LOS ESTEROS CRITICAL ENERGY FACILITY, LLC

717 TEXAS AVENUE
SUITE 1000
HOUSTON, TX 77002

DOCKET
03-AFC-2C
DATE Apr 26 2011
RECD. Apr 28 2011

April 26, 2011

Mr. Craig Hoffman
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

Subject: Los Esteros Critical Energy Facility
03-AFC-2
Condition of Certification CUL-3 – Cultural Resources Monitoring and Mitigation Plan

Dear Mr. Hoffman:

In accordance with Condition of Certification CUL-3, as set forth in the California Energy Commission's Final Decision for the Los Esteros Critical Energy Facility II, Phase 2 (LECEF2), the enclosed technical memorandum for the Cultural Resources Monitoring and Mitigation Plan has been revised based on Staff comments.

If you have any questions regarding this information, please contact me at (925) 557-2250.

Sincerely,

Allison Bryan
Authorized Signatory
EHS Specialist III

Amendment to the CRMMP for the Los Esteros Critical Energy Facility, Phase 2

PREPARED FOR: Craig Hoffman, CPM

PREPARED BY: Phillip Reid, M.A.; Clint Helton, M.A., RPA

COPIES: Allison Bryan/Calpine, Rosemary Silva/Calpine, Barbara McBride/Calpine, Sarah Madams/CH2M HILL

DATE: April 22, 2011

1.0 Introduction and Overview of Project

Los Esteros Critical Energy Facility, LLC (the Project Owner) obtained a license from the California Energy Commission (Energy Commission) for continued operation of Phase 1 of the Los Esteros Critical Energy Facility (LECEF or the project) located in San Jose, Santa Clara County, California. Phase 1 is a nominal 180-megawatt (MW) natural-gas-fired peaking power plant consisting of four simple-cycle combustion turbine generators (CTG) and associated equipment. The license also authorizes conversion of the peaker power plant to combined-cycle operation. The combined-cycle conversion will involve the addition of four heat recovery steam generators (HRSG); one steam turbine generator (STG); a six-cell, plume-abated cooling tower; and ancillary equipment to the LECEF for a total combined nominal generating capacity of 320 MW.

The Project Owner originally applied for a facility license from the Energy Commission for Phase 1 of the LECEF in August 2001, under the expedited licensing provision promulgated under California Public Resources Code (PRC) § 25552. The Energy Commission granted the Phase 1 license in July 2002, and the LECEF was constructed and became operational in March 2003. The purpose of the Phase 2 Application for Certification to the Energy Commission was to meet the requirement of the of PRC § 25552 by recertifying (relicensing) Phase 1 and certifying Phase 2 conversion to combined-cycle, which will allow the project to achieve much higher efficiency in generating power.

As licensed and constructed, the 21-acre LECEF Phase 1 site currently consists of the following features:

- Four GE LM6000 SPRINT CTGs with water injection
- Oxidation catalysts and selective catalytic reduction pollution control equipment, installed within four HRSG casings and stacks (these casings were installed during Phase 1 in anticipation of Phase 2)
- A 115-kilovolt (kV) switchyard
- A 150-foot-long, wood pole transmission line to the Pacific Gas and Electric Company (PG&E) 115-kV Los Esteros-Nortech transmission line, immediately west of the LECEF switchyard

- A 2,700-foot-long primary access road, Thomas Foon Chew Way, linking LECEF with Zanker Road
- A 470-foot-long emergency access road, linking Thomas Foon Chew Way and Alviso-Milpitas Road
- A 55-foot-long, 10-inch-diameter natural gas supply line between the facility and PG&E lines 101 and 109
- Two 1,500-foot-long recycled water supply lines between the facility and the City of San Jose (the City) Waste Pollution Control Plant (WPCP) recycled water supply pipeline in Zanker Road
- A 2,000-foot-long sanitary sewer discharge line to the City's sewer main in Zanker Road
- A 1,000-foot-long stormwater line between the LECEF and the Coyote Creek flood control channel to the east. (Installation of a permanent stormwater outfall, which extended the Phase 1 temporary outfall 250 feet to the low flow channel was completed in accordance with Energy Commission licensing requirements [Phase 1] and other permit conditions, including permits from the U.S. Army Corps of Engineers [USACE], the State Water Resources Control Board, and California Department of Fish and Game [CDFG] in October 2008.)
- A 370-horsepower diesel fire pump

Phase 2 of the project will add the following major equipment to the Phase 1 facility:

- HRSG tube sections and associated steam drums and piping, to be installed within and around the existing HRSG casings
- HRSG duct burners
- A six-cell, plume-abated cooling tower
- A nominal 140-MW STG
- Circulating water pumps and boiler feedwater pumps
- A deaerating surface condenser
- A second ammonia storage tank to be installed in the existing secondary containment basin
- A 230-kV transmission connection to the planned adjacent Silicon Valley Power 230-kV switching station through two 115:230-kV transformers

The Project Owner owns the 34-acre project parcel on which the LECEF Phase 1/Phase 2 facilities and temporary construction parking and laydown area are situated. All Phase 2 infrastructure (including HRSGs, STGs, cooling towers, storage tanks, various pumps, and 230-kV connection) will be sited entirely within the existing fenced Phase 1 site. The 13-acre temporary construction parking and laydown area required during Phase 2 construction is located on the parcel property immediately south of the LECEF and north of Alviso-Milpitas

TABLE 1
Schedule of Pre-construction, Construction, and Post-construction Tasks

Timing	Task
10 days in advance	Designate a new CRS if replacement is necessary and submit qualifications to the CPM for approval (CUL-1).
5 days before a new CRM starts work	Identify replacement CRMs and provide their names and a letter signed by the CRS stating that the CRMs meet the qualifications identified in CUL-1, and send to the CPM (CUL-1).
Within 5 days of a schedule change	Provide information regarding changes to the project schedule to the CRS and CRMs and CPM (CUL-2).
Monthly	Provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed the training to date (CUL-4).
Weekly	Provide a schedule of construction activity to the CRS (CUL-2).
Ongoing during construction	Maintain daily monitoring logs and prepare weekly summaries of monitoring and mitigation activities for inclusion in the MCR (CUL-5).
24 hours before implementing a change in monitoring level	Provide documentation justifying any change in the monitoring level. No reduction in the monitoring level may occur without approval from the CPM (CUL-5)
24 hours prior to reducing or ending daily reporting	Submit to the CPM, for review and approval, documentation detailing the justification for reducing or ending daily reporting (CUL-06).
Within 24 hours of a discovery	Halt construction in the vicinity of the find and notify the CPM. Evaluate the find and obtain the CPM's concurrence and complete any necessary mitigation (CUL-6).
After the discovery of Native American archaeological materials	When Native American archeological materials are discovered, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM, who will initiate a resolution process (CUL-5).
After non-compliance issue resolution in the next MCR	Written report describing issue, resolution, and effectiveness of resolution (if non-compliance issue during construction) (CUL-5).
Post-construction Tasks	
90 days after completion of ground disturbance	Prepare and submit the CRR to CPM for approval (CUL-9).
After completion of ground disturbance	Provide a copy of an agreement with a qualified curation facility to accept cultural materials from the project. The project owner shall pay curation fees (CUL-10).
30 days after CPM approval of CRR	Provide documentation to the CPM that copies of the CRR were provided to SHPO, CHRIS, and curation facility (CUL-9).

TABLE 1
Schedule of Pre-construction, Construction, and Post-construction Tasks

Timing	Task
Ongoing during project life	If archeological materials are found, the project owner shall maintain in its compliance files, copies of signed contracts or agreements with the museum(s), university (ies), or other appropriate research specialists. The project owner shall maintain these files for the life of the project and the files shall be kept available for periodic audit by the CPM (CUL-8). For the life of the project, the project owner shall maintain in its compliance files copies of signed contracts or agreements with the public repository to which the project owner has delivered for curation all cultural resource materials collected during testing, data recovery and mitigation for the project (CUL-10).

Notes:

CHRIS = California Historical Resources Information System
CRM = Cultural Resources Monitor
LORS = laws, ordinances, regulations, and standards
SHPO = State Historic Preservation Officer

3.0 Cultural Resources Monitoring and Mitigation Plan

This amendment memorandum updates several sections of the original CRMMP. The major elements and measures within the CRMMP are shown in Table 2 with corresponding document and section where the information can be found.

TABLE 2
CUL-3 CRMMP Elements and Measures

CRMMP Required Element	Information Provided In
Research design	Original LECEF CRMMP, (provided as Attachment 2)
Implementation sequence and estimated time frames for all project related tasks	Amendment to LECEF CRMMP, Section 2.0
Personnel qualifications, responsibilities, and reporting procedures	Amendment to LECEF CRMMP, Sections 3.1.1 and 3.1.11, and Attachments 3, 4, and 5
Native American monitoring	Amendment to LECEF CRMMP, Section 4.0
Incorporation of the Applicant's mitigation measures, as mandated by the US DataPort Draft EIR	Original LECEF CRMMP (provided as Attachment 2)
Flagging, fencing, and other measures to restrict access	Original LECEF CRMMP (provided as Attachment 2)
Cultural resources recording mapping, photographing, collection, and curation criteria	Original LECEF CRMMP (provided as Attachment 2)
Reporting procedures	Original LECEF CRMMP (provided as Attachment 2)
Work curtailment procedures	Amendment to LECEF CRMMP, Section 3.1.5
Equipment and supplies availability	Original LECEF CRMMP, (provided as Attachment 2)

3.1 Mitigation Implementation Measures

The original CRMMP for the LECEF identified mitigation measures to avoid, minimize, and compensate for potential effects to sensitive archaeological resources. These measures are discussed in the following sections.

3.1.1 Cultural Resources Specialist

Prior to the start of any project-related ground disturbance, the Project Owner will identify, for CPM approval, a CRS who meets the minimum qualifications specified in the U.S. Secretary of the Interior Guidelines, as published by the State Office of Historic Preservation, requirements in Condition of Certification CUL-1 and who will be responsible for the implementation of all cultural resources Conditions of Certification.

The CRS for the LECEF project is Clint Helton. Mr. Helton has a master's degree in anthropology with an emphasis on archaeology and 13 years of experience in archaeology and cultural resources management. He is a Registered Professional Archaeologist (formerly Society of Professional Archaeologists). Mr. Helton has served as Principal Investigator for several large cultural resources management projects during the permitting and construction compliance phases (resume provided in Attachment 5).

3.1.2 Research Design

CUL-3 requires a research design section within the CRMMP, to include a summary of the prehistoric, historic, and ethnographic background of the project area, as well as pertinent research questions and data sources to answer questions. The original CRMMP for the LECEF project contains a research design.

3.1.3 Worker Environmental Awareness Training

A pre-construction meeting and training session will be provided to all employees at the initial start of construction, and to all new employees prior to, and during ground-disturbing activities, to brief them on the role and responsibility of the archaeologist and the procedures to follow in the event of a cultural resources discovery. The training session will include information on how to recognize cultural resources and the legal and/or regulatory implications of knowingly destroying cultural resources or removing artifacts, human remains, bottles and other cultural materials from the site. The training will be presented by the CRS, Cultural Resource Monitor (CRM), or another qualified individual approved by the CPM, may be combined with other training programs, and may be presented in the form of a video, with qualified staff available (via telephone or other means) to answer questions during or following the presentation(s).

All workers who complete the training will be required to sign a form certifying they understand the content of the training and will abide by its guidelines. Additionally, documentation will be provided to the CPM of the cultural resources awareness training of all new employees (see Attachment 4).

3.1.4 Mitigation Monitoring

Pursuant to COC CUL-5, either the CRS, alternate CRS, or CRM under the direct supervision of the CRS or alternate CRS will monitor full time during ground-disturbing activities in the vicinity of the project site, linears, and at laydown areas to ensure that there are no impacts to previously undiscovered cultural resources unless the CPM determines that full-time monitoring is not necessary. Monitoring will be conducted by an archaeologist

(approved as a CRM) with appropriate regional experience to ensure that both aboriginal and historic cultural materials are preserved. The CRS will determine whether prescriptive treatment may be applied to newly discovered cultural material, unless instructed by the CPM that prescriptive treatment is not appropriate. In the event that the CRS concludes that full-time monitoring is not necessary in certain locations, a letter providing a detailed justification for the decision to reduce the level of monitoring will be provided to the CPM for review and approval prior to any reduction in monitoring. Daily logs will be prepared by the CRM (see Attachment 3).

The CRS, alternate CRS, or CRM will be equipped with basic archaeological field equipment necessary to map discovered sites, photograph the finds, and begin recovery of cultural materials. A full suite of field gear needed to recover cultural materials will be brought onsite as required. If necessary, the CRS will make arrangements to cache frequently needed gear or supplies with the construction superintendent's field office.

3.1.5 Discovery Procedures and Discovery Protection

Pursuant to COC CUL-6, in the event that any cultural resources are found during construction, the archaeologist will have the authority to temporarily halt construction operations within a minimum of 33 feet (10 meters), or sufficient distance to protect the resource of a find or resource exposure. The CPM shall be notified of the discovery within 24 hours, along with the owner's project manager, appropriate city and/or county staff inspectors, or their designated representatives, as appropriate.

Construction will not resume at the discovery site until all of the following have occurred:

1. The specialist has notified the CPM of the find and the work stoppage
2. The CRS and the Project Owner have consulted with the CPM, and the CPM has concurred with the recommended eligibility of the discovery and proposed data recovery or other mitigation
3. Any needed data recovery and mitigation has been completed

All required data recovery and mitigation will be completed expeditiously unless all parties agree to additional time. The specialist, the project owner, and the CPM shall confer within five working days of the notification of the CPM to determine what, if any, data recovery or other mitigation is needed. This determination will be made as expeditiously as possible. If data recovery or other mitigation measures are required, the specialist and team members will monitor construction activities and implement data recovery and mitigation measures as needed. The original CRMMP presents a general research design and field methods to appropriately document, and evaluate unexpected discoveries. Significance is determined by the lead agency.

When a grave is inadvertently disturbed during construction, the remains must be treated with respect. If prehistoric skeletal remains are discovered during construction-related ground disturbance, state law will be followed.

3.1.6 Prescriptive Treatment

The original CRMMP for the LECEF does not include a section on prescriptive treatment. The prescriptive treatment described here applies to all areas of the project.

3.1.7 Treatment of Cultural Materials Considered Less Than 50 Years of Age

All of the materials listed below are less than 50 years of age and, unless of exceptional significance, will not be considered cultural resources that merit consideration for recordation or mitigation. If there is any doubt regarding the age of a historic-period find, the project owner and CRS will discuss this with the CPM when giving notice of the find. The following materials will not be reported under CUL-6 or CUL-10 unless exceptional:

- Plastic products limited to Styrofoam® and other foamed polystyrene products, Velcro®, Teflon® -coated cookware, polyvinylchloride (PVC) pipe, high-density polyethylene, polypropylene, polyimide, thermoplastic polyester, linear low density polyethylene, liquid crystal polymers, and products marked with resin codes
- Cans made from aluminum or bi-metal, or those with pull-tab or push-tab (metal or plastic) openings
- Aluminum foil containers
- Synthetic tires, car parts
- Modern electronics (CD players, VCRs, electronic appliances, personal electronics, computers, printers)
- Compact disks, floppy computer disks, magnetic tape media
- Unidentifiable metal fragments
- Rubberized metal
- Clothing or shoes made of plastic or synthetic materials

Monitors or other staff who are examining historic materials, especially plastic materials, should have sufficient familiarity to differentiate materials that are more than 50 years of age from more recent materials. Keep in mind that even though there is a perception that plastics are all of recent production, many plastics were invented and produced in the late 19th and early 20th centuries.

Any materials less than 50 years old that are found with materials older than 50 years will be reported.

3.1.8 Prescribed Treatment of Archaeological Discoveries 50 Years of Age or Older

For some classes of resources, treatment (mitigation) under the CUL-6 discovery condition can be agreed upon before starting construction on the project. Defining the resource classes and treatments prior to starting project-related ground disturbance can limit delays in the construction schedule.

All cultural resources over 50 years of age will be recorded on DPR 523 forms, mapped, and photographed. Not all cultural resources over 50 years of age discovered during construction, however, are significant historical resources under the California Environmental Quality Act. Non-significant cultural resources, ineligible for nomination to the California Register of Historical Resources due to lack of integrity or information potential, may be treated prescriptively. The prescribed treatments for resources that are limited in value are listed below. Any resources not in this list cannot be so treated.

Prescribed treatment for the classes of resources over 50 years of age consists of the following:

- Construction is halted in the immediate vicinity of the find.
- The CRS/CRM records the find on a DPR 523A, including a location map and a photograph. Artifacts do not have to be collected or curated.
- The CRS or the Project Owner notifies the CPM of the find within 24 hours. The notification includes a description of the resource, a statement that it qualifies for prescribed treatment, and the information that the treatment has been completed.
- Construction can resume when the CPM acknowledges notification of the discovery and the required information has been collected.
- The CRS submits the required DPR 523A form completed for the find to the CPM as an attachment to the next Cultural Resources Monthly Compliance Report.

3.1.9 Classes of Prehistoric Archaeological Resources Eligible for Prescribed Treatment

- Small, sparse (less than three pieces per square meter) scatters of lithic debitage that lack depth (less than 10 centimeters). If the project area has low-density sites that have research potential, then such sites cannot be treated in accordance with this procedure.
- Sparse occurrences of fragments of fire-affected rock (less than three pieces per square meter, with no other cultural constituents).
- Sparse occurrences of fragments of baked or vitrified clay (less than three pieces per square meter, with no other cultural constituents). If baked clay effigies are found, the baked clay effigies and associated deposit will be evaluated for significance.
- Small midden remnants (smaller than 1 meter x 1 meter) that lack depth (less than 10 centimeters). If charcoal, bone, or other diagnostic elements are found in the midden, or the deposit is exceptional (greater than 3,000 years old) as determined from associated artifacts, the midden and associated diagnostic elements will be evaluated for significance.
- Small clusters (less than 1 meter x 1 meter in size) of unidentifiable shell (whole or fragmented). If artifacts, manuports or other materials are found, the shell and associated deposit will be evaluated for significance.
- Non-diagnostic isolated (spatially and temporally) prehistoric artifacts.

3.1.10 Classes of Historic-Period Archaeological Resources Eligible for Prescribed Treatment

- Roadside disposal of debris
- Small, isolated artifact concentrations (fewer than 20 artifacts or the fragments of fewer than three objects) with no potential for subsurface deposit
- Concrete, brick, or other building materials that lack structural integrity and are part of a documented disturbed (redeposited) context
- Metal, concrete, or ceramic pipes, conduits, or culverts that lack structural integrity

- Non-diagnostic isolated historic artifacts
- Any cultural resources deposits containing human remains cannot be treated prescriptively

3.1.11 Reports and Curation

Reports will follow contemporary professional archaeological standards and the general guidelines of the California Office of Historic Preservation. The designated specialist will prepare weekly summary reports on the progress or status of cultural-resources related activities that will be filed with the Project Owner for inclusion in the Monthly Compliance Report to the CPM. Interim, progress, and final reports will be issued as required and provided to the project manager. A copy of the CPM-approved confidential Final Cultural Resources Report will be provided to the CPM, under CUL-9.

Recovered specimens will be cleaned and reconstructed to the point of identification and, along with associated notes and reports, submitted to a qualified museum facility for curation. Following the filing of the CPM-approved Cultural Resources Report with the appropriate entities, the Project Owner will ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the project are delivered to a public repository that meets the U.S. Secretary of the Interior requirements for the curation of cultural resources. The Project Owner will pay any fees for curation required by the repository under CUL-10.

Although the CRMMP for the LECEF designates the Tiburon Archaeological Research Group at San Francisco State University as the curation facility for cultural resources found at the LECEF, it is no longer accepting collections for curation. Therefore, a new agreement has been acquired and any artifacts collected will be curated at the David A. Fredrickson Archaeological Collections Facility at Sonoma State University.

4.0 Native American Participation

Pursuant to COC CUL-5, provisions will be made for the participation of a Native American monitor during ground-disturbing activities if Native American artifacts are encountered during ground disturbance. The Native American monitor will act as a liaison between Native Americans and archaeologists, developers, contractors, and public agencies to ensure that cultural features are treated appropriately from the Native American point of view. This will help others involved in a project to coordinate mitigation measures. If human remains are discovered during the course of monitoring or mitigation activities, then the specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission (NAHC), and in accordance with Health and Safety Code Section 7050.5 and PRC Section 5097.98, apply. Section 7050.5(c) will guide the potential Native American involvement as follows:

> If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she will contact by telephone within 24 hours the Native American Heritage Commission.

Under typical circumstances, the NAHC will then notify the Most Likely Descendent(s) (MLD) of the discovered remains. The MLD has 48 hours after being granted access to the

construction site to make recommendations to the landowner or landowner's representative regarding treatment and disposition of the identified remains. The Project Owner will notify the CPM within 24 hours of the discovery, and of the recommendations made by the MLD and the proposed actions to mitigate the impact in accordance with CUL-5.

5.0 References

CH2M HILL. 2002. Cultural Resources Monitoring and Mitigation Plan for the Los Esteros Critical Energy Facility, Santa Clara County, California. March 2002.

Attachment 1
LECEF Phase 2 Final Decision
Conditions of Certification

6. Implementation of the Conditions of Certification below will assure that the proposed project will comply with all applicable LORS pertaining to Cultural Resources set forth in the appropriate portion of **Appendix A** of this Decision.

We therefore conclude that the proposed project will not create any significant direct, indirect, or cumulative adverse impacts to cultural resources.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance, the project owner shall provide the California Energy Commission Compliance Project Manager (CPM) with the name and resume of its Cultural Resources Specialist (CRS), and an alternate CRS, if an alternate is proposed, who will be responsible for implementation of all cultural resources conditions of certification. No ground disturbance shall occur prior to CPM approval of the CRS, unless specifically approved by the CPM.

1) The resume for the CRS and alternate, if an alternate is proposed, shall include information that demonstrates that the CRS meets the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published in the Code of Federal Regulations, 36 CFR Part 61.

2) The technical specialty of the CRS shall be appropriate to the needs of this project and shall include a background in anthropology, archaeology, history, architectural history or a related field.

3) The background of the CRS shall include at least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California;

1. The resume shall include the names and phone numbers of contacts familiar with the CRS's work on referenced projects.
2. The resume shall also demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during project ground disturbance, construction and operation.
3. The CRS may obtain qualified cultural resource monitors to monitor as necessary on the project. Cultural resource monitors shall meet the following qualifications.

- A BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or
- An AS or AA in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

4. The project owner shall ensure that the CRS completes any monitoring, mitigation and curation activities necessary to this project and fulfills all the requirements of these conditions of certification. The project owner shall also ensure that the CRS obtains additional technical specialists, or additional monitors, if needed, for this project. The project owner shall also ensure that the CRS evaluates any cultural resources that are newly discovered or that may be effected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR).

Verification:

1) At least 45 days prior to the start of ground disturbance, the project owner shall submit the name and statement of qualifications of its CRS and alternate CRS, if an alternate is proposed, to the CPM for review and approval.

2) If the CPM determines the proposed CRS to be unacceptable, the project owner shall submit another individual's name and resume for consideration. If the CPM determines the proposed alternate to be unacceptable, the project owner may submit another individual's name and resume for consideration. At least 10 days prior to the termination or release of the CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval.

3) At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for cultural resource monitoring required by this condition. If additional monitors are obtained during the project, the CRS shall provide additional letters to the CPM, identifying the monitor and attesting to the monitor's qualifications. The letter shall be provided one week prior to the monitor beginning on-site duties. 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.

4) At least 10 days, prior to the start of ground disturbance, 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 1) Prior to the start of ground disturbance, the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps will include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting individual artifacts. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide them with copies to the CPM. If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the CRS and the CPM. Maps shall identify all areas of the project where ground disturbance is anticipated.

2) If construction of this project will proceed in phases, maps and drawings may be submitted in phases. A letter identifying the proposed schedule of each project phase shall be provided to the CPM and the CRS.

3) Prior to implementation of additional phases of the project, current maps and drawings shall be submitted to the CPM and the CRS.

4) At a minimum, the CRS shall consult weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed. A current schedule of anticipated project activity shall be provide to the CRS on a weekly basis during ground disturbance and provided to the CPM in each Monthly Compliance Report (MCR).

Verification:

1) At least forty days prior to the start of ground disturbance, the project owner shall provide the designated cultural resources specialist and the CPM with the maps and drawings.

2) If this is to be a phased project, a letter identifying the proposed schedule of the ground disturbance or construction phases of the project shall also be submitted.

3) At least 30 days prior to the start of ground disturbance on each phase of the project, following initial ground disturbance, copies of maps and drawings

reflecting additional phases of the project, shall be provided to the CPM for review and approval.

4) If there are changes to the scheduling of the construction phases of the project, a letter shall be submitted to the CPM within 5 days of identifying the changes.

5) A copy of the current schedule of anticipated project activity.

CUL- 3 Prior to the start of project construction-related vegetation clearance or earth disturbing activities or project site preparation; the designated cultural resources specialist shall prepare, and the project owner shall submit to the CPM for review and approval a Cultural Resources Monitoring and Mitigation Plan (CRMMP) identifying general and specific measures to minimize potential impacts to sensitive cultural resources has been approved by the CPM. Since changes and additions to the project, would make it necessary to amend the CRMMP, the amendment shall be submitted to the CPM for review and approval. The amendment shall identify cultural resources that may be treated programmatically. Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's on-site manager. No ground disturbance shall occur prior to CPM approval of the amended CRMMP, unless specifically approved by the CPM.

The CRMMP shall be submitted to the CPM for review, and the CPM must approve the CRMMP, prior to any construction-related vegetation clearance or earth disturbing activities or project site preparation. After CPM approval of the plan, the project owner shall make the designated cultural resource specialist and designated cultural resource team available to implement the CRMMP as needed throughout project construction.

The Cultural Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

1. A proposed research design that includes a discussion of questions that may be answered by the mapping, data and artifact recovery conducted during monitoring and mitigation activities, and by the post-construction analysis of recovered data and materials. Data sources shall be specified.
2. Discussion of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the pre-construction, construction, and post-construction analysis phases of the project.
3. Identification of the person(s) expected to perform each of the tasks; a description of each team member's qualifications and

their responsibilities; and the reporting relationships between project construction management and the mitigation and monitoring team.

4. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.

5. Incorporation of the Applicant's mitigation measures, as mandated by the USDP Draft EIR (2001).

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

7. A discussion of the requirement that all cultural resources encountered will be recorded and mapped (may include photos) and that all significant or diagnostic resources will be collected for analysis and eventual curation into a retrievable storage collection in a public repository or museum that meets the U.S. Secretary of Interior standards requirements for the curation of cultural resources.

8. A description of the set of reporting procedures prepared in concert with the project owner, to be used by all project personnel to notify the designated cultural resource specialist of any unexpected cultural resource discoveries during project construction.

9. A description of the work curtailment procedures prepared in concert with the project owner, to be used by all project personnel in the event of unexpected cultural resource discoveries during project construction.

10. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during construction.

Verification: At least 10 days prior to the start of project construction changes, related vegetation clearance or earth disturbing activities or project site preparation, the project owner shall provide to the CPM for review and approval an amendment to the Cultural Resources Monitoring and Mitigation Plan, prepared by the designated cultural resource specialist. The amendment may be submitted as an appendix to the CRMMP.

CUL-4 Worker Environmental Awareness Training for all new employees shall be conducted prior to and during periods of ground disturbance. New employees shall receive training prior to starting work at the project site or linears. The training may be presented in the form of a video. The training shall include a discussion of applicable laws and penalties under the law. Training shall also include samples or visuals of artifacts that might be found in the project vicinity. The training should inform workers that the CRS, alternate CRS or monitor has the authority to halt construction in the event of a discovery or unanticipated impact to a cultural resource. The training shall also instruct employees to halt or redirect work in the vicinity of a find and to contact their supervisor and the CRS or monitor. An informational brochure shall be provided that identifies reporting procedures in the event of a discovery. Workers shall sign an acknowledgement form that they have received training and a sticker shall be placed on hard hats indicating that environmental training has been completed.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a letter to the CPM stating that employees will not begin work until they have completed environmental training and that a sticker on hard hats will identify workers who have received training. Copies of acknowledgement forms signed by trainees shall be provided in the MCR.

CUL-5 1) The project owner shall ensure that the CRS, alternate CRS, or monitors shall monitor ground disturbance full time in the vicinity of the project site, linears and ground disturbance at laydown areas to ensure there are no impacts to undiscovered resources. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter providing a detailed justification for that decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring.

2) Those individuals conducting cultural resources monitoring shall keep a daily log describing the construction activities, areas monitored, soils observed, and any cultural materials observed. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

3) The CRS shall notify the project owner and the CPM, by telephone or e-mail, of any incidents of non-compliance with any cultural resources conditions of certification within 24 hours of becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.

4) A Native American monitor shall be obtained to monitor activities if Native American archeological materials are 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 will be monitored.

Verification:

1) During the ground disturbance phases of the project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter or e-mail identifying the area(s) where the CRS recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval.

2) During the ground disturbance phases of the project, the project owner shall include in the MCR to the CPM copies of the daily cultural resource monitoring reports. Copies of daily logs shall be retained.

3) Within 24 hours of recognition of a non-compliance issue, the CRS shall notify the CPM by telephone of the problem and of steps being taken to resolve the problem. The telephone call shall be followed by an e-mail or fax detailing the non-compliance issue and the measures necessary to achieve resolution of the issue. Daily logs shall include forms detailing any instances of non-compliance with conditions of certification. In the event of a non-compliance issue, a report written no sooner than two weeks after resolution of the issue that describes the issue, resolution of the issue and the effectiveness or the resolution measures, shall be provided in the next MCR.

4) When Native American archeological materials are discovered, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM who will initiate a resolution process.

CUL-6 The designated cultural resource specialist or the specialist's delegated monitor(s) shall have the authority to halt or redirect construction if previously unknown cultural resource sites or materials are encountered during project construction-related vegetation clearance or earth disturbing activities or project site preparation or if known cultural resources will be affected in an unanticipated manner.

If any cultural resources are encountered, the project owner shall notify the CPM within 24 hours. Construction will not resume at the discovery site until all of the following have occurred:

1. The specialist has notified the CPM of the find and the work stoppage;

2. The CRS, and the project owner, have consulted with the CPM and the CPM has concurred with the recommended eligibility of the discovery and proposed, data recovery or other mitigation, and;

3. Any needed data recovery and mitigation has been completed.

The specialist, the project owner, and the CPM shall confer within five working days of the notification of the CPM to determine what, if any, data recovery or other mitigation is needed.

If data recovery or other mitigation measures are required, the specialist and team members shall monitor construction activities and implement data recovery and mitigation measures as needed.

All required data recovery and mitigation shall be completed expeditiously unless all parties agree to additional time.

Verification: At least 30 days prior to the start of project construction-related vegetation clearance or earth disturbing activities and site preparation; the project owner shall provide the CPM with a letter confirming that the designated cultural resources specialist and delegated monitor(s) have the authority to halt construction activities in the vicinity of a cultural resource find. The project owner shall also provide to the CPM, for review and written approval, a set of work curtailment procedures to be followed in the event that previously unknown cultural resources are discovered during construction.

CUL-7 ***Deleted.***

CUL-8 The project owner shall ensure that the designated cultural resource specialist performs the testing, recovery, preparation for analysis, analysis, preparation for curation, and delivery for curation of cultural resource materials encountered and collected during pre-construction surveys, testing and during the monitoring, data recovery, mapping, and mitigation activities related to the project. Cultural resources materials shall be curated in accordance with the California State Historical Resources Commission "Guidelines for the Curation of Archaeological Collections" and the CRMMP including data sources identified in the research design.

Verification: If archeological materials are found, the project owner shall maintain in its compliance files, copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate research specialists. The project owner shall maintain these files for the life of the project and the files shall be kept available for periodic audit by the CPM. Information as to the specific location of sensitive cultural resource site shall be kept confidential and accessible only to qualified cultural resource specialists.

CUL-9 After completion of the project, the project owner shall ensure that the CRS prepares a Cultural Resources Report (CRR) according to the Archaeological Resource Management Reports Guidelines as recommended by the California Office of Historic Preservation. The project owner shall submit the report to the CPM for review and

approval. The report shall be considered final upon approval by the CPM.

Protocol: The CRR shall include (but not be limited to) the following:

A. For all projects:

1. Description of pre-project literature search, surveys, and any testing activities;
2. Maps showing areas surveyed or tested;
3. Description of any monitoring activities;
4. Maps of any areas monitored; and
5. Conclusions and recommendations.

B. For projects in which cultural resources were encountered, include the items specified under "a" and also provide:

1. Site and isolated artifact records and maps;
2. Description of testing for, and determinations of, significance and potential eligibility; and
3. Research questions answered or raised by the data from the project.

C. For projects in which cultural resources were recovered, include the items specified under "a" and "b" and also provide:

1. Descriptions (including drawings and/or photos) of recovered cultural materials;
2. Results and findings of any special analyses conducted on recovered cultural resource materials;
3. An inventory list of recovered cultural resource materials; and
4. The name and location of the public repository receiving the recovered cultural resources for curation.

Verification: After completion of the project, the project owner shall ensure that the CRS completes the CRR within ninety days following completion of the analysis of the recovered cultural materials. Within seven days after completion of the report, the project owner shall submit the CRR to the CPM for review and approval. Within 30 days after receiving approval of the CRR, the project owner shall provide to the CPM documentation that the report has been sent to the State Historic Preservation Officer and the appropriate archaeological information center(s).

CUL-10 If significant cultural resource deposits are encountered through testing or project monitoring, the project owner shall ensure that all cultural

resource materials, maps, and data collected during data recovery and mitigation for the project are delivered to a public repository that meets the US Secretary of Interior requirements for the curation of cultural resources following the filing of the CPM-approved CRR with the appropriate entities. The project owner shall pay any fees for curation required by the repository.

Verification: The project owner shall ensure that all significant recovered cultural resource materials and a copy of the CRR are delivered for curation. Significance will be determined after consultation with the CPM. The project owner shall provide a copy of the transmittal letter received from the curation facility and provide a copy to the CPM within thirty days after receipt.

For the life of the project, the project owner shall maintain in its compliance files copies of signed contracts or agreements with the public repository to which the project owner has delivered for curation all cultural resource materials collected during testing, data recovery and mitigation for the project.

CUL-11 Prior to any additional project-related activities which may result in ground disturbance, the project owner must ensure that the area(s) to be impacted have been subject to a cultural resource surveys for this project, if current (within 5 years) surveys for those areas do not already exist.

The responsibility for the evaluation must be taken by persons meeting the Secretary of the Interior's Professional Qualification Standards in a discipline appropriate to the historic context within which the resource is being considered (OHP 1995).

If significant cultural resources will be affected, then mitigation measures will be determined in consultation with the CPM.

Verification: The project owner shall provide the results of any additional cultural resource surveys and evaluations in the form of a technical report (with request for confidentiality if needed), along with any associated maps, to the CPM at least thirty (30) before any project-related construction is to take place. All required mitigation will be completed prior to construction of the project-related activities.

Attachment 2
LECEF Phase 1 CRMMP

Final

Cultural Resources Monitoring and Mitigation Plan

Los Esteros Critical Energy Facility, San Jose, California

Prepared for:

Calpine C*Power

March 2002

CH2MHILL
2485 Natomas Park Drive
Sacramento, CA 95833

Declaration

I, the Designated Cultural Resource Specialist, participated in the preparation of this Cultural Resource Monitoring and Mitigation Plan and have approved the final version of the plan for submittal to the California Energy Commission's Compliance Project Manager.

_____

Dr. Colin Busby — Date
Designated Cultural Resource Specialist

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Appendices

1.0 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. If there appears to be a discrepancy between the Conditions and the way in which they have been summarized, described, or interpreted in this CRMMP, the Conditions, as written in the Final Decision, supercede any interpretation of the Conditions in the CRMMP."

This Cultural Resources Monitoring and Mitigation Plan (CRMMP) meets California Energy Commission (CEC) requirements for the Los Esteros Critical Energy Facility (LECEF) project (01-AFC-12) and appurtenant linear facilities (natural gas, recycled water supply, wastewater discharge and electrical transmission lines) associated with the LECEF project. Calpine C*Power is hereto referred to as the "project owner."

The LECEF site, all of the transmission lines, all of the recycled water line and wastewater discharge, and all of the natural gas line lie within the City of San Jose, California.

This treatment plan fulfills CEC Condition of Certification CUL-3 for LECEF and the mitigation measures required by the US DataPort Environmental Impact Report (PDCSH00-06-048) by having the designated cultural resources specialist prepare a CRMMP for submittal by the project owner to the CPM for review and written approval. CH2M HILL prepared this plan in conjunction with Dr. Colin I. Busby of Basin Research Associates, Inc. Dr. Busby is the Designated Cultural Resource Specialist (DCRS) for the project and is responsible for implementing this CRMMP. The scope of the CRMMP includes the LECEF plant site and all linears for the LECEF project.

Chapter 8.3 (Cultural Resources) of the Application for Certification (AFC) document for the LECEF project was prepared in 2001 by CH2M HILL's cultural resource specialists - Dr. James C. Bard and Mr. Jim Sharpe, M.S.

CEC's Staff Assessment for LECEF includes 11 Cultural Resources Conditions of Certification (CULs 1-11). Throughout this CRMMP document, the CEC staff assessment report is referred to often and are incorporated by reference into this CRMMP. In addition, the eleven Cultural Resources Conditions of Certification are included in Appendix A to this plan.

The CRMMP, together with the Conditions of Certification (COC) and state and federal law, provides appropriate guidelines to protect and treat any archaeological resources exposed during construction of the LECEF power plant and associated linears.

2.0 Project Location and Description

LECEF will be constructed on a 55-acre site controlled by Calpine c*Power. The power plant will have a nominal capacity of 180 megawatts (MW). Several linear facilities will be built as part of the project. A new transmission line will connect with PG&E's Kifer-Nortech-Trimble line located at the corner of Zanker Road and Hwy 237. A new natural gas pipeline will connect to existing PG&E gas transmission lines Nos. 101 and 109 located adjacent to State Route 237, and within property controlled by c*Power. Plant process water will be supplied by San Jose/Santa Clara Water Pollution Control Plant (WPCP) via a new pipeline from the existing recycled water main located within the City of San Jose's buffer land adjacent to the site.

Plant wastewater will be returned to San Jose/Santa Clara WPCP together with the facility's sanitary sewage via two pipelines. These lines will connect to one of two of the City's sanitary sewer lines located adjacent Zanker Road.

3.0 Summary of Previous Research and Resources Identified

The LECEF certification process cultural resource record search included the project Area of Potential Effect (APE) and areas within 1/2 mile of the APE. It determined that portions of the project APE have been surveyed previously for cultural resources.

A large number of cultural resource studies have been conducted within the project APE and/or within a 1/2-mile radius of the project area (proposed corridors and all other studied corridors). These cultural resource studies are summarized both by Bard and Sharpe (2001) in A Cultural Resource Assessment of the Proposed Los Esteros Critical Energy Facility, Santa Clara County, California and by Palmer and Reinoehl (2001) in the CEC Staff Assessment – Cultural Resources; Testimony of Robin Palmer and Gary Reinoehl (December 2001) for this project.

No city, county, state and/or federal historically or architecturally significant structures, landmarks or points of interest are located in or adjacent to the LECEF project. One previously recorded prehistoric archaeological site (CA-SCL-528) lies in close proximity to the LECEF project footprint (see below).

3.1 Recorded Cultural Resource Sites

As documented for the LECEF project (see Bard and Sharpe 2001 and Palmer and Reinoehl 2001) one prehistoric archaeological site (CA-SCL-528) is located in close proximity to the proposed Los Esteros plant site and project linear corridors (see Confidential AFC Figure 8.3-3). No sites have been determined eligible for the National Register of Historic Places or for the California Register of Historical Resources.

3.2 Areas Requiring Cultural Resource Monitoring

Prior to the start of construction and on a weekly basis throughout the construction period, the DCRS will review the schedule of project activity. In addition, during periods of ground disturbance, the DCRS will consult daily with the project superintendent or construction field manager to confirm the areas to be worked on the next day. The project owner will be responsible for providing the construction schedule and final project design maps (7.5-minute quad maps) identifying the milepost markers, final centerlines and right-of-way boundaries, and the location of all areas where surface disturbances may occur. The initial maps and schedule will be reviewed by the DCRS prior to the start of construction. Full time monitoring will be conducted in accordance with the requirements of Condition of Certification CUL-3. The condition requires full-time monitoring of the following areas during ground disturbance:

- The project site
- The project linears

- The laydown areas

If the DCRS proposes any changes to the monitoring program, the project owner will submit, for review and approval, a letter to the CPM containing the DCRS's recommendations for the proposed changes and justification for the changes.

4.0 Cultural Resources Monitoring Mitigation Plan (CRMMP)

The DCRS has created this plan to comply with the Conditions of Certification. As presented below, this CRMMP explains how the facility is going to comply with the CEC's Conditions of Certification. As noted above in the Introduction, this CRMMP includes and incorporates by reference, the CEC's 11 Cultural Resources Conditions of Certification for the Los Esteros Critical Energy Facility project and its linear facilities (Appendix A). This CRMMP explicitly commits the DCRS to comply with all the COCs as incorporated by reference.

The main purpose of this CRMMP is to plan ahead in order to avoid impacts to cultural resources that could result either directly or indirectly during the preconstruction, construction, and operation phases of the LECEF project. Direct impacts are those that may result from the immediate disturbance of resources, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, or excavation. Indirect impacts are those that may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource materials due to improved accessibility.

For the LECEF project and linears, project-related site development and construction will entail sub-surface disturbance of the ground, which has the potential to adversely affect previously unknown cultural resources. One prehistoric archaeological site is known to be located in the vicinity of the LECEF project. It is possible that previously unknown historic and prehistoric resources might be encountered and affected during project construction. Operation of the LECEF project is not expected to have any significant impacts on previously identified cultural resources.

This CRMMP provides procedures to be followed to ensure that significant cultural resources are not inadvertently affected by project-related activities and that the DCRS complies with all the cultural resources COCs for this project. These procedures include specific measures to avoid or minimize impacts, notifications and actions to be taken in the event that unanticipated cultural materials are discovered during construction, and treatment of any Native American human remains that may be exposed during project implementation.

Significant cultural resources impacts include:

- Those that cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of CEQA Guidelines, Title 14, California Code of Regulations.
- Those that cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of CEQA Guidelines, Title 14, California Code of Regulations.

- Those that disturb any human remains, including those interred outside of formal cemeteries.

Cultural resource activities related to the LECEF project will meet any applicable standards and guidelines established by the California Office of Historic Preservation and will comply with the conditions of certification. Professional reports will follow contemporary archaeological standards and COC CUL-9. Daily logs will be maintained as required by the COC CUL-5 and submitted to the CPM with the Monthly Compliance Reports (see Section 4.7 for additional information on reporting procedures). Any confidential site information that needs to be forwarded to the CPM will be done so under a request for confidentiality to ensure that the CPM is able to keep sensitive site information confidential.

In addition, this CRMMP complies with the requirements of the US DataPort Environmental Impact Report's Cultural Resource mitigation requirements. These requirements are presented below.

> The project proposes to include the following measures to avoid or reduce potential impacts to buried cultural resources:
>
> > The project includes a comprehensive monitoring and protection program to ensure that all subsurface resources are appropriately protected. Prior to site grading, a subsurface mechanical testing program for archaeological materials will be conducted over the entire site. Subsurface testing will look for buried or obscured prehistoric deposits and in the vicinity of the historic Boots farm, possible historic remains. Backhoe trenches would be excavated systematically at approximately 30 meter intervals and samples of excavated soils will be regularly screened to help identify small archaeological indicators. Soil logs and/or stratigraphic profiles for each trench will be maintained.
> >
> > In the event significant prehistoric or historic archaeological resources are discovered, either during the preconstruction testing program or during site grading or excavations for utility lines, all construction within a radius of 50 feet of the find would be halted, the Director of Planning, Building and Code Enforcement would be notified, and the archaeologist will examine the find and make appropriate recommendations regarding the significance of the find and the appropriate mitigation. Recommendations could include collection, recordation, and analysis of any significant cultural materials.[1]
> >
> > In the event that human skeletal remains are encountered, the applicant is required by County Ordinance No. B6-18 to immediately notify the County Coroner. Upon determination by the County Coroner that the remains are Native American, the coroner shall contact the California Native American

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1 Significant cultural materials include but are not limited to: aboriginal human remains; chipped stone; ground stone; shell and bone artifacts; concentrations of fire-cracked rock; ash and charcoal; shell; bone; and historic features such as privies or building foundations.

Heritage Commission, pursuant to subdivision (c) of section 7050.5 of the Health and Safety Code and the County Coordinator of Indian Affairs. No further disturbance of the site may be made except as authorized by the County Coordinator of Indian Affairs in accordance with the provisions of State law and the Health and Safety Code. The Director of Planning, Building and Code Enforcement will also be notified.

Archaeological monitoring during ground disturbing activities such as grading and trenching for utility lines will be conducted if recommended by the archaeologist conducting the preconstruction testing program.

Compliance with the first mitigation requirement was demonstrated by the preparation of this CRMMP and Calpine C*Power's submittal of a Presence/Absence Testing Protocol and Results report. Compliance with the third mitigation measure is presented in Section 4.5 (Discovery of Native American Skeletal Remains).

4.1 Resource Protection

Standard operating procedures for construction activities are provided here to ensure that significant cultural resources are not inadvertently affected by project related activities. These procedures include:

1. Cultural resource monitoring by the DCRS during subsurface construction on the LECEF site and LECEF linear facilities (Section 4.2).
2. Construction Employee Training Program (Section 4.3).
3. Use of specific procedures to deal with the inadvertent exposure of subsurface cultural resources during construction, including Native American burials (Sections 4.4-4.5).

4.2 General Monitoring Program

As required by the CEC's Conditions of Certification for this project, cultural resource monitoring by a qualified cultural resource specialist is a mitigation measure to ensure there are no adverse impacts during subsurface construction. Cultural resource monitoring is defined in this CRMMP as the controlled observation and regulation of construction operations on or in the vicinity of a known or potentially significant cultural resource in order to prevent or minimize impact to the resource. The project owners have submitted the qualifications (education, experience, work history, and roles and responsibilities) of the DCRS and DM to the CPM for approval. The monitoring will focus on surface site preparation, subsurface demolition activities and foundation excavation as well as trenching for gas, recycled water and wastewater utilities.

The cultural resource monitoring will be conducted by the DCRS or the Designated Monitor (DM). Monitoring will occur full time in areas specified in CUL-3 and in other areas as determined by the DCRS.

If cultural resources are observed during the construction activities, the DCRS or DM will immediately halt or redirect construction in the area of the find and will notify the CPM and

the City of San Jose Director of Planning, Building and Code Enforcement of the find and the work stoppage within 24 hours if the find is suspected to be significant. The DCRS will confer with the project owner and the CPM and the City of San Jose Director of Planning, Building and Code Enforcement (as required by the second mitigation requirement of the US DataPort EIR) to determine whether any data recovery or other mitigation is needed. After completion of data recovery or mitigation, construction will resume in the area of the find.

As discovered by the DCRS, DM, or by construction supervisors or workers, all the newly discovered finds will be recorded and mapped (and photographed). All significant or diagnostic resources will be collected for analysis and eventual curation into a retrievable storage collection in public repository or museum that meets the US Secretary of the Interior's Standards and requirements for the curation of cultural resources. By definition, not all finds of cultural materials are historical resources. The Programmatic Treatment of Cultural Resources Discoveries will be incorporated into this CRMMP (as Appendix C) when finalized by the CEC, and will be used to determine which finds are insignificant and require no further action be taken. The research design for any discoveries will include a discussion of the information value of the materials recovered, which materials will be recovered, and materials to be curated.

Some pre-construction tasks will be completed prior to ground disturbance. A key pre-construction task is to deliver a construction worker awareness training program. The DCRS or the designated cultural resource trainer(s) will conduct the cultural resources training or alternatively, a video of an earlier LECEF training will be presented as required by COC CUL-4. This cultural resource training will be given at the same time as the biological and paleontological resources training to all project managers, all construction supervisors, and all construction workers prior to these individuals working on the LECEF site.

The cultural resource training program, prepared by the DCRS will be submitted to the CPM for approval. The training will include presentation of a printed training brochure/guide booklet. Cultural resource training will be provided to new project managers, construction supervisors, and workers rotating into the construction operations during periods of ground disturbance on the project site, the laydown areas, the linears and during landscaping. The DCRS or the designated cultural resource trainer(s) will document all training given in the daily logs and weekly summary. The daily logs will include any resource finds (including type and location), the progress or status of the resource monitoring, any mitigation, preparation, identification, and analytical work being performed on the project. The daily logs will also include the location of monitoring (identified by milepost markers to the nearest tenth of a mile) and where monitoring was deemed unnecessary. The daily logs will form the basis for the weekly summary reports submitted to the project owners. Employees receiving training will sign and date a statement certifying that they have received and understood the training. Copies of these statements will be included in the Monthly Compliance Reports.

Monitoring will be conducted by the cultural resource specialist or designated monitor approved by the CEC's CPM, with appropriate regional experience to ensure that both aboriginal and historic cultural materials are preserved. Construction monitoring will occur until all ground-disturbing construction has been completed. It is likely there will be days where there will not be any ground disturbing activities conducted. During days with no

ground disturbing activities, monitoring may not be necessary. The last day of monitoring will be the last day of ground-disturbing construction.

The DCRS in consultation with project owners and the CEC's CPM will determine the duration and intensity of the monitoring program in the areas where the DCRS has discretion. It will range from full time monitoring to "as needed" inspections on either a regular or intermittent basis throughout all ground disturbing construction operations (as approved by the CEC). Full-time monitoring may be required initially until some indication of the overall sensitivity of a given work zone can be determined by the DCRS based on his/her inspection of the subsurface sediments. Once the subsurface sensitivity has been established, the intensity of the monitoring program can be adjusted (e.g., full time to intermittent as approved by the CEC). The DCRS will remain on-call throughout the project to deal with any unexpected discoveries. The DCRS will determine the size or extent of the areas where monitoring is to occur and will establish the percentage of time the monitor will be present. Areas required to be monitored will include the power plant site, the construction laydown area, the natural gas pipeline route, the recycled water line route, and, possibly, any landscaping areas. The project owner will submit a letter to the CPM for review and approval of any changes to the monitoring program. This letter will identify the DCRS's recommendations and justification for the change in the monitoring program.

Measures to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation will be implemented when and if discoveries are made during monitoring. With the possible exception of nearby CA-SCL-528, there are no known sensitive cultural resources that would be affected by the LECEF project.

The strongest measure to restrict access would be to erect cyclone fencing and post a 24-hour security guard (e.g., for a burial site). A local fencing contractor would be hired to erect the fencing and a local security firm would be retained to provide a security guard, if necessary. A less stringent measure would be to erect fencing but not post a security guard. Where suitable, flagging or flexible colored plastic fencing can be used to direct construction workers and machinery away from sensitive areas. The length of time such measures are needed will vary. It is likely that flagging or flexible fencing can be removed from a sensitive area once construction has been completed in that area. Removal of cyclone fencing or dismissal of a security guard might take place after data recovery has been completed in the sensitive area. Long-term access restrictions, if needed, might consist of permanent fencing or concealment of the resource under landscaping.

All discoveries of cultural resource finds will be recorded, mapped, and photographed. All significant or diagnostic resources will be collected for analysis and eventual curation into a retrievable storage collection in a public repository or museum that meets the US Secretary of the Interior's Standards and requirements for the curation of cultural resources.

The DCRS will provide qualified cultural resource specialists that meet or exceed the Secretary of the Interior's standards and are approved by the CPM. Peer review/oversight staff at CH2M HILL and Basin Research exceed the Secretary's minimum standards. The CPM will review and approved the Designated Cultural Resources Specialist and the Designated Monitor proposed for the project. The mitigation team will consist of Basin Research Staff with the DCRS serving as Principal Investigator. Other Basin Research Staff

will serve as Laboratory Director and as Lead Field Technicians and will supervise line staff members and Native American participants.

As needed, the DCRS may bring on Adjunct Staff to augment the mitigation team. The DCRS and/or project owners will provide the qualifications of any additional staff deemed necessary by the DCRS to the CPM for review prior to use. Possible Adjunct Staff include Mr. Robert Harmon (M.A. Archaeology) and Mr. David DeVries (B.S. Soil Science). A full description of Basin's key staff and other supporting staff is on file with the CEC.

The DCRS or DM will be equipped with basic archaeological field equipment necessary to map discovered sites, photograph the finds, and begin recovery of cultural materials. Basin's office and laboratory are located in San Leandro - about one hour from the project area. A full suite of field gear needed to recover cultural materials is on hand at Basin's office and laboratory. Basin's field vehicles (pick-up trucks) will transport needed gear to the find site as needed. If needed, Basin will make arrangements to cache frequently needed gear or supplies with the construction superintendent's field office.

4.3 Pre-Construction Meeting/Training Program

The DCRS will provide a pre-construction meeting and training session (after CPM approval of the Worker Environmental Awareness Training Program required by CUL-4). This initial training will be given to all assembled project managers, construction supervisors and workers to brief them on the role and responsibility of the DCRS and the procedures to follow in the event of a cultural resources discovery. The training session will include information on the legal and/or regulatory implications of knowingly destroying cultural resources or removing artifacts, human remains, bottles and other cultural materials from the project site. The DCRS prepared a cultural resource-training program that will be submitted to the CPM for approval and the initial training will be given. The training will include presentation of the printed training brochure/guide booklet (approved by the CPM). Cultural resource training will be provided throughout the life of the project as new project managers, construction supervisors, and workers rotate into the construction operations. After the initial training, future training will be presented in the form of a training video and the training brochure/guide booklet will also be handed out.

4.4 Discoveries During Construction

Cultural resources are sometimes discovered after project construction begins and occasionally a project has unexpected effects on known resources. In the event that any cultural resources are exposed during construction when the DCRS/DM are present, work at the location of the find will be stopped immediately by the DCRS or DM.

If the DCRS or DM are not present (due to a reduced cultural resource monitoring program as approved by the CPM or the DCRS/DM is at another part of the project site) when a potential find is discovered, the supervising member of the construction crew will halt construction and will contact the project owner's Field Construction Manager (FCM) immediately. All workers will have been through the worker environmental awareness training program before beginning work on the project, and they will be aware that construction in the immediate area of a potential cultural resource find is to be halted. The FCM will immediately notify the DCRS or DM by telephone of the discovery and the

temporary work stoppage will continue to be effected. The FCM will cooperate fully with the DCRS or DM to enforce and maintain a construction work stoppage. The CPM will be contacted within 24 hours of the discovery if the discovery is suspected of being significant (see section 4.4.2). The DCRS or DM will maintain a log of each work stoppage with appropriate details.

Construction will remain halted to avoid or minimize harm to the discovery[2] until significance is determined and an appropriate treatment can be identified and implemented through consultation between the project owners, the DCRS and the CPM or any other applicable city/county officials, or tribal governments. Construction will remain halted until CUL-6 is satisfied unless the discovery is determined to be insignificant as outlined in the Programmatic Treatment Plan.

During this evaluation period, construction operations outside of the find location can continue.

4.4.1 Not-Eligible Resource

The project owners will notify the CPM of any finds within 24 hours of discovery, unless the finds consist only of those insignificant items identified in the Programmatic Treatment of Cultural Resources Discoveries (Appendix C).

The project owner and DCRS will notify the CPM of the find via telephone/fax/e-mail. The DCRS will then record the find in a manner agreed upon during consultation with the CPM.

4.4.2 Eligible Resource

The DCRS and project owner will notify the CPM within 24 hours that a significant (or suspected significant) find was discovered. If the discovery appears significant on review, the DCRS will (1) determine and detail avoidance procedures or, (2) develop an appropriate *Treatment Plan* within 48 hours of notification using the guidelines/procedures in the CRMMP. The *Treatment Plan* prepared by the DCRS based on consultation and discussion with the CPM and project owner regarding appropriate mitigation measures will then be immediately forwarded to the CPM and to the project owners within five working days of the find for review and written approval. CH2M HILL's senior archaeologist will provide peer review and oversight on the proposed *Treatment Plan*. Construction may resume in the affected area once the measures in the *Treatment Plan* have been completed.

4.4.3 Treatment Plan

Research Design

The *Treatment Plan* that will be developed to mitigate the inadvertent exposure of significant cultural resources will be guided by a research design appropriate to the discovery and potential research data inherent in the resource. The *Treatment Plan* will use suitable archeological field techniques and analytical strategies. Data recovery and analytical efforts for prehistoric cultural materials will be guided by a general research design based on prehistoric archaeological research over the past 25 years in Santa Clara County, which has identified a number of major regional research domains (e.g., Chronology, Lithic

2 Methods to protect finds include fencing, covering remains with protective material and cultural sterile soil or plywood. If vandalism is a threat, a 24-hour security system may be necessary.

Technology, Settlement/Subsistence/Seasonality, Trade/Exchange, and Prehistoric Demography).

The *Treatment Plan* will include a description of the resource, how it was encountered, the contents, its boundaries, the depth and stratigraphic relationship of the deposit, the testing conducted, results of the testing, any additional research required to understand the deposit, an recommendation of the eligibility, and a proposal for mitigation. If the *Treatment Plan* recommends data recovery, the plan will include a research design, proposed field methods, data sets required, materials to be collected and curated, analysis required to recover information on the find, reporting procedures, and curation methodology. The research design will focus on the values contained in the discovered deposit.

Data recovery for historic cultural materials, if encountered, will be guided by several major regional historic archaeological research domains. A general research design is attached to this CRMMP (Appendix B). The treatment plan will include additional staff deemed appropriate for the analysis, identification, preservation, and curation of the find.

Field Methods

Archaeological field methods and analytical strategies appropriate to the discovery and potential research data will be developed and employed during the mitigation effort. General methods and procedures may be employed at the direction of DCRS. These include the following: (1) Recording of features; (2) Sampling of significant features; and, (3) Capping. All field activities will follow the documentation procedures of the cultural resource monitoring program and will include recording all collection methods and procedures, locations of finds, and any other pertinent information in the daily logs. Sites will be considered, evaluated, and recorded as a whole.

Standard archaeological field procedures will be used to complete any site testing and/or data recovery treatment program. The location of excavation units, isolated finds, burials, other features, etc. will rely on available aerial and engineering maps keyed to established permanent datums or features. Unit or feature excavations rely on hand tools with heavy equipment used to remove overburden or to facilitate excavation. All features or units will be excavated in natural stratigraphic levels or 10 cm arbitrary levels with screening through either ¼-inch or 1/8-inch mesh at the discretion of the Principal Investigator. Standard field notes will be maintained by the field archaeologist.

Artifacts and appropriate samples of bulk materials will be collected. Information on each item will be noted on standardized forms and all materials will be assigned a field catalog number. A comprehensive photographic record will be maintained for each excavation unit and other items of project interest.

Radiocarbon samples of a suitable quality and quantity will be collected at the discretion and direction of the DCRS from *in situ* deposits and the screen, recorded and packaged to avoid contamination in accordance with current lab procedures. Selected samples will be forwarded to an appropriate lab for chronometric dating. Sediment samples of an appropriate weight and/or capacity will be secured (e.g., from random surface localities, each level/layer, feature, etc, profiled sidewalls) at the discretion of the DCRS along with samples for flotation as appropriate. These samples may be subjected to standard soil tests

at the discretion of the DCRS. Column, as well as pollen samples, may be secured from selected unit sidewalls at the discretion of the DCRS.

Each completed unit/feature will be auger tested (where possible) to determine if additional cultural materials are present below the last culturally sterile level(s). A unit/feature will be presumed complete if the auger borings are culturally sterile. Units/features will be backfilled upon completion of the excavation.

Laboratory processing and cataloging of all cultural and floral and faunal materials will be completed after treatment. Metric measurements (or English in the case of EuroAmerican artifacts) and the attributes of each artifact will be described during processing. Field and laboratory documentation and the collection will be transferred to a designated depository upon completion of the project.

The removal of Native American human remains and associated grave objects will follow the general guidelines and specific procedures in the *Native American Burial Protection Plan* (NABPP - see Section 4.5) and will be performed in accordance with the recommendations of the Native American most likely descendent.

The above field methods are generalized and will be refined as necessary in a *Treatment Plan* to reflect the information values of the discovered resource.

Implementation

The DCRS, with the approval/concurrence of the CPM and project owners, will implement the treatment plan. If construction disturbance to the find can be avoided prior to the review and approval of the *Treatment Plan*, the CPM and the project owners will be notified and construction will resume with full-time monitoring and other resource protection measures as necessary. Construction in the immediate area of the find will not resume until mitigation has been completed; construction in other areas away from the find may continue.

4.4.4 Completion of Field Work

The CPM and the project owners will be notified upon the completion of the field portion of the approved treatment plan and construction will resume in the area of the find. The DCRS will prepare a Data Recovery Report documenting the discovery and treatment. The Data Recovery Report will be prepared and submitted to the CPM for review, comment, and written approval. The report will note the sequence of events, procedures and findings.

A more detailed description of the report contents is presented in Section 4.7. The Data Recovery Report will be prepared within 90 days following the completion of the analysis of the recovered cultural materials and will be submitted to the CPM within seven days of completion of the report, in accordance with CUL-9.

4.4.5 Post-Construction Analysis

Post-construction analysis will be completed in accordance with time frames indicated in the Conditions of Certification. If no cultural resources are found during monitoring, the schedule for completion of the post-construction analysis tasks may be accelerated accordingly. Actual time frames needed to complete post-construction analysis will be determined by the nature and magnitude of any data recovery mitigation work that is conducted in response to discoveries.

Standard descriptive and statistical analyses will be used to interpret the recovered artifactual and ecofactual materials. In general, the analyses of prehistoric artifacts will emphasize the lithic and faunal materials since they are often present at prehistoric sites in the Santa Clara Valley. Other prehistoric material types which may be recovered include groundstone, bone awls, ear ornaments, shell beads, etc. All prehistoric and historic artifacts will be individually described, analyzed, and integrated into the cultural interpretation of the site based on the interpretive objectives in the approved *treatment plan*. The analysis of historic era artifacts will rely on standard descriptive nomenclature and sources of identification. Other laboratory analyses (e.g., radiocarbon dating, sediment analyses, obsidian sourcing and hydration dating studies, etc.) will be completed in accordance with generally accepted practices.

4.5 Discovery of Native American Skeletal Remains

Native Americans consider the graves of their ancestors of utmost importance and wish to prevent the disturbance of interments. The remains and the offerings buried with them are sacred to Native Americans. When a grave is inadvertently disturbed during construction, the remains must be treated with respect. In general, the *Native American Burial Protection Plan* (NABPP - see below) provides procedures to follow if and when prehistoric or historic skeletal remains are discovered during construction to ensure compliance with state mandates and the desires of the local Native American peoples. The NABPP provides direction on treatment (avoidance, removal, temporary storage), laboratory analysis, reburial, reporting, and curation. The NABPP will be followed for any Native American skeletal remains exposed during project construction.

A *Most Likely Descendent* (MLD)[3] will be assigned by the Native American Heritage Commission (NAHC) upon notification of the inadvertent discovery of Native American skeletal remains (see NABPP) and provide both recommendations on further treatment and contact with the local Native American community. State law shall be followed in regard to the discovery of Native American burials on state and private land (Chapter 1492, Section 7050.5 to the Health and Safety Code, Sections 5097.94, 5097.98 and 5097.99 of the Public Resources Code; NAHC [State of California] [NAHC] 1994).[4] The Burial Plan conforms to California law and regulations. The project owner understands it's obligations to comply with California law.

4.5.1 Native American Burial Protection Plan (NABPP) Guidelines and Procedures

1. In the event of an inadvertent discovery of human remains[5] and cultural items during project construction, the developer shall take immediate steps, if necessary, to secure

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3 A Most Likely Descendent (MLD) is a person the Native American Heritage Commission (NAHC) believes to be most likely descended from the deceased Native American) (California Public Resources Code 5097.9, .91-99).

4 The Native American Heritage Commission (NAHC) is an executive agency of the State of California. Its nine members are appointed by the Governor with the advice and consent of the Senate. In regard to Native American human remains, upon notification of discovery of human remains, the NAHC, notifies those persons it believes to be most likely descended from the deceased Native American.

5 Human Remains means the physical remains of a human body, including but not limited to bones, teeth, hair, ashes, or mummified or otherwise preserved soft tissues of a person of Native American ancestry.

and protect any remains and cultural materials. This shall include but is not limited to such measures as: (a) temporary avoidance by construction until the remains and items can be removed; (b) posting a security person; (c) placement of a security fence around the area of concern; or, (d) some combination of these measures. Any such measures employed will depend upon the nature and particular circumstances of the discovery.

2. The Santa Clara County Medical Examiner (Coroner) shall be notified by the DCRS and informed of the find and of any efforts made to identify the remains as Native American. If the remains are determined to be from a prehistoric Native American, the Medical Examiner is responsible for contacting the Native American Heritage Commission (NAHC) within 24 hours of notification. The NAHC then designates and notifies a *Most Likely Descendant* (MLD).[6]

   The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. Other Native Americans may be consulted during the process and the project may have to provide notices on the circumstances of discovery, and information on the remains.

3. Preservation *in situ* of the human remains and any associated cultural items is usually the preferred option. If the remains and cultural items will not be subject to further project disturbance, the MLD will usually recommend no further action. The remains and artifacts[7] should be documented archaeologically and the find location carefully backfilled to avoid further disturbance.

4. Human remains or cultural items exposed during project construction and which are subject to further disturbance will be exhumed archaeologically at the discretion of the MLD and reburied with the concurrence of the MLD in a place mutually agreed upon by all parties.[8]

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6 California law uses the term "Most Likely Descendent" (MLD); that is, an individual recognized by the NAHC as most likely descended from the deceased Native American. Under California law this individual can recommend appropriate treatment of Native American human remains (e.g., *in situ* preservation, exhumation, analyses, report, etc.) discovered during construction or other activities.

7 Grave artifacts usually include associated funerary objects and unassociated funerary objects (definition as per Native American Graves and Repatriation Act of 1990 (NAGPRA)).

Associated funerary objects means items that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed intentionally at the time of death or later with or near individual human remains that are currently in the possession or control of a museum or Federal agency, or other items reasonably believed to have been made exclusively for burial purposes or to contain human remains.

Unassociated funerary objects means items that, as part of a death rite or ceremony of a culture, are reasonably believed to have been intentionally placed with or near individual human remains, either at the time of death or later, but for which the associated human remains are not in the possession or control of a museum or Federal agency.

8 The Archeologist or Physical Anthropologist may be assisted in the exposure and removal of the remains and artifacts by the MLD and/or one or more other Native Americans with the permission of the MLD.

At the discretion of and with the permission of the MLD, documentation and analysis of human remains and associated grave goods may be conducted prior to reburial by qualified archaeologists and/or physical anthropologists.[9] Analyses of human skeletal remains and any associated burial artifacts by non-destructive methods shall be conducted in a location on-site or as close to the place of discovery as is feasible and still allow such analyses to be completed with competent results. Permission shall be obtained from the MLD to complete analyses of any human remains and artifacts at a formal archaeological/osteological laboratory away from the original find location. The non-destructive analysis of any human remains and grave goods shall be completed within a time period to be determined in consultation with the MLD. Any analyses and reports resulting from this examination shall be made available to the Native American community.

5. Each burial and associated cultural items shall be stored as a unit in a secure facility that shall be accessible to the MLD and other Native American representative(s) or their designated alternates upon prior arrangement.

6. The remains and associated cultural items shall be reburied in a secure location as near as possible to the area of their discovery or at an off-site location acceptable to the MLD that has minimal potential for future disturbance. The reburial shall be done in a manner that shall discourage or deter future disturbance. Persons designated by the MLD, with the assistance, if requested, of the project owner(s) shall conduct reburial. The location shall be fully documented, filed with the NAHC and the California Historical Resources Information System, Northwest Information Center, California State University, Sonoma and treated as confidential information.

7. If the NAHC is unable to identify a MLD, or the MLD fails to make a recommendation, or the landowner or his/her authorized representative rejects the recommendation of the MLD and mediation (as per Section 5097.94 subdivision (k)) fails, re-interment of the human remains and associated cultural items associated shall take place with appropriate dignity on the property in a location not subject to further subsurface disturbance.

8. For security reasons, no news releases, including but not limited to photographs, videotapes, written articles, or other such means that contains information about human remains or burial-related items of Native American origin shall be released by any party during the discovery, recovery and reburial unless approved by the MLD.

9. Any disputes that arise among the MLD and representatives of affected Native American groups and/or between the developer and its representatives and the MLD concerning cultural affiliation or the ultimate disposition of Native American human

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9 An Archaeologist, or qualified physical anthropologist shall expose and remove of the remains and cultural items, perform non-destructive measurements, and tests including metric and non-metric osteological analyses, determination of sex and age, and examination for injuries and pathologies. The Archeologist or Physical Anthropologist may handle, draw or photograph the remains as part of the analysis. Analyses that require the destruction of human bone or associated cultural items, such as radiocarbon dating of bone or hydration analysis of obsidian, shall be subject to approval on a case-by-case basis by the MLD, with concurrence or denial within 15 calendar days.

remains and associated funerary objects and unassociated funerary objects shall be resolved according to the dispute resolution procedures in Section 5097.94 of the State of California Public Resources Code.

10. Professional Archeologist(s) under contract to the project owner(s) shall prepare the Archeological Data Recovery/Burial Treatment Report(s). The report(s) shall include, but not be limited to, the following: project overview; ethnographic section; previous archaeological research in the region and on-site; circumstances of discovery; recovery procedures and techniques; artifact analysis; faunal analysis; osteological analysis and interpretation; conclusions and interpretations. The MLD and other interested Native American representative(s) shall be provided an opportunity to review the report and submit comments within the same time period as accorded any other reviewers.

11. Objects not associated with the human remains and recovered from private land shall be transferred to a public repository that meets the US Secretary of the Interior standards for curation of cultural resources. Curation will take place in accordance with the provisions of COC CUL-10.

4.5.2 Personnel

The Designated Cultural Resource Specialist and other discipline specialists that meet the Professional Qualifications Standards mandated by the Secretary of the Interior will implement the Monitoring and/or Native American Burial Protection Plans. The MLD will be recommended by the NAHC if Native American skeletal remains are exposed during construction. Native American monitors will be retained in accordance with COC CUL-5 to assist with construction observation or any needed data recovery.

4.6 Reports and Dissemination of Results

The CEC has prepared very detailed requirements regarding reports and the dissemination of results. This CRMMP explicitly adopts and will implement the reporting requirements provided in the COC for the project. The Designated Cultural Resource Specialist and his staff at Basin Research Associates, Inc. will prepare all of the required logs and reports.

The pre-construction reconnaissance surveys have already been completed. A subsurface investigation will be completed as soon as possible. In accordance with CUL-7, the CPM will be provided with a schedule of the proposed testing, including maps showing where test trenches will be placed, at least seven days prior to implementation of the testing program.

The designated cultural resources specialist shall keep a daily log of any resource finds, monitoring activities (and when monitoring is deemed unnecessary), location of monitoring activities (with milepost marker designations), and the progress or status of the resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The DCRS shall prepare a monthly summary report on the progress or status of cultural resource-related activities and will include copies of the daily logs as required by CUL-5. The monthly summary reports are to be filed with the project owners for inclusion in the Monthly Compliance Report to the CPM. The DCRS will informally discuss the cultural resource monitoring and mitigation activities with CPM technical staff on an as-needed basis.

The project owners shall maintain in its compliance files, copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate research specialists which will ensure the necessary recovery, preparation for analysis, and analysis of cultural resource materials collected during data recovery and mitigation for the project, and that the project owners shall keep these files available for periodic audit by the CPM. The DCRS will provide these items to the project owners as they are generated.

After completion of the project, the Designated Cultural Resources Specialist will prepare a Cultural Resources Report in accordance with Archaeological Resource Management Reports (ARMR) Guidelines as recommended by the California Office of Historic Preservation. The project owner will submit the CRR to the CPM for review and written approval. The DCRS will ensure that this report includes (as applicable), preliminary information on the survey report(s), methodology, and recommendations; site records and maps; determinations of sensitivity and significance; data recovery and other mitigation activities; discussion of possible results and findings of any analysis to be conducted on recovered cultural resource materials and data; proposed research questions which may be answered or raised by the data recovered from the project; and an estimate of the time needed to complete the analysis of recovered cultural resource materials and prepare a final report. If no cultural resource materials are recovered during project construction, the CPM-approved Cultural Resource Report shall also serve as the final report and copies of the report will be submitted to the curating repository, SHPO, and the regional information center(s) within 30 days after receiving written approval of the report from the CPM.

These submittals will include: original or original-quality copies of all text; originals of any topographic maps showing site and resource locations, originals or original-copies of drawings of significant or diagnostic cultural resource materials found during pre-construction surveys or during project-related monitoring, data recovery, or mitigation; and photographs of the site(s) and various cultural resource materials recovered during project monitoring and mitigation and subjected to post-recovery analysis and evaluation. The project owners will also provide the curating repository with a set of negatives of all photographs included in the Cultural Resource Report.

For this CRMMP, it has been determined that the Cultural Resource Report will follow contemporary professional archaeological standards and the general guidelines of the California Office of Historic Preservation (i.e., Preservation Planning Bulletin Number 4(a), *Archaeological Resources Management Reports (ARMR): Recommended Contents and Format* (1990)). In addition, the Cultural Resource Report will include the following information: a description of pre-project literature search, surveys, and any testing activities; maps and descriptions of areas monitored, surveyed, or tested; site and isolate records and maps, descriptions of testing for, and determination of significance and potential eligibility; research questions answered or raised by the data recovered; descriptions, drawing, and/or photographs of recovered materials; results and findings of any special analyses conducted on the recovered cultural materials; an inventory list of recovered cultural materials; and the name, telephone number, and location of the public repository receiving the recovered cultural materials for curation.

4.7 Curation

Any transfer of the cultural materials and associated documentation to the designated repository (Tiburon Archaeological Research Group [TARG] - San Francisco State

University) should undertaken at appropriate intervals or at the completion of the project. (The point of contact at the TARG is Mr. Gary Pahl at 415-338-1642.). The Adan E. Treganza Museum of Anthropology manages the TARG repository. (TARG) meets the Secretary of the Interior's Standards. All curation fees will be paid by the project owners. Letters of transfer will be included with the final project monitoring/data recovery summary letter. Copies of signed contracts or agreements with TARG will be maintained by the project owner for the life of the project.

5.0 References Cited and Consulted

Bard, J.C. and J.J. Sharpe. 2001. A Cultural Resource Assessment of the Proposed Los Esteros Critical Energy Facility, Santa Clara County, California. CH2M HILL for Calpine c* Power.

California (State of), Department of Parks and Recreation, Office of Historic Preservation (**CAL/OHP**). 1990c. *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format*. Preservation Planning Bulletin 4(a). State of California, The Resources Agency, Department of Parks and Recreation, Sacramento.

Native American Heritage Commission [State of California] **(NAHC).** 1994. [Leaflet]. *A Professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods*. California Native American Heritage Commission, Sacramento.

Palmer, R. and G. Reinoehl. 2001. *Testimony of Robin Palmer and Gary Reinoehl – Cultural Resources*. Staff Report, California Energy Commission, 01-AFC-12, Sacramento.

Appendix A

Conditions of Certification

<The Applicant will Insert the Conditions of Certification from CEC's Staff Assessment and Addendum, when issued>

Appendix B

General Research Design
Potential Research Domains and Questions

Archaeological Background

Cultural resources are traces of human occupation and activity. In Northern California, cultural resources extend back in time for at least 11,500 years. Written historical sources tell the story of the past 200 years. Archaeologists have reconstructed general trends of prehistory.

The Los Esteros project area is situated in an archaeologically sensitive area with Coyote Creek and other seasonal water sources lying in close proximity. Watercourses were favored locations for prehistoric occupation in the Santa Clara Valley. From such spots, Native Americans could exploit a variety of ecological niches on the alluvial plain and foothills. Archaeologists believe that the population of the prehistoric San Francisco Bay Area slowly increased from the Early to the Late Horizon time periods (see below). The population increase is thought to reflect more efficient resource procurement, increased ability to store food at village locations, and the development of increasing political complexity.

Prior to about 5000 to 7000 years ago, Native American occupation of the San Francisco Bay Area was intermittent and sparse. Evidence for early occupation along the bayshores was hidden by rising sea levels from about 15,000 to 7,000 years ago, or was buried under sediments caused by bay marshland infilling along estuary margins from about 7,000 years onward (Moratto 1984). Early occupants concentrated on hunting and gathering various plant foods and collecting shellfish.

A three-part cultural chronological sequence, the Central California Taxonomic System (CCTS) was developed by archaeologists to explain local and regional cultural change in prehistoric central California from about 4,500 years ago to the time of European contact (Lillard, Heizer, and Fenenga, 1939 and Beardsley 1948, 1954).

In 1969, several researchers met at UC Davis worked out several substantive taxonomic problems that had developed with the CCTS. Table 1 summarizes David Fredrickson's (1994) cultural periods model and provides CCTS classification nomenclature (such as "Early Horizon," etc).

Moratto (1984) suggests the Early Horizon dated to circa 4,500 to 3,500/3,000 years ago with the Middle Horizon dating to circa 3,500 to 1,500 years ago and the Late Horizon dating to circa 1,500 to 250 years ago. The Early Horizon is the most poorly known of the period with relatively few sites known or investigated. Early Horizon traits include hunting, fishing, use of milling stones to process plant foods, use of a throwing board and spear ("atlatl"), relative absence of culturally affected soils (midden) at occupation sites, and elaborate burials with numerous grave offerings.

Middle Horizon sites are more common and usually have deep stratified deposits that contain large quantities of ash, charcoal, fire-altered rocks, and fish, bird and mammal bones. Significant numbers of mortars and pestles signal a shift to plant foods from reliance on hunted animal foods. Middle Horizon peoples generally buried their dead in a fetal position and only small numbers of graves contain artifacts (and these are most often utilitarian). Increased violence is suggested by the number of burials with projectile points embedded in the bones or with other marks of violence.

The Late Horizon emerged from the Middle Horizon with continued use of many early traits and the introduction of several new traits. Late Horizon sites are the most common and are noted for their greasy soils (midden) mixed with bone and fire-altered rocks. The use of the bow-and-arrow, fetal-position burials, deliberately damaged ("killed") grave offerings and occasional cremation of the dead are the best known traits of this horizon.

TABLE 1
Hypothesized Characteristics of Cultural Periods in California

1800 A.D. Upper Emergent Period Phase 2, Late Horizon	Clam disk bead money economy appears. More and more goods moving farther and farther. Growth of local specializations relative to production and exchange. Interpenetration of south and central exchange systems.
1500 A.D. Lower Emergent Period Phase 1, Late Horizon	Bow and arrow introduced, replace atlatl and dart; south coast maritime adaptation flowers. Territorial boundaries well established. Evidence of distinctions in social status linked to wealth increasingly common. Regularized exchanges between groups continue with more material put into the network of exchanges.
1000 A.D. Upper Archaic Period Middle Horizon Intermediate Cultures	Growth of sociopolitical complexity; development of status distinctions based on wealth. Shell beads gain importance, possibly indicators of both exchange and status. Emergence of group-oriented religious organizations; possible origins of Kuksu religious system at end of period. Greater complexity of exchange systems; evidence of regular, sustained exchanges between groups; territorial boundaries not firmly established.
500 B.C. Middle Archaic Period Middle Horizon Intermediate Cultures	Climate more benign during this interval. Mortars and pestles and inferred acorn economy introduced. Hunting important. Diversification of economy; sedentism begins to develop, accompanied by population growth and expansion. Technological and environmental factors provide dominant themes. Changes in exchange or in social relations appear to have little impact.
3000 B.C. Lower Archaic Period Early Horizon Early San Francisco Bay Early Milling Stone Cultures	Ancient lakes dry up as a result of climatic changes; milling stones found in abundance; plant food emphasis, little hunting. Most artifacts manufactured of local materials; exchange similar to previous period. Little emphasis on wealth. Social unit remains the extended family.
6000 B.C. Upper Paleo-Indian Period San Dieguito Western Clovis 8000 B.C.	First demonstrated entry and spread of humans into California; lakeside sites with a probable but not clearly demonstrated hunting emphasis. No evidence for a developed milling technology, although cultures with such technology may exist in state at this time depth. Exchange probably ad hoc on one-to-one basis. Social unit (the extended family) not heavily dependent on exchange; resources acquired by changing habitat.

Acorn and seed gathering dominated the subsistence pattern with short and long-distance trade carried out to secure various raw materials. Compared to earlier peoples, Late Horizon groups were short in stature with finer bone structure; evidence perhaps of the replacement of original Hokan speaking settlers by Penutian speaking groups by circa 1,500 years ago.

Another scheme proposed by Chartkoff and Chartkoff (1984) is also used by archaeologists; its features are summarized in Table 2.

TABLE 2
The Chartkoff and Chartkoff (1984) Model of Cultural Periods in California

Pre-Archaic Period – 11,500-9,000 B.C.

Pre-Archaic populations were small and their subsistence included big game hunting of now extinct mammoth and mastodon. Research indicates that the Pre-Archaic economies were based on a wide-ranging hunting and gathering strategy, dependent to a large extent on local lake-marsh or lacustrine habitats.

Early to Middle Archaic Period - 9,000-4,000 B.C.

During the Early and Middle Archaic periods, prehistoric cultures began to put less emphasis on large-game hunting. Subsistence economies probably diversified somewhat, and Archaic era people may have started using such ecological zones as the coast littoral more intensively than before. Advances in technology (milling stones) indicate that new food processing methods became important, enabling more efficient use of certain plant foods, including grains and plants with hard seeds.

Late Archaic Period - 4,000-2,000 B.C.

An important technological advance was the discovery of a tannin-removal process for the abundant and nutritious acorns. Prehistoric trade networks developed and diversified, bringing raw materials and finished goods from one region to another. Resource exploitation, as during the Early and Middle Archaic, was generally seasonal. Bands moved between established locations within a clearly defined/defended territory, scheduling resource harvests according to their availability. Clustering of food resources along the shores of large lakes or the banks of major fish-producing rivers allowed for larger seasonal population aggregates. Dispersed resources, such as large and small game, during the winter prompted small family groups to disperse across the landscape for more efficient food harvesting. The spear thrower (atlatl) may have been introduced or increased in importance, accounting for a change in projectile point styles from the Western Stemmed to the Pinto and Humboldt series. Seed grinding increased in importance.

Early and Middle Pacific Periods - 2,000 B.C.-A.D. 500

The Pacific Period is marked by the advent of acorn meal as the most important staple food. Increasing population densities made it desirable and necessary for Indian populations to produce more food from available land and to seek more dependable food supplies. The increasing use of seed grinding and acorn leaching allowed for the exploitation of more dependable food resources; increased use of previously neglected ecological zones (the middle and high Sierran elevations) may also have been part of this trend.

Late Pacific Period – A.D. 500-1400

Around A.D. 500 – 600, a cultural watershed was triggered by the introduction of the bow and arrow, which replaced the spear thrower and dart as the hunting tool/weapon of choice. The most useful time markers for this period tend to be small projectile points/arrow tips. Another trend is the marked shift from portable manos/metates to bedrock mortars/pestles (Moratto, 1984). Moratto, et al. (1978) demonstrated that this was a time of cultural stress, during which trading activity abated, warfare was common, and populations shifted away from the Sierra Nevada foothills to higher mountain elevations. They explain these changes in terms of rapid climatic fluctuations, including a drier climate and a corresponding shift of vegetation zones.

Final Pacific Period - A.D. 1400-1789

Populations became increasingly sedentary and depended more on staple foods, even as the diversity of foods exploited increased. Permanent settlements with high populations were more common. Every available ecological niche was exploited, at least on a seasonal basis. Other trends included the resurgence of long-distance trade networks and the development of more complex social and political systems.

A review of the prehistoric cultural sequence of the Santa Clara Valley is provided by Bard and Busby (1986). In general, prehistoric village sites were located near permanent fresh water sources, often at the mouths of streams along the bay shore. Several villages were established inland along permanent streams at the base of hills. Special-use sites and seasonal-use sites are often found in association with rock outcrops or abundant food resources.

Most of the archaeological sites in the project area are small to large shell middens, some of which may contain human remains. These shell middens tend to be located on alluvial flats and along historic bay margins, as well as near water sources such as Coyote Creek.

When the first Indians entered the Santa Clara Valley is unknown, but there is evidence from archaeological sites in the vicinity that Indian occupation began as early as 9000 years ago (CA-SCL-178). These early peoples were hunter-gatherers who could be thought of as "generalists." Their diet was rich in fish, shellfish, game (deer), and gathered seeds. About 4,000 years ago, judging from archaeological evidence, the Indian peoples started using a wider variety of environmental settings and focused more on specific food resources. Some researchers suggest that the early Middle Horizon (4500 – 2500 years ago) was a time when peoples from outside of California moved into the area. The archaeological evidence suggests these early Middle Horizon populations employed technologies well adapted to river-wetland environments (Moratto, 1984).

Typical archaeological sites from this time period are often situated in riverine, marshland, and valley floors that offered a variety of plants and animal resources. Burial artifacts include fishing paraphernalia (net weights, spear points, bone hooks), large projectile points, and large and small mammal remains. The subsequent Middle Horizon (or Berkeley Pattern) covers a time period from 2500 to 1500 years ago, and sites from this period are more numerous and better documented. The archaeological evidence suggests that the Indian economy focused on riverine environments. Sites from this period include deeply stratified midden deposits with large assemblages of milling and grinding stones for vegetal resource processing and smaller and lighter projectile points. Typical artifacts include slate pendants, steatite beads, stone tubes, and ear ornaments. Burial patterning shifts from ventrally extended (west oriented) to flexed body positioning (with variable directional orientation) (Moratto, 1984).

The late prehistoric period ranged from 1500 to 150 years ago and is referred to as the Augustine Pattern. This pattern is characterized by intensive hunting, fishing, and gathering, a focus on acorn processing, large population increases, intensified trade and exchange networks, more complex ceremonial and social attributes, and the practice of cremation in addition to flexed burials. Distinguishing artifacts include bone basketry awls, small notched and serrated projectile points, the first bows and arrows, occasional pottery, clay effigies, bone whistles, and stone pipes.

Explanatory Models

Archaeologists have generally assumed that the location of archaeological sites is probably the result of prehistoric peoples' efforts to *minimize the level of effort* needed to obtain the *maximum amount of necessary resources*. The information for the study area suggests that the known site locations reflect aspects of a prehistoric economy focused on the exploitation of wetland, riparian, and upland resources. The subsistence focus probably included the use of abundant fresh and salt water marshes in the southern San Francisco Bay, seasonal vernal wetlands, riverine and riparian resources along major rivers like the Guadalupe River and Coyote Creek, and inland lacustrine settings (e.g., Laguna Seca) formerly found either within or in the near vicinity of the project area. Foothill and interior resources were also available a short distance to the east and west.

Information from the numerous archaeological compliance studies conducted throughout the greater San Francisco Bay Area suggests that prehistoric archaeological sites could represent a settlement pattern of "larger" villages occupied year round and functioning as centers for the exploitation of local environments by stable, sedentary aboriginal populations. It is possible that these villages controlled and exploited a suitable "catchment" area with large "permanent" villages along the bay margins and smaller "satellite" sites in the surrounding foothills. The procurement of foothill resources may have served as a supplement to bay margin resources and could have resulted in the dispersal of the larger village populations along the bay into smaller encampments in the foothills on a seasonal basis.

A less likely model for the immediate project area would be a settlement pattern characterized by semi-permanent encampments focusing on the procurement of seasonally available resources with no village bases but only satellite or temporary camps focused on seasonal resource exploitation and movement between camps dictated by resource availability. Resource exploitation of foothill resources would have taken place between late spring/early summer and late fall/early winter. During the remainder of the winter and spring the population would have utilized littoral-riparian-marsh resources. Later on, in the spring, the energy necessary to procure those littoral-riparian-marsh niche resources would have increased until it became more efficient to shift strategies and concentrate once again on the foothill niche. Researchers have hypothesized that archaeological sites should be located in some number along valley margins, marsh edges and river banks where more food resources could be obtained with less effort than in other areas.

Ethnographic Background

LECEF is located within the territory of the Costanoan, who lived in the area when Spanish explorers/missionaries entered. The aboriginal inhabitants of the project area belonged to a group known as the "Costanoan", derived from the Spanish word Costanos ("coast people" or "coastal dwellers") who occupied the central California coast as far east as the Diablo Range (Kroeber 1925:462). The project area lies within the Tamyen territory of the Costanoan (*Ulistak* tribelet), close to the boundary with the Chochenyo Costanoan (also known as the Ohlone; Galvan 1967/68; Margolin 1978). Based on Spanish mission records and archaeological data, researchers estimated the Tamyen to be about 1000 to 1200 individuals in 1770 (Levy 1978:485; C. King 1977:54). Within the Tamyen area, the population was further subdivided into tribelets. In 1770, these tribelets were politically autonomous groups containing some 50 to 500 individuals, with an average population of 200. Tribelet territories, defined by physiographic features, usually had one or more permanent villages surrounded by a number of temporary camps. The camps were used to exploit seasonally available floral and faunal resources (Levy 1978:485;487).

The Costanoan aboriginal lifeway apparently disappeared by 1810 due to its disruption by new diseases, a declining birth rate, and the impact of the mission system. The Costanoan were transformed from hunters and gatherers into agricultural laborers who lived at the missions and worked with former neighboring groups such as the Esselen, Yokuts, and Miwok (Levy 1978:486). Later, because of the secularization of the Missions by Mexico in 1834, most of the aboriginal population gradually moved to ranchos to work as manual laborers (Levy 1978:486). For a comprehensive review of the Costanoan see Kroeber (1925), Levy (1978), T. King (1973), C. King (1974, 1977, 1978b), King and Hickman (1973), Elsasser (1986), Bean (1994), and Milliken (1995). For an extensive review of regional and Santa Clara Valley prehistory see C. King (1974, 1977, 1978a-b), Elsasser (1978, 1986), T. King (1973), and T. King and Hickman (1973) and Daniel, et al. (1983).

Historical Background

Recorded history in Santa Clara County can be divided into three periods: the Spanish Period (1769-1821), the Mexican Period (1821-1848), and the American Period (1848-present).

The period of initial historic exploration of the Santa Clara Valley lasted from 1769 to 1776. Between 1769 and 1776 a number of Spanish expeditions traversed the area including those led by Portola, Fages, Fages and Crespi, Anza, Rivera, and Moraga (Levy 1978:486). Even though the routes of the early explorers cannot be accurately determined, a number appear to have been within the project vicinity. These include the expeditions of Pedro Fages in 1770, Pedro Fages and Father Crespi in 1772, Fernando Javier y Moncada Rivera and Father Francisco Palou in 1774, Bruno de Hezeta-Palou in 1775, and Anza and Font in 1776. Still later, more Spanish expeditions passed near the approximate vicinity including those led by Alferez Gabriel Moraga in 1806, and Jose Viader accompanied by Moraga in 1810, and Jose Dolores Pico in 1815 (Beck and Haase 1974:17, 20, 21).

Mission Santa Clara de Asis, the 8th of the 21 missions founded in California, was established on January 18th, 1777 (Hall 1871:48; Hart 1978:388). As one of seven missions within Costanoan territory, Mission Santa Clara would have been the mission with the greatest impact on the aboriginal population living in the vicinity (Hart 1978:96). Moreover, Mission Santa Clara provided all the religious needs of the Pueblo San Jose de Guadalupe until 1851 (Hall 1871:84). The Spanish philosophy of government was directed at the founding of presidios, missions, and secular towns with the land held by the Crown (1769-1821), while the later Mexican policy stressed individual ownership of the land (Findlay 1980:6). The study area was probably used for grazing cattle as the export of tallow and hides was a major economic pursuit of the Santa Clara Valley and California during the Spanish Period.

During the Mexican Period (1821 to 1846) and into the American Period, the project area was situated at the northern portion of Ranch Rincon de soe Esteros (which was granted in 1838 to Ignacio Alviso (Blount, et al. 1980). Rancho Rincon de los Esteros once embraced about 7000 acres and spread east from the Guadalupe River to the western outskirts of Milpitas. It was bordered on the south by pueblo lands, and on the north by the Bay (Arbuckle, 1968:27 Thompson and West, 1876;: Map Number II, pp.24-25). No Spanish Period adobe dwellings or other structures have been reported in or adjacent to the project area (Hendry and Bowman, 1940).

The Mexican Period witnessed the secularization of the missions as the Spanish-colonial system collapsed and the lands fell out of mission control. By 1845, most of the land holdings were in the form of large ranchos. Increasingly bad relations between the United States and Mexico led to the Mexican-American War of 1847, which resulted in Mexico releasing California to the United States under the Treaty of Guadalupe Hidalgo in 1848.

In the mid-19th century, much of the rancho and pueblo lands and some ungranted land was sub-divided as the result of population growth, the American takeover, and the confirmation of property titles. Growth was attributed to the Gold Rush (1848), the completion of the transcontinental railroad (1869), and construction of local railroads. Later, the development of the refrigerator railroad car (circa 1880s), which was used to transport local agricultural produce to distant markets, had a major impact on the Santa Clara Valley.

During the later American Period and into the Contemporary Period (circa 1876-1940s), fruit production became a major industry (Broek 1932:76-83). Fruit production/processing held steady until after World War II. In recent decades this agrarian land-use pattern has been gradually displaced by residential housing, commercial centers, and the development of research and manufacturing facilities associated with the electronics industry leading to the designation of the general region as the "Silicon Valley."

The LECEF project area is located within the Alviso area of the City of San Jose. Land speculators founded the Port of Alviso in the late 1840s and the initial town site survey of Alviso was completed in December 1849. The Port of Alviso, one of the oldest ports on the West Coast, was created to replace the Embarcadero de Santa Clara, one-half mile to the south. At its peak, Alviso was the major commercial shipping depot in northern California.

William Boots was an early farmer-settler within the Berryessa tract. By 1876, Boots owned over 650 acres in the area, including the easternmost portion of the project site. His residence was located south of SR 237, although a reported former structure of this era was located on the site. Subsequently, portions of the site were used to raise fruit, initially pears, from the 1920s to 1988.

The site also includes greenhouses used for vegetable and flower production and three residences built prior to 1950. Flower growing has been an important agricultural activity in Santa Clara County. Since the California constitution of 1879 prohibited almost all forms of employment to the Chinese population of the state, Chinese families were forced to be self employed in small firms or on farms. In the early years of the Chinese flower growing industry in Santa Clara County, all growers were from the Chung San area of China. The growers formed an association which sponsored social events and activities. The

current greenhouse and nursery located on the project site were established in the late 1970s when a group of Chinese and Chinese-American flower growers relocated from the Cupertino area.

Chronology

The primary objective of a chronological study is to determine when a site or suite of sites were used or occupied. Chronological studies are important to determine site-specific chronology, to compare/contrast occupational histories with other sites in surrounding areas, and to test the validity of current culture history sequences for a region. Chronological data is especially important for California prehistory as it may help determine the initial dates of settlement and changes through time. Individual sites can rarely by themselves begin to address these topics but can provide information relevant for local and regional syntheses.

1. What is the chronological range of occupation/use of each single component, multi-component or mixed component site?
2. Can distinct single component loci be identified within multi-component sites? Can these loci be placed in chronological order using available data?
3. Do the temporally diagnostic artifacts correlate with the absolute chronology?
4. Do the temporally diagnostic artifacts correlate with the site stratigraphy to provide a rate of deposition and a determination of site integrity?
5. Is occupation "continuous" or are distinct periods of disuse or abandonment present?
6. Is the site chronology similar to other known sites in the region?
7. Is there a protohistoric component present?
8. Do the obsidian data (sourcing and hydration) obtained from waste flakes and non-diagnostic artifacts produce a chronology? Are these data comparable to other data sets (e.g., diagnostic artifacts, obsidian sourcing and hydration of diagnostic artifacts, radiocarbon samples)?
9. Does the chronological data, particularly from obsidian hydration and radiocarbon dating, allow an assessment of the stratigraphic integrity of the site deposits.

Analysis Strategy

Archaeological research in the Santa Clara Valley and central California has been interpreted using several chronological schemes based on stratigraphic differences and cultural traits. A three-part sequence of cultural development over time proposed by Lillard et al. (1939) has usually been used to document local and regional cultural change in prehistoric central California including the study area although other researchers have proposed local chronologies (see Allen et al. 1999 for a South Bay chronology proposed by Hylkema). This classification scheme, using Early, Middle and Late "horizons" to designate both chronological periods and social change, was developed by archaeologists to explain local and regional cultural change from about 4,500 years ago to the time of European contact (see Lillard et al., 1939 and Beardsley 1948, 1954).

Moratto (1984) suggests that the Early Horizon dated to ca. 4,500 to 3,500/3,000 years ago with the Middle Horizon dating to ca. 3,500 to 1,500 years ago and the Late Horizon dating to ca. 1,500 to 250 years ago. The Early Horizon is the most poorly known of the period with relatively few sites known or investigated. Early Horizon traits include hunting, fishing, use of milling stones to process plant foods, use of a throwing board and spear ("atlatl"), relative absence of culturally affected soils (midden) at occupation sites, and elaborate burials with numerous grave offerings.

Middle Horizon sites are more common and usually have deep stratified deposits that contain large quantities of ash, charcoal, fire-altered rocks, and fish, bird and mammal bones. Significant numbers of mortars and pestles signal a shift to plant foods from reliance on hunted animal foods. Middle Horizon

peoples generally buried their dead in a fetal position and only small numbers of graves contain artifacts (and these are most often utilitarian). Increased violence is suggested by the number of burials with projectile points embedded in the bones or with other marks of violence.

The Late Horizon emerged from the Middle Horizon with continued use of many early traits and the introduction of several new traits. Late Horizon sites are the most common and are noted for their greasy soils (midden) mixed with bone and fire-altered rocks. The use of the bow-and-arrow, fetal-position burials, deliberately damaged ("killed") grave offerings and occasional cremation of the dead are the best known traits of this horizon.

Another scheme proposed by Chartkoff and Chartkoff (1984) is also used by archaeologists (see Table 2) while Hylkema (Allen et al. 1999) has presented a four-period chronological framework for the Northern Santa Clara Valley/Southern San Francisco Bay region through a synthesis of previous research (see Table 3). General overviews and perspectives on the regional prehistory including chronological sequences can be found in C. King (1978a), Moratto (1984), Elsasser (1986) and Allen et al. (1999).

Table 3. Comparison of California Cultural Period with Temporal Phases of Central California (Allen et al. 1999)

Cultural Periods (Fredrickson 1994)	Dating Scheme B1 (Bennyhoff and Hughes 1987)	
	Year	Time Period
EMERGENT PERIOD	AD 1800	Historic Period
	AD 1700	Late Period Phase 2-B
	AD 1500	Late Period Phase 2-A
	AD 1300	Late Period Phase 1-C
	AD 1100	Late Period Phase 1-B
		Late Period Phase 1-A
UPPER ARCHAIC PERIOD	AD 900	Middle/Late Period Transition
	AD 700	Middle Period Terminal Phase
	AD 500	Middle Period Late Phase
	AD 300	Middle Period Intermediate Phase
	AD 100	Middle Period Early Phase
	200 BC	Early/Middle Period Transition
MIDDLE ARCHAIC PERIOD	500 BC	Early Period
	3000 BC	
LOWER ARCHAIC PERIOD	6000 BC	
PALEOINDIAN PERIOD	8000 BC	

Lithic Technology

The study of the lithic technology will focus on determining the nature of flaked and ground stone procurement and manufacturing activities represented by both the artifacts and manufacturing waste present.

1. What lithic assemblage(s) and manufacturing techniques (including types, range and variability for both chipped and ground stone materials) are present?
2. Do the lithic assemblage(s) and manufacturing techniques change through time?
3. If chronological variation in lithic manufacturing techniques and raw material preference is present, do the metric and nonmetric (i.e., primary, secondary flakes, etc.) attributes of whole flakes change over time?
4. Are lithic quarries, workshop/activity areas present and do these change over time?

Analysis Strategy

Lithic technology for both chipped and ground stone artifacts will be studied through morphological inspection, raw material classification and sourcing and frequency analysis, and a limited metric analysis of formal artifact types. The raw material types will be reviewed with respect to interpretations of aboriginal preference and local/regional trade networks.

Settlement/Subsistence/Seasonality

Settlement systems and accompanying subsistence strategies have been the topic of considerable interest in terms of regional research in the northern Santa Clara Valley. Settlement, subsistence and seasonality studies are important in order to determine why and when sites were occupied (season) and what economically valuable resources were used and/or exploited. The topics are functionally interrelated because the prehistoric aboriginal groups in the region were hunter/gatherers who relied upon available seasonal resources and scheduled their subsistence round in response to resource availability.

1. What was the subsistence economy at the site and does it change through time?
2. Does the subsistence regime correlate with a specific season or seasons?
3. Can the subsistence activities be correlated with specific intra-site locations?
4. Can a specific season or seasonal round be determined from the range of subsistence activities represented at sites in the area?
5. If macroscale mobility is indicated, is this correlated with climatic change?
6. What are the predominant faunal and vegetal resources? Can their ecological zones be determined? Are there changes in species exploitation over time?
7. Do the results of faunal, palynological and macrobotanical studies suggest substantive differences in resource exploitation between different site types?
8. Do the results of the paleoenvironmental studies indicate relationships between the populations of the various sites (i.e., macroscale mobility on either a seasonal, annual or multiannual basis)?
9. Are faunal/botanical remains present and if not why?
10. Can subsistence activities be correlated with specific cultural groups? Are the subsistence activities specific to certain areas? Do the subsistence activities fluctuate through time and space?

Analysis Strategy

Subsistence/settlement/seasonality generalizations will be based on the ecofactual and artifactual data at each site. These data will be used to examine patterns of transhumance, gathering and hunting behavior and site placement with respect to local operational resources. A probable subsistence framework will be constructed using any available faunal, macrobotanical and paleoenvironmental data. Comparisons will be made against the available ethnographic record. Attempts to determine seasonality will be made through the analysis of the faunal and macrobotanical information. Settlement patterns will be analyzed by examining site placement and spatial patterns of seasonally dependent cultural remains between different sites.

Specialized data collection will rely on faunal analysis with possible palynological and macrobotanical sample collection and analysis. In addition, the evaluation of certain artifact types (e.g., projectile points, bifaces, ground stone, etc.) may provide data for inferences on the subsistence practices and seasonality of sites by the prehistoric inhabitants of the area.

The faunal analysis will provide qualitative and quantitative summaries of the archeofaunal assemblage. Interpretations of hunting behavior, food processing, seasonality and paleoenvironmental life zone reconstruction may result from the analysis. Faunal analysis may also provide information on intra-site task differentiation by comparing relative MNI and NISP frequencies in contingency arrays and measuring the association and dependence between taxonomic categories and spatial location.

Trade/Exchange

The goal of a trade/exchange analysis is to understand the nature of resource procurement and distribution networks operant in the overall prehistoric economic system of the region.

1. What materials indicative of trade are present?
2. What is the point of origin of the "trade" commodities?
3. How many obsidian sources are represented at each site?
4. Do the obsidian sources change over time in terms of absence/preference and quantity? Can any changes be correlated with artifact style changes?
5. Can any site be identified as a center for exchange or manufacturing of trade items or raw materials? How does the trade network represented at a site compare with other sites in the area?
6. If protohistoric period sites can be identified, are any materials or sources unique to ethnic territories?

Analysis Strategy

Artifact inventories at each site will be inspected for the presence of "non-local" materials. Obsidian source analysis will be used in conjunction with hydration analysis to provide a chronological/location record of obsidian use at the site. Debitage data will be reviewed for evidence of manufacturing for a surplus in excess of inferred local immediate needs. Hydration dates will be cross-checked against available absolute dates to assist in developing the chronological data to interpret any trade patterns.

Prehistoric Demography

The study of prehistoric demography in California is of ongoing interest in regard to population movement and replacement, population size and density measure research based on the theoretical availability and exploitation of subsistence resources and the demographic relations of hunter-collector groups among other issues. Physical anthropology, through the analysis of aboriginal skeletal remains, may provide both a cultural and physical knowledge of the people who once occupied a study area. In

addition, the archaeological study of grave associated artifacts may provide insights into social status, and societal complexity as well provide technical information on the material culture of the group.

1. Do the burials and their grave associations exhibit change through time (e.g., position, orientation, grave offerings) which would indicate cultural change rather than a change in genetic or physical type?
2. Do the skeletal attributes of the prehistoric population change through time? Do the skeletal remains indicate "population replacement" or displacement by another group?
3. What was the age/sex composition of the site's population? Can inferences on the demographic structure of the site's occupants be extrapolated? Is there evidence of change through time (i.e., life tables)?
4. What was the relative health of the site's population? Do particular physical types have a propensity to certain pathological conditions? Were there periods of time when individuals suffered from pathologies?
5. Can the prehistoric population be assigned to a specific physical type (genetic pool)? Were they of the same "physical type" as the people in other geographical areas? Does the physical type or types change through time?
6. Can a reasonable estimate of the population of each site and the region through time be derived from the available data?

Analysis Strategy

Any analysis of human remains and/or grave associated artifacts may be undertaken with the permission and concurrence of the "most likely descended" Native American assigned to the project (see *Native American Burial Protection Plan* (NABPP) regarding the discovery of human and cultural remains during project construction for guidelines and procedures).

Site Function

Sites, whether single, multi-component or mixed, are microcosms of cultural activities and use. Sites come into existence for a variety of reasons, but are generally related to socio-demographic and ceremonial/religious purposes (including settlement, subsistence, and economics). The interpretation of site function by an archaeologist relies on the types, amount, and arrangement of cultural material observed and available for analysis and comparison. Archeological material may be arranged in clusters (associations) or dispersed vertically or horizontally throughout a site. These arrangements allow the identification of activity areas or loci.

1. What is the function(s) of each site? What activities were conducted? Can multiple use/functions be identified?
2. Does the site belong to a specific physiographic (i.e., correlation of site type with geographical area) or geological area (e.g., are village sites confined to riparian or marsh areas?)
3. Can the site be placed into a regional network (e.g., allowing for resource availability and environmental factors, lithic scatters and temporary camps should be located within an areal interactive zone)?

Analysis Strategy

The interpretation of site function and functional significance depends upon the *interpretation* of kind and context of cultural materials at each site. Any activity or activity loci at each site will be identified on the basis of the interpretation of individual artifacts and assemblages, as well as other factors.

The majority of the recorded prehistoric site types include: (1) lithic scatters (most common), (2) "habitation debris" (e.g., temporary camp, seasonal base camp, permanent/seasonal village), (3) bedrock mortars or other milling features (e.g., groundstone), (4) petroglyph sites (isolated or in association with Site Types 1-3), (5) lithic quarry/source, and (6) burial/cremation cemetery or isolates.

The use of the site as the basic analytical unit types as the basic an analytical tool have the potential to yield data on: (1) settlement patterns, (2) subsistence patterns, (3) economic pursuits, (4) house construction and use, (5) lithic technology, (6) chronology, (7) domestic organization and practices, (8) floral and faunal communities, (9) paleo-environments, (10) physiography and geomorphology, and, (11) geochronology, sedimentation, and stratigraphy.

Obsidian hydration dates may help identify components at sites in the project area. Single component sites reflect a single use. Two component sites, representing two similar or different activities or events in time and space, are more difficult to interpret than single component sites and as a result only general function or chronological placement may be possible from the data obtained. Multicomponent sites, representing three or more similar or different activities or events through time and space, are subject to the same restrictions on interpretation as two component sites. Mixed component sites have a wide range of hydration readings from both surface and subsurface contexts indicating disturbance and lack of integrity.

Wear pattern analysis can be a useful means to determine the function(s) of formed tools and unmodified debitage. In addition to sample size, edge damage caused by frost-heaving, cattle trampling, abrasion from the site matrix and numerous other factors including the brittle nature of obsidian, suggests that wear pattern analysis of either artifacts or debitage from the sites would be inconclusive.

Historic Research Domains and Questions

Archaeological data may produce unique, complementary information not available from historic documents such as photographs, written records and so on. Such data can verify and/or contradict the historical record. The following research questions may be posed in a research design developed to treat significant historic resources inadvertently exposed during construction at in the project area.

Consumer Behavior and Socioeconomic Status

1. Are there sufficient artifactual remains to ascertain the period of construction/use/ residency/discard and socioeconomic status or predominant ethnicity of a household or living unit, occupational group, etc.?
2. Can distinct social groups or ethnic patterns be identified (foodways, distinctive kinds of artifact used/discarded)?
3. Does this resource contribute to the existing literature concerning the resource type?

Household/Institutional Living Unit

1. What is the consumption/disposal pattern present? Are there patterns which can be distinguished?
2. What subsurface evidence of modifications of the landscape -- topographic, water and waste management and structures (including buildings) -- are present? Can changes in unit composition or activity use be observed/defined?
3. Does this resource contribute to the existing literature?

Institutional Geography

1. Can the functional and spatial norms for differing property types (institutional, domestic, community/social, farm) be documented and distinguished from one another and through time?

Subcultures/Subgroups

1. Does this resource reflect a class-based ideology?
2. Does this resource possess unique and/or typical material (i.e., artifacts or features) that could distinguish ethnic, occupational, gender and/or other subgroup preferences, differences, etc.?
3. Does this resource possess material remains that could elucidate the role of symbols in maintaining boundaries between groups?
4. How is the social distance between groups (patients, staff, professional staff, other employees, etc.) reflected archaeologically?
5. Can this resource explicate the dynamics of cultural pluralism and social stratification during the 19th and 20th century?
6. Can Native American historic era or Hispanic era artifacts/features/sites (or components of sites) be identified? Can these be traced to a period of occupation, activity or group/family/individuals?

Environmental Change and Landscape Modification

1. What were the characteristics of the prehistoric, mid/late 19th century landscape?
2. What modifications were made to the landscape?
3. What was the impact of industrialization, and/or farming on the landscape and environment?

Industrialization/Technology

1. Are undocumented technologies visible within strata or artifacts?
2. What is the evidence of standardized technologies, "appropriate technology", and/or local innovation? Is there evidence for extensive reuse of equipment, sites, buildings, and artifacts?

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Appendix C

Programmatic Treatment of Cultural Resources Discoveries

(To be incorporated when approved by the CEC)

<Insert a copy of the CEC's Final Programmatic Treatment, when available>

Attachment 3
Cultural Resources Daily Monitoring Log Form

Cultural Resources Daily Monitoring Log

_____ Project, Date:_____, Monitor Name:_____
Weather Conditions: _____
Hours on Site Not Worked and Reason: _____
Work Location (Project Component):_____
Work Type (Machine): _____
Depth of Excavation: _____
Observed Native Soils (Stratigraphy):_____

Disturbed/Redeposited Soils: _____

Features: _____

Artifacts (Isolated? Diagnostic? Older than 45 years? Exceptional? Include description, provenience, stratigraphic context.):

Recommendation of Significance of Any Finds?

Actions Taken (Halt/Resume Construction; Identification; Notifications; Recommendations; Photography; Collecting; Sampling), Other Observations:

Attachment 4
WEAP Training Log Form

Certification of Completion of Cultural Resources Education Program

_____ Project, _____ County, California

Cultural Resources Education Program Verification

All On-Site Employees

This is to certify the below-mentioned individuals have completed a mandatory California Energy Commission-approved Cultural Resources Education (Environmental Awareness) Program for Employees on site at the _____Project. By signing below, the participants indicate that they understand and shall abide by the guidelines set forth in the Program materials.

No.	Employee Name	Company	Signature	Date
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Trainer: _____Signature:_____Date: ____/____/____

Attachment 5
Resume of Cultural Resource Specialist

Clint Helton, RPA
Cultural Resources Specialist

Education

M.A., Anthropology
B.A., Language and Literature

Professional Registration

Registered Professional Archaeologist (1999, No. 11280)

Distinguishing Qualifications

- Strong background in environmental impact evaluations, with particular expertise in conducting cultural resources studies in California, Colorado, Idaho, Nevada, Utah, and Wyoming
- Has 13 years of environmental management experience in the western U.S.
- Meets Secretary of Interior Professional Qualification Standards (36 CFR 61)
- Highly experienced managing cultural resources studies for large linear transportation and utility projects to meet requirements of National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), California Environmental Quality Act (CEQA), and standards of the California Energy Commission (CEC), and Federal Energy Regulatory Commission (FERC)

Relevant Experience

Mr. Helton is an environmental consultant with more than 13 years of environmental management experience in the western United States. He has a strong background in environmental impact evaluations, having directed technical studies; negotiated with lead agencies, responsible agencies, and clients; and written, edited, and produced a substantial number of environmental review and technical documents. Mr. Helton has extensive experience of regulatory compliance, cultural and paleontological resources, NEPA and NHPA compliance activities, and federal regulations governing treatment of cultural resources, especially Section 106 of NHPA (36CFR800) and the Native American Graves Protection and Repatriation Act (NAGPRA) (43CFR10). Additionally, Mr. Helton is experienced with the challenges of preparing environmental documentation for large linear utility projects, including large interstate pipelines and is familiar with the process and guidelines of CEC and FERC among others. Mr. Helton has authored numerous environmental technical reports, cultural resources management plans, cultural resources studies, Programmatic Agreements, and Memorandums of Understanding (MOU) and contributed to many NEPA and CEQA documents for a variety of private and public sector clients.

Representative Projects

Task Manager, GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Task Lead and overall management of cultural resources studies for this conversion of an existing peaking plant to a combined-cycle baseload facility in San Joaquin County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, BrightSource Energy, Ivanpah Solar Electric Generating System Project, San Bernardino County, California. Assisted with preparation of Application For Certification for California Energy Commission in support of a large proposed solar power generation facility covering over 4,000 acres of land managed by Bureau of Land Management in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including archival research, field surveys, report preparation, and conducting Native American consultation.

Task Manager, Terra-Gen LLC Alta Wind Project, Kern County, California. Task Lead, quality control manager, and overall management of cultural resources studies for this 5,000-acre-plus alternative energy development project near the City of Tehachapi, Kern County, California. Provide regulatory guidance, regional technical expertise in cultural resources and coordination with Kern County. Supervised inventory for cultural resources, technical report preparation, and conducted Native American Consultation.

Task Manager, Iberdrola Renewables, Multiple Solar Energy Development Projects, Arizona, California, New Mexico, Nevada. Led preparation of cultural resources assessments for solar power generation facilities in Arizona, New Mexico, Nevada, and California. Mr. Helton is acting as principal investigator for several critical issues analyses as well as full permit preparation of solar energy development projects in Arizona, California, Nevada, and New Mexico. Project acreages range from 5,800 acres to 35,000 acres.

Task Manager, PPM Energy, Solar Energy Development, Arizona, Nevada, California. Cultural resources assessments for solar power generation facilities in Arizona, Nevada, and California. Mr. Helton is acting as principal investigator for literature searches and field visits for several proposed solar energy projects in Arizona, California, and Nevada. Project acreages range from 2,000 acres to 25,000 acres.

Task Manager, Edison Mission Energy, Walnut Creek Energy Park Power Plant, California. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed 500-MW power generation facility in Los Angeles County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Edison Mission Energy, Sun Valley Energy Center Power Plant, California. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed 500-MW power generation facility in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Task Lead and overall management of cultural resources studies for this 100-MW power plant upgrade project in San Diego County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

CRS References:

Beverly Bastian

California Energy Commission

Biological/Cultural Resources Unit

(916) 654-4840

Dena Parish

PG&E

Humboldt Bay Generating Station

(707) 444-6568

(707) 267-8674