks, and places of historical significance; Resource Conservation "Objective p" To conserve and explore historical resources, including archaeological sites; and Human Resources "Objective o" To encourage appreciation of the county's heritage by preserving reminders of our past, such as the Princeton Fairy, the Stone Corral, and the Grand Island Shrine.	Section 8.3.5


LEGEND
Area of Potential Effects (APE) Architectural History
Area of Potential Effects (APE) Archaeology
100-acre Project Site
Plant Layout
Proposed Transmission Line Interconnection
Proposed Water Supply Pipeline
Proposed Natural Gas Pipeline
Proposed New Roadway
Proposed Bridge/Intersection Improvements
Construction Areas
Assessor's Block Book and Page Number
Parcel Boundary
Parcel Number
GLENN CO.
COLUSA CO.
Approx. 1-Mile Radius
Construction Laydown Area
Construction Parking Area
Glenn-Colusa Canal Bridge Replacement
PROJECT SITE
Construction Office
PG&E Compressor Station
230 kV Transmission Line
Teresa Creek Bridge Replacement
Intersection Improvements
DIRKS ROAD
DELEVAN ROAD
McDERMOTT ROAD
DELEVAN ROAD
Siphon
Hunters
N
0 ½ 1
Scale in Miles
0 2000 4000
Scale in Feet
1:24,000
Source:
USGS Topographic Maps, 7.5 Minute Series:
Logan Ridge, California, 1973
Logandale, California, 1973
Sites, California, 1973
Maxwell, California, 1994
Colusa County Assessor's Parcel Maps:
Bk. 11 pages 4,14,22
CULTURAL RESOURCES
AREA OF POTENTIAL EFFECTS
Colusa Generating Station
28067004
E&L Westcoast, LLC
November 2006
Colusa County, California
URS
FIGURE 8.3-1
11/02/06 vss ..\28067004 CPV Colusa\8.03 Cultural\8.3-1_crape.cdr



Source:
Map After Johnson, 1978; Levy, 1978;
and Wilson and Towne, 1978.

N

0 10 20 30 Miles

0 10 20 30 Kilometers

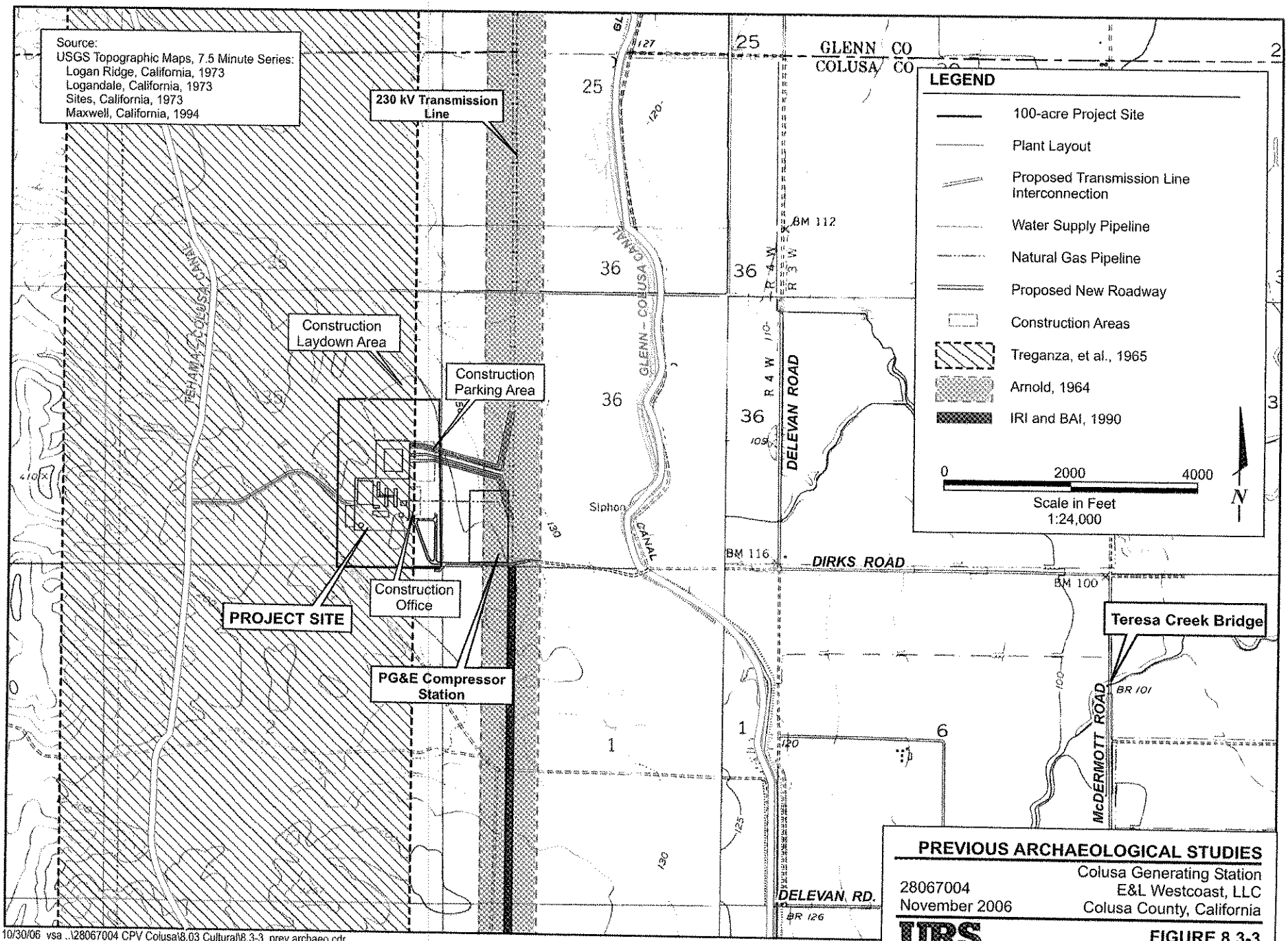
MAP OF ETHNOGRAPHIC TERRITORIES

Colusa Generating Station
28067004 E&L Westcoast, LLC
November 2006 Colusa County, California

URS

FIGURE 8.3-2

10/23/06 vsa ..\28067004 CPV Colusa\8.03 Cultural\8.3-2_mapethno.cdr



10/30/06 vsa ..\28067004 CPV Colusa\8.03 Cultural\8.3-3_prev archaeo.cdr

PREVIOUS ARCHAEOLOGICAL STUDIES

28067004
November 2006

Colusa Generating Station
E&L Westcoast, LLC
Colusa County, California

URS

FIGURE 8.3-3

ATTACHMENT 3

RESPONSES TO CEC DATA REQUESTS OF JANUARY 11, 2007 DATA REQUESTS 63 THROUGH 76, COLUSA GENERATING STATION, URS CORPORATION, FEBRUARY 12, 2007

CULTURAL RESOURCES

Technical Area: Cultural Resources
Author: Cindy Baker

BACKGROUND [63 THROUGH 66]

Reliant Energy sent letters describing the project to Native Americans on February 28, 2001. The Native American Heritage Commission (NAHC) provided Reliant Energy with a list of Native American contacts in the area. Reliant Energy sent letters to all the individuals and groups on the list provided by the NAHC. E&L Westcoast did not provide information that they have contacted the NAHC or sent letters to all the individuals and groups on the list provided by the NAHC. The list of Native American contacts interested in the area may have changed in the last five years. When the NAHC provides a list of Native Americans who wish to be contacted regarding construction disturbances on land where they have heritage concerns, the NAHC requests that the project make a follow-up telephone call to Native Americans who have not responded.

DATA REQUEST

63. ***Please request the NAHC to provide the applicant with a current list of Native American contacts in the project area, and send letters to all the individuals and groups on the list regarding the current project.***

RESPONSE

The NAHC was contacted via fax on January 19, 2007 with a request that they search their Sacred Lands File for any sites of cultural significance to the Native American community within or adjacent to the proposed location of the Colusa Generating Station. Additionally, the NAHC was requested to provide a list of groups or individuals who may have additional knowledge of cultural resources in the project area. The NAHC responded on January 27, 2007 with a negative search of its Sacred Lands Files; however, they also provided a list of nine individuals and groups of Native Americans who the NAHC feels should be contacted regarding this proposed project. On February 7, 2007, an informational letter describing the proposed project was sent to the nine individuals and groups whose names were provided by the NAHC. The letters were sent via U.S. Postal Service (USPS) Priority Mail with Delivery Confirmation receipt.

DATA REQUEST

64. Please provide copies of all responses to the letter.

RESPONSE

As responses to the informational letters are received from the Native American community, they will be documented and copies will be provided to the CEC.

DATA REQUEST

65. Please make one telephone call to Native American individuals or groups listed by the NAHC who have not responded within two weeks to ensure that they have received the correspondence and gather any information they may have regarding cultural resources in the project area. Please provide documentation for each call, and note any comments regarding the project area provided by the Native Americans.

RESPONSE

The informational letters have been sent via USPS Priority Mail with Delivery Confirmation in order to establish proof that the letters were sent and received. Additionally, two weeks after receipt of the letters, the progress of which will be tracked online at www.usps.com, followup telephone calls will be made to any individuals or groups who had not replied prior to that time in order to determine the level of sensitivity for Native American concerns in the project vicinity including the presence of sacred sites or archaeological sites. All telephone calls will be logged on a "Telcon" form that shows specifics about the time, duration, date, and content of the conversations.

DATA REQUEST

66. ***Please provide copies of any additional written responses received from Native Americans. If responses have been received by telephone, please provide a summary of each conversation. If the location of archaeological sites may be revealed in the information, please provide the responses under confidential cover.***

RESPONSE

All correspondence with the Native American community will be thoroughly documented whether the communication is in written form or verbal (in person or over the telephone). A summary of each conversation will accompany each telcon log.

BACKGROUND

According to CEQA Guidelines Section 15064.5 (a) (2), cultural resources included in a local register of historical resources must be treated as significant by public agencies unless a preponderance of evidence demonstrates that a resource is not significant.

DATA REQUEST

67. Please review local registers maintained by Colusa County and provide a list of any cultural resources (prehistoric or historic archaeological or historic built environment) listed by the County within ½-mile of the project area.

RESPONSE

Currently the Colusa County General Plan does not provide a historic preservation ordinance or any ordinance designating a local list of historic resources (Moran, 2007; JRP, 2007). Therefore, there are no locally designated architectural or engineering cultural resources within ½ mile of the project area.

References

Moran, Kathleen, Colusa County Clerk-Recorder, 2007. Personal communications with Kathleen Kennedy, JRP Historical Consulting, LLC, January 22, 2007.

Colusa County Planning Department, 2007. Personal communications with Kathleen Kennedy, JRP Historical Consulting, LLC, January 22, 2007.

BACKGROUND

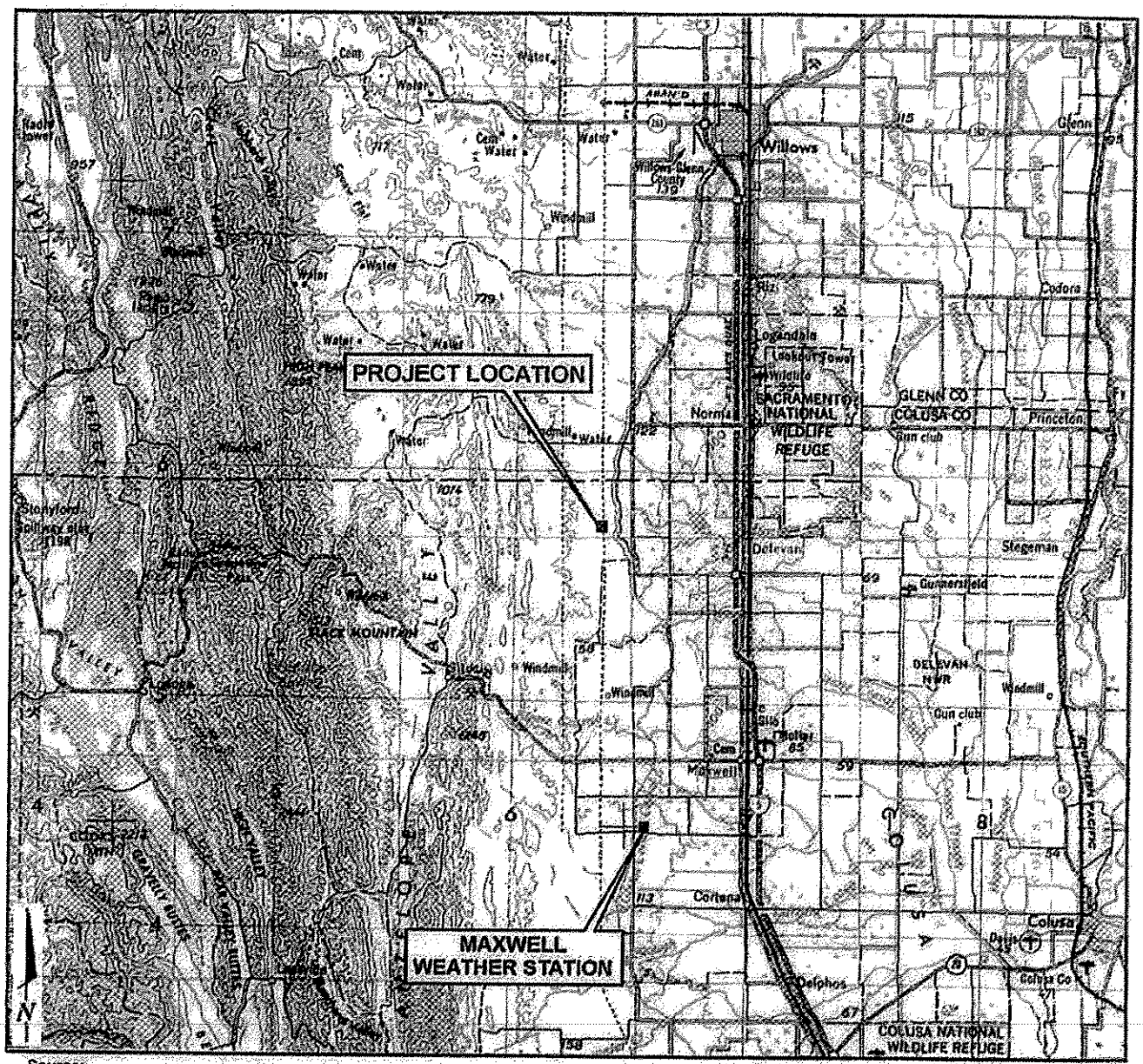
AFC Section 8.3.1.5.1 specifies historical and archaeological societies as sources of information used to identify the cultural resources that might be impacted by the project. It appears that the research was conducted as part of the Reliant Energy project in 2001, not for the E&L Westcoast project. Current information from local archaeological and historical societies, county lists, and other interested groups is essential to the process of identifying all the cultural resources.

DATA REQUEST

68. Please provide a discussion of the local historical and archaeological organizations that were contacted for this application. Include information regarding responses that were received and historical or archaeological resources that were identified.

RESPONSE

Letters to the Colusa County Historical Society and Colusa County Historical Records Commission were mailed January 19, 2007. To date, no response has been received from either organization and no known historic architectural or engineering resources have been reported. Copies of these letters are attached (Attachment 68-1).



Source:
USGS Topographic-Bathymetric Series
Ukiah, California, 1979

Scale in Miles
1:250,000

Partners
Rand F. Herbert
Stephen R. Wee
Meta Bunse
Christopher McMorris

JRP HISTORICAL CONSULTING, LLC

January 19, 2006

Colusa County Historical Records Commission
c/o Colusa County Free Library
738 Market Street
Colusa, CA 96932

RE: Colusa Generating Station (06-AFC-9)

To Whom It May Concern:

As you may already know, E&L Westcoast, LLC has submitted an Application for Certification (AFC) to the California Energy Commission for the licensing and construction of a nominal 660 megawatt (MW) combined cycle power plant in Colusa County. The Colusa Generating Station proposed site is adjacent to located in northern Colusa County near the Glenn County line, approximately four miles northwest of Delevan and nine miles southwest of Willows. Enclosed is a map showing the project site and its surrounding environment.

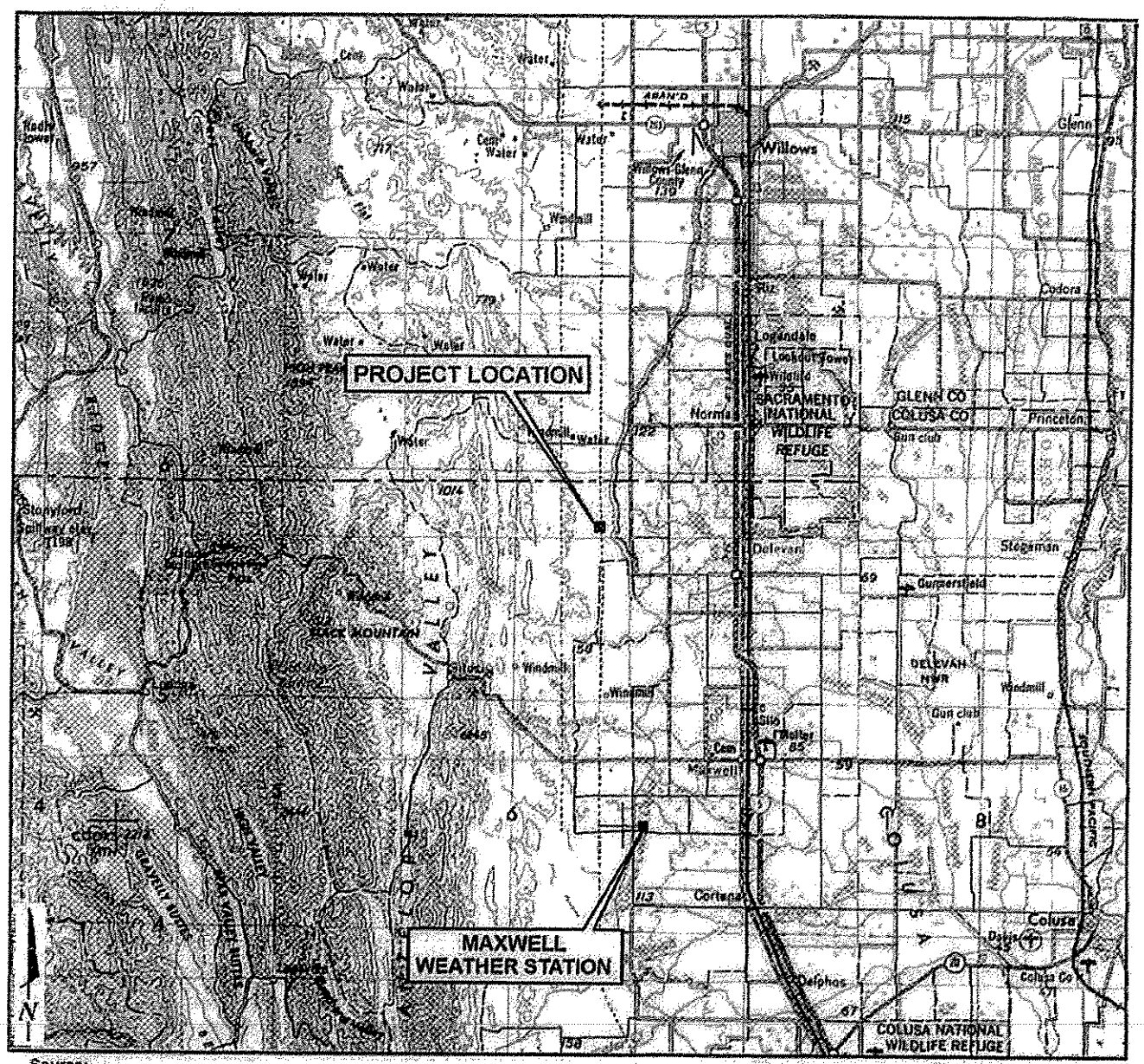
JRP Historical Consulting, LLC has been retained to study the historic architectural and engineering resources in the proposed project area to determine if any historic properties are potentially eligible for the National Register of Historic Places or the California Register of Historical Resources. We have reviewed national, state, and local historic properties inventories, and historians and our architectural historians have completed the evaluation of historic-era architectural properties near the proposed project site. Your ideas and concerns are important to us and we would like to incorporate them into our studies. If you or your organizations have any concerns regarding specific historic resources within the project area, please respond in writing to me at the above address citing your concerns within the next thirty days, or call me at (530) 757-2521.

Please contact me if you require further information. Thank you for your assistance.

Sincerely,

Toni Webb
Architectural Historian

Enclosures: Project Location Map



Source:
USGS Topographic-Bathymetric Series
Ukiah, California, 1979

Scale in Miles
1:250,000

BACKGROUND [69 THROUGH 71]

AFC Section 8.3.2.2.1, page 8.3-16, states that the Cottonwood-Vaca-Dixon 230 kV transmission line is a property potentially eligible for the National Register of Historic Places (NRHP). For CEQA purposes, staff deals with the California Register of Historical Resources (CRHR), with properties that are eligible for the National Register also eligible for the CRHR. The associated discussion does not make clear whether both of the parallel transmission lines that, apparently, constitute the Cottonwood-Vaca-Dixon 230 kV transmission line are together potentially eligible, or only one of them is. Staff needs to clarify how many potentially eligible resources are present.

AFC Appendix J, page J-3, indicates that, within the APE, the present towers of both lines of the Cottonwood-Vaca-Dixon 230 kV transmission line appear to be similar to Frank Baum's original 1920s engineering drawings, suggesting that this part of the potentially significant transmission line has integrity of design, materials, and workmanship. However, Appendix J1 states that "significant portions of the line have been rebuilt" (page J-7, Section J.4.1). The discussion does not indicate exactly what "rebuilt" means, and no source for that information is provided. Assuming that the Cottonwood-Vaca-Dixon 230 kV transmission line is an eligible historic resource under CEQA, staff needs to have the integrity of this line evaluated, so that the significance of the project's impacts on the line can be assessed.

Pacific Gas and Electric Company has conducted a NRHP evaluation of the Vaca-Dixon Substation in which it was determined that the substation and its accompanying switchyard (including transmission lines approaching from the north) constituted a historic district. The AFC does not appear to consider the Cottonwood-Vaca-Dixon 230 kV transmission line as part of a historic district. Staff needs to have this possibility evaluated.

DATA REQUEST

69. ***Please research the Cottonwood-Vaca-Dixon 230 kV transmission line and determine if both lines are the same age and could equally qualify for the CRHR. If the two do not equally qualify, please indicate which one does qualify, or, if they both qualify, in what ways they qualify, and for what reasons. Also, please determine whether one or both of the lines is/are historically associated with the Vaca-Dixon Substation.***

RESPONSE

Are both lines the same age?

The easternmost line [including the segment within the current project APE] is known as the Cottonwood-Vaca section of the Pit-Vaca Dixon 220 kV line. This transmission line structure was built by the Mt. Shasta Power Corporation, a subsidiary of PG&E, to transmit power from the Pit 1 Powerhouse to the Vaca-Dixon substation in 1921-1922. In 1956, this line "underwent some structural changes and was fully reconductored with commercially available conductor." When the line was reconductored, the insulators may have also been replaced—PG&E does not keep records about changes of this type. These changes were made to the entire line. The westernmost line is known as the Cottonwood-Vaca Dixon 220 kV line. It was built by PG&E in 1945. Apart from maintenance, this line has not been changed.

Could both lines equally qualify for the CRHR? If the two do not equally qualify, please indicate which one does qualify, or, if they both qualify, in what ways they qualify, and for what reasons?

The transmission lines do not appear to be individually eligible for the CRHR.

Please determine whether one or both of the lines is/are historically associated with the Vaca-Dixon Substation.

Both the eastern and western lines have been transmitting power to the Vaca-Dixon Substation, since 1922 and 1945, respectively. Thus, both lines are historically associated with the Vaca-Dixon Substation, located some 70 miles to the south of the current project APE.

DATA REQUEST

70. Please provide evidence on how many towers there are in the entire Cottonwood-Vaca-Dixon 230 kV line and determine, through research and/or PG&E expert opinion, how many of them have been altered. Additionally, please describe the documented alterations.

RESPONSE

According to Pacific Gas and Electric Company's *Annual Report of the Department of Electrical Operation and Maintenance, 1930*, the entire transmission line, which spans from the Pit 1 Powerhouse to the Vaca-Dixon Substation, is 201.75 miles in length. According to PG&E, the Cottonwood-Vaca-Dixon 230 kV line currently includes 1,491 towers. Consultation with PG&E regarding the alterations to this line did not identify any towers that had been replaced (PG&E, 1930; Grosse, 2007). As noted above, in 1956 the entire line was structurally changed, including the reconductoring. It was also assumed that the insulators were changed at that time as well; however, PG&E does not maintain records of these types of changes. The western line, which was constructed in 1945, would include roughly the same number of towers. Besides standard maintenance, this line has not been altered.

References

Grosse, Karen, PG&E, 2007. Email correspondence with Greg Bosscawen, PG&E, January 24, 2007.

PG&E (Pacific Gas and Electric Company), 1930. *Annual Report of the Department of Electrical Operation and Maintenance, 1930*, p. 200, 206, 235, and 260.

DATA REQUEST

71. Please determine if the transmission line in the project area is associated with the Vaca-Dixon Substation and if it could be considered part of that historic district.

RESPONSE

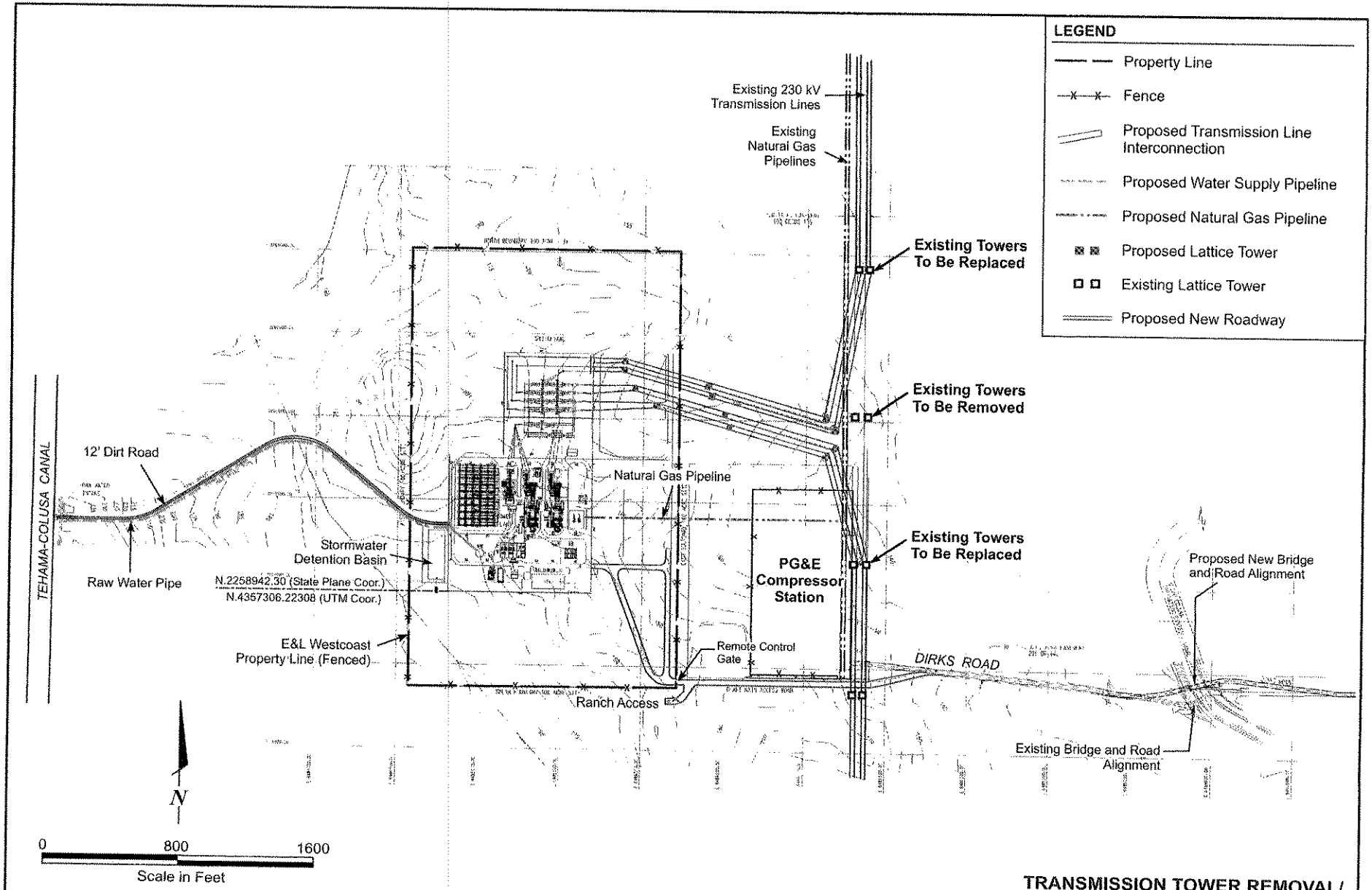
The eastern and western lines have been transmitting power to the Vaca-Dixon Substation since 1922 and 1945, respectively. Both lines were built to transmit power from the Pit 1 Powerhouse to the San Francisco Bay Area; thus, both are associated with the Vaca-Dixon Substation. The question then is, are they contributing elements of the historic district formed by the substation?

The Vaca-Dixon Substation was evaluated for its eligibility for the National Register of Historic Places in November 2003 by PAR Environmental Services (PAR, 2003). That detailed and comprehensive evaluation addressed the buildings within the substation complex and the associated switchyard, and found that there was a National Register-eligible historic district. The contributing elements of the district were listed as the substation, switchyard, landscaping, garage, office/shop, and four pump houses. While the report mentions transmission towers within the district, none were listed as contributing elements by themselves, nor was the line running north toward the Pit River discussed as part of the district. In the introduction to the district evaluation, the authors noted "the substation switchyard within the enclosed fence portion examined for the purposes of this report is filled with electrical structures including transformers, bus structures, and transmission and distribution lines and towers," without further description (i.e., how many towers were within the switchyard, what kind of towers they are, etc.). Later, in discussing eligibility under Criterion A, the authors note that the district is eligible "because of the property's association with 1) the rapid development of the San Francisco Bay area that resulted from the introduction of a major supply of hydro-electricity to the region, and 2) the first long distance 220-kV transmission in the world." It did not address whether the towers were specifically designed for that purpose, or whether they were standard designs used to carry the power generated at Pit River 1 Powerhouse. Nevertheless, as noted above, the towers within the substation district boundary were not specifically identified as contributing elements to the historic district.

The transmission line from the power house to the substation is formed by 1,491 identical, manufactured towers that carried the original 220-kV line. The district evaluation does not address the transmission line as a whole, nor does it indicate that the central figure who designed the Pit River/220-kV system, Frank Baum, specifically designed these towers. It would, therefore, seem to be an over-broad conclusion to consider the line, as a whole, as a part of the Vaca-Dixon Substation Historic District.

Reference

PAR (PAR Environmental Services, Inc.), 2003. "National Register of Historic Places Evaluation, Vaca-Dixon Substation, Solano County, California, Final Report." Cindy L. Baker and Tracy Bakic. Prepared for PG&E, November 5, 2003.



Source:
Bechtel Corporation; Colusa Power Plant, Dwg. No. P1-0100-00003
General Arrangement With Air Cooled Condenser (COL_GA05 Rev Oc) October 4, 2006;
Figure 7.2-1 in progress Oct 20, 2006

TRANSMISSION TOWER REMOVAL/ REPLACEMENT

28067004
February 2007

Colusa Generating Station
E&L Westcoast, LLC
Colusa County, California

URS

FIGURE 72-1

2/02/07 vsa ..\28067004 CPV Colusa 2007\Data Request_feb07\72-1_trans tower removal.cdr

BACKGROUND

On AFC page 3-25 (3.9.2.1), the applicant reports that four towers will be refitted and that two towers will be removed, but it is not clear which of the two parallel transmission lines will be affected by these changes.

DATA REQUEST

72. ***Please identify how many existing towers in each of the two lines will be removed and how many existing towers in each of the two lines will be altered and provide a drawing delineating the towers to be replaced. Please specify the types of alterations that are proposed and state if these changes will alter the integrity of the towers as contributing elements of the transmission line.***

RESPONSE

Two existing transmission towers (one for each line) would be removed and four existing transmission towers (two for each line) would be replaced to accommodate changes in electrical line (cable) take-off angles. The change in the take-off angles may require replacement of the four towers with a change in the foundation. The removal of the two towers and necessary replacement of the other four towers will be undertaken through a redesign of the remaining towers, which will focus on maintaining the physical and electrical integrity of the transmission lines. While the proposed project will result in the demolition of two towers and alteration of four towers, the loss, or replacement, of these character-defining features (including the spacing of towers) is relatively minor and would not substantially impact the integrity of the line. The entire 201.75-mile line includes approximately 1,500 towers that have previously undergone some level of alteration. The removal of two towers among the more than 1,200 in between the Cottonwood and Vaca-Dixon substations would result in a less-than-significant impact to the overall resource. Figure 72-1 is a drawing that delineates the towers to be replaced.

BACKGROUND

AFC page 8.3-18 provides a discussion of cumulative impacts, but states it will not affect any historic resources. The application does not provide a list of all proposed projects in the project region. It is not clear whether any projects may contribute to cumulative impacts to cultural resources in the area.

DATA REQUEST

73. ***Please provide a discussion of cumulative impacts to the transmission line that describes projects that have been proposed or are under construction within a ½-mile radius of the proposed Colusa Generation Station project. Please discuss all types of development including residential.***

RESPONSE

There are no known projects proposed or under construction within ½-mile radius of the proposed project site (Bosscawen, 2007; Colusa County Planning Department, 2007). Therefore, no cumulative impacts are predicted for this proposed project.

Reference

Bosscawen, Greg, PG&E, 2007. Email correspondence with Kathy Rushmore, URS Corporation. January 24, 2007.

Colusa County Planning Department, 2007. Personal communications with Kathleen Kennedy, JRP Historical Consulting, LLC, January 22, 2007.

BACKGROUND [74 THROUGH 76]

The California Historical Resources Information System has identified the proposed plant site as a location that has a low probability for archaeological resources. On AFC page 3-18, Section 3.5.8, states that approximately 330,000 cubic yards of cut and fill material will be required on the project site. Staff needs more information to assess potential project impacts to buried archaeological resources on the project site.

DATA REQUEST

74. If any additional geotechnical borings are completed for this project within the coming nine months, please have the borings examined by an archaeologist on site and provide a discussion of the findings.

RESPONSE

No additional geotechnical borings will be completed for this project within the next nine months.

DATA REQUEST

75. Please provide a discussion that identifies the probable locations of intrusion into native soil caused by either excavation or fill removal and replacement.

RESPONSE

The area of the proposed CGS will be stripped of vegetation and organics prior to construction of the facility. The area to be stripped is approximately 31 acres, including power block, switchyard, and storm water areas. The plant area and switchyard will be in-cut on the north, west, and south sides. The area to the east and north will be on fill and will be comprised of the east portion of the power plant, the construction facilities area to the east of the power plant and the construction laydown area to the north, which cover about 43 acres.

DATA REQUEST

76. If removed soils will be disposed of off-site and/or new soils brought in and if disposal and borrow sites are not commercial operations and consequently have not been surveyed for cultural resources, please conduct such surveys and provide the personnel qualifications, survey methods, and findings to staff.

RESPONSE

Earthwork on the power plant site will consist of removal of topsoil, vegetation, and debris; excavation and compaction of earth to create the plant grade; and excavation for foundations and underground systems. Materials suitable for compaction will be stored in stockpiles within designated locations on the site. Materials unsuitable for compaction will be stored in separate stockpiles and reused on the site, where appropriate. No soils are expected to be disposed of off site and no new soils are expected to be brought in during these activities. Any contaminated materials encountered during excavation will be disposed of in accordance with applicable laws, ordinances, regulations, and standards.

ATTACHMENT 4

RESPONSES TO FEBRUARY 21, 2007 CEC WORKSHOP QUESTIONS, DATA REQUESTS 28 THROUGH 30, COLUSA GENERATING STATION, URS CORPORATION, MARCH 23, 2007

THE FOLLOWING DO NOT REPRESENT WORKSHOP QUESTIONS, BUT PROVIDE ADDITIONAL RESPONSES TO JANUARY 11, 2007 DATA REQUESTS.

PREVIOUS DATA REQUEST 64

29. Please provide copies of all responses to the letters sent to individuals and groups listed by the NAHC.

To date, no written responses to the information letters sent to groups and individuals whose names were provided by the NAHC have been received.

PREVIOUS DATA REQUEST 65

30. Please make one telephone call to Native American individuals or groups listed by the NAHC who have not responded within two weeks to ensure that they have received the correspondence and gather any information they may have regarding cultural resources in the project area. Please provide documentation for each call, and note any comments regarding the project area provided by the Native Americans.

RESPONSE

On March 7, 2007 telephone calls were made to each of the groups and individuals on the list provided by the NAHC. When the individual was not available, a detailed voicemail was left describing the project, detailing the name and contact information of URS archaeologists. Telecon logs of each conversation are provided in Appendix F.

ATTACHMENT 5

CULTURAL RESOURCES SECTION, PROPOSED BRIDGE DESIGN MODIFICATION, COLUSA GENERATING STATION, URS CORPORATION, AUGUST 2007

2.3 CULTURAL RESOURCES

2.3.1 Construction

The revised bridge design described in Section 1.3 is not expected to result in a significant change to impacts on cultural resources compared to those associated with the previous bridge design and discussed in Section 8.3.2 of the AFC. With respect to historic architectural resources, the removal of the existing bridge and subsequent construction of a replacement bridge at essentially the same location will not cause an adverse effect to the Glenn-Colusa Canal or irrigation system; both potentially significant cultural resources under the National Register of Historic Properties Criteria A and/or C. The canal at the Glenn-Colusa Canal Bridge location has already been affected by the extant bridge, which was constructed in 1965, well after the historic period. The revised bridge design will not further contribute to this loss of integrity nor will it result in any additional effects other than those evaluated in the AFC. It will result in a direct effect on the canal through the construction of piers within the canal which were not proposed in the original project description, but this will not affect the canal alignment and function and will not diminish the canal's overall integrity in a manner that will disqualify it as a contributor to the larger potential Glenn-Colusa Irrigation District historic district. The Area of Potential Effect (APE) for historical architecture identified in the AFC (see Section 8.3.1 and Figure 8.3-1) will not change as a result of the revised bridge design.

The removal of the existing bridge will not result in any adverse cultural impacts on the bridge itself. The bridge is less than 50 years old, is a small bridge of a common type and method of construction, and is not historically significant.

Archaeological surveys carried out for the original proposed facility (URS, 2001), which included the proposed replacement of the Glenn-Colusa Canal Bridge, indicated that there were no significant archaeological resources within the proposed project's APE. The APE for archaeological resources will not change as a result of the revised bridge design, and the design would not result in any impacts on archaeological resources. The revised bridge design would not change any of the conclusions presented in the AFC for construction impacts to cultural resources.

2.3.2 Operation

The revised bridge design will not result in any impacts on cultural resources (historic architectural and archaeological) during operation. Operation of the power plant will not affect any cultural resources identified in the study area. Use of the replacement bridge will not differ between the previous bridge design and the revised bridge design and will not affect operational activities at the power plant. The permanent disturbance of an additional 0.6 acre as a result of the revised project design would not change any of the conclusions presented in the AFC for operation impacts to cultural resources.

ATTACHMENT 6

RESPONSES TO CEC DATA REQUESTS OF SEPTEMBER 20, 2007, DATA REQUEST 134, COLUSA GENERATING STATION URS CORPORATION, OCTOBER 12, 2007

CULTURAL RESOURCES

Technical Area: Cultural Resources
Author: Dorothy Torres

BACKGROUND [134]

Locations that were previously surveyed for archaeological resources are identified on Figure 8.3-1 in the AFC. The supplement to the AFC, "Proposed Modifications to Glenn-Colusa Canal Bridge Design" identifies a proposed 1.09-acre laydown area and portions of a 135-foot-long construction right-of-way that do not appear to have been surveyed for cultural resources.

DATA REQUEST

134. ***a. Please conduct an archaeological survey of the proposed laydown area and the 135-foot right-of-way described in the supplement.***

b. Provide a discussion of the archaeological survey methods and archaeological survey boundaries, to include the findings of the survey.

c. Provide résumés of survey personnel to staff.

RESPONSE

On October 6, 2007, URS archaeologist Mark Hale conducted an archaeological pedestrian reconnaissance of the entire 1.09-acre temporary construction laydown area and 135-foot right-of-way described in the supplement. Mark Hale's resume is provided as Attachment 134-1. The methods used and the results of these efforts, including an account of the field conditions at the time of survey, are described below.

Prefield Research. The existing record search and previously conducted Native American consultation efforts completed for this AFC were consulted prior to initiating field efforts.

The record search data and Native American responses did not identify either previously recorded archaeological resources or areas of concern to the local Native American community within these additions to the project's archaeological Area of Potential Effect (APE).

Field Methods. The archaeological field reconnaissance of the 1.09-acre temporary construction laydown area and 135-foot right-of-way expansion was completed on October 6, 2007. Specifically, these additions to the project APE were visually inspected using approximately 20-meter-wide parallel transects.

The ground surface within the proposed laydown area at the time of the archaeological survey was under rice cultivation and had been recently irrigated. As such, the overall ground visibility within the subject parcel can be described as poor. Given the limited surface visibility, small areas (20-cm by 20-cm) were cleared approximately every 10 meters to aid surface examination. To lessen disturbance to the unharvested crop, these clearings were carefully placed between the clusters of rice stalks.

Visibility of the ground surface within the 135-foot right-of-way expansion was mixed. The area west of the Glenn-Colusa Canal and north of Dirks Road, as well as the portion that bisects the proposed laydown area, were under rice cultivation. As such, ground visibility was poor and field methods identical to those described above were employed. The area west of the canal

and south of Dirks Road, however, had recently been plowed. Visibility in this area was unobstructed, eliminating the need to clear away surface vegetation. The remainder of the right-of-way was on road shoulders or canal banks, both of which had excellent surface visibility. No clearing was required in these disturbed areas.

Results. No archaeological resources or areas of concern to the local Native American community were identified during the completion of this supplemental archaeological field survey.

ATTACHMENT 7

CULTURAL RESOURCES SECTION, APPLICATION FOR CERTIFICATION, COLUSA POWER PLANT, URS CORPORATION, JUNE 2001

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APPENDICES [in Volume II]

8.3 CULTURAL RESOURCES

In accordance with CEC regulations, this section evaluates the effects of the proposed project on cultural resources.

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect and target the management of cultural resources. These include:

- Antiquities Act of 1906;
- Historic Sites Act of 1935;
- Reservoir Salvage Act of 1960;
- National Historic Preservation Act of 1966;
- National Environmental Policy Act of 1969;
- Executive Order 11593 (Projection and Enhancement of the Cultural Environment, 5/13/1971);
- 36 CFR 800 and CFR 60 (Advisory Council on Historic Preservation: Protection of Historic and Cultural Properties, Amendments to Existing Regulations, 1/30/1979, National Register of Historic Places, Nominations by States and Federal Agencies, Rules and Regulations, 1/9/1976);
- Revisions to 36 CFR 800 (Protection of Historic Properties, 1/10/1986);
- Archaeological and Historical Preservation Act of 1974;
- American Indian Religious Freedom Joint Resolution of 1978;
- Archaeological Resources Protection Act of 1979;
- California Environmental Quality Act of 1970;
- Native American Graves Protection and Reparation Act of 1990.

Collectively, these regulations and guidelines establish a comprehensive program for the identification, evaluation, and treatment of cultural resources.

The following section documents the efforts undertaken to determine whether cultural resources could be adversely affected by the implementation of the proposed project. Section 8.3.1 presents the environment that may be affected, Section 8.3.2 identifies the environmental consequences, and Section 8.3.3 discusses the cumulative effects associated with the proposed project. Section 8.3.4 indicates the mitigation measures to be implemented to avoid identified impacts. The following sections present the regulatory context. Specifically, Section 8.3.5 identifies the cultural resources laws, ordinances, regulations, and standards (LORS) applicable to the proposed project; Section 8.3.6 lists the involved agencies and agency contacts; and Section 8.3.7 discusses permits and scheduling.

8.3.1 Affected Environment

An archaeological survey of the facility and all infrastructure routes was completed. Consultation with the Colusa County Historic Records Commission, the State of California's Native American Heritage Commission (NAHC) and subsequent contact with Native American individuals identified by the NAHC was also completed. No significant archaeological resources were identified within the proposed project's Area of Potential Effects (APE). The specific boundaries of the archeological APE are shown on Figure 8.3-1.

A survey was conducted within the historic architectural APE to identify all historic architectural properties that were greater than 45 years of age. The historic architectural APE for this project was established in consultation with Gary Reinoehl (California Energy Commission), Denise Heick (Project Manager, URS Corporation), and Denise Bradley (Senior Landscape Historian, URS Corporation) on April 3, 2001. The APE consists of parcels of land that either border or contain project actions. Additionally the project area was reviewed to identify any properties pre-dating 1957 that were within a one-mile radius of the proposed project site and that would have views of the proposed project facility; this was done to consider visual effects to historic architectural properties. See Figure 8.3-1 for the location of the historic architectural APE.

8.3.1.1 Natural Environment

For a detailed description of the natural environment within which the facility is situated, the reader is referred to the appropriate sections of this document (e.g., Sections 8.2, Biological Resources, and 8.14, Water Resources).

8.3.1.2 Prehistoric Background

The Colusa Power Plant vicinity lies directly adjacent to one of the most intensively studied areas in California, the Sacramento/San Joaquin River Delta and adjoining sections of the Sacramento and San Joaquin valleys. Beginning in the last decade of the nineteenth century, avocational archaeologists recovered thousands of artifacts from numerous sites in the Delta vicinity. A general synthesis of these early works is found in Schenk and Dawson (1929).

The next series of excavations in the general region were conducted by student crews from Sacramento Junior College (SJC). Beginning in 1931, various sites adjacent to the Cosumnes River and Deer Creek confluence were excavated. Joined a few years later by crews from the University of California (UC), the SJC archaeologists continued their excavations within the Delta region. These efforts culminated in the milestone works of Lillard and Purves (1936) and Lillard, Heizer, and Fenenga (1939), both of which identified a sequence of cultural change within the Delta and adjacent vicinities.

The cultural sequence identified by Lillard and his colleagues (1936; 1939) contained three cultural periods (Early, Intermediate/Transitional, Late), which were based upon changes observed within the mortuary patterns and grave furniture recovered from their sample of sites. Lillard, Heizer, and Fenenga (1939) believed that the sequence represented a single cultural progression, the Early Period evolving into the Transitional Period, the Transitional Period evolving into the Late Period.

Nearly simultaneous with the early work in the Delta, archaeologists from UC began conducting excavations of sites located farther northward in the Sacramento Valley. Among the earliest of these was a series of excavations at three sites (CA-COL-1, -2, and -3) in Colusa County (Heizer, 1936; Heizer and Fenega, 1938; Heizer and Krieger, 1935-1936).

As more archaeological work was conducted within central California during the 1940s and 1950s, the cultural sequence developed by Lillard and his colleagues (1936; 1939) was refined and expanded to

accommodate the additional data including that collected from COL-1, -2, and -3. The most significant of these revisions was Beardsley's (1954) Temporal and Areal Relationships in Central California Archaeology, in which the Central California Taxonomic System (CCTS) was formally developed.

Of relevance to the current investigation was Beardsley's supposition that "the flow of traits was northward from Cosumnes Province" to the inhabitants of the Colusa Province (1954:78). Beardsley was not alone in this belief for in 1978 Elsasser made a similar statement when he claimed that the "Colusa District . . . seemed to be chiefly on the receiving end of influences exchanged back and forth between it and the Cosumnes District" (1978:45).

As archaeologists in central California began trying to incorporate their data into the CCTS, the limitations of Beardsley's system became apparent. Alterations to the CCTS began appearing in the literature of the discipline, with the doctoral dissertation of Fredrickson (1973) being of the most consequence.

After many debates and numerous revisions, the cultural sequence for the central California region, first defined by Lillard and his colleagues (1936; 1939), currently stands as follows:

Windmiller Pattern (ca. 3000 B.C. - 500 B.C.)

The artifact assemblage characteristic of this cultural manifestation includes a variety of flaked stone, ground stone, baked clay, and shell items reflecting exploitation of diverse subsistence resources and acquisition of materials from distant geographic areas through trade. The burial pattern of Windmiller cemeteries and grave plots is unique in that virtually all of the interments are ventrally extended, with the head oriented to the west. The primary exception to this burial pattern is that aged females were buried in a flexed position. Social stratification can be inferred from the burial practices of Windmiller peoples. Males appear to generally have higher status than females, as evidenced in their deeper and artifactually richer graves. Social status may have been at least partially inherited, for some female, child, and infant burials contained elaborate grave furniture, while others lacked such wealth (Moratto, 1984:201-207).

Berkeley Pattern (ca. 500 B.C. - A.D. 500)

The Berkeley Pattern represents a gradual shift in adaptation and material culture that appears to have originated within the San Francisco Bay region. The subsistence practices of Berkeley peoples differs from that of the Windmiller peoples in that the utilization of acorns for food seems to have increased dramatically. The reliance on acorns is evidenced in the increase in mortars and pestles recovered from Berkeley Pattern sites. Other differences in material culture include the occurrence of an extensive bone tool kit, unique knapping techniques, and certain types of shell beads and pendants within Berkeley Pattern sites. Burial practices of Berkeley peoples also differed from those of Windmiller Pattern sites. No longer were corpses placed into graves extended towards the west. Instead, Berkeley Pattern burials are flexed with variable orientation (Moratto, 1984:207-211).

Augustine Pattern (ca. A.D. 500 -A.D. 1880)

The Augustine Pattern reflects local innovation in technology, as well as the incorporation of new developments with traits of the Berkeley Pattern. The artifact assemblages of Augustine Pattern sites indicate an increased reliance on hunting, gathering, and fishing. Acorns appear to have become particularly important. Many burials continue to be flexed; however, cremation becomes the mortuary practice for high-status burials. Extensive trade networks developed to accommodate the resource and social needs of the burgeoning populations (Moratto, 1984:211-214).

8.3.1.3 Ethnographic Background

The present project area is situated within the ethnographic territory of the Patwin, who inhabited the western half of the lower Sacramento Valley and adjoining portions of the Coast Range (Figure 8.3-2). Their territory included the northern shores of Suisun Bay, the lower reaches of the Napa River, nearly the entire lengths of Cache and Putah creeks, and the Sacramento River between the present communities of Knights Landing and Princeton (Johnson, 1978; Kroeber, 1932, 1976).

Kroeber (1932, 1976) has provided the most complete ethnographic analyses of Patwin lifeways, while a very early account of the Patwin is found within Powers' (1877) study of California Indians. Johnson (1978) has synthesized the existing data and written a general account of this particular Native American group.

Powers stated that the Patwin were one of the largest nations of the state, yet they have no common government, and not even a name for themselves (1877:218). Typical of aboriginal California, among the Patwin the largest recognized political unit was the triblet. In general, a Patwin triblet consisted of a single primary and several auxiliary villages situated within a definable territory. Powers utilized the term *pat-win*, as it was a word which they all employed to signify man or person (1877:218).

Johnson (1978:350) does not identify any named villages within the general vicinity of the project area. The closest Patwin villages to the project area are situated approximately 14 miles to the east along the banks of the Sacramento River (Johnson, 1978:350).

Similar to other native Californians, the Patwin groups who inhabited the valley floors placed their primary villages atop high ground along the major watercourses. Structures in this region were generally dome shaped and covered with earth (Kroeber, 1976; Powers, 1877).

A broad spectrum of plant and animal resources were consumed by the Patwin. Important plant foods included the ubiquitous acorn, various seeds, buckeye, pine nuts, numerous berries, wild grapes, roots, and bulbs. Many animals were hunted, including tule elk, deer, bear, numerous small mammals, turtles, waterfowl, and various other bird species. Among the animals not considered to be dietary fare were canines (dog and coyote), various raptors, frogs, reptiles, caterpillars, grizzly bears, and predator animals in general (Johnson, 1978:355).

Among the Patwin inhabiting the larger watercourses, fishing played a significant subsistence role. Anadromous runs of salmon and steelhead, as well as resident fish were taken. It is reported (Johnson, 1978:355) that the Patwin erected at least two fish weirs across the Sacramento River in the vicinities of the modern communities of Colusa and Grimes.

8.3.1.4 Historic Background

8.3.1.4.1 The Hispanic Period

As a result of the Cabrillo expedition of 1542-1543, the southbound passage of the Manila Galleon along the coast after 1565, and subsequent voyages of exploration by Drake in 1579, Cermmenho in 1597 and Vizcaino in 1602, the California coastline was familiar to navigators by the end of the sixteenth century (Donely et al., 1979). Conversely, exploration of the interior did not commence until the late eighteenth and early nineteenth centuries.

The Spanish annexation and colonization of Alta California, as manifested in the religious-military mission system, produced profound changes in the cultures of the indigenous population. Missions were established in Northern California at San Jose, San Francisco (San Francisco de Asis), San Rafael, and Sonoma (San Francisco Solano). The missions resettled and concentrated the aboriginal hunter-gatherer

population into agricultural communities. The Mission tribes were christianized and converted to a form of peasantry which was in rapid decline in Europe.

Following the depletion of the local coastal aboriginal groups, the missionaries turned to Northern California's interior for neophytes. Among the groups recruited during this second wave of proselytization were the Patwin. Patwin neophytes have been identified within the baptismal records of the missions at San Francisco, San Jose, and Sonoma (Johnson, 1978).

Jurisdiction over Alta California was established by Mexico in April 1822. During the Mexican Period (1822-1848), control over this remote area by the central and local Mexican authorities was never strong. Rather, the Mexican Period was one of a slow disintegration of control by the Mexican government. In 1833, the mission lands were secularized, expropriated, and given out as private ranches during the next decade in the form of land grants (Donely et al., 1979). The project area does not appear to have been part of any Mexican land grant, the closest being the Larkin Children's Rancho which was established in 1844 along the western bank of the Sacramento River (Hoover et al., 1990:47).

8.3.1.4.2 The American Period

A major factor leading to the disintegration of Mexican control of California was pressure from the United States. Initial contacts were made by private citizens, such as the November 1826 visit by Jedediah Smith to the San Gabriel Mission, the 1827 trek of James Ohio Pattie, and the 1832 stop by Ewing Young at Los Angeles. These and other sojourners brought the news of California back to the United States, helping trigger the immigration of U.S. citizens into California. The Mexican Government became increasingly agitated by the continued influx of U.S. citizens into California. The semi-official 1844 and 1845 expeditions into California by John Charles Fremont further distressed the Mexican Government (Beck and Haase, 1974).

The Patwin were also greatly impacted by these early American intrusions into the region. In 1827, Jedediah Smith led a party of trappers through the Patwin territory before embarking upon his famous journey across the Sierra Nevada (Beck and Haase, 1974). Smith was quickly followed by others, including a group of trappers from the Hudson Bay Company who entered the region in 1832. Infected by malaria, these trappers spread the disease among the aboriginal communities of the region. It is reported that this pestilence often killed the inhabitants of entire villages (Cook, 1955; Powers, 1877). Cook (1955) estimates that up to 75 percent of the population perished as a result of diseases introduced by non-native peoples.

Those Patwin who survived the epidemics were then subjected to the mass incursion of Euro-Americans into the region following the discovery of gold at Sutter's Mill in 1848. In response to a lumber shortage, John Sutter opened a sawmill in the Sierra Nevada foothills, operated by John Marshall. Marshall selected a location for the sawmill on the South Fork American River, about 45 miles northeast of Sutter's Fort. During final stages of completion of the mill's tailrace, Marshall discovered gold. Attempts to keep the discovery silent were unsuccessful (Hoover et al., 1990:72). By the middle of 1848, word of the find was spreading like wildfire and the rush for gold was on, changing forever the character of the state. From a non-Indian population of about 14,000 in 1848, California's population jumped to nearly 100,000 by the close of 1849, and to over 220,000 by late 1852 (Paul, 1965:17-21, 25).

Native peoples were no longer viewed as a source of labor as during the mission era, but instead as obstacles to progress. During the Gold Rush period, the wholesale removal of the Patwin from their lands began (Johnson, 1978; Schwaderer, et al., 1979). Subsequently, the Patwin living in the southern portion of their territory became so overwhelmed by the diseases and encroachment of the Euro-Americans, that by 1923-1924 Kroeber could not identify any living members in this region (Johnson, 1978:352).

The continued friction between Mexico and the United States ultimately led to the Mexican War of 1846-1847. California became part of the United States in 1848 when the territory was formally ceded in the treaty of Guadelupe Hidalgo following the U.S. victory over Mexico (Beck and Haase, 1974; Bethel, 1969).

The State of California was admitted to the Union in 1850, and by 1851, 27 counties were established. Among the original counties was Colusa County, in which Monroeville was the original county seat. Monroeville was established on the ranch of Uriah P. Monroe, on the old Rancho Capay. Monroe settled here during the early years of the Gold Rush, and in 1851, Monroeville was selected as the seat of Colusa County. By 1853, the seat was moved to Colusa and Monroeville was abandoned to become agricultural land (Francis and Huberland, 1999:13; Hoover et al., 1990:80).

The development of the mining industry in California, along with the rapid population growth, led to shortages of raw materials and food. Besides mining, other industries soon developed to meet the needs of the miners and growing population centers, including lumbering, ranching, and agriculture. Much of the Sacramento Valley and surrounding foothills consisted of open range upon which large herds of cattle and sheep could be raised. At first, uncontrolled grazing was common; however, the prime agricultural land was soon fenced, and livestock was moved to higher ground.

Among the early American agriculturalists in the project vicinity was Dr. Hugh J. Glenn, who came in 1849 to California from Missouri. Glenn worked the gold camps of the American River for a time, returned home, and brought his family to California. In 1867, Glenn purchased 7,000 acres of Rancho Jacinto from Isaac Sparks. He added more property to his holdings, and by 1874 owned some 55,000 acres, including 41,000 acres planted in wheat. Glenn ultimately became known as the "Wheat King of the West" (Hoover et al., 1990:95).

In March 1891, a portion of Colusa County was removed to become Glenn County, with the county seat established at Willows. Glenn County was named in honor of Dr. Glenn, while Willows was named for a willow pond or spring that represented one of the few watering places in the plains east of Stoney Creek (Gudde, 1969:365). This stand of willow trees grew along a portion of Willow Creek and was visible from a great distance, serving as a landmark for travelers in the area. The town of Willows was established in 1876 by W. Johnson and M. Hickheimer, who built a store at the watering place. In 1878, the Southern Pacific Railroad was built to Willows, and a post office was established in 1880 (Francis and Huberland, 1999:13; Hoover et al., 1990:97; White, 1979).

Closer to the project area is the small agricultural community of Maxwell. This town, established in 1878, was named for early resident George Maxwell (Gudde, 1969:196). Also situated nearby are the remnants of the community of Sites. According to Gudde (1969:312), the town was named after local landholder John H. Sites in 1887 by C. E. Grunsky.

8.3.1.4.3 Irrigation and the Development of Colusa County

The project area is located to the west of the small town of Delevan. The history of this area is also related to the development of ranching, farming, and irrigation within the west Sacramento Valley. In 1849, the gold rush brought miners to the area, many of whom stayed once they were unable to make a living searching for gold. They found that the climate made the Sacramento Valley amenable to farming, but seasonal water supplies limited the crops to dry farming, primarily wheat, and ranching.

By the 1880s, wheat farming had become less profitable for several reasons. First, the intensive dry farming was beginning to deplete the soil, and crops were thinning. Second the completion of the transcontinental railroad reduced the West's dependence on locally grown wheat. Finally, a drought in 1898 drove many farmers to abandon farming and the Sacramento Valley.

William S. Green, one of the founders of Colusa, envisioned revolutionizing agriculture in the area by constructing a major canal that would divert water from the Sacramento River to the farms along the western side of the Sacramento Valley. Not all landowners in the area were convinced of the need for a canal, but the passage of the Wright Irrigation District Act on March 7, 1887 by the state legislature encouraged the formation of irrigation districts by giving them powers similar to those of municipalities. On November 22, 1887, the Central Irrigation District was founded in Colusa County (as described above, Glenn County was part of Colusa County until 1891) and construction on the Central Canal began.

Litigation over rights-of-way soon hampered the project, construction stopped, and portions of the canal were not built. The fate of the Central Irrigation District was not unique; most of the forty-nine districts proposed under the Wright Act were never completed (Davis, 1984: 13-15). In 1897 a new law, the Bridgeford Act, was adopted that made forming irrigation districts easier. In 1903 the Central Canal and Irrigation Company purchased the works, with the hopes of irrigating a smaller area. Despite its progress on the canal, the Central Canal and Irrigation Company had financial troubles similar to those of the Central Irrigation District (JRP and Caltrans, 2000: 23).

On June 15, 1909, the Kuhn banking firm from Pittsburgh founded the Sacramento Valley Irrigation Company, which purchased the Central Canal and Irrigation District (Davis, 1984: 30). After the Kuhn bank failed in 1915, the Sacramento Valley West Side Canal Company was in receivership with the State Railroad Commission fixing the rates. During these years farmers discovered that rice could be grown on the alkaline and heavy clay soils. However, the fields had to be flooded during the growing season, a practice that required massive amounts of water.

Land adapted to rice culture consists of any soil with tight subsoil in which losses from seepage are minimal, especially as the land is continuously flooded during the growing season. To keep rice fields constantly covered during the growing season, water must be supplied at the fields in sufficient quantity to provide for evaporation losses, for transpiration from the growing plants, and for consumers' waste from imperfect regulation of the supply (Supplement Report).

Although it demanded lots of water, rice farming was attractive to many farmers, because prices were high due to a tremendous demand caused by World War I. Unfortunately, the existing irrigation system was inadequate to meet the increased demand, and the State Railroad Commission would not increase rates to pay for expansion (Davis, 1984:63).

During this period, several other counties in the Sacramento Valley were organizing irrigation districts. By 1929, there were 15 irrigation districts in the valley between Sacramento and Redding. Over half of these were constructed between 1916 and 1919 during the years of the great expansion of the rice industry (Supplement Report). Landowners within the boundaries of the Central Irrigation District also organized and had the goal of purchasing and then expanding the system. A committee named the organization the Glenn-Colusa Irrigation District. Although some landowners protested the purchase (and the fees that would be levied), the organization overcame opposition through legal means and purchased the system from the Sacramento Valley West Side Canal Company for $1,000,000 in 1920 (JRP and Caltrans, 2000:23).

The canal was finally finished, but the weather and the economy combined to deal the district a serious blow. In 1920 rice crops were lost due to an early and continuous rain that resulted in the "Crash of 1920." Ten years later, the Great Depression further devastated farmers. Holders of poorer lands increasingly were delinquent on their payments to the irrigation district, Reclamation District 2047, and taxes to the county. Those unable to pay lost their land. The irrigation and reclamation districts became rich in land but poor in fees. In the late 1930s, Charles Lambert headed the reorganization of district lands and the sale of the property back to farmers at low prices. Options to buy went first to those who had lost their lands. World War II increased demand for grains, and once again rice was a profitable crop.

The war years were a period of growth for the towns of Colusa County. Many of the farming structures with the project area were built at that time.

In the 1950s, the Bureau of Reclamation constructed the Shasta Dam and questioned Glenn-Colusa Irrigation District's water rights. Litigation ensued and the Secretary of the Interior finally settled the disagreement in 1964 in favor of the district. In the 1960s, agriculture continued to be the major industry in Glenn and Colusa counties. Gross receipts in Colusa County in 1965 were $29,786,500 from field crops, followed by fruits and nuts at $6,123,000, and livestock at $5,431,000 ("Map of Colusa County California, Colusa County Chamber of Commerce" 1966). Today the land surrounding the project area is used for rice farming and for growing all types of vegetables.

8.3.1.4.4 Electric Power Transmission

The earliest hydroelectric generating plants in the United States were built in the 1880s and 1890s. These were generally of two different types. In the eastern United States, steam-powered generating plants provided most of the power, with the remainder provided from hydroelectric facilities. Both types of plants were located near the consumers of electricity and required short transmission lines with low voltages. In the west, hydroelectric plants provided a much greater share of electric power. However, these hydroelectric plants were located far from cities — in California, they were in the Sierra Nevada — and required long transmission lines with high voltages. For new transmission lines to operate successfully at greater distances, new technologies were developed.

In the 1890s, systems were built that were generally ten to twenty miles long. In 1899, an 83-mile-long line was built in southern California, and in 1900, a 142-mile-long system was built from the Sierra Nevada to Oakland. By 1915, at least two lines were over 200 miles long. This early period of hydroelectric development culminated in more efficient transmission systems in the early 1920s, among the first of which was the transmission line from the Pit 1 power plant in Shasta County to the Vaca-Dixon substation in Solano County. This line was built southwest from Pit 1 to the Cottonwood substation near Redding. From Cottonwood, it ran south, through the APE for this project in Glenn and Colusa counties to Vaca-Dixon.

At Vaca-Dixon, the power was fed into the San Francisco Bay area distribution systems.

> "To carry power from the Pit River to users in the San Francisco Bay Area, engineer Frank G. Baum designed a 220,000 volt transmission system. It is more efficient to transmit electricity over long distances at high voltages, but the power is also more difficult to control. Baum designed PG&E's Pit River project as a 220 kV system from the outset with all of its components arranged to handle voltages that had not yet been tested commercially. When Pit 1 first went on line its output, combined with that of the Hat Creek plants, went out at 110 kV, matching the voltage of existing PG&E high tension lines. Voltage was stepped up to 175 kV in 1923 (?), to 220 kV after the 70,000 kw line went in. At the time it started up, its machinery was similar to that of scores of other plants built throughout the country in the late 1910s and 1920s, except in one respect — it was larger than most, and in particular, its transmission system operated at a record voltage.
>
> Since it was completed, changes to Pit 1 and its parts have been relatively minor. The most significant changes were made in 1946 when a new dam and a second intake were built creating a forebay to store water for use in times in high demand.
>
> The larger Pit River system was expanded with the construction of Pit 3 in 1925, followed by several other plants, all downstream of Pit 1. In 1967, a new substation was built at Round Mountain in the lower Pit River valley as part of the development of an

intertie system linking northern and southern California with transmission lines of increased capacity. This ended the original relationship between Pit 1 and the Vaca-Dixon substation" (Hay and Corbett 1992, Appendix Historic Resources Inventory Form for the Pit No. 1 Power Plant: 4-5).

8.3.1.5 Resources Inventory

The methods utilized to inventory the Colusa Power Plant project area for archaeological resources consisted of archival research, Native American consultation, and a pedestrian reconnaissance of the entire project APE (Figure 8.3-1). Appendix I contains Native American consultation correspondence.

The methods utilized to inventory the Colusa Power Plant project area for historic architectural resources consisted of archival research, contact with local agencies, and a site survey of the entire project APE (Figure 8.3-1). See Appendix J for the Historic Architecture Report.

8.3.1.5.1 Archival Research

8.3.1.5.1.1 Archaeological Resources

Archival research included a literature review and record search of ethnographic and historic literature and maps, federal, state, and local inventories of historic properties, archaeological base maps and site records, and survey reports on file at the Northwest Information Center at Sonoma State University. The Information Center serves as a regional office of the State Historic Preservation Office. The purpose of the record search was to ascertain whether any cultural resources had been previously identified within or adjacent to the project area and to identify any previous archaeological investigations that may have included the current APE.

The record search revealed that no archaeological resources have been previously recorded within the current APE. It appears that various portions of the Colusa Power Plant project APE have been subjected to archaeological investigations on three previous occasions (Figure 8.3-3). Unfortunately, the exact portions and to what extent is unclear. It is also unclear whether the lack of archaeological resources within the APE is the result of not having been previously inventoried or due to a lack of past human activities within the general vicinity.

This confusion is the result of the lack of detailed project area descriptions, survey methodologies, and/or project maps in two mid-1960 inventory reports. The initial investigation was completed by Brigham Arnold in 1964 in association with the construction of the PG&E Canadian Gas Line through California. The records on file at the information center warn that the boundaries of this study, as depicted on their base maps, are approximate and that it is unclear whether the survey included all sections of the gas line. As such, it is unclear whether the current APE was included in the Arnold (1964) inventory. If the current project area was a part of that investigation, a corridor approximately 800 feet wide within the eastern portion of the APE was previously inventoried for archaeological resources.

A second, nearly contemporaneous survey, was completed in 1965 by Treganza, Edwards, and King in advance of construction of the Tehama-Colusa Canal. Much of the current APE may have been inventoried for archaeological resources during this investigation; however, similar to the Arnold (1964) study, project boundaries on the information center base maps are approximate as a result of the small scale of the project maps included in the original report. It is also unclear whether the entire canal corridor or just select areas were examined. If the Treganza, Edwards, and King (1965) study did include the current project vicinity, the western half of the current APE was inventoried for archaeological resources.

Most recently, a small portion of the current APE was inventoried for archaeological resources by Infotec Research, Incorporated and Biosystems Analysis, Inc. (IRI and BAI, 1990) during their survey of the PGT-PG&E Pipeline Expansion Project. Specifically, the extreme southern end of the utility corridor extending southward from the southeast corner of the PG&E Compressor Station to the southern edge of the APE was included in the IRI and BAI investigation.

As mentioned above, no archaeological resources have been previously identified within the current APE.

8.3.1.5.1.2 Historic Architectural Resources

Research was conducted for three different purposes: preliminary research, research for the historical overview, and research on the individual properties. Research was conducted in March and April 2001.

Preliminary research included a literature review and record search of historic literature and maps, federal, state, and local inventories of historic properties. The following list includes libraries, other repositories, and sources of information that were consulted or contacted and the subjects that were researched:

Colusa County Agricultural Agency for rice farming history.

Colusa County Assessor's Office, Colusa, California for APN maps and information.

Colusa County Historical Commission (Kathy Moran) for Colusa County history.

Colusa County Planning Department, Colusa, California for building permits.

Colusa County Public Records, Colusa, California for background information on area and the Glenn-Colusa Canal.

Colusa County Public Works Department (Jon Wrysinski) for Colusa County history, including bridges and rice farming.

Colusa County Recorder (Wylie Anderson) for survey and subdivision maps.

Christopher Doerr (Garcia & Associates) for a report on an evaluation of a portion of the transmission line from Pit 1

Earth Sciences Library, University of California, Berkeley for historic maps.

Glenn-Colusa Irrigation District, Willows, California (Ben Tennock) for information on the Glenn-Colusa Canal and Glenn-Colusa Irrigation District (GCID) and general history of the region and a map of the Delvan Unit of the GCID)

Glenn County Assessor's Office, Willows, California for APN maps and information.

Glenn County Planning Department, Willows, California for building permits.

Pacific Gas & Electric Company (Stan Mishoika) for history of transmission lines.

San Francisco Public Library for information on Colusa County history.

State Board of Equalization Assessors Office for information on transmission lines.

Water Resources Archives, University of California, Berkeley for information on the Glenn-Colusa Canal.

The following list includes persons or agencies that were contacted but from which a reply was not received:

Depue Warehouse Company (Kevin Dennis), for a history of the rice warehouse in Delevan.

Emerald Farms (Allan Etchepare), for information on the farm located within the APE.

Holthouse Water District, for district history.

Pacific Gas & Electric Company (Jim Clausen), for information on the bridge over the Glenn-Colusa Canal at Dirks Road.

Additionally, the book *Where Water Is King: The Story of Glenn-Colusa Irrigation District* by Cynthia F. Davis (1984) provided an excellent source of information and contextual history for the development of the area and the Glenn-Colusa Irrigation District. The newly revised *Water Conveyance Systems in California, Historic Context Development and Evaluation Procedures* prepared jointly by JRP Historical Consultants and the California Department of Transportation (Caltrans, 2000) was consulted for contextual information on irrigation districts and for the evaluation of the Glenn-Colusa Canal and GCID.

The portions of the 230 kV transmission lines that are located within the APE for this project are part of a larger system that historically delivered electricity from the Pit 1 Power Plant to the San Francisco Bay area via transmission lines that ran from Pit 1 to the Cottonwood Substation and then to the Vaca-Dixon Substation. This line was online by 1922. *National Register of Historic Places and California Register of Historical Resources Evaluation of CA-SHA-2939-H and CA-SHA-2920-H, Shasta County, California* (Hair, 2000) evaluated a segment of the 230 kV transmission line (Trinomial CA-SHA-2939-H) that runs from the Pit 1 Power Plant to the Cottonwood substation, approximately 59 miles away. This report was consulted for information on its historical context, evaluation of the transmission line, and references and for information on the plans for the original transmission towers used in the ca. 1920 construction, contained in Appendix C and labeled as "Pit River 220,000 Volt Transmission Line, Mt Shasta Power Corp (PG&E Co)." These plans were designed by Frank G. Baum, Chief Engineer with PG&E. Two of the plans — "Standard Tower, 220 K.V. Transmission Line" and " "Type 'M' Tower, 222K.V. Line" — appear similar to the towers located within the APE for the Colusa Power Plant project.

Hair found the transmission line from Pit 1 to the Cottonwood Substation (Trinomial CA-SHA-2939-H) to be significant under National Register of Historic Places (NRHP) criterion A and California Register of Historical Resources (CRHR) criterion 1 "because of the significant effect the Pit 1 Hydroelectric Development had on the development of the San Francisco Bay region" and under NRHP criterion C and CRHR criterion 3 "for its revolutionary engineering feat of transmitting high voltage electricity over a great distance" (Hair, 2000: 12). No period of significance was established. The transmission line does not retain its integrity because "Most of the original towers have been replaced...," and it is not eligible for NRHP or CRHR (Hair, 2000: 13).

The report by Duncan Hay and Michael Corbett, *Historic Resources Assessment Report for the Pit 1 Hydroelectric Project, Shasta County, California, revised draft* (1992), was reviewed for its historical context on the development of electrical generation and transmission and the evaluation of the Pit 1 Power Plant. Hay and Corbett found the Pit 1 Power Plant eligible for the NRHP under criteria A and C:

> "Under Criterion A, it is significant at the local level for its impact on local economic and social life, replacing much of the old agricultural economy and ending the isolation of the area from the mainstream of the State. And it is significant at the State level for its place

in the hydroelectric development of the State, representing the beginning of the hydroelectric development of a major river by PG&E and the confidence of an era of growth. Under Criterion C, it is significant at the national level for its engineering and architecture, with one of the largest generating capacities of its day and an unusual degree of embellishment of its plant, in comparison with hydroelectric plants around the country. The whole system was unified by an architectural idea, focused on the power house. The result was a powerful visual image that represented the importance of Pit 1 to PG&E and to the development of hydroelectric power in California. In addition, it represents the work of Frank Baum, one of the leading hydroelectric engineers of his day in the United States.

"The following features of the Pit 1 Hydroelectric Plant appear to be contributors to its significance: the transformer yard, power house, generating machinery, Fall River diversion dam, Intake No. 1, canal, tunnel, surge tank and spillway, valve house, penstocks, tail race, and towers for transmission lines A and B. The following appear to be non-contributors: the forebay dam, intake, forebay, transformers, and towers for transmission line C." (Hay and Corbett 1992, Appendix Historic Resources Inventory Form for the Pit No. 1 Power Plant: 5).

It should be noted that the transmission towers that contribute to Pit 1's significance are those located immediately adjacent to the Pit 1 Power Plant.

Standard references were consulted in the preparation of this report: National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation was used in evaluating properties under NRHP criteria; CEQA Guideline Summary: Historical Resource Sections 15064.5, 15126.4, 15325, 15332, Appendix G (California Office of Historic Preservation, 1999) was used in applying the California Register of Historical Resources criteria; and Instructions for Nominating Historical Resources to the California Register of Historical Resources (California Office of Historic Preservation, 1997) was used in preparing the Historical Resources Inventory (DPR 523) records.

Jody Stock (Architectural Historian, B.S., Architectural Studies, Preservation, 1995, University of Utah) and Roxana Khakpour (Architect URS Corporation; B.A., Architecture, 1996, University of California Berkeley) conducted research. Stock also prepared the historical context for irrigation and Colusa County.

Michael Corbett (Senior Architectural Historian, URS Corporation) evaluated the properties within the APEs, prepared the DPR 523 records and wrote the historical context on transmission lines. Corbett (Ph.D. Candidate, History of Architecture, University of California Berkeley and A.B., 1973, Anthropology and American Studies, Princeton University) has over 27 years of experience as an architectural historian and has particular expertise in the history of the built environment in California. He meets the Secretary of the Interior's standards for professionals for historians and architectural historians.

Denise Bradley (Senior Landscape Historian, URS Corporation) assisted Corbett in the evaluation of the Glenn-Colusa Canal and GCID and prepared the technical report for historic architecture. Bradley (Master of Landscape Architecture, 1986, Louisiana State University and B.S. in Agriculture, 1979, University of Tennessee) has over 15 years of experience in historic resources analysis and has worked in California since 1993. She meets the Secretary of the Interior's standards for professionals for historians and historical landscape architects.

8.3.1.5.2 Native American Consultation

To further assist in securing information regarding potential cultural resources located in or near the project location, a request for information was submitted to the Native American Heritage Commission (Appendix I).

The NAHC provided a list of contacts, all of whom were notified about the project and questioned about their concerns and/or knowledge of resources in the area (Appendix I).

Responding by telephone to our request was Mr. Kesner Flores of the Cortina Rancheria of Wintun Indians of California. Mr. Flores had no specific knowledge of resources within the APE; however, he indicated that a number of archaeological sites had been identified to the south in the Sites vicinity and along the PG&E gas pipeline.

In addition, Mr. Flores, as a representative of the Cortina Rancheria Environmental Protection Agency, had questions about air quality issues. Mr. Flores was put in contact with the appropriate individuals, who addressed his questions. Because these discussions did not concern cultural resources, they are not included in this section.

No other responses were received.

8.3.1.5.3 Field Reconnaissance

8.3.1.5.3.1 Archaeological Resources

The archaeological field reconnaissance of the archaeological APE commenced on March 7, 2001 and was completed on March 23, 2001. Specifically, the project APE was visually inspected utilizing approximately 20-meter-wide parallel transects. Although surface visibility was excellent throughout the APE, no archaeological resources were identified during the course of the current investigation.

Mr. Mark Hale (Project Archaeologist, URS Corporation) conducted the pedestrian reconnaissance of the project's APE. Mr. Hale holds a B.A. in anthropology from the University of California, Berkeley, and has completed his course work and defended his thesis for a M.A. in cultural resources management from Sonoma State University. He has over 15 years of professional experience in conducting and managing cultural resource investigations in California and elsewhere in western North America and Pacific Islands.

Mr. Hale was assisted by Mr. Russell Bevill (Project Archaeologist, URS Corporation). He received his B.A. in anthropology from California State University Chico where he is also pursuing a M.A. in anthropology. Mr. Bevill has over 10 years of professional experience in conducting cultural resource investigations in California and elsewhere in western North America and the Pacific Islands.

8.3.1.5.3.2 Historic Architectural Resources

Brian Vahey photographed the properties within the APE and surrounding vicinity March 8 and 11, 2001. A survey of the APE and surrounding area was conducted by Jody Stock (Architectural Historian) on March 13, 14, and 20, 2001 to take field notes used in the preparation of the DPR 523 records. A survey of the APE was conducted by Michael Corbett (Senior Architectural Historian, URS Corporation) and Denise Bradley (Senior Landscape Historian, URS Corporation) on April 6, 2001. Additional field notes and photographs were taken on that date.

8.3.2 Environmental Consequences

CEQA requires that the significant impacts to archaeological or historical resources be determined. Archaeological and historic resources are those that are listed in or determined eligible for listing in the California Register of Historical Resources, or are included in a local register of historical resources. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource has integrity and meets the criteria for listing on the California Register of Historical Resources. Resources already listed or determined eligible for the National Register or the California Historic Landmarks 770 or higher, are also by definition eligible for the California Register. Historic resources included in historic resource inventories prepared according to California State Office of Historic Preservation guidelines (and thus included in the State Inventory of Historic Resources) or designated under county or city historic landmark ordinances may be eligible if the designation occurred during the previous five years.

For a resource to be eligible for the California Register, it must satisfy ***all*** of the following three standards:

1. A property must be significant at the local, state or national level, under one or more of the following criteria:

    a. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.

    b. It is associated with the lives of persons important to the nation or California's past.

    c. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

    d. It has yielded, or may be likely to yield, information important to the prehistory or history of the State or the Nation;

2. A resource must retain enough of its historic character or appearance to be recognizable as a historic property, and to convey the reasons for its significance; and

3. It must be fifty years old or older (except for rare cases of structures of exceptional significance).

The California Register regulations define "integrity" as "the authenticity of an historic resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance" (California Office of Historic Preservation, 1990:17). That is, it must retain enough of its historic character or appearance to be recognizable as a historical resource. California Register regulations specify that integrity is a quality that applies to historic resources in seven ways: location, design, setting, materials, workmanship, feeling, and association. A property must retain most of these qualities to possess integrity.

A project is considered to have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource. Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired.

8.3.2.1 Archaeological Resources

As a means to determine the potential effects of the proposed project to archaeological resources, a number of tasks were completed, including archival research, Native American consultation, and a field reconnaissance. The project APE for archaeological resources is shown on Figure 8.3-1. No archaeological resources were identified within the project APE during the course of these efforts. As such, there will be no effect to known cultural resources with project implementation.

Although no archaeological resources were identified on the surface of the project's APE, it is possible that with project implementation previously undiscovered archaeological resources may be exposed during construction activities. Unless properly evaluated and managed, this could result in a potentially significant impact to cultural resources.

Indirect impacts to archaeological resources of the proposed project are not expected, because archaeological sites are typically only affected by direct (physical) impacts (Caltrans, 1991:5-2). Once the proposed project is in place, further impacts to archaeological resources due to operation or maintenance are not anticipated.

8.3.2.2 Historic Architectural Resources

To determine the potential effects of the proposed project on historic architectural resources, a number of tasks were completed, including archival research, field survey, preparation of historical contexts, and evaluation of significance of all properties 45 years of age or older under National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) criteria.

Within the APE, there are six properties that are at least 45 years of age. The locations of these properties are shown on Figure 8.3-4. None of these properties had been previously evaluated for significance under NRHP or CRHR criteria.

Of the six properties evaluated for NRHP and CRHR significance, four do not appear be eligible for the NRHP or have significance under CRHR criteria. These include the

small animal feeder located on APN 11-14-21;

group of ranch buildings located on Section 1 (APN 11-14-4);

farmstead located on Section 6 (APN 11-22-1); and

Teresa Creek Bridge.

For the purposes of CEQA, these four properties are not historic resources.

The two remaining properties within the APE are small sections of larger properties, and for both more research would be required in order to provide a complete evaluation. These properties are (1) the 230 kV transmission line owned by PG&E, and (2) the Glenn-Colusa Canal and Glenn-Colusa Irrigation District. These properties are described below.

8.3.2.2.1 Two 230 kV Transmission Lines

A small portion of these two 230 kV transmission lines — approximately two miles — is located within the APE for this project. They consist of two parallel north-south high voltage (230 kV) electrical power transmission lines, each consisting of steel towers, insulators, and conductors (connecting cables). Each tower carriers two circuits (Mishioka, pers. comm., 2001). The towers in the two parallel lines are similar but not identical. The base of each tower flares outward to four legs. The upper part of each tower is

vertical and supports three crossarms, each of which carries a hanging insulator at each end. The conductors are strung from the insulators.

From the PG&E Compressor Station, located within the APE, the transmission lines run north to the Cottonwood Substation (approximately 72 miles away) and south to the Vaca-Dixon Substation (approximately 70 miles away) (Mishioka, pers. comm., 2001).

During the early 1920s, a transmission line was built from the Pit 1 Power Plant in Shasta County to the Vaca-Dixon substation in Solano County. This line was built southwest from Pit 1 to the Cottonwood substation near Redding. From Cottonwood, it ran south, through the APE for this project in Glenn and Colusa counties to Vaca-Dixon.

Because significant portions of the line have been rebuilt, it is not clear whether the section that is located within the APE for this project is original.

The sections of the two 230 kV transmission lines that are located within the APE are part of a larger system that transmitted power from the Pit 1 Power Plant to the Bay Area. Specifically, the sections of the two 230 kV transmission lines that are located within the APE are part of the transmission lines between the Cottonwood and Vaca-Dixon substations. The sections of the transmission lines with the APE are not individually significant. However, if either of the transmission lines between the Cottonwood and Vaca-Dixon substations were significant, then these sections may have significance as contributing features to the larger property.

An evaluation of the transmission lines between the Cottonwood and Vaca-Dixon substations has not been done. However, this system would appear to have the potential to be significant under NRHP criteria A and/or C. Potential areas of significance would be in the development of electrical power in northern California, its impact on the development of the economy, as an example of transmission line engineering in the 1920s, and as an example of the work of engineer Frank Baum, one of the leading hydroelectric engineers of his day in the United States. Before the eligibility of either of the transmission lines could be determined, more research would be required to more fully assess the significance within the appropriate historical contexts, to document the history of the properties, to establish a period of significance, and to document the integrity of the character defining features. Following this, the contributing status of the sections of the transmission lines within the APE could then be established.

The proposed project will involve an electrical transmission line interconnection to the existing 230 kV transmission lines. PG&E will ultimately own and operate the interconnection. The proposed interconnection evaluated in this AFC represents a likely description of this project component. It may, however, be modified by PG&E during final design. The proposed action would involve two pairs of PG&E transmission lines that would loop in and out of the proposed site's switchyard, as described in Chapter 5 and shown on the Site Plan, Figure 3.3-1. These PG&E transmission lines would connect to the existing lines at two places. The portion of the existing lines between these two new connections would be removed. This proposed action will impact the two existing transmission lines.

At this time the status of the two 230 kV transmission lines as historic resources is not known. However, if these were to be shown to be contributors to NRHP-eligible properties, it would appear that the addition of the two electrical line interconnections and the removal of a small portion of the conductors (connection cables) would have a less-than-significant impact. This would be a small change within the larger overall system (between the Cottonwood and Vaca-Dixon substations). These changes would not alter the transmission within the APE such that their significance would be materially impaired. These changes would not alter any individual towers which appear to be an original design feature of the transmission lines nor would they alter the transmission lines alignment or location — both of which would likely be character defining features of a historic system.

8.3.2.2.2 Glenn-Colusa Canal and Glenn-Colusa Irrigation District (GCID)

A portion of the GCID's Delevan Unit irrigation infrastructure, including laterals, ditches, valves, concrete turnouts and gates, and a bridge at Dirks Road, are located within the APE for this project. The laterals, ditches, and various concrete diversion structures appear to date from the original irrigation district construction (ca. 1920s). The bridge at Dirks Road dates from ca. 1960 when it was built or renovated at the same time that the gas pipeline was built to the PG&E Compressor Station (Wrysinski, pers. comm., 2001).

A one-and-a-half to two-mile portion of the Glenn-Colusa Canal is located within or borders the APE for this project. The canal is dirt lined with rock or rubble riprap at the bridge abutment at Dirks Road. There is a levee on either side of the canal and a dirt maintenance road on top of each levee.

The GCID provides irrigation water to 175,000 acres of farmland in Glenn and Colusa counties. The Glenn-Colusa Canal, the main water distribution canal for the GCID, diverts water from the Sacramento River at a point just east of the town of Artois. Water travels southwesterly through the roughly 65-mile canal. The canal finally terminates just south of the town of Williams near Interstate 5.

The portions of the Glenn-Colusa Canal and other GCID features that are within the APE are part of a larger property — the GCID. The portions of the canal and irrigation system within the APE are not individually significant. However, if either the Glenn-Colusa Canal or the GCID were significant, then these portions may have significance as contributing features to the overall canal or irrigation system.

An evaluation of the GCID or Glenn-Colusa Canal has not been done. However, the GCID and the Glenn-Colusa Canal would appear to have the potential to be significant under NRHP criteria A and/or C. Potential areas of significance would be in the development of irrigation districts and irrigation infrastructure in the Sacramento Valley, development of twentieth-century farming in Colusa County, and/or as an example of early twentieth-century irrigation engineering. Before the NRHP eligibility of either the GCID or Glenn-Colusa Canal could be determined, more research would be required to more fully assess the significance of these properties within appropriate historical contexts, to document the history of the properties, to establish a period of significance, and to document the integrity of the features of the properties. Following this, the contributing status of the portions the GCID system within the APE could then be established.

Within the APE, the proposed project's roadway access crosses over the Glenn-Colusa Canal via the bridge (ca. 1960) at Dirks Road. Some strengthening of the bridge deck may be required during construction. If needed, all associated improvements would be limited to the existing roadway surfaces. However, the proposed project does not involve any portions of the canal itself and would not alter or change the canal in any way.

Within the APE, the proposed project intersects other features of the GCID on McDermott Road in two places:

- At Teresa Creek Bridge, the project intersects a GCID ditch that is labeled "D-8b" on the GCID map (Tennock, pers. comm., 2001). The Teresa Creek Bridge, which is not a historic resource, will be replaced. This proposed bridge replacement will not alter or change the irrigation ditch in any way.

- At the intersection of McDermott Road and Delevan Road, the intersection on the northeastern and southeastern corners will be widened. A GCID ditch that is labeled "41-1c" on the GCID map (Tennock, pers. comm., 2001) is located to the east of McDermott Road. A GCID ditch that is labeled "D-5a 3" on the GCID map (Tennock,

pers. comm., 2001) is located to the south of Delevan Road. However, the proposed intersection widening will not alter or change the irrigation ditches in any way.

The proposed project would have no impact to the portion of the Glenn-Colusa Canal and other features of the GCID that are located within the APE.

8.3.3 Cumulative Impacts

8.3.3.1 Archaeological Resources

Given that project implementation would not result in effects to known important cultural resources, it is unlikely that the proposed project could have significant cumulative effects to cultural resources. As noted above, however, it is possible that previously undiscovered archaeological resources may be exposed during construction activities. Unless properly evaluated and managed, this could result in a cumulative effect to such inadvertently exposed resources.

8.3.3.2 Historic Architectural Resources

Given that the proposed project implementation will not effect any historic architecture resources, there will be no significant cumulative effects to historic architecture resources.

8.3.4 Mitigation Measures

The California Environmental Quality Act of 1970 (CEQA) requires that if project implementation results in significant impacts to important cultural resources, then alternative plans and/or mitigation measures must be considered.

8.3.4.1 Archaeological Resources

Although no cultural resources have been identified within the APE, there is a possibility that buried archaeological resources occur within the confines of the archeological APE. Unless properly identified, evaluated, and managed, construction of the proposed project could result in a significant impact to the resource(s). With appropriate consultation by a qualified archaeologist, this impact would be mitigated to a less-than-significant level.

CULT-1 Retain a Qualified Archaeologist

Prior to the start of project-related vegetation clearance, earth-disturbing activities, or project site preparation, a qualified professional archaeologist will be retained as the cultural resources specialist (CRS) who will be responsible for implementation of mitigation measures CULT-2, CULT-3, and CULT-4.

CULT-2 Cultural Resources Monitoring and Mitigation Plan

Prior to the start of project-related vegetation clearance, earth-disturbing activities, or project site preparation, the CRS shall prepare a Cultural Resources Monitoring and Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts to sensitive cultural resources.

CULT-3 Worker Training

Prior to the start of earth-disturbing activities, the CRS shall prepare and implement an employee training program for the protection of cultural resources.

The CRS will provide cultural resources training to all project managers, construction supervisors, and workers. The designated trainer will provide the workers with a set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during construction. Initial training will occur prior to the start of project-related vegetation clearance, earth disturbing activities, or project site preparation and continue throughout the project construction period as needed for all new employees.

Training at the project site may be discontinued after all foundations at the site are completed and the CRS has inspected the site and determined that no cultural resources will be impacted. Training shall continue for project personnel working in the vicinity of other project components that will disturb native soils.

CULT-4 Construction Monitoring

The CRS or their delegated monitor shall be present at times the specialist deems appropriate to monitor construction-related ground disturbance, including grading, excavation, trenching, and/or augering in the locations specified in the CRMMP.

8.3.4.2 Historic Architectural Resources

There would be no significant impacts to historic architecture resources within the APE. For this reason, no mitigation measures are required.

8.3.5 Cultural Resources Laws, Ordinances, Regulations, and Standards

The proposed project will be implemented in accordance with the applicable laws, ordinances, regulations, and standards identified below. These LORS are also listed in Table 8.3-1.

Because the Lead Agency for the project is the CEC, CEQA is the regulation of most consequence. CEQA requires that public or private projects financed or approved by the State of California must assess the effects of the undertaking upon cultural resources. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance.

In addition to CEQA, Section 7050.5 of the California Health and Safety Code would become applicable if human remains associated with the Native American occupation of the vicinity were discovered. This regulation requires that a County Coroner examine any discovered human remains and contact the NAHC if the remains are determined to be both archaeological and Native American. In compliance with Public Resources Code Section 5097.98, The NAHC would then be responsible for identifying a most likely descendent (MLD) to inspect the remains and make recommendations for their treatment.

If the project ultimately requires some level of federal involvement (e.g., Section 404 permit) compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, would become necessary. Section 106 requires federal agencies to identify cultural resources that may be affected by any undertaking involving federal lands, funds, or permitting. In addition, the significance of the resources that may be affected by that action must be addressed using established criteria (36 CFR 60.4) for the NRHP. The criteria for NRHP eligibility are listed in 36 CFR 60 as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and

(a) That are associated with events that have made significant contributions to the broad pattern of our history; or

(b) That are associated with the lives of persons significant in our past; or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded, or may be likely to yield, information important in prehistory or history.

If a resource is determined to be eligible to the NRHP, Section 106 of the NHPA (80 Stat. 915; 16 U.S.C. 470) and its implementing regulations (36 CFR 800) require that effects of the proposed project to that resource be determined. If NRHP eligible resources are identified, that would be adversely affected by the implementation of the project, then prudent and feasible measures to avoid or reduce these adverse impacts must be taken. In addition, the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO) must be provided an opportunity to review and comment on these measures. The ACHP has adopted regulations (36 CFR 800) that implement this commenting authority.

On the local level, compliance with the Colusa County General Plan (CCGP) may be necessary. According to the CCGP, relevant goals of the County include:

Community Character "Objective g" To preserve historic buildings, landmarks, and places of historical significance;

Resource Conservation "Objective p" To conserve and explore historical resources, including archaeological sites; and

Human Resources "Objective o" To encourage appreciation of the county's heritage by preserving reminders of our past, such as the Princeton Fairy, the Stone Corral, and the Grand Island Shrine.

To achieve these objectives, a number of Resource Management Policies targeting the management of cultural resources have been adopted by the County. The Cultural Resource Policies that have been adopted include:

CO-22 The preservation and re-use of historical sites and structures in the county should be encouraged;

CO-23 The county should apply for landmarks status or national register listing for any historic sites which may be eligible;

CO-24 The county shall encourage and cooperate with cities, special districts, state and federal agencies, and private landowners in acknowledging and preserving the county's cultural heritage, historical and archaeological structures, sites, and landmarks;

CO-25 An archaeological survey should be required prior to approval of any project which would require excavation in an area known to contain archaeological resources.

As the proposed project will not result in impacts to known cultural resources (important or otherwise), and does not involve the issuance of a discretionary permit from the county, none of these policies and

measures currently apply. In the event that this status changes, however, compliance with CEQA, Section 106, and/or the implementation of the mitigation measures discussed within Section 8.3.4 will satisfy the County's concerns for cultural resources.

8.3.6 Involved Agencies and Agency Contacts

Unless consultation with SHPO becomes necessary, the NAHC is the only agency involved with the management of cultural resources for this project. Appendix I contains the correspondence with the NAHC concerning this particular project.

In addition, the Colusa County Planning Department will review and comment on this AFC. Specific contact information for this agency is also listed below, should the need for consultation arise.

Issue	Agency/Address	Contact/Title	Telephone
Native American traditional cultural properties	Native American Heritage Commission	Ms. Debbie Treadway, Associate Government Program Analyst	(916) 653-4038
Federal agency NHPA Section 106 compliance	California Office of Historic Preservation 1416 9th Street, Room 1442 Sacramento, CA 95814	Dr. Knox Mellon, SHPO	(916) 653-6624
Colusa County General Plan Compliance	Colusa County Department of Planning and Building 200 12th Street Colusa, CA 95932	Mr. David Kelly, Planner	(530) 458-0508

8.3.7 Permits Required and Permit Schedule

Other than certification from the CEC, no state, federal, or local permits are required by the project for the management of cultural resources. As described previously, consultation with SHPO and ACHP would be required under Section 106 if federal involvement is to occur and significant cultural resources were to be affected by the project.

8.3.8 References

Adams, Frank
1929 *Irrigation Districts in California, Bulletin No. 21.* Sacramento: State of California Department of Public Works.

Arnold, Brigham
1964 A Survey of Archaeological Resources Along the Pacific Gas and Electric Company's Canadian Gas Line in California. Report on file Northwest Information Center, Sonoma State University, Rohnert Park, California.

Baum, Frank G.
1923 "The Pit River Power and 220,000-Volt Transmission Problem." *Electrical World*, 27 January 1923, 81: 205-12.

Beardsley, Richard K.
1954 Temporal and Areal Relationships in Central California Archaeology. 2 Pts. *University of California Archaeological Survey Reports* 24-25. Berkeley.

Beck, Warren A. and Ynez D. Haase
1974 *Historical Atlas of California.* University of Oklahoma Press. Norman, Oklahoma

Bethel, John P., ed.
1969 *Webster's Geographical Dictionary.* G. & C. Merriam Co. The Collegiate Press Menasha, Wisconsin.

Blair, Lynda
1994 *An Evaluation of Eighteen Historic Transmission Line Systems That Originate from Hoover Dam, Clark County, Nevada.* Prepared for Los Angeles Department of Water and Power.

"Blueprint Bridge Plans & Specifications"
1915 Index located at Colusa County Archives.

Bradley, Denise, and Michael Corbett
1996 *Rural Historic Landscape Report for Reclamation District 1000.* Chico, CA: Dames & Moore, Inc., January 1996.

Burgan, R.W., P.E. (C.E. #9268)
1980 Bridge Report on Bridge No. 15C-167. California Department of Transportation. 31 January 1980.

California Department of Transportation (Caltrans)
1991 *Guidance for Consultants: Procedures for the Protection of Historic Properties, the Section 106 Process.* Division of State and Local Project Development. Office of Environmental Analysis, Environmental Studies Branch. Sacramento, CA. Revised June 1991.

California Office of Historic Preservation
1990 *California Historical Landmarks.* California Department of Parks and Recreation.

1997 *Instructions for Nominating Historical Resources to the California Register of Historic Resources.* Sacramento, CA. August 1997.

1999 *CEQA Guideline Summary: Historical Resources Sections 15064.5, 15126.4, 15325, 15332, Appendix G.* Sacramento, CA. January 1999.

Coleman, Charles M.
1952 *PG&E of California.* New York: McGraw Hill.

Cook, Sherburne F.
1955 The Epidemic of 1830-1833 in California and Oregon. *University of California Publications in American Archaeology and Ethnology.* 43(3): 303-326. Berkeley.

Cope, Rand, Means Co.
1922 "Report on Proposed Contract between Williams Irrigation District and Glenn-Colusa Irrigation District." 1922. Manuscript. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. January 1922.

1921 "Report to the Board of Directors of the Glenn-Colusa Irrigation District," 1921. *Project Report 20 No. 118,* June 1921. Part of Means Collection at the Water Resources Archives, University of California, Berkeley.

1922 "Supplement Report: Connection between Glenn-Colusa Main Canal and Williams Irrigation District," 1922. Manuscript. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. April 24, 1922.

Cramer, Cecile B.
1993 "Water History in the Making." *Wagon Wheels* 1 (1983): 4.

Davis, Cynthia F.
1984 *Where Water is King*. Willows, CA: Glenn-Colusa Irrigation District.

Davis, Edwin F.
1960 "Charles F. Lambert, and Irrigation in the Sacramento Valley." *Wagon Wheels* IX:1 (1960): 1.

Donely, Michael W., Stuart Allan, Patricia Caro and Clyde P. Patton
1979 *Atlas of California*. Pacific Book Center, Culver City, California.

Donohoe, Charles L. and Frank Freeman
no date "Petition of Central Canal and Irrigation Company to the War Department of the United States for Permission . . ." Willows, CA.

Elsasser, Albert
1978 Development of Regional Prehistoric Cultures. In *Handbook of North American Indians, Volume 8, California*, edited by Robert F. Heizer, pp. 37-57. Smithsonian Institution, Washington, D.C.

Flores, Kesner, Cortina, Rancheria of the Wintun Indians of California
2001 Personal communication with Mark Hale, URS Corporation, March 29 and April 2, 2001.

Francis, Charla Meacham, and Amy Huberland
1999 *Cultural Resources Survey Report for the Level (3) Fiber Optic Project, Glenn County, California.* Sycamore Environmental Consultants, Sacramento. Submitted to California Public Utilities Commission, San Francisco.

Fredrickson, David A.
1973 *Early Cultures of the North Coast Ranges, California.* Ph.D. Dissertation, University of California, Davis; Department of Anthropology.

Gudde, Erwin G.
1969 *California Place Names*. Third Edition. University of California Press, Berkeley.

Hair, Jennifer M.
2000 *National Register of Historic Places and California Register of Historical Resources Evaluation of CA-SHS-2939-H an dCA-SHA-29020-H, Shasta County, Californ*ia. Prepared by Garcia and Associates for Ogden Environment and Energy Services. October 2000.

Hanna, Phil Townsend
1946 *The Dictionary of California Land Names.* Los Angeles: Automobile Club of Southern California.

Hay, Duncan
1991 *Hydroelectric Development in the United States, 1880-1940.* Washington, D.C.: Edison Electric Institute.

Hay Duncan and Michael R. Corbett
1992 *Historic Resources Assessment Report for the Pit 1 Hydroelectric Project, Shasta County, California*, revised draft. Prepared for the Pacific Gas & Electric Company by Dames & Moore.

Heizer, Robert F.
1936 Notes and Manuscripts on the Miller Mound, Site CA-Col-1. *University of California Archaeological Survey Manuscripts* 94. Berkeley.

Heizer, Robert F. and Franklin Fenenga
1938 Archaeological Notes on the Sandhill Site (Ca-Col-3). *University of California Archaeological Survey Manuscripts* 57. Berkeley.

Heizer, Robert F. and A.D. Krieger
1935
1936 Colusa County Sites: Miller Mound, (CA-Col-1), Sandhill Mound (Ca-Col-2), Howells Point Mound (Ca-Col-3). *University of California Archaeological Survey Manuscripts* 383. Berkeley.

Hoover, Mildred B., Hero E. Rensch, and Ethal G. Rensch
1990 *Historic Spots in California.* Fourth Edition Revised by Douglas E. Kyle. Stanford University Press. Stanford, California.

Infotec Research, Inc. and Biosystems Analysis, Inc. (IRI and BAI)
1990 Cultural Resources Assessment Report. PGT-PG&E Pipeline Expansion Project Idaho, Washington, Oregon, and California. Report submitted to Pacific Gas & Electric Company, San Francisco.

Johnson, Patti J.
1978 Patwin. In *Handbook of North American Indians, Volume 8, California*, edited by Robert F. Heizer, pp. 350-360. Smithsonian Institution, Washington, D.C.

Jollyman, J.P.
1922 "The Purpose and Problems of 220,000-Volt Transmission." *Journal of Electricity and Western Industry*, 15 August 1922, 49: 131-33.

JRP Historical Consulting Services and California Department of Transportation
2000 *Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures.* Davis and Sacramento, CA, December 2000.

Kelley, Robert
1989 *Battling the Inland Sea.* Berkeley and Los Angeles, CA: University of California Press.

Knowlton, Archer E., editor
1957 *Standard Handbook for Electrical Engineers*, 9th edition. New York: McGraw Hill.

Kroeber, Alfred L.
1932 The Patwin and Their Neighbors. *University of California Publications in American Archaeology and Ethnology.* 29(4): 253-423. Berkeley.

1976 *Handbook of the Indians of California.* Reprinted. Dover Publications, Inc., New York. Originally published 1925, Bureau of American Ethnology Bulletin 78, Washington, D.C.

Lillard, Jeremiah B., and W.K. Purves
1936 The Archaeology of the Deer Creek-Cosumnes Area, Sacramento County, California. *Sacramento Junior College, Department of Anthropology Bulletin* 1. Sacramento.

Lillard, Jeremiah B., Robert F. Heizer and Franklin Fenenga
1939 An Introduction to the Archaeology of Central California. *Sacramento Junior College, Department of Anthropology Bulletin* 2. Sacramento.

Matthew, Raymond, Manager
no date. "Report to the Honorable Board of Directors of the Glenn-Colusa Irrigation District on Operation Maintenance and Construction Work 1922-1923." Manuscript. Available at the Water Resources Archives, University of California, Berkeley.

Merriman, Thaddeus, editor
1930 *American Civil Engineers' Handbook,* fifth edition. New York: John Wiley & Sons.

Mikesell, Stephen D.
1990 *Historic Bridges of California.* [Sacramento]: California Department of Transportation.

Moratto, Michael J.
1984 *California Archaeology.* Academic Press, New York.

Northern California Atlas & Gazetteer
1986 Freeport, Maine: DeLorme Publishing Company.

"Orland Project California"
2001 http://dataweb.usbr.gov/html/orland.html. March 2, 2001.

Paul, Rodman W.
1965 *California Gold: The Beginning of Mining in the Far West.* University of Nebraska Press, Lincoln and London. Reprint.

Pisani, Donald J.
1984 From the Family Farm to Agribusiness: The Irrigation Crusade in California and the West, 1850-1931. Berkeley and Los Angeles, CA: University of California Press.

Powers, Stephen
1877 Tribes of California. *Contributions to North American Ethnology* 3. U.S. Geographic and Geological Survey of the Rocky Mountain Region, Washington.

"Pumping Plant Dedication and Water Rights Centennial"
1985 *Wagon Wheels* 1 (1985): 24.

"Report on Proposed Contract between Williams Irrigation District and Glenn-Colusa Irrigation District."
1922 Manuscript. Cope, Rand, Means Co. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. January 1922.

"Report to the Board of Directors of the Glenn-Colusa Irrigation District," 1921. *Project Report 20 No. 118*
1921 Part of Means Collection at the Water Resources Archives, University of California, Berkeley.

Rogge, A.E. (Gene), Michael Corbett, and Lori Hunsaker
1997 *Cultural Resources Survey for the McCullough-Liberty Fiber Optics Project.* Dames & Moore. International Cultural Resource Services Research Paper No. 41. Phoenix.

Schenck, W. Egbert, and Elmer J. Dawson
1929 Archaeology of the Northern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 25(4):289-413. Berkeley.

Schwaderer, R., R.A. Stradford, and D.A. Fredrickson
1979 An Archaeological Study of the Suscol Village, CA-Nap-15, Napa County, California. Cultural Resources Facility, Sonoma State University. Report submitted to the California Department of Transportation.

Scott, W.A.
1922 "202 Miles of Transmission Lines to Operate at 220,000 Bolts." *Engineering World*, March 1922.

Stene, Eric A.
1994 "Central Valley Project: Sacramento River Division." Bureau of Reclamation History Program. http://dataweb.usbr.gov/html/sacriver.html.

"Supplement Report: Connection between Glenn-Colusa Main Canal and Williams Irrigation District"
1922 Manuscript. Part of Means Collection at the Water Resources Archives, University of California, Berkeley. April 24, 1922.

Treganza, A.E., R. Edwards, and T. King
1965 Archaeological Survey Along the Tehama-Colusa Canal, Central California. Report on file Northwest Information Center, Sonoma State University, Rohnert Park, California.

Urquhart, Leonard Church, editor
1950 *Civil Engineering Handbook*, third edition. New York: McGraw-Hill.

White, Lester O.
1979 *Archaeological Reconnaissance of Phase 2 and 3 Irrigation Pipeline Installation, Kanawha Water District, Willows, Glenn County, California.* On file, Northeast Information Center, Department of Anthropology, California State University

Maps

"Assessor Parcel Map." Maps. 14-18-0-011-00. Glenn County Assessors Office, Willows, CA.

"Assessor Plat Maps for Colusa County." Maps. Book 11 pages 4, 5, 14, and 22. Glenn County Assessors Office, Willows, CA.

"Assessor Plat Maps for Glenn County." Maps. Book 14 pages 16-18. Glenn County Assessors Office, Willows, CA.

Delevan Unit of the Glenn-Colusa Irrigation District." n.d. Photocopy of portion of larger map provided by Ben Tennock, Glenn-Colusa Irrigation District.

"Map of Colusa County California, Colusa County Chamber of Commerce." Map. 1966. Earth Sciences Library, University of California, Berkeley.

"Map of the Glenn-Colusa Irrigation District: Glenn & Colusa Counties, California." Map. 1956. Water Resources Archives, University of California, Berkeley.

"Metsker's Map of Colusa County California." Map. 1960. Earth Sciences Library, University of California, Berkeley.

"Official Chamber of Commerce Map of Colusa County and Its Communities." Map. 1988. Earth Sciences Library, University of California, Berkeley.

"Rand McNally Map of Colusa County." Map. 1962. Earth Sciences Library, University of California, Berkeley.

"State of California, The Resources Agency, Department of Conservation, Division of Forestry, Colusa County." Map. 1947. Earth Sciences Library, University of California, Berkeley.

"Thomas Bros. Map of Colusa County California." Map. 1946. Earth Sciences Library, University of California, Berkeley.

"Title Insurance and Trust Map of Colusa County and Its Cities." Map. 1978. Earth Sciences Library, University of California, Berkeley.

United States Geological Survey. "Sites Quad." Map. 1904 revised.

United States Geological Survey. "Colusa Quad." Map. 1907.

United States Geological Survey. "Sites Quad." Map. 1917 revised.

United States Geological Survey. "Colusa Quad." Map. 1973.

United States Geological Survey. "Lodoga Quad." Map. 1943.

United States Geological Survey. "Lodoga Quad." Map. 1958 revised.

United States Geological Survey. "Lodoga Quad." Map. 1960.

United States Geological Survey. "Maxwell Quad." Map. January 1906 reprinted 1936.

United States Geological Survey. "Maxwell Quad." Map. 1952.

United States Geological Survey. "Maxwell Quad." Map. 1952-1954.

United States Geological Survey. "Maxwell Quad." Map. 1973.

United States Geological Survey. "Maxwell Quad." Map. 1994 revised.

"WAC-96CA." Aerial photograph. 6 April 1996.

Personal Communications

Anderson, Wylie (Colusa County Assessors Office). Interview with Roxana Khakpour. 12 and 20 April 2001.

Anderson, Wylie (Colusa County Assessors Office). Telephone conversation with Roxana Khakpour. 20 April 2001.

Colusa County Agricultural Agency. Telephone conversation with Roxana Khakpour. 20 April 2001.

Doerr, Christopher (Garcia & Associates). Telephone conversation with Michael Corbett. 26 April 2001.

Etchepare, Jean. Telephone conversation with Michael Corbett. 25 April 2001.

Mishioka, Stan (PG&E). Telephone conversation with Roxana Khakpour. 26 April 2001.

Mishioka, Stan (PG&E). Telephone conversation with Michael Corbett (URS Corporation), 1 and 2 May 2001.

Moran, Kathy (Colusa County Historical Commission). Interview with Jody Stock. 20 March 2001.

Moran, Kathy (Colusa County Historical Commission). Interview with Roxana Khakpour. 20 April 2001.

Tennock, Ben (Glenn-Colusa Irrigation District). Telephone conversation with Roxana Khakpour. 12 April 2001.

Thuemler, Nancy (Colusa County Assessors Office). Interview with Jody Stock. 14 March 2001.

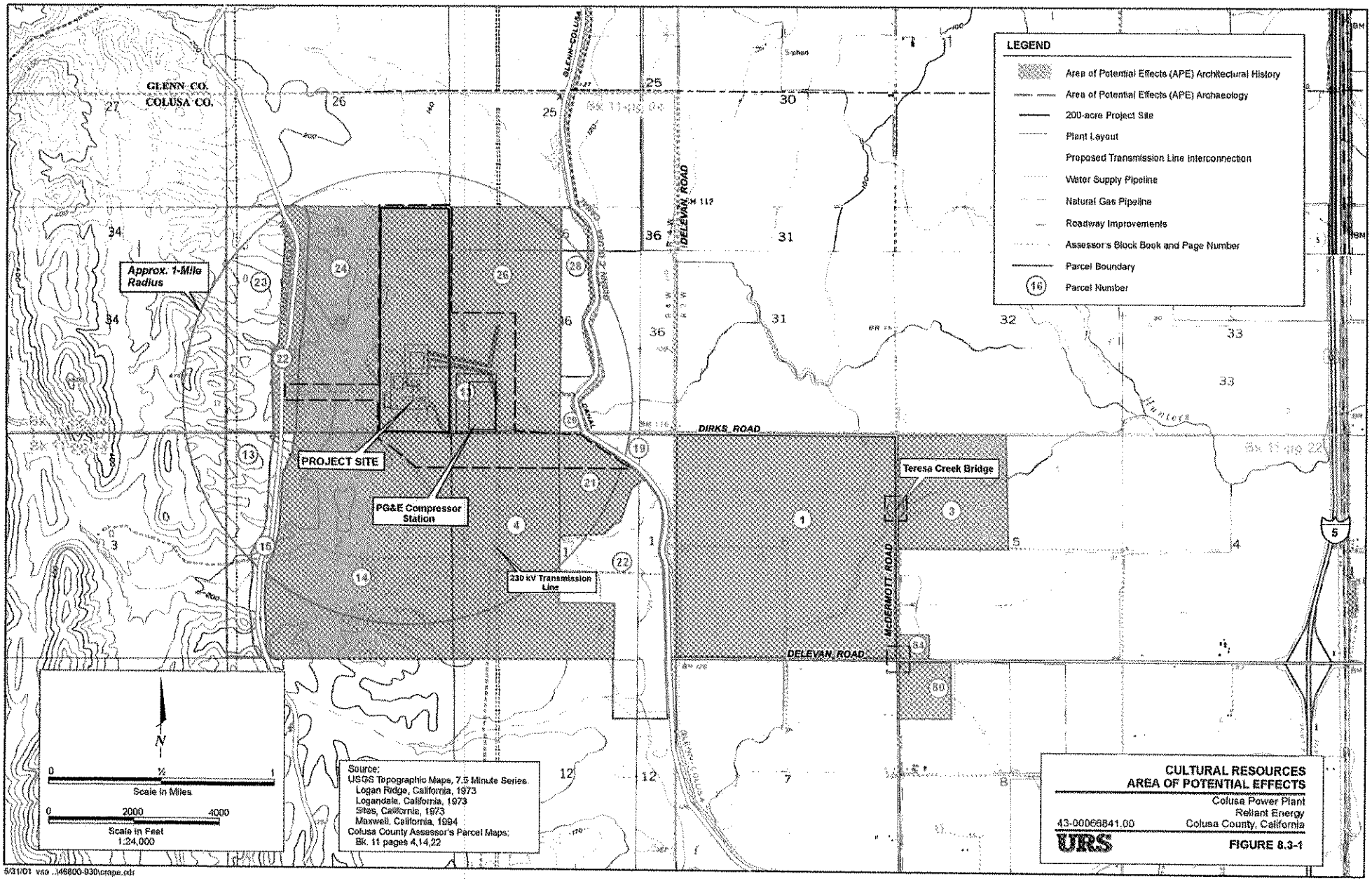
Wrysinski, Jon (Colusa County Department of Public Works). Interview with Jody Stock. 14 March 2001.

Wrysinski, Jon (Colusa County Department of Public Works). Interview with Roxana Khakpour. 12 April 2001.

Wrysinski, Jon (Colusa County Department of Public Works). Telephone conversation with Roxana Khakpour. 23 April 2001.

Table 8.3-1
Applicable Cultural Resources Laws, Ordinances, Regulations, and Standards

Law, Ordinance, Regulation, or Standard	Applicability	AFC Reference
CEQA	Project construction may encounter archaeological resources	Section 8.3.5
Health and Safety Code Section 7050.5	Construction may encounter Native American graves, Coroner calls NAHC	Section 8.3.5
Public Resources Code Section 5097.98	Construction may encounter Native American graves, NAHC assigns Most Likely Descendent	Section 8.3.5
Colusa County General Plan	Colusa County Goals; Community Character "Objective g" To preserve historic buildings, landmarks, and places of historical significance; Resource Conservation "Objective p" To conserve and explore historical resources, including archaeological sites; and Human Resources "Objective o" To encourage appreciation of the county's heritage by preserving reminders of our past, such as the Princeton Fairy, the Stone Corral, and the Grand Island Shrine.	Section 8.3.5



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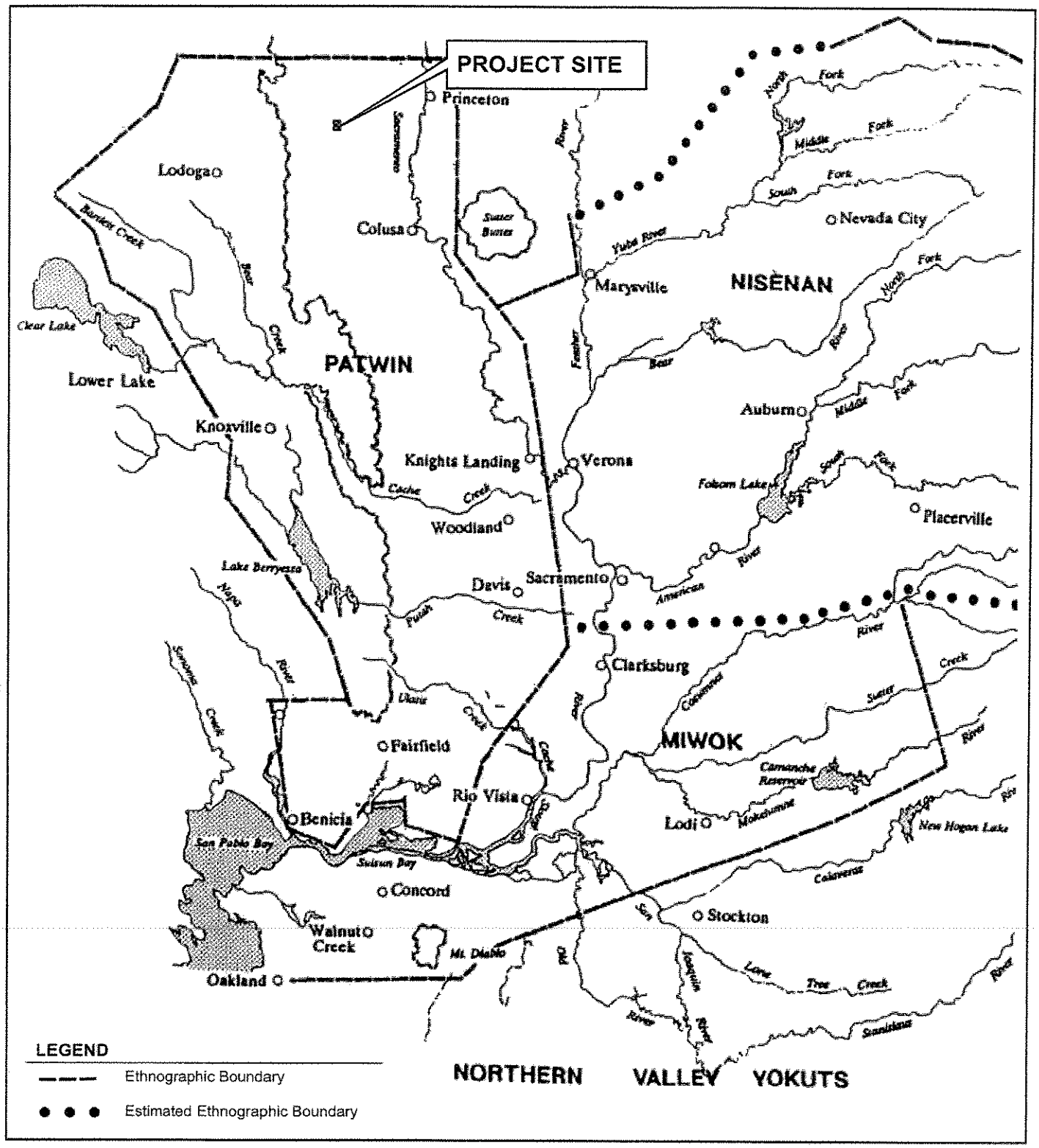


Source:
Map After Johnson, 1978; Levy, 1978;
and Wilson and Towne, 1978.

N

0 10 20 30 Miles

0 10 20 30 Kilometers

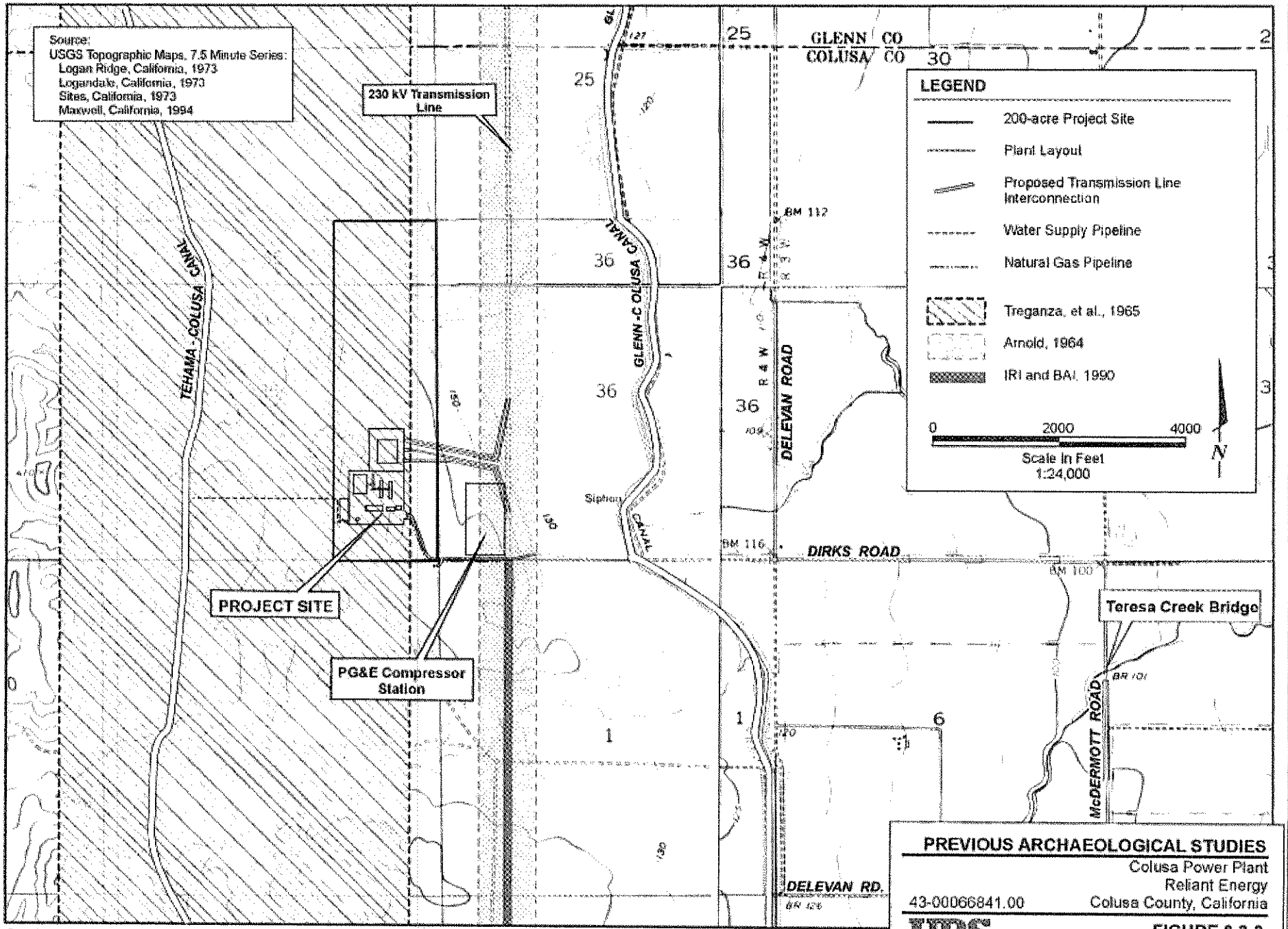
5/19/01 vsa ..\46800-930\mapethno.cdr

MAP OF ETHNOGRAPHIC TERRITORIES

Colusa Power Plant
Reliant Energy
43-00066841.00 Colusa County, California

URS

FIGURE 8.3-2



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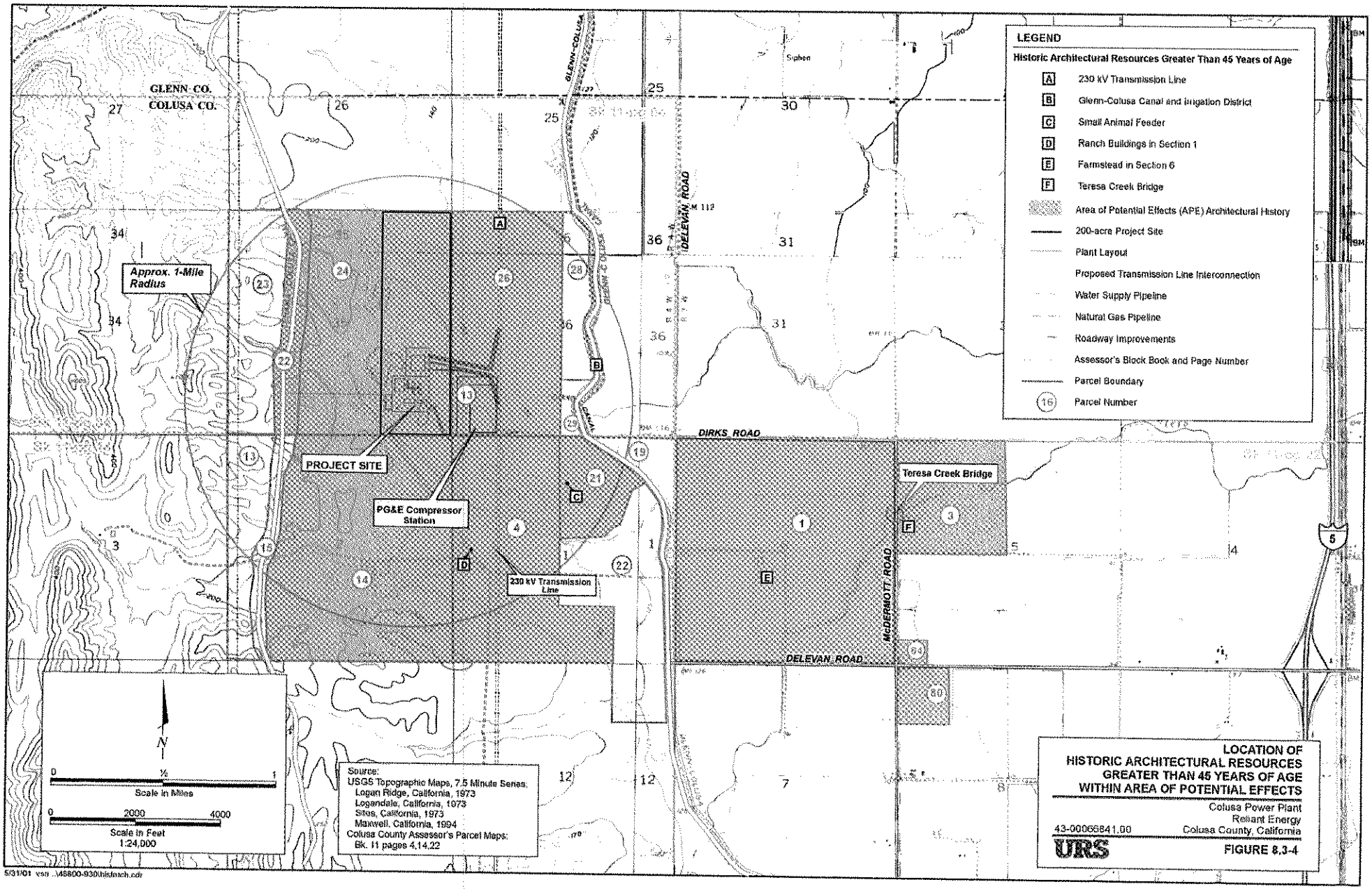
PREVIOUS ARCHAEOLOGICAL STUDIES

Colusa Power Plant
Reliant Energy
43-00066841.00 Colusa County, California

URS

FIGURE 8.3-3



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ATTACHMENT 8

RESPONSES TO CEC DATA REQUESTS OF AUGUST 22, 2001, DATA REQUESTS 49 THROUGH 60, COLUSA POWER PLANT PROJECT, URS CORPORATION, SEPTEMBER 2001

CULTURAL RESOURCES

BACKGROUND [49 THROUGH 52]

According to the AFC, two historic resources that could be eligible for the California Register of Historic Resources (CRHR) and National Register of Historic Places (NRHP) as part of larger systems are located within or directly adjacent to the Area of Potential Effects (APE). One of these, the Glenn-Colusa Canal/Glenn-Colusa Irrigation District, will not be impacted by the project, according to the AFC. The other resource, two components of the larger Cottonwood to Vaca-Dixon electrical transmission line system, will be materially impacted by the project. According to the AFC, the portions of the transmission line system within the APE have been evaluated as not significant when considered individually. However, they may have significance as contributing elements to the overall Cottonwood to Vaca-Dixon system, a potential CRHR and NRHP property. Whether these portions of the system represent original construction and retain integrity has not been determined. Additional information on this resource is necessary for staff to complete the analysis.

DATA REQUEST

49. ***Please provide information that details whether the 230 kV transmission lines located within the project APE are part of the original circa early 1920s Cottonwood to Vaca-Dixon system designed by PG&E engineer Frank Baum and whether any alterations to this portion of the transmission line were subsequently made. An architectural historian that meets the Secretary of the Interior's standards for an architectural historian should complete this investigation.***

RESPONSE

Michael Corbett, who meets the Secretary of the Interior's Standards for architectural historians, prepared the response to this Data Request as well as Data Requests 50, 51, and 52.

The two 230 kV transmission lines that are located within the project APE are identified by PG&E by almost identical names, as follows:

1. The easternmost line is known as the Cottonwood-Vaca section of the Pit-Vaca Dixon 220 kV line. This transmission line structure, designed by engineer Frank Baum, was built by the Mt. Shasta Power Corporation, a subsidiary of PG&E, to transmit power from the Pit 1 Powerhouse to the Vaca-Dixon substation in 1921-1922. The entire line was built at that time, including the portion of the line within the APE. In 1956, this line "underwent some structural changes and was fully reconductored with commercially available conductor" (Lavezzo, 2001). When the line was reconductored, the insulators may also have been replaced—PG&E does not keep records about changes of this type (Schmidt, 2001). These changes were made to the entire line, including the portion of the line within the APE.

2. The westernmost line is known as the Cottonwood-Vaca Dixon 220 kV line. It was built by PG&E in 1945. Apart from maintenance, this line has not been changed.

References

Lavezzo, Kathy O. (Senior Project Manager, Interconnection Services, PG&E), 2001. Personal communications with Michael Corbett. 4 and 6 September 2001.

Schmidt, Neil (PG&E engineer), 2001. Telephone conversation with Michael Corbett. 6 September 2001.

DATA REQUEST

50. Please provide a period of significance of the original Cottonwood to Vaca-Dixon system and whether the 230 kV transmission lines located within the project APE were constructed within the period. An architectural historian that meets the Secretary of the Interior's standards for an architectural historian should complete this investigation.

RESPONSE

The period of significance for any historic resource is defined in relation to an evaluation for eligibility to the California Register of Historic Resources (CRHR) or the National Register of Historic Places (NRHP). Because the 1922 Pit-Vaca Dixon transmission line has not been evaluated in its entirety, this discussion of its period of significance is based on incomplete information.

Hay and Corbett (1992) included 14 transmission towers adjacent to the Pit 1 Powerhouse in a determination of eligibility to the NRHP of the Pit 1 Hydroelectric Plant. Hair (2000) considered the segment of the Pit to Vaca Dixon line between Pit 1 and Cottonwood to be significant under criteria A and C of the NRHP, but ineligible due to a lack of integrity and, similarly, to be significant under criteria 1 and 3 of the CRHR but ineligible due to a lack of integrity.

The period of significance is specifically identified in relation to the criteria. In this case, the criteria most likely to apply are criteria A and C of the NRHP and 1 and 3 of the CRHR. The potential period of significance is discussed in relation to each of these criteria, below.

Criterion A (NRHP) and Criterion 1 (CRHR)

Shortages of money and materials during World War I delayed construction on new power plants and inhibited the development of industry in Oakland and the east bay. The availability of power from the Pit system beginning 30 September 1922 was an essential element in an enormous boom in industrial development in the 1920s, by the end of which Oakland was referred to as the "Detroit of the West" (Bagwell, 1982, p. 196) and Alameda County was called "first in the west in national industries" (Bagwell, 1982, p. 216). This development boom came to an end about 1930 with the onset of the Depression.

Under criterion A (NRHP) and criterion 1 (CRHR), the period of significance would be 1922-1930, covering the years of the industrial boom in Oakland and the east bay made possible by electrical power from the Pit 1 system.

Criterion C (NRHP) and Criterion 3 (CRHR)

Under criterion C (NRHP) and criterion 3 (CRHR), the period of significance would begin in 1921 when the innovative design of the Pit-Vaca Dixon transmission line was completed and construction was begun.

An end date of this period of significance is more difficult to specify and depends on several considerations. The electrical transmission system from Pit 1 to Vaca Dixon was the first in the world to be designed for 200 kV transmission. However, when it was built there were still technological difficulties that were not solved. For that reason, it was initially operated at less than 220 kV and its load was increased with new developments in insulators and management of the corona effect until 1925 when it operated at full load. By 1925, at least one other system had been built to operate at 220 kV—at Pit 3. By the early 1930s, when multiple transmission

lines were designed for transmission of electricity from Hoover Dam to Los Angeles, several of the lines were designed to carry 220 kV. Similar developments were made in the same period by the Tennessee Valley Authority and elsewhere.

Under criterion C (NRHP) and criterion 3 (CRHR), three possibilities appear to exist for the period of significance. It could be 1922, the year the Pit system went into operation, recognizing the design of the system. It could be 1922 to 1925, when at least one other system is known to have been built for 200 kV. Or, it could be from 1922 to the mid-1930s, when Hoover Dam, Tennessee Valley Authority dams, and other projects went into service with 220 kV lines considered standard.

Under either criteria A or C (NRHP) or criteria 1 or 3 (CRHR), the section of the original 220 kV Cottonwood-Vaca line that lies within the APE was built within possible scenarios for a period of significance.

The second transmission line between the Pit River power generating area and the Vaca-Dixon substation, built in 1945, does not appear to possess significance under any of the criteria of the NRHP or the CRHR. Based on what is known about the 1945 line, its technology was similar to that of the original 1922 line. Built 23 years later, its technology was commonplace, and it would not possess significance under criteria C (NRHP) or 3(CRHR). While nothing is known about the impact of the line on development, it appears less likely to have played a distinctive role because there were many other sources of power by that time, and it would not possess significance under criteria A (NRHP) or 1 (CRHR). Lacking significance, this line would not have a period of significance.

References

Bagwell, Beth
1982 *Oakland: The Story of a City*. Oakland: Oakland Heritage Alliance.

Hair, Jennifer M.
2000 National Register of Historic Places and California Register of Historical Resources Evaluation of CA-SHS-2939-H and CA-SHA-29020-H, Shasta County, California. Prepared by Garcia and Associates for Ogden Environment and Energy Services. October 2000.

Hay Duncan and Michael R. Corbett
1992 Historic Resources Assessment Report for the Pit 1 Hydroelectric Project, Shasta County, California, revised draft. Prepared for the Pacific Gas & Electric Company by Dames & Moore.

DATA REQUEST

51. ***Please describe the character-defining attributes of the historic Cottonwood to Vaca-Dixon transmission line system as a potentially eligible CRHR and NRHP property and how these attributes might be evident in the portion of the system located within the project APE. An architectural historian that meets the Secretary of the Interior's standards for an architectural historian should complete this investigation.***

RESPONSE

The character-defining attributes of any transmission line are its location, spacing of towers, alignment of the transmission line structure, transmission towers, and the connections of the line at each end to power sources or substation (Hay, 2001). These are character-defining features of the Cottonwood-Vaca transmission line under criteria A and C (NRHP) and 1 and 3 (CRHR). Ordinarily, relatively small individual elements such as conductors and insulators would not be character-defining features. Such elements would routinely be replaced during maintenance. In this case, because of the particular history and significance of this line, the insulators and conductors also appear to be character-defining features under criterion C (NHRP) and criterion 3 (CRHR).

Looking at that portion of the transmission line within the APE, several of the character-defining features are present under all criteria: the location, spacing, alignment, and steel transmission towers. The connections of the line to power sources and substations at either end are outside the APE. Insulators and conductors are also present within the APE. However, these are probably not the original insulators and conductors which would have been character-defining features under criteria C (NHRP) and 3 (CRHR). To ascertain whether the insulators and conductors now present are character-defining features, a brief discussion of these elements of the system is necessary.

While information on the possible replacement of the original insulators and conductors is not available, it seems likely that the insulators were modified by 1925. Because the design of insulators was one of the key features in the developing technology of electrical transmission on this line and because the original insulators were not considered adequate for 220 kV transmission in 1922, it seems probable that when the system was operated at 220 kV in 1925, improvements in the design of insulators were available. According to Baum and others, laboratory research was underway in 1922 and 1923 on insulators both by insulator manufacturers and at Stanford University. Jollyman (1922, p. 13) speculated that the research would lead to the elongation of existing insulators.

One of the particular issues addressed in the design of insulators was management of the corona effect with corona shields. The corona effect was the tendency to create electrical pressure along the line at high voltages, resulting in power losses. Corona shields were developed for this line that ameliorated the corona effect. This was accomplished by incorporating shields in the design of the insulators. Visually, an insulator looked like a string of disks of equal size, while a corona shield included larger disks of different materials at the end of the string.

A final factor in management of the corona effect developed for this system was the use of large conductors. A conductor of .8-inch-diameter was necessary for a 220 kV line. The original conductors were replaced in 1956. The insulators that were in place in 1956 may also have been replaced at that time.

In summary, character-defining features of the Cottonwood to Vaca–Dixon transmission line that are present in the APE in relation to criteria A (NRHP) and 1 (CRHR) are the location, spacing of towers, alignment, and towers. In relation to criteria C (NRHP) and 3 (CRHR), the same character-defining features are present in the APE: the location, spacing of towers, alignment, and towers. In addition, the insulators and conductors that would be character-defining features if they were present are no longer present. Because of this, the line appears to have lost integrity under criterion C (NRHP) and criterion 3 (CRHR) and to be ineligible under those criteria.

References

Hay, Duncan (National Park Service), 2001. Telephone conversation with Michael Corbett, 1 May 2001.

Jollyman, J.P.
1922 "The Purpose and Problems of 220,000-Volt Transmission." *Journal of Electricity and Western Industry*, 15 August 1922, 49.

DATA REQUEST

52. Please discuss how these character-defining attributes, as evident in the portion of the system located within the project APE, will be altered by the proposed interconnection to the power plant switchyard. An architectural historian that meets the Secretary of the Interior's standards for an architectural historian should complete this investigation.

RESPONSE

Based on the analysis presented in the responses to Data Requests 49, 50, and 51, the original 1922 transmission line appears to be eligible for the NRHP under criterion A and for the CRHR under criterion 1. The line does not appear eligible under any other criteria. The period of significance is 1922 to 1930. The character-defining features within the APE are the alignment of the transmission structure, the steel towers, the spacing of the towers, and the location of the transmission structure.

The proposed interconnection to the power plant switchyard would involve two electrical line interconnections, the removal of three steel transmission towers, and the removal of conductor supported by those three towers. The towers themselves are character-defining features. The conductor is not a character-defining feature, and the addition of electrical line interconnectors would not affect any character-defining features.

Although the project would result in the loss of character-defining features—the removal of three steel towers and the associated loss of the spacing of the towers in that segment of the line—in the context of the entire 200-mile transmission line, the changes would be minor. In the 140-mile segment of the line between Cottonwood and Vaca Dixon, there are hundreds of original towers. Consultation with PG&E did not identify any towers within that segment which have previously been replaced. The removal of three towers among hundreds would appear to have a less-than-significant impact. Similarly, the change in the spacing of the towers in that short segment would appear to have a less-than-significant impact.

BACKGROUND [53 THROUGH 56]

Cultural resources that are on lists created by local jurisdictions that could qualify as historical resources and could be impacted by the project need to be considered in the analysis. The AFC indicates that the Colusa County Historical Records Commission was contacted about historic properties in the vicinity of the project, but the Commission's written response was inconclusive. Staff needs the following information to complete the analysis.

DATA REQUEST

53. Please provide copies of local lists of important cultural or historic resources designated by a Colusa County ordinance.

RESPONSE

According to the Colusi (Colusa, Glenn, and Tehama Counties) County Historical Society (Moran, 2001) and the Colusa County Planning Department (pers. comm., 8/30/01), there is no Colusa County ordinance designating local lists of important cultural or historical resources.

Reference

Colusa County Planning Department, 2001. Personal communication with Roxana Khakpour of URS Corporation, August 30, 2001.

Moran, Kathleen (Director, Colusi County Historical Society), 2001. Telephone conversation with Roxana Khakpour. 27 August 2001.

DATA REQUEST

54. ***If any of these resources could be impacted by the project or could have their immediate surroundings altered (change in the integrity of setting) by this project in such a manner that the significance of the historical resource would be materially impaired, then please provide a copy of the requirements used by the local jurisdictions to qualify for the listing.***

RESPONSE

Please see the response to Data Request 53.

DATA REQUEST

55. If any of the resources could be impacted by the project or could have their immediate surroundings altered (change in the integrity of setting) by this project in such a manner that the significance of the historical resource would be materially impaired and it has not been recorded on a DPR 523 form, then please record the cultural resource on the DPR 523 form and provide a copy of the form.

RESPONSE

Please see the response to Data Request 53.

DATA REQUEST

56. ***If any of the resources could be impacted by the project or could have their immediate surroundings altered (change in the integrity of setting) by this project in such a manner that the significance of the historical resource would be materially impaired, please provide a discussion of the significance of the resources under CEQA Section 15064.5, (a), (3), (A)(B)(C) & (D) and provide staff with a copy of the assessment and the specialist's conclusions regarding significance.***

RESPONSE

Please see the response to Data Request 53.

BACKGROUND [57 THROUGH 59]

In some cases, local historical and archaeological societies have knowledge of cultural resources in an area of a project that may not be available through normal record sources. Staff needs the following information to complete the analysis.

DATA REQUEST

57. Please inquire with any local historical and archeological societies that might have knowledge of historical or archeological resources in the area of the project. Please provide copies of the inquiry letters and any responses.

RESPONSE

According to the Colusi (Colusa, Glenn, and Tehama Counties) County Historical Society and their retained archaeologist, Greg White (California State University at Chico) (Moran, 2001; White, 2001), there are no known historical resources in the area of the project.

Please see copies of two inquiry letters sent.

References

Moran, Kathleen (Director, Colusi County Historical Society), 2001. Telephone conversation with Roxana Khakpour. 27 August 2001.

White, Gregory. (Professor, California State University, Chico), 2001. Personal communications with Roxana Khakpour. 31 August 2001 and 5 September 2001.

URS

27 August, 2001

Colusi County Historical Society
443 10th Street
Colusa, CA 95932

To whom it may concern:

Reliant Energy has retained URS Corporation to prepare an Application for Certification (AFC) for a proposed new power plant in Colusa County, California. Specifically, the proposed facility would be a 500 MW combined cycle natural gas-fired facility to be located on an undeveloped 60-acre site in northeastern Colusa County. For the AFC, URS Corporation is to identify and record all cultural resources within the project's Area of Potential Effects (APE) and, if needed, provide recommendations for their proper management.

As part of the research, I am requesting any information the Society may have regarding historic or archaeological properties, features, or materials within the APE or general vicinity that may be of value to our investigation. Enclosed is a map delineating the proposed plant site and surrounding vicinity. Any comments you may have regarding this area would be greatly appreciated.

If you have any questions, please feel free to call me directly at (415) 243-3796. Thank you for your cooperation.

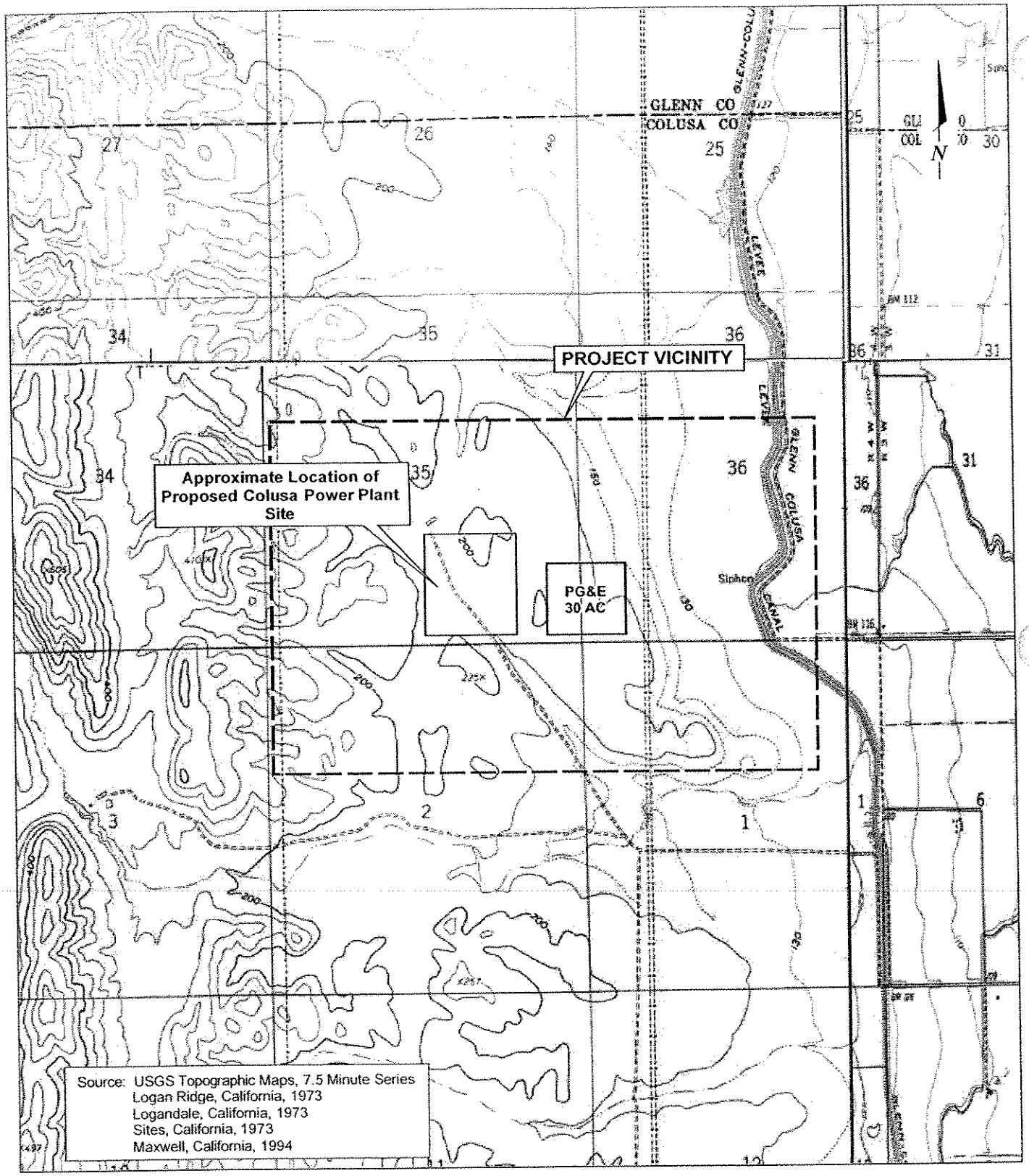
Sincerely,

URS Corporation

Roxana Khakpour
Project Coordinator

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1917
Tel: 415.896.5858
Fax: 415.882.9261



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PROJECT VICINITY

Colusa Power Plant Project
Reliant Energy
Colusa County, California

08719-043

URS

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URS

27 August, 2001

Professor Greg White
Department of Anthropology
Chico State University
Chico, CA 95929-0400

Dear Professor White:

Reliant Energy has retained URS Corporation to prepare an Application for Certification (AFC) for a proposed new power plant in Colusa County, California. Specifically, the proposed facility would be a 500 MW combined cycle natural gas-fired facility to be located on an undeveloped 60-acre site in northeastern Colusa County. For the AFC, URS Corporation is to identify and record all cultural resources within the project's Area of Potential Effects (APE) and, if needed, provide recommendations for their proper management.

I was referred to you by the Colusi County Historical Society in regards to your archaeological work with them. As part of the research, I am requesting any information you may have regarding historic or archaeological properties, features, or materials within the APE or general vicinity that may be of value to our investigation. Enclosed is a map delineating the proposed plant site and surrounding vicinity. Any comments you may have regarding this area would be greatly appreciated.

If you have any questions, please feel free to call me directly at (415) 243-3796. Thank you for your cooperation.

Sincerely,

URS Corporation

Roxana Khakpour
Project Coordinator

Enclosure

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1917
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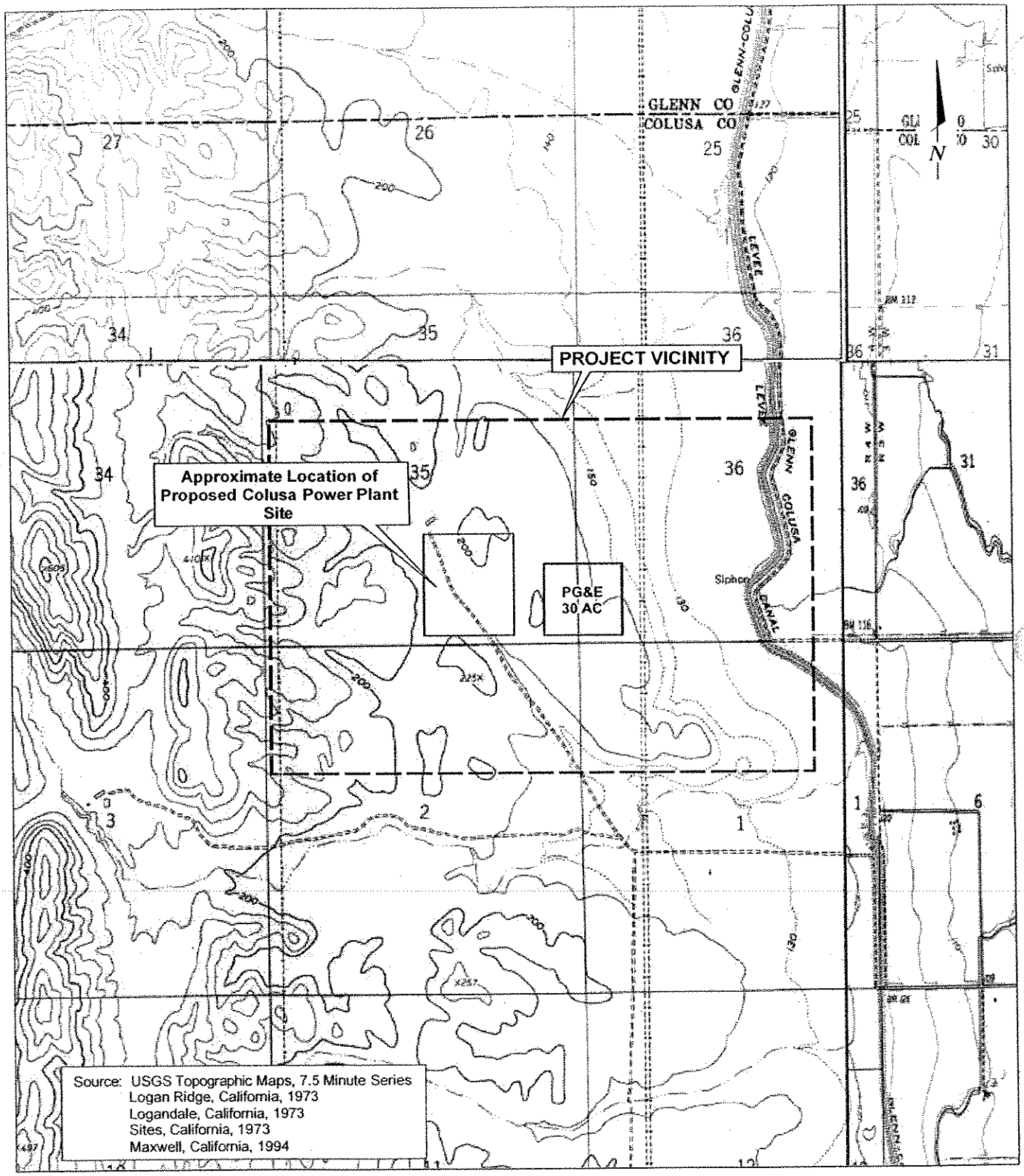
Fax: 415.882.9261



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PROJECT VICINITY

Colusa Power Plant Projec
Reliant Energy
Colusa County, California

08719-043

URS

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DATA REQUEST

58. ***If any such resources are identified that could be impacted by the project or could have their immediate surroundings altered (change in the integrity of setting) by this project in such a manner that the significance of the historical resource would be materially impaired and it has not been recorded on a DPR 523 form, then please record the cultural resource on the DPR 523 form and provide a copy of the form.***

RESPONSE

Please see the response to Data Request 57.

DATA REQUEST

59. ***If any of the resources could be impacted by the project or could have their immediate surroundings altered (change in the integrity of setting) by this project in such a manner that the significance of the historical resource would be materially impaired, please provide a discussion of the significance of the resources under CEQA Section 15064.5, (a), (3), (A)(B)(C) & (D) and provide staff with a copy of the assessment and the specialist's conclusions regarding significance.***

RESPONSE

Please see the response to Data Request 57.

BACKGROUND

Although records of consultation concerning cultural resources and DPR 523 forms were appended to the AFC (Appendix I), the archaeological survey report was not appended. Staff needs the following information to complete the analysis.

DATA REQUEST

60. Please provide a copy of the original archaeological survey report.

RESPONSE

A separate archaeological technical report was not prepared for the Colusa Power Plant AFC, because there were no previously recorded data for the site, and the surveys performed for the proposed project on the site did not identify any archaeological features. The Cultural Resources section of the AFC includes contextual data, consultations, methods, and findings. Following the completion of the project, the AFC section and any other necessary documentation will be submitted to the Information Center. This typically occurs after completion of the project as there may be design changes, data requests, etc., which may require examination of other areas within an expanded APE.

Additional Sources for Cultural Resources

Gallison, Norman S.
1922 "Insuring California's Industrial and Agricultural Growth..." *Journal of Electricity and Western Industry,* 15 August 1922, pp. 3-10.

Ohio Brass Company
1922 "O-B Insulators." Advertisement, *Journal of Electricity and Western Industry,* 15 August 1922, p. 24.

Pacific Gas and Electric Company
1922 Pacific Gas and Electric Company Submits to the Charles A. Cohen Prize Committee of the Nations Electric Light Association Its Record of Achievement and of Contributions to the Development of the General Use of Electric Light and Power by the Public During 1922. Pacific Gas and Electric Company Library.

Pacific States Electric Company
1922 "Locke Insulators: for the Pit River Development." Advertisement, *Journal of Electricity and Western Industry,* 15 August 1922, p. 20.

Pardee, S.C.
1922 "The Pit River Project of the Pacific Gas and Electric Company." *Architect and Engineer,* December 1922, Vol. 71, No. 3, pp. 88-99.

Talbot, Frederick A.
1923 "The Pit River 70, 000-kVA Hydro-Electric Development: Opening of the 200-mile, 220,000-volt Transmission System." *The Electrical Review,* 5 January 1923, Vol. 92: 2,354, pp. 19-23.

STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

In the Matter of:	)	Docket No. 06-AFC-9
	)	
Application for Certification,	)	**ELECTRONIC PROOF OF SERVICE**
for the COLUSA GENERATING STATION	)	**LIST**
by E&L Westcoast, LLC	)	
	)	**(revised August 22,2007)**
	)	
	)	

Transmission via electronic mail and by depositing one original signed document with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the following:

DOCKET UNIT

CALIFORNIA ENERGY COMMISSION
Attn: DOCKET NO. 06-AFC-9
1516 Ninth Street, MS-4
Sacramento, California 95814-5512
docket@energy.state.ca.us

☐ Transmission via electronic mail addressed to the following:

APPLICANT

Andy Welch
Vice President
Competitive Power Ventures
8403 Colesville Road, Suite 915
Silver Spring, MD 20910
awelch@cpv.com

APPLICANT'S CONSULTANTS

Dale Shileikis
Vice President
URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1917
dale_shileikis@,3,urscorp.com

Mark Strehlow
Senior Project Manager
URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612
Mark_Strehlow@URSCom.com

INTERESTED AGENCIES

Larry Tobias
Ca. Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630
LTobias@,caiso.com

Electricity Oversight Board
770 L Street, Suite 1250
Sacramento, CA 95814
esaltrnarsh@eob.ca.gov

Stephen M. Hackney
Director
Colusa County Department of Planning and Building
220 12th Street
Colusa, CA 95932
shacknev@countvofcolusa.org

Harry Krug, APCO
Colusa County APCD
100 Sunrise Blvd. #F
Colusa, CA 95932-3246
hak@,countvofcolusa.org

Steve Tuggle
Environmental Manager
Sierra Nevada Region
Western Area Power Administration
114 Parkshore Drive
Folsorn, CA 95630
tugele@,wapa.gov

Mark Wieringa
Western Area Power Administration
12155 W. Alameda Parkway
P.O. Box 281213
Lakewood, CO 80228
wieringa@wapa.gov

INTERVENORS

Emerald Farms
c/o Allen L. Etchepare
Post Office Box 658
4599 McDermott Road
Maxwell, California 95955
jme@efarmsmail.com
ale@efarmsmail.com

Pacific Gas and Electric Company
c/o Scott A. Galati, David L. Wiseman
GalatiBlek LLP
555 Capitol Mall, Suite 600
Sacramento, CA 95814
sgalati@gb-llp.com
dwiseman@gb-llp.com

Pacific Gas and Electricity Company
c/o Andrea Grenier
Grenier & Associates, Inc.
1420 East Roseville Parkway,
Suite 140-377
Roseville, CA 95661
andrea@agrenier.com

ENERGY COMMISSION

John L. Geesman
Presiding Member
jgeesman@energy.state.ca.us

James D. Boyd
Associate Member
jboyd@energy.state.ca.us

Susan Brown
Adviser to Commissioner Boyd
sbrown@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

Jack Caswell
Project Manager
jcaswell@energy.state.ca.us

Dick Ratliff
Staff Counsel
dratliff@energy.state.ca.us

Public Adviser
pao@energy.state.ca.us

DECLARATION OF SERVICE

I, Paul Kihm, declare that on January 11, 2008, I deposited a copy of the attached:

LETTER FROM MARK HALE, URS CORPORATION, TO BRIAN VIERRIA, U.S. ARMY CORPS OF ENGINEERS, DATED OCTOBER 22, 2007

with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the California Energy Commission. I further declare that transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service List above.

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 11, 2008, at Costa Mesa, California.

Paul Kihm