



# AIRPORT LAND USE COMMISSION RIVERSIDE COUNTY SPECIAL MEETING AGENDA

Riverside County Administration Center  
4080 Lemon St., Hearing Room (1st Floor)  
Riverside, California

Tuesday 1:00 p.m., July 6, 2010

CHAIR  
Simon Housman  
Rancho Mirage

VICE CHAIRMAN  
Rod Ballance  
Riverside

COMMISSIONERS

Arthur Butler  
Riverside

Robin Lowe  
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John Lyon  
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Greg Pettis  
Cathedral City

STAFF

Director  
Ed Cooper

John Guerin  
Russell Brady  
Barbara Santos

County Administrative Center  
4080 Lemon St., 9<sup>th</sup> Floor.  
Riverside, CA 92501  
(951) 955-5132

[www.rcaluc.org](http://www.rcaluc.org)

NOTE: If you wish to speak, please complete a "SPEAKER IDENTIFICATION FORM" and give it to the Secretary. The purpose of the public hearing is to allow interested parties to express their concerns. Comments shall be limited to 5 minutes and to matters relevant to the item under consideration. Please do not repeat information already given. If you have no additional information, but wish to be on record, simply give your name and address and state that you agree with the previous speaker(s). Also please be aware that the indicated staff recommendation shown below may differ from that presented to the Commission during the public hearing.

Non-exempt materials related to an item on this agenda submitted to the Airport Land Use Commission or its staff after distribution of the agenda packet are available for public inspection in the Airport Land Use Commission's office located at 4080 Lemon Street, 9<sup>th</sup> Floor, Riverside, CA 92501 during normal business hours.

In compliance with the Americans with Disabilities Act, if any accommodations are needed, please contact Barbara Santos at (951) 955-5132 or E-mail at [basantos@rctlma.org](mailto:basantos@rctlma.org). Request should be made at least 48 hours or as soon as possible prior to the scheduled meeting.

## 1.0 INTRODUCTIONS

### 1.1 CALL TO ORDER

### 1.2 SALUTE TO FLAG

### 1.3 ROLL CALL

## 2.0 PUBLIC HEARING: OLD BUSINESS

### BLYTHE AIRPORT

- 2.1 ZAP1006BL10 – Palo Verde Solar I, LLC – California Energy Commission Docket No. 09-AFC-6. The project proposes to construct a nominal 1,000 megawatt solar thermal electric generating facility on 9,400 acres of BLM managed land, including four units of north-south oriented tracking parabolic trough mirrors, four 120-foot tall air-cooled condensers, a 230 kV transmission line with maximum 145-foot tall monopoles, and a four-inch diameter 9.8-mile long natural gas pipeline. (Blythe Airport: Zones C, D, and E). ALUC Staff Planner: John Guerin at (951) 955-0982, or e-mail at [jguerin@rctlma.org](mailto:jguerin@rctlma.org). or Russell Brady at (951) 955-0549, or e-mail at [rbrady@rctlma.org](mailto:rbrady@rctlma.org).

Staff Recommendation: Direct staff to prepare a letter to the California Energy Commission

**3.0 ORAL COMMUNICATION ON ANY MATTER NOT ON THE AGENDA**

**4.0 COMMISSIONER'S COMMENTS**

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COUNTY OF RIVERSIDE  
AIRPORT LAND USE COMMISSION  
STAFF REPORT

AGENDA ITEM: 2.1 ~~3.2 3.1 2.3~~

HEARING DATE: July 6, 2010 ~~June 10, 2010 May 13, 2010~~  
(continued from June 10, May 13, and April 8, 18,  
2010)

CASE NUMBER: ZAP1006BL10 – Palo Verde Solar I, LLC  
(Representative: Howard Balentine)

APPROVING JURISDICTION: California Energy Commission

JURISDICTION CASE NO.: 09-AFC-06

MAJOR ISSUES:

~~Materials submitted with the application include analysis of the proposed project's impacts from structure heights, radio frequency interference, reflectivity/glare, and thermal plumes. While the analysis addresses each impact at length, substantial information is not provided to determine the actual anticipated impacts on the Blythe Airport. In addition, information on provision of a minimum 10% open space area within Compatibility Zone D and analysis on cumulative impacts of hazards to flight were not included. ALUC staff prepared a letter (attached to this staff report) to the applicant on March 22nd requesting the specific additional information needed by staff to make a recommendation of consistency to the Commission.~~

- ~~1. — Proposed aboveground line extends through Compatibility Zones B1 and C;~~
- ~~2. — Possible visible plume from Power Block 4 partially within AIA boundary;~~
- ~~3. — Effect on radio communications used by pilots;~~
- ~~4. — Reflectivity/glare from Heat Conducting Element tube;~~
- ~~5. — Thermal plumes from air-cooled condenser and auxiliary cooling tower; and~~
- ~~6. — Compliance with Zone D Open Area requirements; and—~~
- ~~7. — Cumulative impacts of multiple energy projects.~~

1. The feasibility of a route alignment for the gen-tie lines that is farther from the westerly end of the runway and located at a higher elevation closer to the mountains, such that the terrain becomes the primary constraint, should be explored.
2. The continuance from June is understood and expected to be the final continuance, and is for the purpose of having an opportunity to review the independent studies requested by California Energy Commission staff in response to issues initially raised by ALUC staff (glint/glare and the location and velocity of the thermal plume as potential flight hazards) At press time, the independent studies are not yet available for public review.

**RECOMMENDATION:**

STAFF RECOMMENDS THAT THE AIRPORT LAND USE COMMISSION (ALUC) WEIGH THE EVIDENCE REGARDING EACH ISSUE AND DIRECT STAFF TO FORWARD A LETTER TO THE CALIFORNIA ENERGY COMMISSION (CEC) ADVISING THE CEC OF ALUC'S CONCERNS AND RECOMMENDATIONS, IF ANY, REGARDING THAT ISSUE. (SEE "CHECKLIST FOR DISCUSSION".) FURTHERMORE, ALUC MAY THEN PROCEED TO OFFER AN OPINION REGARDING THE COMPATIBILITY OF THE PROJECT BY SELECTING EITHER (1) OR (2) BELOW:

- (1) THE PROJECT WILL NOT INDIVIDUALLY CONSTITUTE, OR CUMULATIVELY CONTRIBUTE TO, A HAZARD TO FLIGHT, AS THE RECOMMENDED CONDITIONS, TOGETHER WITH SUCH ADDITIONAL CONDITIONS AS MAY BE NECESSARY TO COMPLY WITH FEDERAL AVIATION ADMINISTRATION LETTERS OF DETERMINATION, ARE SUFFICIENT TO MITIGATE HAZARDS AND IMPACTS TO BELOW A LEVEL OF SIGNIFICANCE.

OR:

- (2) THE PROJECT MAY INDIVIDUALLY CONSTITUTE, OR CUMULATIVELY CONTRIBUTE TO, A HAZARD TO FLIGHT, AND THE AVAILABLE INFORMATION IS NOT SUFFICIENT TO DEMONSTRATE THAT THE RECOMMENDED CONDITIONS ARE SUFFICIENT TO MITIGATE SUCH HAZARDS TO BELOW A LEVEL OF SIGNIFICANCE; THEREFORE, IT IS RECOMMENDED THAT THE PORTION OF THE PROJECT WITHIN THE AIRPORT INFLUENCE AREA BE EXCLUDED OR RELOCATED TO A SITE OUTSIDE THE AIRPORT INFLUENCE AREA BOUNDARY.

~~At the time of the writing of this staff report, staff has not received the requested information from the applicant or their representative. The applicant's representative has indicated that the requested information would not be able to be provided by the April 8th hearing and has requested a continuance. Staff~~

~~recommends that the Commission CONTINUE this matter without discussion to the meeting of May 13, 2010, pending submittal, review, and adequacy of the requested information.~~

~~At this time, ALUC staff believes that available data is not adequate to enable a finding of consistency for this project.~~

~~The California Energy Commission staff has requested an independent review of the effects of this project on the operation of Blythe Airport, but the results of these studies will not be available in time for the June 10 public hearing. The applicant's representative has provided additional information in an attempt to demonstrate that the project does not present a flight hazard. That information is included herewith for your review. ALUC staff does not claim expertise in analysis of this information.~~

~~If the Airport Land Use Commission is satisfied that the information that the applicant has provided is sufficient to determine that the project will not individually constitute or cumulatively contribute to a hazard to flight, the Commission should direct staff to forward a letter to the California Energy Commission advising of such a finding, along with the recommended conditions (that could be incorporated into the project environmental document as mitigation measures). This action would conclude ALUC review and be the equivalent of a finding of conditional consistency (pending completion of FAA Form 7460 reviews).~~

~~If the Airport Land Use Commission (ALUC) is not satisfied that the information that the applicant has provided is sufficient to demonstrate that the project will not individually constitute or cumulatively contribute to a hazard to flight, staff recommends that ALUC, after consideration of any additional testimony at the June 10 hearing, direct staff to forward a letter to the California Energy Commission (CEC) advising CEC of the concerns that are yet to be satisfied. In this situation, ALUC may decide to continue the matter to a forthcoming hearing (either in August or through the establishment of a special hearing in July, which could include other items continued from this agenda).~~

~~If ALUC finds that the project would individually constitute or cumulatively contribute to a hazard to flight, staff recommends that ALUC direct staff to forward a letter to the CEC advising of such a finding and recommending that the portion of the array within the Airport Influence Area be excluded from the project.~~

~~enable a finding of consistency, it would seem logical to open the public hearing and consider testimony, but CONTINUE this matter with discussion to the Commission's June 10 hearing. (It should be noted that there is a possibility that the results of the independent studies will not be available in sufficient time to allow ALUC staff analysis prior to the June meeting.)~~

**PROJECT DESCRIPTION:**

The project proposes to construct a nominal 1,000 megawatt solar thermal electric generating facility on 9,400 acres of BLM managed land, including four units of north-south oriented tracking parabolic trough mirrors, four 120-foot tall air-cooled condensers, a 230 kV transmission line with maximum 145-foot tall monopoles, and a four-inch diameter 9.8-mile long natural gas pipeline.

**PROJECT LOCATION:**

The project site is located northwesterly of the Blythe Airport, with the closest parcel located approximately 4,650 feet northwesterly of the north end of Runway 17-35, in Sections or portions of Sections 1-5, 8-15, 23-24 of Township 6 South, Range 21 East and in Sections or portions of Sections 6, 7, and 18 of Township 6 South, Range 22 East. Blythe Airport is located northerly of Interstate 10 and Hobsonway and easterly of Mesa Drive, in unincorporated Riverside County.

**LAND USE PLAN:** 2004 Blythe Airport Land Use Compatibility Plan

- a. Airport Influence Area: Blythe Airport
- b. Land Use Policy: Airport Compatibility Zones ~~B1~~, C, D, and E
- c. Noise Levels: Outside the 55 CNEL contour

**BACKGROUND:**

California Energy Commission: Due to the project being a thermal solar project exceeding 50 Megawatts, the project's review falls under the jurisdiction of the California Energy Commission (CEC). At this time, the CEC has released a Staff Assessment and Draft Environmental Impact Statement (EIS), which includes analysis of the project's impact on the Blythe Airport. In order for the CEC to better determine the project's consistency with applicable laws, ordinances, regulations and standards (LORS), the EIS recommended that the proposed project file an application with the RCALUC to determine consistency with the Blythe Airport Compatibility Plan. ~~The~~ Any determination of consistency by the ALUC is would be advisory to the CEC.

**The issue of airport land use compatibility was addressed at a public workshop held by California Energy Commission staff in Palm Springs on April 28.**

**THE CALIFORNIA ENERGY COMMISSION CONTRACTED WITH RICONDO & ASSOCIATES FOR AN INDEPENDENT REVIEW OF CONCERNS RELATING TO AIRPORT LAND USE COMPATIBILITY FOR THIS PROJECT. AS OF JUNE 28, 2010, THESE REPORTS HAD NOT BEEN PUBLISHED AND WERE NOT AVAILABLE FOR PUBLIC REVIEW.**

Flight Hazard Issues: Structure height, electrical interference, reflectivity/glare, and thermal plumes are among the issues that renewable energy facilities in the airport influence area must address. The majority of structures proposed by the project are located outside of the Blythe Airport ***Influence*** Area. The southeasterly most portion of the project, Solar Unit #4, is located within Zones D and E. The majority of structures of substantial height are located at the center of the solar unit, known as the power block. Within this power block is located the 120 foot air cooled condenser (ACC). According to the materials provided, the ACC is located just outside of the Airport Influence Area and, therefore, would not be subject to its height restrictions. ~~Staff has requested a more detailed map showing the boundaries of the AIA in relation to the precise location of the ACC.~~ **The applicant team has provided a diagram depicting the location of Power Block 4 in relation to the Airport Influence Area (AIA) boundary. The applicant team estimates that the actual air cooled condenser location is approximately 135 feet outside the boundary of the Airport Influence Area, and is willing to accept a condition that a registered land surveyor confirm that the facility is located outside the AIA boundary.**

### **TRANSMISSION LINES**

The 230 kV transmission line generally crosses southerly from the main project site across Compatibility Zones E, D, ***and C***, ~~and B1~~ perpendicular to runway 8/26 before turning westerly to its connection with the SCE substation. The maximum height of the transmission poles ~~to be 145 feet spaced 1,000 feet apart~~ **would be not exceed 145 feet in height. Poles would not exceed a height of ninety (90) feet in Zone D (EXCEPT FOR THREE POLES AT A HEIGHT OF 120 FEET – SEE BELOW) and seventy (70) feet in Zone C. It should be noted that the transmission line pole locations would likely be the same within Zones C and D whether or not the portion of the array within the Airport Influence Area is developed.**, ~~with a portion of the transmission line's poles being limited to 90 feet in height and spaced 800 feet apart.~~ No map based information was provided with the application showing the height of the transmission poles in relation to the Airport Compatibility Zones. This information has been requested to determine consistency with height restrictions for each applicable Compatibility Zone as well as flight path clearance of the transmission poles. All other structures associated with the project meet the height restrictions of the applicable Compatibility Zones. **The applicant has provided an exhibit and table identifying the height and Compatibility Zone location of each proposed pole.**

At the April 8 public hearing, Commission Chairman Simon Housman advised that the transmission lines passing through Airport Compatibility Zones B1 and C should be sited underground. He expressed concerns that the airport maintain at least one unobstructed approach, noting that there are already obstructions easterly of the runway.

The applicant maintains that undergrounding a 230kV line would be prohibitively expensive and that “dissipation of heat from the power line into the surrounding dry sands would seriously reduce the amount of power able to be transmitted along the

underground segment of the transmission line during the hottest days of the summer, precisely the time of the peak summer load on the California power grid.”

ALUC staff raised the option of re-routing the line westerly of its proposed location to avoid areas within Compatibility Zones B1 and C. The applicant team responded that this would be “potentially counter-productive,” as a more westerly route would place the line at a much higher base elevation closer to the McCoy Mountains located westerly of the airport. These mountains basically delineate the westerly edge of the Palo Verde Valley. The applicant team maintains that poles at such locations would “pose a greater hazard to aviation than that posed by the proposed pole locations in Zones B1 and C” due to the greater elevation above sea level.

However, upon further review, the applicant agreed to amend the location of the line so as to avoid traversing Zone B1. For topographic reasons, avoidance of Zone C is not feasible.

CHAIRMAN HOUSMAN OFFERED A NEW PERSPECTIVE AT THE JUNE HEARING. PLACING THE LINES AT A HIGHER ELEVATION FARTHER AWAY FROM THE AIRPORT RUNWAY TERMINUS MAY MEAN THAT THE TOP OF THE LINES WOULD BE AT A HIGHER ELEVATION, BUT IF THE LINES ARE PLACED CLOSER TO THE MCCOY MOUNTAINS, THEN THE TERRAIN REMAINS THE PRIMARY CONSTRAINT, AND THE POWER LINES WOULD NOT BE AN ADDITIONAL FACTOR OF CONCERN.

AECOM HAS PROVIDED A MEMORANDUM AND GRAPHICS EXPLAINING THAT MOVING THE TRANSMISSION LINE FARTHER TO THE WEST WOULD DECREASE THE VERTICAL DISTANCE BETWEEN THE TOP OF THE POLES/TOWERS AND THE FAA PART 77 SURFACE. SITING THE ROUTE AT A MORE WESTERLY LOCATION WOULD “INCREASE THE SEPARATION FROM THE GLIDE SLOPE BUT... [REDUCE] CLEARANCE UNDERNEATH THE HORIZONTAL SURFACE.”

THE APPLICANT’S AVIATION CONSULTANT, DOUGLAS MOSS OF AEROPACIFIC CONSULTING, WHO TESTIFIED AT THE JUNE 10 HEARING, SUBMITTED A LETTER STATING THAT, BASED ON THE CHART, HE WOULD CONSIDER THE PROPOSED LOCATION TO BE “OPTIMUM.” HE ALSO AGREED WITH THE SUGGESTION FROM COMMISSIONER LYON AT THE MAY HEARING FOR THE INSTALLATION OF “VISIBILITY BALLS ON THE POWER LINES.”

AS A RESULT OF FIELD INVESTIGATION, THE APPLICANT HAS LEARNED THAT THE PROPOSED 230KV GENERATOR INTERCONNECTION TIE LINE WILL NEED TO CROSS TWO EXISTING POWER LINES, INCLUDING A 161KV SOUTHERN CALIFORNIA EDISON TRANSMISSION LINE EXTENDING IN A NORTHWEST-SOUTHEAST DIRECTION FROM EAGLE MOUNTAIN TO BLYTHE. IN ORDER TO MAINTAIN THE MINIMUM VERTICAL WIRE TO



**WIRE SEPARATION BETWEEN THE INTERSECTING LINES (10.67 FEET, PURSUANT TO CALIFORNIA PUBLIC UTILITIES COMMISSION GENERAL ORDER 95), A MINIMUM 120 FOOT POLE HEIGHT WILL BE REQUIRED AT THREE POLE LOCATIONS IN AIRPORT COMPATIBILITY ZONE D. THE INCREASED HEIGHT PROVIDES FOR INCREASED SPAN LENGTH; CONSEQUENTLY, THREE OTHER POLES WOULD BE DELETED.**

**ALUC STAFF WOULD RECOMMEND THE FOLLOWING MITIGATION MEASURE:**

**IN ORDER TO ENHANCE VISIBILITY AND PILOT AWARENESS, "SPHERICAL OBSTRUCTION BALLS" (IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 7-/7460-2 SERIES) SHALL BE PLACED ON THE WIRES OF THE NEW TRANSMISSION LINE(S) LOCATED WITHIN AIRPORT COMPATIBILITY ZONE C, IF FEASIBLE. SUCH BALLS SHALL BE IN ADDITION TO ANY LIGHTING THAT MAY BE REQUIRED BY THE FEDERAL AVIATION ADMINISTRATION PURSUANT TO ITS AERONAUTICAL STUDIES OF THE PROPOSED POLE LOCATIONS.**

#### **ELECTRICAL AND COMMUNICATIONS INTERFERENCE**

The electromagnetic signal/noise emanating from the operation of electrical equipment of the project will be at base frequency 60 hertz with less intense higher frequencies from harmonics. ~~Navigation and communication signals typically utilized are substantially higher in frequency and therefore would not be impacted by electrical equipment proposed by the project. Information has been requested to confirm the signals in use at the Blythe Airport.~~

The applicant team has provided information indicating that gap noise and corona noise associated with the transmission line and the conductors will not result in interference with the use of the Blythe VORTAC signal or with communications. ~~ALUC staff has requested that the applicant team also address potential for interference at frequencies used by pilots to communicate with the airport and with other aircraft in the area.~~

**BASED ON THE INFORMATION PROVIDED, ALUC STAFF IS CONFIDENT THAT THERE WILL NOT BE A HAZARD TO FLIGHT AS A RESULT OF ELECTRICAL OR COMMUNICATIONS INTERFERENCE. ALUC STAFF WOULD RECOMMEND THE FOLLOWING MITIGATION MEASURE:**

**THE PROJECT SHALL NOT INCLUDE ANY USE THAT WOULD GENERATE ELECTRICAL INTERFERENCE THAT MAY BE DETRIMENTAL TO THE OPERATION OF AIRCRAFT AND/OR AIRCRAFT INSTRUMENTATION. IN THE EVENT THAT ANY INCIDENCE OF ELECTRICAL INTERFERENCE AFFECTING THE SAFETY OF AIR NAVIGATION OCCURS AS A RESULT OF**

**PROJECT OPERATION, THE PERMITTEE SHALL BE REQUIRED TO TAKE ALL MEASURES NECESSARY TO ELIMINATE SUCH INTERFERENCE.**

**GLINT AND GLARE/REFLECTIVITY**

The project proposes to collect thermal solar energy via reflective parabolic troughs that redirect the sun's light to a Heat Conduction Element (HCE) that absorbs the heat generated and distributes it for conversion to steam energy for electricity generation by turbine. Although the majority of the reflected light is focused directly onto the HCE, some scattering of light may occur from the HCE, but not directly from the mirrored trough.

The materials submitted with the application include diagrams of how the parabolic trough functions and sample photographs from the solar array at ~~Kramer Junction~~ **Harper Lake** of light reflection and scattering from the HCE. These indicate that at a specific geometry of the HCE and the observer, there is a concentrated scattering of light from the HCE. The proposed project will construct a 25 foot tall windscreen which will block the scattering from observers from ground level.

In addition, the materials submitted include a sample analysis done for the Victorville 2 Hybrid Power Project (VV2), which is proposed to be located adjacent to the Southern California Logistics Airport (SCLA). As part of the review of this **THAT** project, **staff members from the California Energy Commission and CALTRANS Aeronautics Division conducted a test over-flight of utilizing the solar array at Kramer Junction, including simulation of and simulating an approach to land, based on the proposed layout of the VV2 project and its relation to the SCLA.** Comments were also included from staff from the CEC and City of Victorville that participated in the test. Their comments indicated that there was no glare created by the solar array based on the flight simulation conducted. ~~Although this test and the comments received from it indicate there is little concern for substantial glare to occur that would create a significant hazard to flight, there was no information provided to compare the layout of the VV2 project to the proposed Blythe project to determine if its conclusions are applicable.~~

**Reflectivity, glint, or glare has been the central issue of concern for solar arrays such as the Blythe Solar Power Project. At the May 13 hearing, ALUC asked the project representative whether it would be possible – and, if so, at what times of day and seasons of the year – for reflection or glint from any element of the solar array to intersect Runway 26 or its centerline extended easterly at a height of 1,000 feet or less above ground level. (The concern relates to the potential for a flash or beam of light that would affect a pilot on a final approach to a landing on that runway – coming from the east and making a westbound landing.)**

**The project representative has concluded that the “variation in the sun azimuth and elevation angles during the year would be insufficient to produce the required alignment of the pilot on final approach, the normal to an HCE tube, and the sun.” He also examined a scenario whereby the “sun is reflecting at a glancing angle off the**

side of a joint in the HCE tube” and determined that, while “the required solar geometry for the reflected ray to cross the approach to Runway 26 occurs for about ten weeks near sunrise on either side of the summer solstice,” such “reflected ray will strike the ground approximately 350 feet from the reflection point.”

THE APPLICANT TEAM CONTRACTED WITH DOUGLAS MOSS OF AEROPACIFIC CONSULTING TO CONDUCT AN OVERFLIGHT OF THE KRAMER JUNCTION PARABOLIC TROUGH SOLAR FACILITY. MR. HOWARD BALENTINE OF AECOM ACCOMPANIED MR. MOSS ON THE FLIGHT. MR. MOSS TESTIFIED AT THE JUNE HEARING AND INDICATED THAT, WHILE THERE WOULD BE SOME REFLECTION TOWARDS AIRCRAFT FLYING OVERHEAD, IT WOULD NOT BE OF SUCH INTENSITY AS TO INTERFERE WITH AIRCRAFT OPERATIONS OR DISTRACT A PILOT SUCH THAT HE/SHE WOULD BE UNABLE TO PERFORM HIS/HER DUTIES. HE CONCLUDED THAT THE GLINT/GLITTER CHARACTERISTICS OF THE SOLAR ARRAY WOULD NOT PRESENT A SIGNIFICANT HAZARD TO AVIATION.

RICONDO’S REPORT TO THE CALIFORNIA ENERGY COMMISSION IS NOT AVAILABLE AS OF JUNE 28, 2010.

BASED ON THE FINDINGS OF THE REPORTS PROVIDED, IT IS CLEAR THAT THERE WILL BE SOME REFLECTION OF SUNLIGHT THAT WOULD BE VISIBLE FROM AIRCRAFT. THE KEY ISSUE IS WHETHER SUCH REFLECTION WOULD OCCUR IN SUCH A MANNER AS TO PRODUCE A FLASH THAT COULD BE SEEN FROM AN AIRCRAFT, RESULTING IN EITHER INTERFERENCE WITH AIRCRAFT OPERATIONS OR DISTRACTION OF A PILOT FROM THE PERFORMANCE OF HIS OR HER DUTIES.

ALUC STAFF WOULD RECOMMEND THE FOLLOWING MITIGATION MEASURES: (1) ANY OUTDOOR LIGHTING INSTALLED SHALL BE HOODED OR SHIELDED TO PREVENT EITHER THE SPILLAGE OF LUMENS OR REFLECTION INTO THE SKY. (2) THE PROJECT SHALL NOT INCLUDE STEADY OR FLASHING LIGHTS OF RED, WHITE, GREEN, OR AMBER COLORS DIRECTED TOWARD AIRCRAFT, OTHER THAN FAA-APPROVED OBSTRUCTION LIGHTING. (3) IN THE EVENT THAT ANY INCIDENCE OF GLINT, GLARE, OR FLASH AFFECTING THE SAFETY OF AIR NAVIGATION OCCURS AS A RESULT OF PROJECT OPERATION, THE PERMITTEE SHALL BE REQUIRED TO TAKE ALL MEASURES NECESSARY TO ELIMINATE SUCH GLINT, GLARE, OR FLASH.

### THERMAL PLUMES

The project proposes to cool waste heat from the steam cycle in each power block utilizing an air-cooled condenser (ACC). The ACC is basically a large open air radiator

that dissipates heat to the atmosphere through air convection. Due to it being a dry cooling system rather than utilizing water, no visible plumes will be formed. However, the project will still result in the creation of thermal plumes which could result in a hazard to flight. Project materials note that a temperature rise less than 10°C (18°F) is anticipated for the ACCs. Based on the proposed fans utilized for the ACCs and the dimensions of the structure, a vertical velocity of 4.5 meters per second (m/s) is anticipated. The CEC utilizes a threshold of 4.3 m/s as a threshold of significance for the production of turbulence that could interfere with aircraft operation. The velocity of the plume typically decreases as it rises. ~~In addition, as illustrated by project materials, none of the aircraft traffic pattern envelopes for the Blythe Airport take aircraft over the ACCs to be affected by the thermal plumes.~~ **In this regard, the critical question may be at what heights above the top of the stacks does the vertical velocity remain at or above 4.3 meters per second. The plume velocity analysis prepared by William Walters and included in the Draft (CEC) Staff Assessment indicates that, under calm wind conditions, the average velocity would exceed 4.3 meters per second at heights up to 1,670 feet above ground level. Peak velocity could be twice the average velocity.**

*The meaning of this statement is that the velocity would vary within the plume, with the velocities generally highest at the center (presumably directly over the facility) and lower as distance from the center point increases..*

*It is the applicant's contention that the analysis is based on "flawed assumptions and modeling techniques." MR. BALENTINE OF AECOM PRESENTED GRAPHICS AT THE JUNE HEARING PURPORTING TO DEMONSTRATE THAT THE PLUME VELOCITY WOULD NOT REACH 4.3 METERS PER SECOND, AND WOULD BE APPROXIMATELY 3.23 METERS PER SECOND AT AN ELEVATION OF 190 METERS ABOVE GROUND LEVEL. THE FLUID DYNAMICS MODEL PROJECTS A PLUME VELOCITY BELOW 2 METERS PER SECOND AT AN ELEVATION OF 250 METERS (820 FEET) ABOVE THE TOP OF THE ACC UNIT (BASICALLY TRAFFIC PATTERN ALTITUDE). THE 4.3 METERS PER SECOND STANDARD WOULD ONLY BE EXCEEDED "WITHIN A FEW 10'S OF METERS IMMEDIATELY ABOVE THE ACC."*

*The applicant has also commissioned a flyover of an air cooled condenser at a Nevada Power generation facility in Primm, Nevada. The pilot will be present at the June 10 hearing to indicate the results of the flyover. — MR. MOSS OF AEROPACIFIC CONSULTING CONDUCTED THE FLYOVER ON JUNE 2, AND ADVISED AT THE JUNE HEARING THAT A STUDENT PILOT FLYING SOLO WOULD NOT BE DISTRACTED BY THE MINIMAL LEVEL OF TURBULENCE RESULTING FROM FLYING INTO A PLUME FROM AN AIR-COOLED CONDENSER UNIT.*

*COPIES OF THE WRITTEN REPORTS FROM THE APPLICANT TEAM ARE INCLUDED WITH THE JULY STAFF REPORT PACKETS BEING PROVIDED TO THE COMMISSIONERS.*

**RICONDO'S REPORT TO THE CALIFORNIA ENERGY COMMISSION IS NOT AVAILABLE AS OF JUNE 28, 2010.**

At the April 28 workshop, James Adams of CEC staff noted that Runway 17-35, the north-south runway, could experience a greater proportion of operations once Blythe 2 (the second conventional energy facility easterly of east-west Runway 8-26) becomes operational. In order to mitigate impacts of potential turbulence from thermal plumes from the Blythe 2 project, the CEC had required that the following conditions be satisfied prior to construction:

- that a “remark [be] placed on the Airport’s Automated Surface Observation System (ASOS), or equivalent broadcast, advising pilots to avoid low-altitude direct overflight of the power plant”;
- that “the VFR traffic pattern to runway 26 [be] changed from left-hand turns to right-hand turns; and”
- that a “runway, other than runway 26 [be] designated as the primary calm wind runway.”

**CALIFORNIA ENERGY COMMISSION STAFF HAS ASKED RIVERSIDE COUNTY TO TAKE THE NECESSARY STEPS TO REQUEST THAT THE FEDERAL AVIATION ADMINISTRATION AUTHORIZE THE VFR TRAFFIC PATTERN TO BE CHANGED TO A RIGHT-HAND PATTERN.**

Greater use of Runway 17-35 *could* ~~would~~ increase the likelihood of flyover of the Unit #4 power block. However, as depicted on Figure 5 of the applicant’s response dated May 27, 2010, conversion of Runway 26 to a right-hand pattern would not result in flyover of ACC-4 for the majority of aircraft (presuming that the right-hand pattern would be a mirror image of the left-hand pattern), although it would result in flyover of ~~transmission~~ TRANSMISSION lines farther to the south.

The project also proposes to have one auxiliary two-cell wet cooling tower for each of the four power blocks. This cooling tower would be utilized to cool waste heat from the auxiliary boiler during startup and other non-routine startup operations. ~~No information was provided on how often, for how long, and what time of day these are to be used as well as the amount of temperature rise and velocity of the plumes to determine how these would affect aircraft operations.~~ The materials noted that these were not of concern as hazards to flight during the CEC’s analysis. **While the rates of air flow and water circulation would be miniscule in comparison to the steam cycle cooling towers proposed at the Palmdale and Victorville energy plants, the “temperature of the exhaust air from the auxiliary cooling tower would be comparable to that for the steam cycle cooling tower since both plumes would essentially be saturated with water upon release and the temperature would be determined by the ambient temperature and relative humidity,” according to the applicant team’s statement.**

**The project representative has asserted that the potential for a hazard to aviation from the cooling tower is negligible because (1) the facility is much smaller than the cooling tower of the Blythe Energy Project I tower and operates under a much reduced load;**

**(2) the facilities would be located outside the Airport Influence Area (AIA) and any plumes that may form would be “highly unlikely” to reach the AIA boundary; and (3) “under most circumstances, the plume from the auxiliary cooling tower will not extend above the top of the nearby air cooled condensers.”**

Open Area: Countywide land use compatibility criteria require that a minimum of 10% of land area in Airport Compatibility Zone D consist of open land as defined in Policy 4.2.4 of the ALUCP. Based on the materials submitted, it appears that the 10% requirement can be met. However, information has yet to be provided on the project's proposed developed area within Zone D and the area to qualify as open space. **The applicant team was has been asked to submit a diagram demonstrating that at least 10 percent of the area within the proposed Blythe Solar Power Project right-of-way would be maintained as open land, in order to verify compliance with the open area requirements, and responded with a diagram demonstrating that 94.4 percent of the portion of the project within Zone D would remain as open land.**

Part 77: Federal Aviation Administration obstruction evaluation review has commenced on the project. At the time of the submission of the application to ALUC, the FAA **had** has issued Determination of No Hazard to Air Navigation letters for the two easterly ACCs (ACC-1 and ACC-4) and for 39 transmission poles. Additional information was requested by the FAA on 15 transmission poles which are pending FAA's clearance.

**Subsequently, two major changes to the routing of the transmission line have been made, and new Form 7460-1 applications have been made. Due to the large number of poles associated with this project and the size of this staff report packet, FAA's Letters of Determination and Requests for Additional Information are not attached to this staff report. However, staff has included copies of the status summary reports submitted by the applicant team.**

Noise: The site is located outside the area projected to be subject to average noise levels from aircraft operations in excess of 55 CNEL.

**Public Comment: Two letters (in fax form) have been submitted in support of the proposed project. DAVID LANE, BLYTHE CITY MANAGER, TESTIFIED IN SUPPORT OF THE PROJECT APPLICANT AT THE JUNE HEARING.**

### **NEW ISSUES**

**WILDLIFE ATTRACTANTS: ON JUNE 9, ALUC STAFF RECEIVED A FAX FROM ELIZABETH KLEBANER OF ADAMS BROADWELL JOSEPH & CARDOZO ON BEHALF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY ADVISING THAT THE APPLICANT PROPOSES TO UTILIZE EVAPORATIVE BASINS FOR WASTEWATER MANAGEMENT. TWO PONDS, EACH APPROXIMATELY 3.5 ACRES IN AREA, WOULD BE DEVELOPED IN EACH POWER BLOCK, SO UP TO TWO COULD BE LOCATED WITHIN THE AIRPORT INFLUENCE AREA. THE PONDS WOULD CONSTITUTE AREAS OF**

STANDING WATER FOR EXTENDED PERIODS OF TIME – UP TO 24 MONTHS. AN 18-MONTH PERIOD WOULD BE REQUIRED FOR ANY ONE POND TO EVAPORATE AND BE READY FOR USE AGAIN. FEDERAL AVIATION ADMINISTRATION (FAA) ADVISORY CIRCULAR 150-5200 – 33A, HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS, RECOMMENDS A DISTANCE OF FIVE STATUTE MILES BETWEEN THE FARTHEST EDGE OF THE AIRPORT'S OPERATIONS AREA AND A HAZARDOUS WILDLIFE ATTRACTANT, IF THE ATTRACTANT COULD CAUSE HAZARDOUS WILDLIFE MOVEMENT INTO OR ACROSS THE APPROACH OR DEPARTURE AIRSPACE.

IT MAY BE NOTED THAT THE PONDS WILL BE DOUBLE-LINED AND COVERED WITH NARROW-MESH NETTING TO PREVENT BIRDS FROM ACCESSING THE WASTEWATER.

ALUC STAFF WOULD RECOMMEND THE FOLLOWING MITIGATION MEASURES:

(1) THE NETTING (OR OTHER COVER) EXTEND BEYOND THE EDGE OF THE POND; (2) THE SIDES OF THE POND BE STEEPLY GRADED (MINIMUM 5:1 SLOPE) AND LINED WITH EITHER RIPRAP, CONCRETE, OR HIGH DENSITY POLYETHYLENE (HDPE); (3) ANY LANDSCAPING ON THE SITE UTILIZE PLANT SPECIES THAT DO NOT PRODUCE SEEDS, FRUITS, OR BERRIES; AND (4) ANY TREES BE SPACED TO PREVENT LARGE EXPANSES OF CONTIGUOUS CANOPY WHEN MATURE.

FLAMMABLE LIQUID: STAFF HAS RECEIVED INFORMATION THAT THE HEAT TRANSFER FLUID (HTF), THERMINOL, IS A FLAMMABLE SUBSTANCE (A MIXTURE OF 73.5% DIPHENYL ETHER AND 26.5% BIPHENYL), AND THAT THERMAL SOLAR PLANTS HAVE EXPERIENCED FIRES IN THE PAST. AS A FIRE PROTECTION AND WORKER SAFETY MEASURE, ISOLATION VALVES WOULD BE INCORPORATED INTO THE HTF PIPING SYSTEM, AND WOULD AUTOMATICALLY BLOCK OFF SECTIONS OF THE PIPING IN WHICH A LOSS OF PRESSURE IS DETECTED. IT IS OUR UNDERSTANDING THAT CALIFORNIA ENERGY COMMISSION STAFF IS PROPOSING THAT THE APPLICANT INSTALL ISOLATION VALVES THAT CAN BE EITHER MANUALLY OR REMOTELY ACTIVATED, SO THAT, IF A LEAK DEVELOPS IN A BALL JOINT, FLEX-HOSE, OR PIPE, A LOOP COULD BE CLOSED (IN LIEU OF SHUTTING DOWN THE ENTIRE SYSTEM). IN ANY EVENT, IF AN AIRCRAFT WERE TO CRASH INTO THE TROUGHS IN SUCH A MANNER AS TO SEVER THE HTF TUBE, THE RESULTING FIRE WOULD LIKELY BE FATAL TO THE AIRCRAFT'S OCCUPANTS.

PACKET CONTENTS

DUE TO THE VOLUMINOUS QUANTITY OF DOCUMENTS ASSOCIATED WITH THIS PROJECT, STAFF HAS ELECTED TO EXCLUDE SOME OF THE

**DOCUMENTS PROVIDED AS PART OF THE JUNE COMMISSION PACKETS.  
THE FOLLOWING DOCUMENTS HAVE NOT BEEN INCLUDED IN THE JULY  
COMMISSION PACKETS, BUT ARE AVAILABLE UPON REQUEST:**

**CALIFORNIA ENERGY COMMISSION NOTICE OF PREHEARING  
CONFERENCE AND EVIDENTIARY HEARING;**

**APPLICANT'S RESPONSE TO ALUC COMMENTS DATED MAY 27, 2010  
(OTHER THAN FAA STATUS SUMMARY);**

**APPLICANT'S DISCUSSION OF PROJECT ALTERNATIVES DATED AUGUST  
2009;**

**APPLICANT'S RESPONSE TO CEC STAFF DATA REQUESTS DATED JUNE 6,  
2010;**

**ALUC STAFF EXHIBITS: LOCATION OF PARCELS RELATIVE TO AIRPORT;**

**LETTER FROM ELIZABETH KLEBANER DATED MARCH 15, 2010;**

**NOTICE OF HEARING FOR APRIL MEETING AND LIST OF NOTIFIED  
PROPERTY OWNERS SURROUNDING PROJECT;**

**APPLICATION AND SUPPLEMENT TO APPLICATION DATED FEBRUARY 23  
AND 24, 2010;**

**ALUC STAFF LETTERS DATED MARCH 22, 2010, MARCH 1, 2010, AND  
JANUARY 19, 2010;**

**APPLICANT'S RESPONSE TO ALUC COMMENTS DATED MAY 4, 2010;**

**APPLICANT'S RESPONSE TO ALUC COMMENTS DATED APRIL 20, 2010;**

**ATTACHMENTS TO ABOVE DOCUMENT DATED APRIL 15, 2010;**

**SELECTIONS FROM MARCH 2010 CALIFORNIA ENERGY COMMISSION  
STAFF REPORT/DRAFT EIS:**

**SECTION B.1 (PROJECT DESCRIPTION)**

**SECTION C.6 (LAND USE, RECREATION AND WILDERNESS)**

**SECTION C.10 (TRAFFIC AND TRANSPORTATION), INCLUDING APPENDIX  
TT-1 (PLUME VELOCITY ANALYSIS)**

**CONDITIONS:**



**THE PREVIOUS EDITIONS OF THE STAFF REPORT INCLUDED CONDITIONS; HOWEVER, ALUC HAS NO OFFICIAL JURISDICTION OVER THIS PROJECT ON FEDERAL LAND. CONDITIONS WILL BE ESTABLISHED BY THE CALIFORNIA ENERGY COMMISSION.**

1. ~~The following uses shall be prohibited:~~
  - (b) ~~Any use which would direct a steady light or flashing light of red, white, green, or amber colors associated with airport operations toward an aircraft engaged in an initial straight climb following takeoff or toward an aircraft engaged in a straight final approach toward a landing at an airport, other than an FAA approved navigational signal light or visual approach slope indicator.~~
  - (c) ~~Any use which would cause sunlight to be reflected towards an aircraft engaged in an initial straight climb following takeoff or towards an aircraft engaged in a straight final approach towards a landing at an airport.~~
  - (d) ~~Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise affect safe air navigation within the area.~~
  - (e) ~~Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation.~~
2. ~~Any outdoor lighting installed shall be hooded and shielded to prevent either the spillage of lumens or reflection into the sky.~~
3. ~~If the panels are mounted on a framework, said framework shall have a flat or matte finish so as to minimize reflection of sunlight.~~
3. **Prior to construction of Power Block #4, the permittee shall submit a statement from a licensed land surveyor verifying that the air cooled condenser within that Power Block is located outside the boundaries of the Blythe Airport Influence Area, as adopted in 2004.**
4. ~~In the event that any incidence of glare or electrical interference affecting the safety of air navigation occurs as a result of project operation, the permittee shall be required to take all measures necessary to eliminate such glare or interference.~~
5. **The attached notice shall be provided to all potential purchasers, and shall be recorded as a deed notice for those parcels within the project located wholly or partially within an Airport Influence Area.**