

DOCKETED

Docket Number:	09-AFC-07C
Project Title:	Palen Solar Power Project - Compliance
TN #:	200969
Document Title:	PSH's Rebuttal Testimony to Intervenor CRIT's Opening Testimony
Description:	N/A
Filer:	Marie Fleming
Organization:	Galati Blek LLP
Submitter Role:	Applicant Representative
Submission Date:	10/21/2013 3:23:32 PM
Docketed Date:	10/21/2013

October 21, 2013

California Energy Commission
Dockets Unit
1516 Ninth Street
Sacramento, CA 95814-5512

**Subject: PALEN SOLAR HOLDINGS, LLC'S REBUTTAL TESTIMONY TO
INTERVENOR COLORADO RIVER INDIAN TRIBE'S OPENING
TESTIMONY
PALEN SOLAR ELECTRIC GENERATING SYSTEM
DOCKET NO. (09-AFC-7C)**

Enclosed for filing with the California Energy Commission is the electronic version of **PALEN SOLAR HOLDINGS, LLC'S REBUTTAL TESTIMONY TO INTERVENOR COLORADO RIVER INDIAN TRIBE'S OPENING TESTIMONY**, for Palen Solar Electric Generating System (09-AFC-7C).

Sincerely,



Marie Fleming

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Petition For Amendment for the
**PALEN SOLAR ELECTRIC
GENERATING SYSTEM**

DOCKET NO. 09-AFC-07C

**DECLARATION OF MARY
BARGER**

I, Mary Barger, declare as follows:

1. I am an independent consultant currently under contract with Centerline.
2. A copy of my professional qualifications and experience was included with my Opening Testimony and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Cultural Resources for the Petition for Amendment for the Palen Solar Electric Generating System (California Energy Commission Docket Number 09-AFC-07C).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on October 17 2013.



Mary Barger

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Petition For Amendment for the
**PALEN SOLAR ELECTRIC
GENERATING SYSTEM**

DOCKET NO. 09-AFC-07C

DECLARATION OF FRED NIALS

I, Fred Nials, declare as follows:

1. I am an independent consultant currently under contract with Centerline.
2. A copy of my professional qualifications and experience was included with my Opening Testimony and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Cultural Resources for the Petition for Amendment for the Palen Solar Electric Generating System (California Energy Commission Docket Number 09-AFC-07C).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on Oct. 19 2013.



Fred Nials

**PALEN SOLAR ELECTRIC GENERATING SYSTEM
CULTURAL RESOURCES
REBUTTAL TESTIMONY**

I. Names:

Mary Barger
Fred Nials

II. Purpose:

We provide this Rebuttal Testimony to address cultural resource-related issues raised by Intervenor Colorado River Indian Tribes (CRIT) in its Opening Testimony for the Palen Solar Electric Generating System (PSEGS) (09-AFC-7C).

III. Qualifications:

Our qualifications are highlighted and copies of our resumes are included in our previously filed Opening Testimony, Cultural Resources.

To the best of our knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are our own. We make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Rebuttal:

Throughout the Testimony of Rebecca Loudbear, Winter King, and Sarah Clark, Attorneys for the CRIT, the CRIT Attorneys claim that insufficient work was performed to conduct a CEQA evaluation of the potential cultural resources impacts associated with amending the Approved Project to allow the construction and operation of the PSEGS. It would be more appropriate for the CRIT Attorneys to have made this legal argument in a legal brief, rather than address it as part of intervenor testimony. However, we do want to remind the Committee that a large body of fieldwork and analysis was performed for the Approved Project and that the Commission Decision authorized mass grading of the site, with cut and fill activities that would have displaced in excess of 4.5 million cubic yards of soil. In addition, a large body of additional work has been performed to support the PSEGS amendment (the next section of this rebuttal testimony describes the additional work). Furthermore, we note that the Amended Project would eliminate mass grading across the site which reduces cut and fill activities so that only 200,000 (0.2 million) cubic yards of soil would be displaced, and would primarily limit the cut and fill activities to the power blocks and common facilities areas.

Additionally, the CRIT Attorneys claim, based on Staff's inaccurate description in Part B of the Final Staff Assessment (FSA), that PSH has not cooperated in developing the information to support an appropriate level of CEQA analysis to support the Commission's decision on the amendment. As described below, we disagree with this claim.

Cultural Resources Analyses Completed for the Palen Solar Energy Generating Station (PSEGS)

AECOM completed cultural resource inventories for the Approved Project in 2010. These included: a Class III cultural resources survey for the project footprint (Tennyson and Apple 2010; Tennyson 2010) as well as a built environment inventory of the project footprint plus a one-half mile buffer (Meiser 2009, 2010).

Additional work was requested by the CEC Staff and/or the BLM and was performed by PSH to support amending the PSEGS. The following additional studies were conducted in 2013:

- 1) A geoarchaeological evaluation of the PSEGS Project area (Nials 2013a);
- 2) Updated Class I Survey for PSEGS up to a 15-mile radius (Tennyson et al., draft copy, 2013);
- 3) Class II sample survey of part of the PSEGS Project, including the re-evaluation/re-recording of all historic and prehistoric sites within the PSEGS footprint (direct effects APE/PAA which included 5 parcels for a total of 507 acres (Tennyson et al., draft copy, 2013);
- 4) Class III inventory of the southern portion of the PSEGS footprint which included two parcels: 95 acres and 15 acres with a 200' buffer (Tennyson et al., draft copy, 2013);
- 5) Geoarchaeological trenching at the two PSEGS power tower locations for a length of 175' and 5' in depth for each trench (Nials 2013b);
- 6) Update for the built environment AECOM reports (Meiser 2009 and 2010) up to 15 miles from the project (Meiser and Recksieck, draft copy, 2013);
- 7) Ethnographic literature review which also specifically identify linear resources (trails and associated features) and sites of religious significance to tribes (AECOM, draft copy, 2013); and
- 8) BLM requested an evaluation of indirect (visual and atmospheric) effects caused by the solar towers to known historic properties, traditional cultural properties and sites of interest to tribes (in preparation).

In addition, the CEC Staff requested a reconnaissance level survey of parts of the bases of the Coxcomb Mountains and the Palen Mountains focusing on rock outcrops and desert pavement. This request was received during the Data Request phase in April 2013. Subsequently, BLM also agreed to this request and asked that it be included in the Programmatic Agreement's (PA) workplan. As a result, PSH developed a strategy for a reconnaissance-level survey using Google Earth, focusing on locations that would have been more likely to have the resources of interest preserved. This remote evaluation focused on:

- Delineation of large areas where preservation of any archaeological remains are unlikely because of natural or human processes (primarily Desert Training Center tank tracks);
- Identification of several potential trail segments that needed to be field-checked; and
- Establishment of a tentative basis for settlement patterns in the areas based on potential resource availability.

A series of field-survey transects were established and mapped on Google Earth imagery. These transects were placed in order to provide:

- As broad an areal distribution of cultural resource survey as possible given the limited time frame;
- As broad a cultural resource survey as possible, designed to evaluate the maximum range of topographic variables;
- The maximum coverage of areas having proximity to critical resources (e.g., water and plants) in the desert environment; and
- Ground verification of potential cultural resources tentatively identified from aerial imagery.

The above strategy was included in the BLM's PA amendment as a work plan. No fieldwork could be initiated on any work until the PA went out for review and comment and was executed. The BLM transmitted the amended PA and work plan for review to the signatories on May 20, 2013 including the CRIT, and requested comments by June 17, 2013. This fieldwork strategy was also reviewed by the CEC staff. In negotiating the method to complete this survey in a timely manner, on May 16, 2013, PSH suggested use of a helicopter due to the remoteness of the area, distance in walking to the areas of interest, and the ability to use the helicopter to confirm any trails segments, rock rings, rock circles and rock art. Since the two areas are wilderness areas, BLM denied the request on May 16, 2013, even for low-level flights. Further, the National Park Service's Joshua Tree National Park (JTNP) thought it might be difficult to get it approved and suggested we download an application on line. They said it would take at least 30-60 days for review and was likely to be denied.

Since the BLM already denied the request, PSH did not pursue the effort in Joshua Tree National Park.

PSH then worked with AECOM to develop a budget and schedule to accomplish this work without a helicopter. BLM told PSH that surveys would require completing site forms for all sites found. JTNP did not require this, and suggested that just a mapped location, GPS coordinates, and photographs would be sufficient. BLM also said that they would need to consult with the tribes for 30 days after receipt of the fieldwork authorization, but did not want to consider it until after the comment period was completed for the PA amendment. BLM indicated they could not get everything approved prior to the middle of July. Once field work was completed for this effort, AECOM would need to finalize site forms and a draft report which wouldn't meet the CEC Staff's schedule for inclusion in the Final Staff Assessment. In early June, CEC Staff told us that they would conduct the survey since they did not need a permit, would not be required to make the related notifications, nor would they need to complete site forms. At that point, PSH no longer pursued this reconnaissance-level survey.

In late June, CEC Staff requested that PSH still pursue and complete the reconnaissance-level survey. As discussed in the Commission Status Conference held on June 3, 2013, by then, the schedule discussed above would not allow for the information to be provided to the CEC Staff in time to support the schedule for the FSA. As a result, the CEC Staff conducted its own survey on July 16-17, 2013.

PSH is still committed to completing the reconnaissance survey post-certification as described in the PA's work plan since the PA has been amended requiring the work. Additionally, our understanding is that no comments were received on BLM's proposed amendments to the PSA and it has been executed by BLM and SHPO.

Comparison of PSEGS to the Genesis Solar Energy Project

A common theme in the CRIT Attorney Testimony is that the PSEGS will result in the discovery of artifacts during construction similar to those found at the Genesis Solar Energy Project (GSEP) site. One of the reasons that we engaged in the geoarchaeology studies was to determine whether similar conditions, specifically the historical influence of transition pluvial lakes, exist as the PSEGS site.

The geoarchaeological evaluation (Study #1 above) and the geoarchaeological trenching project (Study #5 above) were not mentioned in the CRIT testimony. The geoarchaeological evaluation was completed in order to:

- Determine whether Pleistocene/Holocene transition pluvial lakes existed in Chuckwalla Valley that may have influenced archaeological site distribution in or near the PSEGS Project area;

- Describe the geomorphic setting and dominant geomorphic processes responsible for the context of prehistoric sites;
- Evaluate the distribution, function, duration of occupation, and potential for dating of archaeological sites in and near the project area insofar as can be determined by site locations and geomorphic context;
- Evaluate existing archaeological site conditions and ongoing processes that may have modified site integrity, and the potential for information return from sites in and near the project area;
- Evaluate the potential for intact buried sites; and
- Recommend additional site treatment(s), if suitable, to protect cultural resources and maximize information return.

The geoarchaeological trenching project was conducted to:

- Determine the potential for buried intact archaeological deposits at these locations;
- Determine the depth of Pleistocene (pre-occupation) deposits in the project area; and
- Test the conclusions in the geoarchaeological evaluation of the Project area.

The following discussion compares the GSEP and PSEGS sites and summarizes the conclusions of the geoarchaeological studies.

The PSEGS and GSEP areas are situated within less than 20 miles of each other; both are located in the same physiographic province, drainage basin, and valley. A single mountain range that partially separates the two project locations is the only major topographic barrier between the two areas. Parts of both projects are located near the shores of playa lakes. With the exception of wind regimes, climate is essentially the same at both locations. Given these similarities, one unfamiliar with the geomorphology and geologic history of the area might predict similar patterns of cultural occupation, land use, and potential damage to cultural resources as a result of construction.

However, despite their many similarities, the two project areas have significantly different geologic and geomorphic histories. Consider the following contrasts between the two areas:

- 1) The GSEP site is located on the margins of Ford Dry Lake (FDL), the lowest point in Chuckwalla Valley. PSEGS is located on the margins of Palen Dry Lake (PDL). The lowest point on the floor of PDL is more than 75 feet higher than the floor of FDL, and any water that manages to flow out of the PDL basin ultimately flows into FDL.

- 2) Several million years before human occupation, a long-standing lake was present in the general area. Neither PDL nor FDL appear to have contained long-term pluvial lakes during the Pleistocene Epoch or any other time since.
- 3) The floor of FDL is flat, and the Lake basin has been the site of many generations of intermittent playa lakes. Near the end of the Pleistocene, one or more unusually deep, but still intermittent, playa lakes occupied the floor of FDL. Sediments, vegetation, and hydrological characteristics related to shorelines of these lakes were the focus of later mid- and late Holocene human occupation.

As shown on topographic maps, PDL has a surface area of about 25 mi.², much larger than FDL. The floor of the lake as shown on maps, however, slopes more than 30 feet from north to south and the “lakebed” appears to have been the site of only small dune-dammed playa lakes near the southern margin of the “lakebed”. There is no record of large pluvial or playa lakes having formed on the floor of the PDL subbasin of Chuckwalla Valley during the Pleistocene. Human occupation was also occasionally and temporarily directed toward the southern margin of PDL, where most archaeological sites occur in sand dunes.

- 4) Because of its topographic position in relation to FDL, the PDL subbasin has, and had, significantly less water, vegetation, and faunal resources than FDL. Sites appear to have been much more intermittently and temporarily occupied than sites around the margins of FDL.
- 5) Archaeological sites in and near the PSEGS project area are primarily located in sand dunes. Patterns of erosion and deposition in the dunes make most sites readily visible. Natural processes of various types of turbation and artifact dislocation dictates that most sites in the PSEGS project area have poor special integrity.

Archaeological sites near the GSEP area are located on a variety of substrates, but most have been modified by slopewash and alluvial fan processes that have covered many of the sites. Most sites in the GSEP project area also had relatively poor special integrity.

- 6) Subsurface excavations and natural exposures in and near the PSEGS project area revealed the presence of a Pleistocene soil within a short distance of the surface. The soil provides evidence of the relative aridity of the project area, and the lack of flowing or standing water (except for very brief periods of time following runoff) in the project area.

- 7) The GSEP involved massive amounts of grading and sediment displacement. The PSEGS project, on the other hand, will grade significantly smaller areas and displace much less sediment. Heliostat pylons will be vibrated into place, displacing only the area of the pylon itself.

Extensive archaeological survey within the PSEGS project area suggests that human occupations of the immediate area were infrequent and short-term. The stratigraphic and geomorphic evidence suggests that there were no pluvial lakes to attract big-game hunters and their prey, no springs in the immediate area of the project, little or no shelter from wind and sun, and only the effects of infrequent, unusually large rainfall events lasted more than a few days during most years. In short, there was usually little in the way of resources to attract people to the area. Those few that did come left little evidence of their visitation, and much of that evidence has been subsequently altered or displaced by natural processes. The PSEGS project area is not the GSEP project area, and the quantity and nature of archaeological manifestations are significantly different.

Data Recovery

The CRIT Attorney Testimony explains that Native Americans would prefer artifacts to be left in place rather than recovered and archived (data recovery). In order to address that concern, PSH agrees to avoid artifacts in the solar field where it can reasonably adjust the location of individual heliostats. Therefore, we propose the following modification to Condition of Certification **CUL-10**.

CUL-10 FLAG AND AVOID

If resources within the transmission line corridor can be spanned rather than impacted, **or resources within the solar field can be feasibly avoided by adjustment of individual heliostat**, or in the event that new resources are discovered during construction where impacts can be reduced or avoided, the project owner shall:

1. Ensure that a CRS, alternate CRS, PPA, or CRM re-establish the boundary of each site, add a 10-meter-wide buffer around the periphery of each site boundary, and flag the resulting space in a conspicuous manner;
2. Ensure that a CRM enforces avoidance of the flagged areas during **PSEGS** construction; and
3. Ensure, after completion of construction, boundary markings around each site and buffer are removed so as not to attract vandals.

In the event a resource can be avoided, data recovery required by these conditions of certification shall not be performed.