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File No. 039610-0001

LATHAM & WATKINS LLP

October 9, 2007

VIA FEDEX

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-1
1516 Ninth Street, MS-4
Sacramento, California 95814-5512

DOCKET	
07-AFC-1	
DATE	OCT 09 2007
RECD.	OCT 09 2007

Re: Victorville 2 Hybrid Power Project: Docket No. 07-AFC-1

Dear Sir/Madam:

Pursuant to California Code of Regulations, title 20, sections 1209, 1209.5, and 1210, enclosed herewith for filing please find a document entitled, "Parabolic Trough Mirror Design Prevents Escape of Reflected Incident Rays."

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

Very truly yours,



Paul E. Kihm
Senior Paralegal

Enclosure

cc: CEC 07-AFC-1 Proof of Service List (w/encl. via e-mail)
Michael J. Carroll, Esq. (w/encl.)

Parabolic Trough Mirror Design Prevents Escape of Reflected Incident Rays

The design of VV2's single axis solar collector essentially prevents the escape of incident rays that directly strike the surface of the mirror. This is accomplished by the fundamental physics of the parabolic reflector as shown at Figure A in EXHIBIT 1 (attached). All rays entering the parabolic reflector are concentrated at single point (the focal point), located $\frac{1}{2}$ the distance of the arc's radius, shown as Fp in Figure A. A Parabolic Trough Mirror type solar array is engineered so as to place the Heat Collection Element (HCE) precisely at the Fp (see also Figure B, on the attached EXHIBIT 1).

The solar array will track the East to West movement of the sun with an accuracy of 0.1 degrees. The concentrated area of the sun's reflected incident rays will be magnitudes smaller than the 70MM diameter of the HCE. The HCE positioned in this direct line of sight with the sun will block or absorb all entering direct incident or reflected incident rays. As a result, aircraft flying over the array will generally not be exposed to reflected incident rays of sunlight -- in other words, the sun itself (or any portions thereof) will not appear to pilots as a reflection in a mirror.

It is important to note that the HCE is encased in glass and will be a minor source of reflection as described below (this is generally what accounts for the "glittering" effect of parabolic trough solar arrays, often described as similar to flying over a body of water):

- 1) The HCE is designed to absorb and collect incident rays reflecting off the parabolic mirror but, of course, some incident rays will strike the HCE directly as it is located in front of the mirror. As a result, there will be some reflections from the glass coating the HCE; however, these reflections will be minor as the HCEs are designed to absorb sunlight, not reflect it.
- 2) The reflected incident rays of the sun will generally be directed to the lower portion of the HCE glass encasement by design and will produce a glow from the reflected scattered beams as they enter the collector. If an aircraft were positioned at exactly the right angle above the array, this "glow" phenomenon could be visible along the entire length of the collector element for an individual row of mirrors. However, there are no reflected incident rays of sunlight associated with this glow and the brilliance/intensity of the light is much less by comparison to reflected sunlight.

In summary

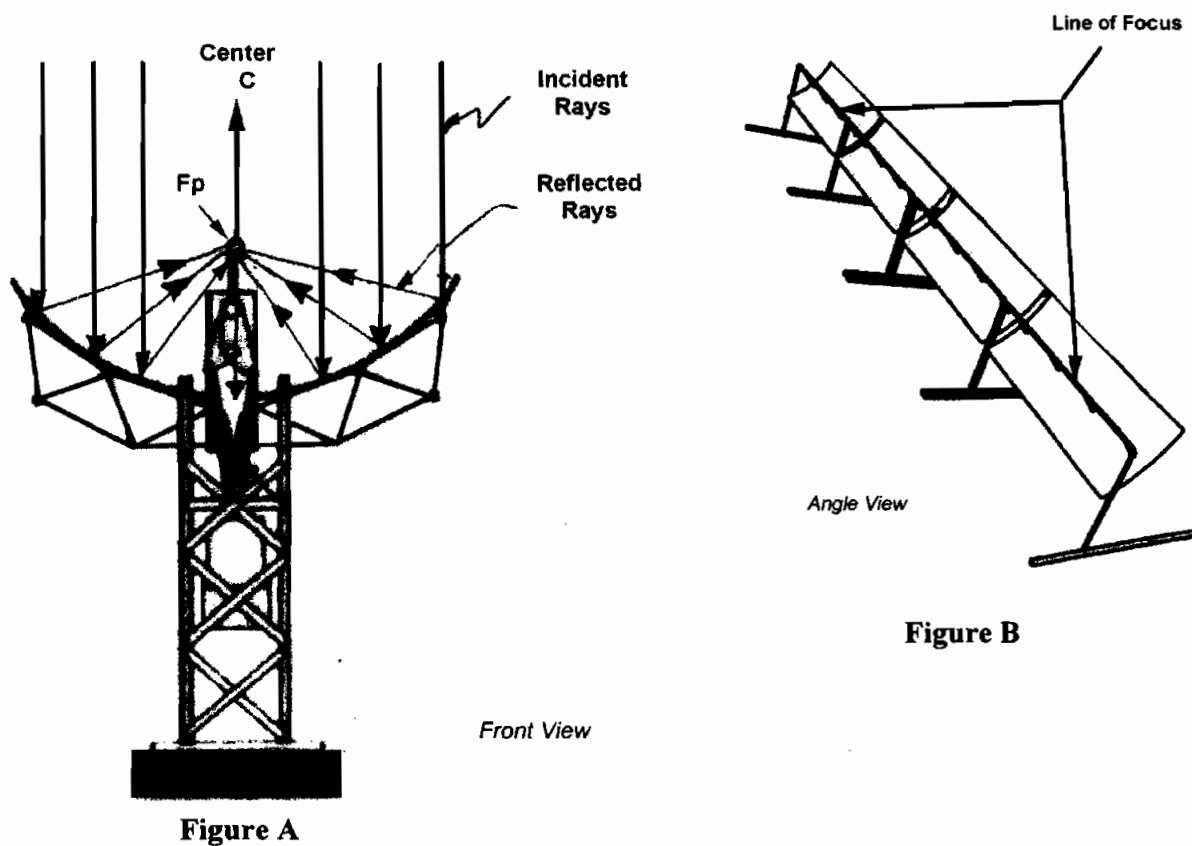
Based on practical experience and the laws of physics, solar arrays using the parabolic trough mirror design do not produce significant glare or reflection that would pose a distraction to aviation. The fundamental reason for this conclusion can be found in the design of the parabolic trough mirror. The focal point created by the parabolic mirror will not allow any concentrated rays to escape the solar field. As a result, descriptions by pilots over flying a solar thermal facility (SEGS) indicate that, with regard to reflective glare, the general appearance of the array from the air is similar to flying over a body of water (see for example, the attached e-mail from Peter Soderquist of SCLA describing a recent overflight of the existing SEGS plants).

EXHIBIT 1: Parabolic reflectivity

Fp = Focal Point = A point located $\frac{1}{2}$ the distance of the arc's radius

C = Center of Arc

Incident Ray = Separate and continuous bombardment of sunlight



A parabolic reflective surface (Figure A) will precisely direct an Incident Ray of light (Ir) to a focal point (Fp) $\frac{1}{2}$ the distance from the center (C) of the arc. There is a "line of focus" (Figure B) created by the parabolic trough that will travel the full length of the mirror.

**STATE OF CALIFORNIA
ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

In the Matter of:)	Docket No. 07-AFC-1
)	
Application for Certification,)	ELECTRONIC PROOF OF SERVICE
for the VICTORVILLE 2)	LIST
HYBRID POWER PROJECT)	
by the City of Victorville)	(revised August 22, 2007)
)	
_____)	

Transmission via electronic mail and by depositing one original signed document with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the following:

DOCKET UNIT

CALIFORNIA ENERGY COMMISSION

Attn: DOCKET NO. 07-AFC-1
1516 Ninth Street, MS-4
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VICTORVILLE II HYBRID POWER PROJECT
CEC Docket No. 07-AFC-1

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VICTORVILLE II HYBRID POWER PROJECT
CEC Docket No. 07-AFC-1

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DECLARATION OF SERVICE

I, Paul Kihm, declare that on October 9, 2007, I deposited a copy of the attached:

PARABOLIC TROUGH MIRROR DESIGN PREVENTS ESCAPE OF REFLECTED INCIDENT RAYS

with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the California Energy Commission. I further declare that transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service List above.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 9, 2007, at Costa Mesa, California.



Paul Kihm