

AIR QUALITY

AIR QUALITY
Testimony of Thomas Cameron

I. Name: Thomas Cameron

II. Purpose:

My testimony addresses the Biological Resources issues related to the construction and operation of the Blythe Energy Project, Phase II (BEP II).

III. Qualifications:

I am a Project Manager retained by Caithness Blythe II. I hold a B.S. degree in engineering. I have 25 years experience in the energy field. I am responsible for managing the permitting activities for development of the BEP II. I am a principal and Vice President of Mountain View Power, Inc., LLC, Project Manager of Summit Power NW LLC, and President/Managing Director of Cameron & Associates, a power industry consulting firm. I was Project Director for the Blythe Energy Project and am also currently Project Director for the Summit Westward Project, a 520 MW Combined Cycle facility using the Siemens V84.3a technology; Vice President and Project Manager for the Bennett Mountain Power Plant, a 160 MW Simple Cycle facility using Siemens 501F technology; Vice President and Project Manager for the Lake Side Power Plant, a 535 MW Combined Cycle facility using Siemens 501 F technology. I have held assignments as Project Manager for Siemens Power Corporation in charge of design, procurement, equipment manufacturing, construction, and commissioning of several large gas turbine power projects, including the 520 MW Bridgeport Energy Project, using the Siemens V84.3a technology. This was the first project of its type using the new Siemens technology in the world. During execution of these projects, my responsibilities included project management, cost and schedule control, technical and commercial contract negotiations, selection and coordination of vendors, engineering firms, and erection contractors, supervision of engineering and site staff, preparation of bid specifications, coordination of construction management, startup coordination and customer interfaces

IV. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

V. Summary:

I have reviewed and agree with the Proposed Conditions of Certification contained in the Air Quality Section of the FSA except Conditions of Certification **AQ-SC3, AQ-SC4, and AQ-19**. CBII proposed modifications to these three

conditions in its Prehearing Conference Statement dated June 24, 2005. After the Prehearing Conference Staff agreed to the modifications to **AQ-SC3** and **AQ-19**. Staff proposed additional modifications to **AQ-SC4**. I agree to Staff's latest modifications. All of the modifications are presented below for the Committee's use:

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the Project. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

- a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of **AQ-SC4** (the prevention of fugitive dust plumes). The frequency of watering can be reduced or eliminated during periods of precipitation.
- b) No vehicle shall exceed 10 miles per hour within the construction site.
- c) The construction site entrances shall be posted with visible speed limit signs.
- d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.
- i) All paved roads within the construction site shall be swept **as necessary** at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept **as necessary** at least twice daily (or less during periods of precipitation) on days when construction

activity occurs or on any other day when dirt or runoff from the construction site is visible on the public roadways.

- k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
- l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
- m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of any complaints filed with the air district in relation to project construction, and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall continuously monitor the construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

- Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.
- Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.
- Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to **eliminate visible dust plumes at any location 200 feet or more off the project site** result in effective mitigation within one hour of the original determination. The activity shall not restart until the

AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified.

AQ-19 During an initial commissioning period of no more than ~~120~~**180** days, commencing with the first firing of fuel in this equipment, NO_x, CO, VOC and ammonia concentration limits shall not apply. The project owner shall minimize emission of NO_x, CO, VOC and ammonia to the maximum extent possible during the initial commissioning period.

Verification: During the initial commissioning period, the project owner shall submit a detailed record of all commissioning activities to the CPM in the Monthly Compliance Report.

With the Conditions of Certification as modified above, it is my professional opinion that construction and operation of the BEP II will not result in significant environmental impacts and will comply with all applicable air quality laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

Application for Certification for the
Blythe Energy Project, Phase II

DECLARATION OF THOMAS
CAMERON

I, Thomas Cameron, declare as follows:

1. I am presently retained by Caithness Blythe II as the Project Manager for the Blythe Energy Project, Phase II.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to **Air Quality** for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Las Vegas, NV on July 14, 2005.



Thomas Cameron

TRAFFIC AND TRANSPORTATION

TRAFFIC AND TRANSPORTATION
Testimony of Steven L. Morris

I. Name: Steven L. Morris, Ph.D., P.E.

II. Purpose:

My testimony addresses the Aircraft Safety Issues associated with the operation of the Blythe Energy Project, Phase II.

III. Qualifications:

I am an aeronautical/mechanical engineer and senior staff consultant for Engineering Systems Inc. (ESI). I hold a Ph.D. in Aerospace Engineering from Texas A&M University, an M.S. in Aeronautical Engineering from the AF Institute of Technology and a B.S. in Engineering Sciences from the USA Air Force Academy. I am an Associate Fellow of the American Institute of Aeronautics and Astronautics and am a Licensed Professional Engineer in the State of Texas. I have taught a variety of courses in aeronautics and engineering at the US Air Force Academy. I have over 29 years experience in aeronautical and mechanical engineering. My consulting work has included aircraft accident reconstruction among other aeronautical analyses. I co-authored a report entitled *Analysis of Turbulence Over the FPL Blythe Power Plant*, dated November 19, 2004 in which I investigated the effects of cooling tower updraft on aircraft landing at Runway 26 of the Blythe Airport. My qualifications are detailed in the resume contained in Appendix A of this testimony.

IV. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

V. Summary:

I co-authored a report entitled *Analysis of Turbulence Over the FPL Blythe Power Plant*, dated November 19, 2004, (BEP Turbulence Report) which is hereby attached and incorporated to my testimony. As described in that report it is possible for aircraft landing at Runway 26 of the Blythe Airport to fly over the thermal plumes that are generated by operation of the cooling towers.

The Blythe Energy Project, Phase II (BEP II) cooling towers will be located approximately 5,000 feet east of the end and 800 feet south of the centerline of Runway 26. I have reviewed the Condition 11g of the City of Blythe contained in its Resolution 04-897 that states:

With concurrence from FAA, modify Visual Flight Rules (VFR)
traffic pattern to Runway 26 from left-hand turns to right-hand turns.

This repositions aircraft in the traffic pattern for Runway 26 from flying on the south side of the runway, to flying on the north side of the runway, which avoids overflight of the proposed facility.

The BEP II cooling tower will be located further south of the centerline of Runway 26 than BEP I. Therefore, the modification of the traffic pattern will make it extremely unlikely that aircraft will fly over the BEP II cooling tower.

However, even if an aircraft did fly over BEP II, I believe that the opinions and conclusions identified in the BEP Turbulence Report will be equally applicable to BEP II. My opinions are summarized below.

1. Low altitude flight over the cooling towers in near calm wind conditions will result in a short duration encounter with some turbulence up to a level of moderate.
2. The updraft from the power plant that causes the potential turbulence will increase an airplane's altitude and/or airspeed; it will not cause a dangerous decrease in altitude.
3. An encounter with this turbulence will not result in structural damage to the airplane.
4. An airplane accurately flying a published instrument approach to Blythe Airport should never encounter turbulence from the power plant while in instrument meteorological conditions.
5. The turbulence encountered by an airplane flying over the power plant is similar in magnitude but shorter in duration to that encountered during normal summer flying in the Blythe area.
6. An inexperienced and low skill pilot who is startled by a turbulence encounter could panic, but the natural stability of an airplane will prevent a hazardous condition from occurring. Only inappropriate pilot behavior could make the encounter hazardous.

Analysis of Turbulence Over the FPL Blythe Power Plant

Submitted To:

**Mr. Harris M. Rosen, Esq.
Florida Power & Light Company
Environmental Services Department
700 Universe Blvd.
Juno Beach, Florida 33408**

Submitted by:

Robert C. Winn, Ph.D., P.E.
Principal Engineer
Director of Colorado Operations

PE License Expiration: 12/31/2005

Reviewed by:

Steven L. Morris, Ph.D., P.E. (Texas)
Senior Consultant

**Date of Report: November 19, 2004
ESI File # 17667C**

INTRODUCTION

Engineering Systems Inc. (ESI) was retained to assist in the analysis of turbulence reported over the FPL Blythe Energy Power Plant. Several pilots have reported turbulence when flying an approach to Runway 26 at the Blythe Airport. The turbulence was experienced when the airplanes were flying over the cooling towers at the power plant. ESI was asked to evaluate the turbulence and assess the potential hazard associated with flight over the power plant.

BACKGROUND

There are four runways at the Blythe Airport, Runways 08-26 and 01-19 as shown in Figures 1 and 2. The Blythe Energy Power Plant is located approximately 1 mile east of the approach end of Runway 26. The plant's four cooling towers are oriented east-west and approximately 50 feet north of the centerline of Runway 26 as shown in Figure 3.

There are no published limitations on visual traffic patterns except to avoid overflight of a residential area to the south of the airport. There are three certified instrument approaches to the Blythe Airport; the approach plates of the approaches to Runway 26 are shown in Figures 1 and 2.

Since late 2002, there have been five documented reports of moderate to extreme turbulence over the Blythe Energy Power Plant. All five pilots were flying approaches to Runway 26 at the Blythe Airport and reported turbulence levels that ranged from moderate to extreme. The airplanes being flown in the reports of extreme turbulence were "Cessna/single" engine airplanes. Reports of moderate to severe turbulence were reported by pilots flying a Beechcraft twin and a Lear two engine business jet.

ANALYSIS

A flight test was flown at the Blythe Airport on 3 November 2004. A Piper Aztec, a two engine propeller airplane, was used as the test airplane. The Aztec weighed approximately 4300 pounds at the time of the flight test. Each event, except the approach to final landing, was flown at 120 knots indicated airspeed. Vertical accelerations were measured in G's by two self-contained accelerometers and maximum and minimum accelerations for each event were recorded. The accelerometers were not attached to the airframe; they were held against horizontal surfaces by passengers (myself and a FPL employee). The weather conditions at the time of the flight were cool, calm winds, and only occasional light natural turbulence.

The flight test consisted of flights over the power plant a variety of altitudes. The lowest altitude at which there was any indication of turbulence from the power plant was 1000 feet above the ground (1000 feet AGL). In general, the turbulence as inferred by the measured accelerations, increased as altitude decreased. The maximum positive

acceleration measured was 1.9 G's and the minimum was 0.0 G's. By comparison, accelerations measured while the airplane was maneuvering prior to a pass over the plant were 1.3 and 0.8 G's. Because the accelerometers were not attached to the airframe, the minimum values recorded were most likely influenced by the passengers holding the instruments; therefore, the correct values for the minimum accelerations are most likely higher than what was recorded. A complete summary of the results of the flight test is presented in Figure 4.

The reporting of turbulence by pilots is covered in the Airman's Information Manual. The categories of turbulence intensity according to the FAA are shown in Figure 5. Using these criteria, the maximum turbulence encountered during the flight test was Intermittent Moderate Chop. It should also be noted that the altitude over the cooling towers during the flight test was as low as 150 feet AGL, which is significantly lower than the 300-350 feet one would expect if an airplane was flying a normal approach. The general characteristics of the turbulence encounters was an abrupt increase in vertical acceleration as the plume was initially entered, followed by light chop while in the plume, and finally a reduction vertical acceleration to something less than one as the airplane left the plume.

The duration of each exposure was limited to the time the airplane was directly over the cooling tower or stack. The airplane was flying at 120 knots indicated. This corresponded to a ground speed of approximately 210 feet per second. If an airplane flies the full length of the cooling towers array, the duration of exposure is approximately two seconds. For an airplane with an approach speed of 70 mph, the time of exposure is increased to approximately four seconds.

Aircraft experience turbulence on a daily basis. In the vast majority of cases, that turbulence is a nuisance at worst. Turbulence encounters can become dangerous under a certain set of circumstances. First, if an airplane at high airspeed encounters severe turbulence, structural damage to the airplane can occur. Second, if an airplane is at low airspeed and altitude encounters turbulence that results in a significant loss of airspeed, stall and/or a hazardous sink rate can occur. Finally, if an airplane is flying in the clouds, called instrument meteorological conditions (IMC), and encounters sustained severe turbulence, the pilot is more likely to experience spatial disorientation, which can have catastrophic results with an inexperienced pilot. Fortunately, none of these conditions exist in the present case.

1. When an airplane encounters turbulence, the wing undergoes rapid and sometimes large changes in angle of attack. The lift that a wing produces is directly related to angle of attack. The excursions in load factor (G's), both positive and negative, that are experienced by an airplane in turbulence are a result of these changes in angle of attack. If an airplane is flying below what is referred to as the maneuver speed, it cannot produce enough lift to damage the airplane. At the maneuver speed, the wing will stall before it can produce damaging lift. Any airplane flying on final approach is well below maneuver speed.

2. Significant loss of airspeed when close to the ground can certainly be dangerous, and that can happen in certain types of turbulence, but this is not the situation at Blythe. The loss of airspeed occurs when an airplane flies into a shear that rapidly changes the wind from a headwind to a tail wind. Loss of airspeed does not occur when an airplane encounters an updraft. Any turbulence that might be encountered when flying over the Blythe Energy facility would be related to an updraft, not a horizontal shear. The updraft could increase the angle of attack to beyond the stalling angle of attack, however, that same updraft acts on the tail of the airplane and causes the nose to pitch down which reduces the angle of attack. The natural stability of the airplane immediately starts to return the airplane to an angle of attack to well below stall. Therefore, the result of an encounter with an updraft is an initial increase in lift and a corresponding increase in altitude, followed by an immediate decrease in lift. Then when the airplane leaves the updraft, the angle of attack will rapidly decrease with a corresponding tendency for the airplane to pitch up. There will be a net increase in altitude of the airplane.

3. Flying on instruments in IMC is a greater challenge than flying with full visual reference to the outside. That is why training and pilot rating is required to legally fly in IMC. That training becomes absolutely essential when flying an instrument approach in bad weather. If that approach is flown in turbulence as well, the challenge can be too much for some pilots. There are three instrument approaches to the Blythe Airport, two of which can be flown to Runway 26. The VOR-DME RWY 26 approach has the lowest minimums; the cloud bases have to be at least 400 feet above the ground for a legal approach to be flown to the Blythe Airport. That means that an approach flown in the worst weather will have the airplane break out of the clouds before it gets to the power plant. In addition, all of the approaches to Runway 26 have the airplane coming in to the north of the power plant. No airplane should ever fly over the power plant on an approach while in the clouds. Encountering some turbulence with the airport in sight can be surprising and perhaps annoying, but it is not hazardous.

The Blythe Airport has four runways: 26, 08, 17, and 35. Runways 17-35 are 5820 feet long, and Runways 26-08 are 6562 feet long. All four runways are suitable for almost all private airplanes. If the winds are nearly calm (the conditions that are the most conducive to turbulence over the power plant), any one of the four runways can be used. If the winds are strong out of the west, Runway 26 may be the only reasonable option for a pilot, but the thermal plumes will be blown to the west and rapidly dispersed. The only reports of turbulence on final were on days with very light or no winds.

An airplane flying over the cooling towers at the Blythe Energy Power Plant at low altitude will experience some turbulence; however, this turbulence is short lived and not hazardous. The short duration of the encounter and the airplane's natural stability will dictate that the encounter will not be hazardous in and of itself. An inexperienced and low-skill pilot could be startled by such a turbulence encounter, but as long as this pilot does not panic and freeze on the controls, the airplane will ride through this turbulence safely due to its inertial and inherent stability.

OPINIONS

1. Low altitude flight over the cooling towers in near calm wind conditions will result in a short duration encounter with some turbulence up to a level of moderate.
2. The updraft from the power plant that causes the potential turbulence will increase an airplane's altitude and/or airspeed; it will not cause a dangerous decrease in altitude.
3. An encounter with this turbulence will not result in structural damage to the airplane.
4. An airplane accurately flying a published instrument approach to Blythe Airport should never encounter turbulence from the power plant while in instrument meteorological conditions.
5. The turbulence encountered by an airplane flying over the power plant is similar to that encountered during normal summer flying in the Blythe area.
6. An inexperienced and low skill pilot who is startled by a turbulence encounter could panic, but the natural stability of an airplane will prevent a hazardous condition from occurring. Only inappropriate pilot behavior could make encounter hazardous.

I reserve the right to amend these opinions if additional relevant information becomes available.

RECOMMENDATIONS

1. AirNav.com has the following announcement in the "Additional Remarks" section for the Blythe Airport: "Power plant 1 mile east of arpt producing thermal plumes. Avoid low altitude direct overflight of the power plant." This is an appropriate announcement to pilots flying into Blythe Airport, but should be expanded to suggest that Runway 26 not be used in calm wind conditions. The above statements should be included in a NOTAM, but ultimately incorporated into the appropriate government documents describing the Blythe Airport.
2. The visual traffic patterns to Runway 26 should be restricted to north of the runway only. This will limit the exposure of airplanes to power plant as well as prevent any overflight of the residential area south of the airport.

[End of Report]

BLYTHE, CALIFORNIA

AL-53 (FAA)

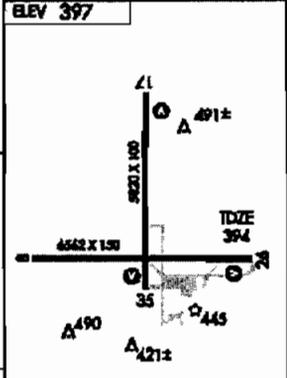
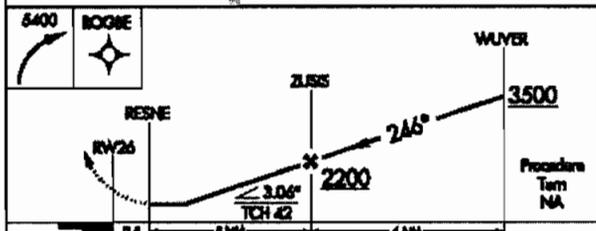
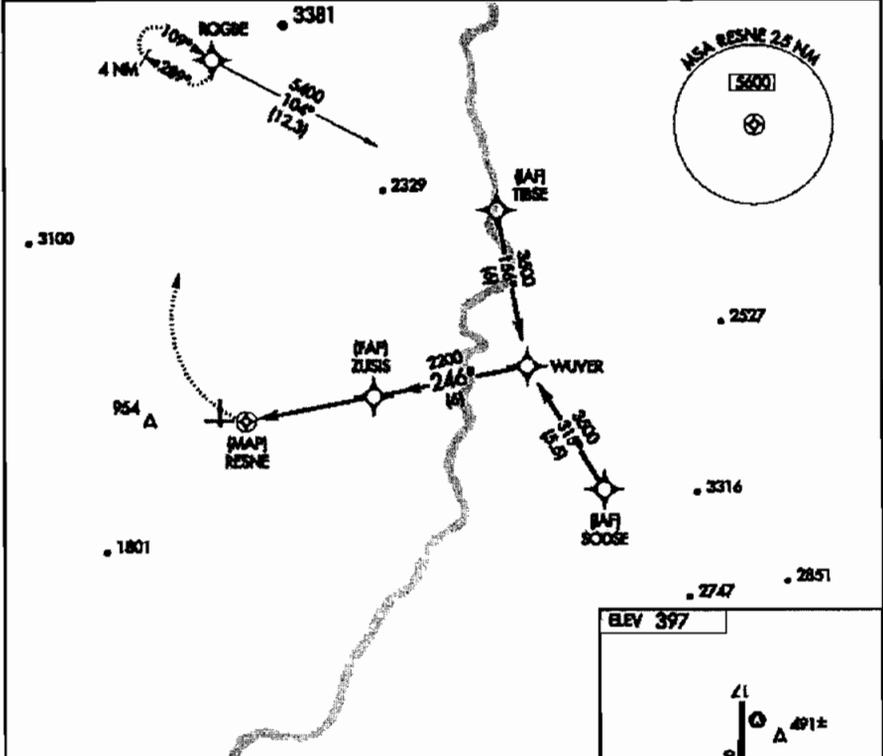
RNAV (GPS) RWY 26
BLYTHE (BLEH)

APP CRS	Way Idg	0582
266°	TDZE	394
	App Elev	397

GPS or RNP-0.3 required. DME/DME RNP-0.3 NA.
 Procedure NA for arrival of SOOGE on V84 eastbound.

MISSED APPROACH: Climbing right turn to 5400 direct
 ROOGE WP and hold.

ASOS	LOS ANGELES CENTER	UNICOM
120.175	120.15 288.8	122.8 (CTAF)



CATEGORY	A	B	C	D
UNAV MDA	760-1 366 (400-1)			760-1½ 366 (400-1½)
CIRCLING	840-1 443 (500-1)	860-1 463 (500-1)	960-1½ 563 (600-1½)	1260-2½ 863 (900-2½)

MRL Rwy 8-26 and 17-35

BLYTHE, CALIFORNIA
 Orig 04/06

33° 37'N - 114° 43'W

RNAV (GPS) RWY 26
BLYTHE (BLEH)

Figure 1. RNAV Approach to Runway 26

BLYTE, CALIFORNIA

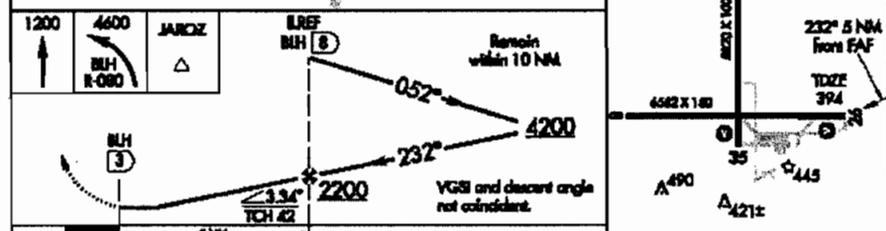
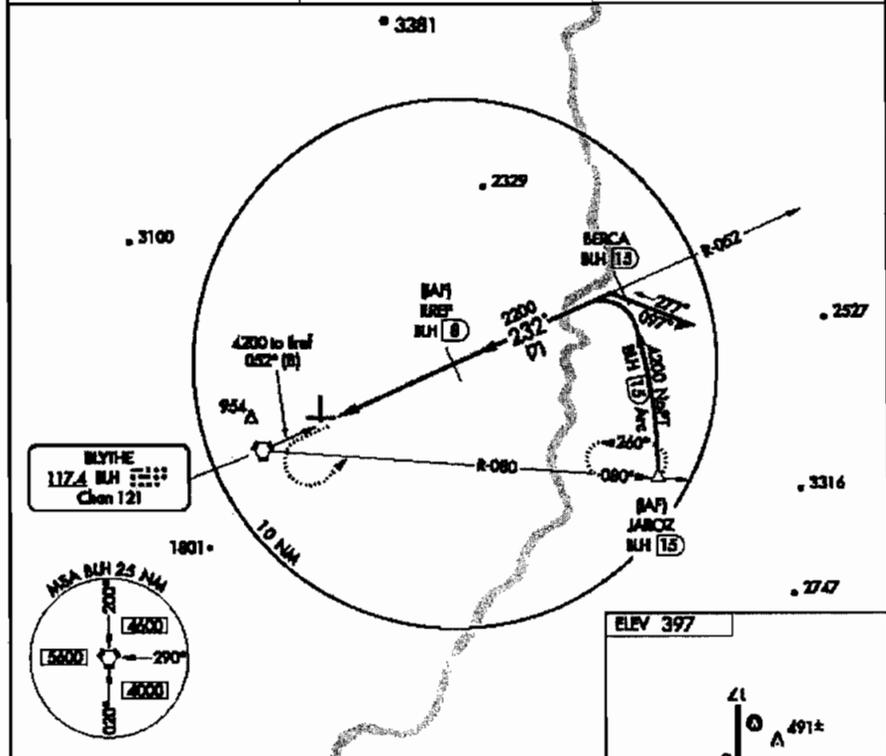
AL-53 (FAA)

VOR/DME RWY 26
BLYTE (BLE)

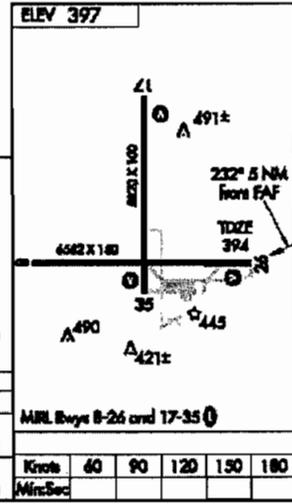
VORTAC BLH 117.4 Chan 121	APP CRS 232°	Rwy Idg 0882	TDZE 394
		Apt Elev 397	

MISSED APPROACH: Climb to 1200 then climbing left turn to 4600 via BLH VORTAC R-080 to JARCOZ/15 DME and hold.

ASOS 120.175	LOS ANGELES CENTER 128.15 285.8	UNICOM 122.8 (CTAF)
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CATEGORY	A	B	C	D
5-26		760-1 364 (400-1)		760-1X 364 (400-1 X)
CIRCLING	840-1 443 (900-1)	860-1 463 (900-1)	960-1½ 563 (600-1½)	1260-2½ 863 (900-2½)



BLYTE, CALIFORNIA
Amdt 4 03247

33° 37'N - 114° 43'W

BLYTE (BLE)
VOR/DME RWY 26

Figure 2. VOR/DME Approach to Runway 26



Figure 3. Orientation of Cooling Towers Relative to Runway

**ESI File # 17667C - Blythe Power Plant - Airport Investigation
Flight Test - 3 Nov 04**

Flown in an Aztec
Weight = 4300 lbs

Time = 620 PST
Temp = 7 C
Alt = 30.15 in Hg
Wind = Calm
Speed = 120 kt

North to South		ESI Max Gs	ESI Min Gs	FPL Max Gs	FPL Min Gs
3000 ft AGL	Smooth				
2000 ft AGL	Smooth				
1000 ft AGL		1.3			
750 ft AGL		1.6	0.6	1.5	0.6
500 ft AGL		1.8	0.2	1.9	0.4
400 ft AGL		1.6	0.5	1.6	0.5
300 ft AGL		1.7	0.5	1.7	0.5

Note: Over Desert Gs ranged from 1.3 to 0.8

East to West		ESI Max Gs	ESI Min Gs	FPL Max Gs	FPL Min Gs	
200 ft AGL		1.3	0.1	1.5	0	Over Cooling Tower
150 ft AGL		1.8	0.3	1.9	0.2	Over Cooling Tower
GS-300 ft AGL		1.5	0.4	1.5	0.4	Over Cooling Tower
GS-300 ft AGL		1.8	0.5	1.8	0.5	Over Stack (Turbulence was very brief, -0.3 sec)

Time = 714 PST
Temp = 9 C
Alt = 30.15 in Hg
Wind = Calm
Speed = 120 kt

East to West		ESI Max Gs	ESI Min Gs	FPL Max Gs	FPL Min Gs	
GS ft AGL		1.3	0.7	1.3	0.7	On Runway Centerline - 140 MW

Note: Over Desert Gs ranged from 1.2 to 0.9

Time = 726 PST
Temp = 9 C
Alt = 30.15 in Hg
Wind = 270/03
Speed = 120 kt

East to West		ESI Max Gs	ESI Min Gs	FPL Max Gs	FPL Min Gs	
200 ft AGL		1.6	0.5	1.7	0.5	Over Cooling Tower - 146 MW
150 ft AGL		1.5	0.7	1.6	0.7	Over Cooling Tower - 146 MW
350 ft AGL		1.4	0.4	1.4	0.4	On Final - 85 kt

Figure 4. Summary of Flight Test Results

Turbulence Reporting Criteria Table

Intensity	Aircraft Reaction	Reaction Inside Aircraft	Reporting Term-Definition
Light	Turbulence that momentarily causes slight, erratic changes in altitude and/or attitude (pitch, roll, yaw). Report as Light Turbulence ; ¹ or Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude. Report as Light Chop .	Occupants may feel a slight strain against seat belts or shoulder straps. Unsecured objects may be displaced slightly. Food service may be conducted and little or no difficulty is encountered in walking.	Occasional-Less than 1/3 of the time. Intermittent-1/3 to 2/3. Continuous-More than 2/3.
Moderate	Turbulence that is similar to Light Turbulence but of greater intensity. Changes in altitude and/or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. Report as Moderate Turbulence ; ¹ or Turbulence that is similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude. Report as Moderate Chop . ¹	Occupants feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.	NOTE 1. Pilots should report location(s), time (UTC), intensity, whether in or near clouds, altitude, type of aircraft and, when applicable, duration of turbulence. 2. Duration may be based on time between two locations or over a single location. All locations should be readily identifiable.
Severe	Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. Report as Severe Turbulence . ¹	Occupants are forced violently against seat belts or shoulder straps. Unsecured objects are tossed about. Food Service and walking are impossible.	EXAMPLES: a. Over Omaha. 1232Z, Moderate Turbulence, in cloud, Flight Level 310, B707.
Extreme	Turbulence in which the aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. Report as Extreme Turbulence . ¹		b. From 50 miles south of Albuquerque to 30 miles north of Phoenix, 1210Z to 1250Z, occasional Moderate Chop, Flight Level 330, DC8.
¹ High level turbulence (normally above 15,000 feet ASL) not associated with cumuliform cloudiness, including thunderstorms, should be reported as CAT (clear air turbulence) preceded by the appropriate intensity, or light or moderate chop.			

Figure 5. FAA Turbulence Reporting Criteria

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

Application for Certification for the
Blythe Energy Project, Phase II

**DECLARATION OF STEVEN L.
MORRIS**

I, **STEVEN L. MORRIS**, declare as follows:

1. I am presently employed by Engineering Systems Inc. as a senior staff consultant.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Colorado Springs, Colorado on July 14, 2005.



STEVEN L. MORRIS

**TRAFFIC AND TRANSPORTATION
Testimony of Kennard F. Kosky**

I. Name: Kennard F. Kosky, P.E.

II. Purpose:

My testimony addresses potential plume interaction with aircraft associated with the operation of the Blythe Energy Project, Phase II (BEP II).

III. Qualifications:

I am Professional Engineer and Principal with Golder Associates. I have over 35 years experience involved with air quality dispersion modeling. I authored a report entitled *Blythe Energy Project, Evaluation of Plume Interaction and Flight Landings*, dated November 2, 2004 (BEP Plume Interaction Report).

III. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Summary:

I authored a report entitled *Blythe Energy Project, Evaluation of Plume Interaction and Flight Landings*, dated November 2, 2004 (BEP Plume Interaction Report), which is hereby attached and incorporated to my testimony. Since the cooling tower and HRSG mechanics of BEP II are identical to that of BEP, I believe that the BEP Plume Interaction Report is applicable and appropriate for evaluation of BEP II's potential thermal updrafts.

I believe that the following opinions and conclusions identified in the BEP Plume Interaction Report will be equally applicable to BEP II. My opinions are summarized below.

1. The plume rise from the HRSG stacks and cooling tower are similar.
2. If a plume were to intersect the path of an airplane, the plume temperature would be similar to the ambient conditions and upward velocity of the plume is low.
3. Based on the diameters of the HRSG and cooling tower plumes, the travel time for an aircraft intersecting a plume would range for 1 to a maximum of 5 seconds.
4. The probability of occurrence of meteorological conditions that would potentially result in the intersection of plumes from the Blythe Energy Project and landing aircraft is very low.
5. The vertical velocity of the HRSG and cooling plumes was determined to be similar to normally occurring atmospheric conditions. Such conditions

are frequent during surface heating that occurs during the mid-morning hours when low winds speeds are present.

6. Reducing the velocity of the plumes would reduce the plume rise and potential forces exerted on low flying aircraft. However, such reductions would result in unwanted environmental impacts (i.e., increase in air impacts) due to a reduction in plume dispersion.

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603



November 2, 2004

043-7639

Florida Power & Light Company
Environmental Services Department
700 Universe Blvd.
Juno Beach, Florida 33408

Attention: Mr. Harris M. Rosen, Esq., Senior Attorney

RE: Blythe Energy Project
Evaluation of Plume Interaction and Flight landings

Dear Harris:

At your request, Golder Associates performed an evaluation to determine the potential interaction of the plume from the Blythe Energy Project with aircraft landings at the Blythe Airport. The Blythe plant consists of a 2-on-1 combined cycle facility using Siemens-Westinghouse "F" Class combustion turbines with associated heat recovery steam generators (HRSGs). The facility is located about 1 mile west of the Blythe Airport. During the operation of the facility, aircraft pilots operating out of the Blythe Airport have commented on turbulence allegedly created by the mechanical draft cooling tower. The evaluation of plume interaction and aircraft landings will focus on four aspects of potential plume interactions. First, an evaluation was conducted to determine the potential for the cooling tower and HRSG plumes to intersect aircraft making an approach to the Blythe Airport. Second, the frequency for potential plume intersection with aircraft approaches was determined. Third, an evaluation of the forces on small aircraft was made for both a plume intersecting a landing aircraft and under normal atmospheric conditions. Finally, an evaluation was conducted of potential mitigation measures.

PLUME INTERACTION

Introduction--Aircraft approaching Blythe airport runway 26 have the potential of crossing the plumes of either the HRSG or cooling tower stacks during a standard 3 degree glide path approach. At the standard glide approach, aircraft would be from about 300 to 500 feet above the ground surface near the Blythe Energy Project. The relative locations of the HRSG and cooling tower stacks with respect to the east end of runway 26 are shown in Table 1. The closest HRSG and cooling tower stack are located approximately 5,937, and 5,663 feet from the end of runway 26, respectively.

The terrain in the area surrounding the Blythe Airport consists of mountains to the west and northwest with flat to rolling terrain to the east. The elevation of Runway 26 is 393.5 feet. The elevation of the Blythe Energy Project is 328 feet. The change in elevation from the Blythe Energy Project to the airport is 65 feet. The city of Blythe is located approximately 5.5 miles east of the airport.

Plume Analysis Methodology--A plume analysis was performed to investigate the potential for the plume to intersect aircraft approaches generated from rising plumes from the Blythe Energy Project's HRSG and cooling tower stacks. Characteristics of each plume were calculated under varying weather conditions and compared to a standard 3 degree approach to Runway 26. Aircraft would generally land on Runway 26 when the wind direction is from the west. The plume path for both the HRSG and cooling tower was determined for three wind speeds and three atmospheric stabilities. The four wind speeds evaluated were 1-, 2-, 4-, and 8- meters/second (m/s) and the three atmospheric stabilities were unstable (A/B), slightly unstable (C) and neutral (D). The runway and Blythe Energy Project elevation difference were taken into account in these analyses. The plume calculations were conducted using the plume rise and stability algorithms incorporated into the EPA approved Industrial Source Complex Short-Term, Version 3 (ISCST3)

dispersion model. This is the same dispersion model used to determine the air quality impacts of the facility as approved by the State of California. The HRSG and cooling tower stack parameters used in these analyses are listed in Table 2. The information on Table 2 indicates that the flow rate of the HRSG stacks are about 650,000 cubic feet per minute (cfm) while the flow rate of each cooling tower cell is 1.3 million cfm. It should be noted that other features or equipment located at the Blythe Energy Project site (e.g., other mechanical equipment and ponds) would have an insignificant influence compared to the HRSG exhausts and cooling tower cells.

The building structures that have the potential to create downwash of the stack plumes are the HRSG and the cooling tower structures. The dimensions of these structures are 52 x 137 feet and 46 x 521 feet, for the HRSG and cooling tower, respectively. Downwash occurs as a result from wind moving over buildings and structures causing wake vortices. When a stack is in the influence zone of a buildings downwash, the result is lower plume rise. Because the intersection of the plume path with either the HRSG or the cooling tower stack plumes is estimated to only occur at low wind speeds, downwash effects are considered insignificant and not included in the analysis. Regardless of the wind speed, analyses without downwash will produce a higher plume height and a lower intersection altitude and would therefore be considered a conservative estimate.

Plume Analysis Results--Figures 1 through 12 present the plume height, potential airplane height, ambient temperature and plume temperature, as a function of downwind distance for the various meteorological conditions evaluated. Figures 1 through 6 present the results of the HRSG plume and Figures 7 through 12 present the results for the cooling tower plume. The results indicate that intersection of the plume with either of the HRSG or cooling tower plumes would primarily occur at low wind speeds, 1 and 2 m/s and unstable atmospheric conditions. At the point of intersection the plume temperature is nearly equivalent to ambient conditions, thus the upward velocities are result of the momentum of the plume rather than thermal buoyancy. At low wind speeds, the analysis indicates that a plane has the potential to intersect the HRSG or cooling tower plumes at an altitude of approximately 400 feet. Interaction of the plume and a landing airplane at higher altitudes is possible under lower wind speed conditions. At the point of potential intersection of a plume and landing aircraft, the plume's temperature is almost ambient and upward velocity is estimated to be 5 and 7 feet per second for the cooling tower and HRSG plumes, respectively.

The dimensions of the HRSG and cooling tower cell plumes at an altitude that would potentially intersect an aircraft landing at the Blythe Airport would range from 28 to 72 meters in diameter. At these dimensions, the travel time through a plume by an intersecting aircraft would range from 1 to 2 seconds based on an air speed of 70 miles/hour. The cooling tower has eight cells that could combine in an elongated plume that would be about 130 meters in length. The travel time for an aircraft traveling through the full length of all the cooling tower cells would be about 5 seconds. However, this would require a perfect alignment of the plane's approach and the elongated portion of the cooling tower plume. The HRSG and cooling tower plumes would also not be combined at the heights of potential intersection with aircraft landings. The HRSG and cooling tower are located perpendicular to Runway 26 at the Blythe Airport and the lateral widths of the plumes in this direction are small relative to their relative locations. For example, plume diameters are in the range of 28 to 72 meters while the distances between the HRSG exhaust and cooling tower cell locations are about 140 meters.

FREQUENCY OF METEOROLOGICAL CONDITIONS

Five years of meteorological data from the Blythe Airport were evaluated to determine the frequency of meteorological conditions that occur during which potential plume interaction could occur. These data were evaluated for both wind speed and direction. As noted in the plume analysis, the potential interaction between the Blythe Energy Project plumes and a landing aircraft would occur during lower wind speeds, 2 m/s or less. These winds speeds are consistent with the conditions under which pilots have noted turbulence. Based on the available data, wind speeds of 2 m/s and less occur about 17.2 percent of the time with 7.7 percent reported as calms and 9.5 percent reported as winds from 0.5 to 2.1 m/s.

An approaching aircraft to the Blythe Airport would generally fly over the Blythe Energy Project when the winds are from the west. Winds from a westerly direction are less frequent than winds from either the southerly or northerly directions as shown on Figure 13. West winds, or wind from a direction of 270 degrees, over a 22.5 degree sector and 0.5 to 2 m/s range occur about 0.44 percent of the time. This is about 39 hours per year. West winds covering a 67.5 degree sector and centered on 270 degrees occur about 1.5 percent of the time or about 127.9 hours per year. During other times, the reported wind directions at the Blythe Airport would suggest that other runways other than runway 26 would be used. In these cases, while aircraft could fly over the Blythe Energy Project, they would be at much higher altitudes where interaction with the plumes is less likely due to the lower plume rise.

Aircraft operations are reported to be about 34 operations per day (www.FltPlan.com). The limited number of flights along with the low frequency of winds from a westerly direction and pilot selection of final approach suggest a low frequency of occurrence for plumes from the Blythe Energy Project impacting landing aircraft.

ATMOSPHERIC AND PLUME TURBULENCE

Turbulence is an irregular movement of air resulting from eddies and vertical currents. It is naturally occurring weather phenomena and can be highly variable. Turbulence can be categorized as four types depending on how they are created as described below:

- Mechanical turbulence – Mechanical turbulence is produced when air passes over the ground, particularly irregular ground, and man made objects.
- Thermal turbulence – Thermal turbulence is a result of ground heating. Radiant energy from the sun heats the ground and the heating causes convective currents of different magnitudes.
- Frontal turbulence – Produced along the interface of moving air masses. As warmer air is forced up and over cooler air, friction between the two air masses creates a zone of turbulence.
- Wind shear – Caused by changing weather systems. A shift in wind direction or velocity at altitude can produce significant turbulence.

Frontal turbulence and wind shear are primarily a result of large scale weather systems. As mentioned previously, pilots landing at the Blythe Airport have report turbulence while flying near the Blythe Energy Project during clear and calm conditions. However, an aircraft approaching to land is at a close proximity to the ground and may therefore, experience mechanical or thermal turbulence. For the Blythe Airport, the possibility of mechanical turbulence can be ruled out as a runway is situated without any nearby large structures. Also, an aircraft in its approach path is usually at an altitude beyond the mechanical turbulence zones for any buildings that are close to the airport. The thermal turbulence however, is a very common phenomenon that occurs during the daytime in the warmer months of late spring, summer and early fall, when ground heating creates unstable convective conditions of atmosphere. Unstable atmosphere occurs when the sensible heat flux is positive due to surface temperature being greater than air temperature. Because of higher temperature air near the surface heats up and starts to rise because of lower density, as a result creates thermal turbulence.

Thermal turbulence can be quite common and severe in a desert environment where surface rapidly heats up the surrounding air. Small aircraft operating close to the ground and at low airspeeds would be more influenced by this effect. To contrast the velocities calculated from the plumes, the velocity of upward moving air was determined based on the heat flux of an unstable atmosphere. An unstable atmospheric occurs during the daytime when the ground is heated by the sun causing a temperature gradient at the surface and aloft. This gradient causes air to rise, causing turbulence. Two pilots reported turbulence on May 4, 2004. Unstable meteorological conditions occurred during May 4, 2004 during the mid-morning to afternoon.

The calculated upward velocity of an unstable atmosphere was calculated to be 2.3 meters/second or 7.5 feet per second. This is within the range of the upward velocities determined for the plumes.

In reality a complex array of things are possible such as wind gusts which will significantly increase the load factor. An upward force on the wing can change the angle of attack of the wing, which may have an effect on airplane handling. If the airplane travels from one convective flow to another such as a plume of hot gases from a stack with lower density and higher velocity, it may also experience different forces. None the less, the potential forces exerted by plumes from the Blythe Energy Project are of the same magnitude that occurs naturally in the atmosphere during unstable conditions.

MITIGATION

The potential for mitigating the potential effects of the HRSG and cooling tower plumes were evaluated in light of their location and physical properties. Based on the location of the Blythe Energy Project and the Blythe Airport, not with standing economic issues, the relocation of any facilities would not result in any benefit. The approach to runway 26 would cover a wind range of potential wind directions from the west that could ultimately bring an aircraft over any location on the Blythe Energy Project's site. Moving the cooling tower to another location on the Blythe Energy Project site would not result in any benefit since aircraft landing on runway 26 could travel any portion of the site as evidenced from the meteorological data. The frequencies of wind directions centered on 247, 270, 292.5 degrees and over 22.5 degree sectors are 0.63 percent, 0.44 percent and 0.39 percent, respectively. These frequencies, albeit very low, are similar and would not result in aircraft going over one portion of the site substantially more frequently than another. Moreover, the HRSG and cooling tower plumes have similar effects in plume height, dimensions and temperature and are located in different areas of the plant site.

Reducing the velocity of either the cooling tower or HRSG exhaust would reduce the momentum of the plumes. This would affect plume rise as well as the velocity of the plume at the heights where potential plume interaction with aircraft could occur. Lowering the velocity of the plume would reduce its potential force. However, at elevations where plume interaction with aircraft could occur, the velocities are low and the calculated forces small. In addition, reducing velocity would reduce atmospheric dispersion and have unwanted effects on the air quality impacts of the facility.

CONCLUSIONS

The results of our analysis suggest the following:

- Intersection of the HRSG or cooling towers with aircraft approaching the Blythe Airport is possible under light wind speeds and unstable conditions.
- The plume rise from the HRSG stacks and cooling tower are similar.
- If a plume were to intersect the path of an airplane, the plume temperature would be similar to the ambient conditions and upward velocity of the plume is low.
- Based on the diameters of the HRSG and cooling tower plumes, the travel time for an aircraft intersecting a plume would range for 1 to a maximum of 5 seconds.
- The probability of occurrence of meteorological conditions that would potentially result in the intersection of plumes from the Blythe Energy Project and landing aircraft is very low.
- The vertical velocity of the HRSG and cooling plumes was determined to be similar to normally occurring atmospheric conditions. Such conditions are frequent during surface heating that occurs during the mid-morning hours when low wind speeds are present.
- Based on the location and orientation Blythe Airport relative to the Blythe Energy Project, moving the cooling tower to another location on the site would not result in any mitigation of potential plume interaction.
- Reducing the velocity of the plumes would reduce the plume rise and potential forces exerted on low flying aircraft. However, such reductions would result in unwanted environmental impacts (i.e., increase in air impacts) due to a reduction in plume dispersion.

Please call if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.

A handwritten signature in black ink, appearing to read "Kennard F. Kosky". The signature is fluid and cursive, with the first name being the most prominent.

Kennard F. Kosky, P.E.
Principal

KFK

cc: Mr. Rich Piper

Blythe Plume Interaction Report.doc

Table 1. Blythe Runway 26 Relative Distance from FPLE Blythe Energy Project HRSG and Cooling Tower Stack Locations

		UTM Coordinates		Distance from Runway 26		
		Zone	Easting	Northing	(m)	(ft)
Blythe Airport Runway 26		11	712,865	3,722,051	0	0
South HRSG Stack		11	714,651	3,721,726	1,815	5,954
North HRSG Stack		11	714,651	3,721,756	1,810	5,937
Cooling Tower						
Cell	1	11	714,579	3,721,844	1,726	5,663
Cell	2	11	714,597	3,721,844	1,744	5,721
Cell	3	11	714,615	3,721,844	1,762	5,780
Cell	4	11	714,633	3,721,844	1,780	5,839
Cell	5	11	714,651	3,721,844	1,798	5,897
Cell	6	11	714,669	3,721,844	1,816	5,956
Cell	7	11	714,687	3,721,844	1,834	6,014
Cell	8	11	714,705	3,721,844	1,852	6,073

Source: Golder, 2004

Table 2. Stack Parameters of the FPLE Blythe Energy Project HRSG and Cooling Tower Stacks

Stack Identification	Stack			
	Height (ft)	Diameter (ft)	Velocity (ft/sec)	Temperature (F)
South HRSG	130	18.5	40.2	170
North HRSG	130	18.5	40.2	170
Cooling Tower				
Cell 1	41.7	32	27	91
Cell 2	41.7	32	27	91
Cell 3	41.7	32	27	91
Cell 4	41.7	32	27	91
Cell 5	41.7	32	27	91
Cell 6	41.7	32	27	91
Cell 7	41.7	32	27	91
Cell 8	41.7	32	27	91

Source: Blythe Energy Project PSD Application

Figure 1. HRSG- Plume Temperature and Height (Detail)
 Stability - A & B, 1m/s Wind Speed

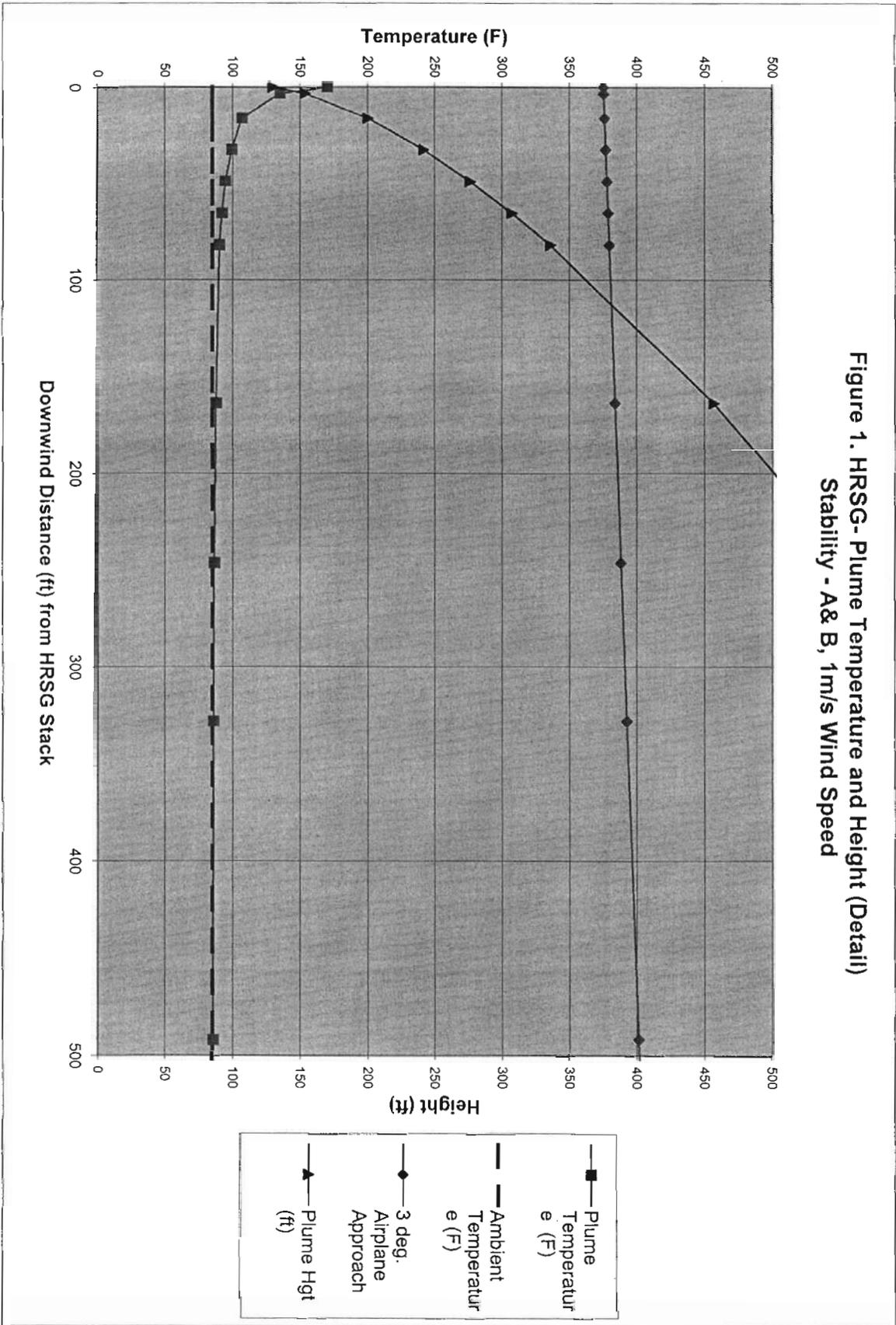


Figure 2. HRSG- Plume Temperature and Height (Detail)
 Stability - A&B, 2 m/s Wind Speed

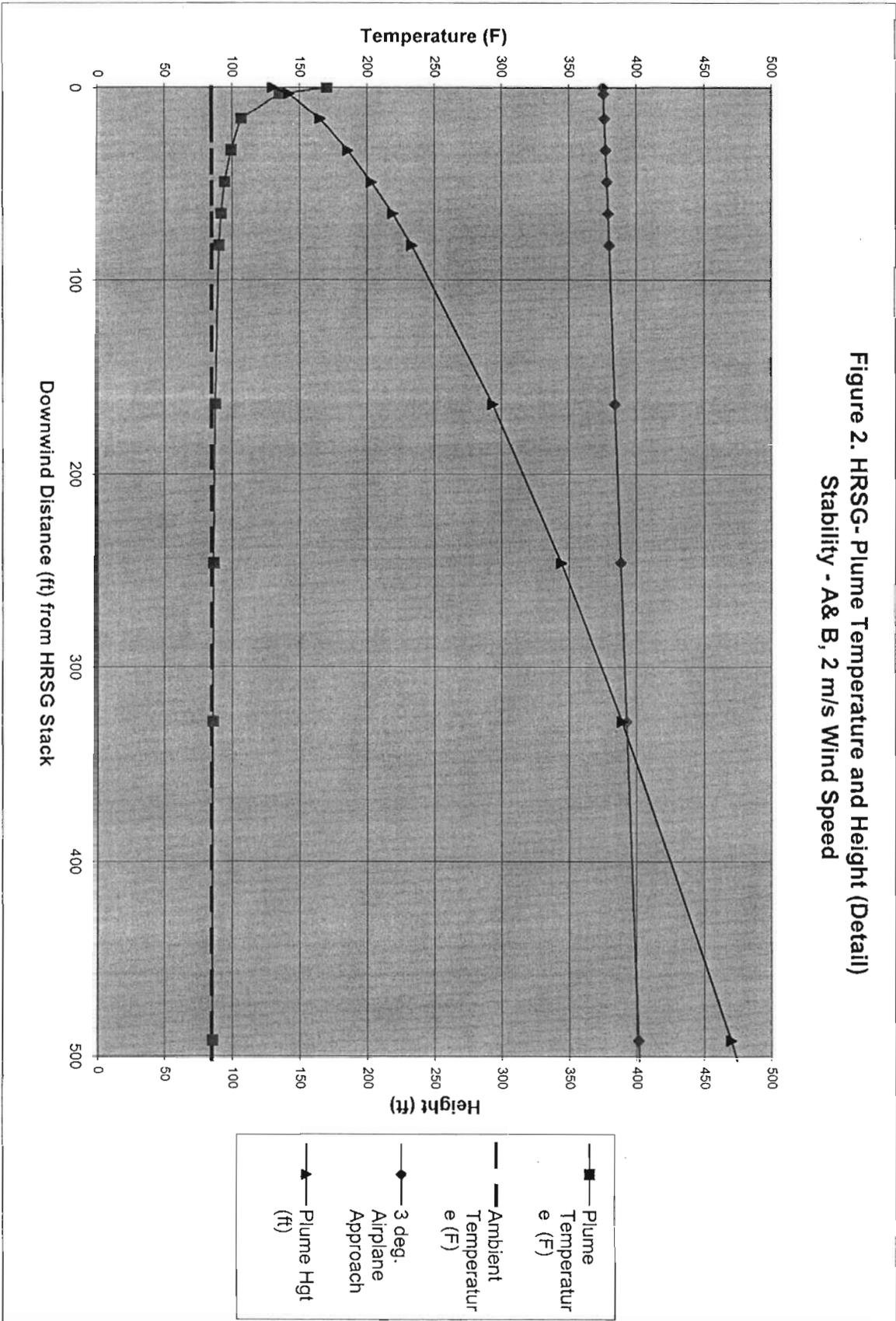


Figure 3. HRSG- Plume Temperature and Height (Detail)
 Stability - A & B, 4m/s Wind Speed

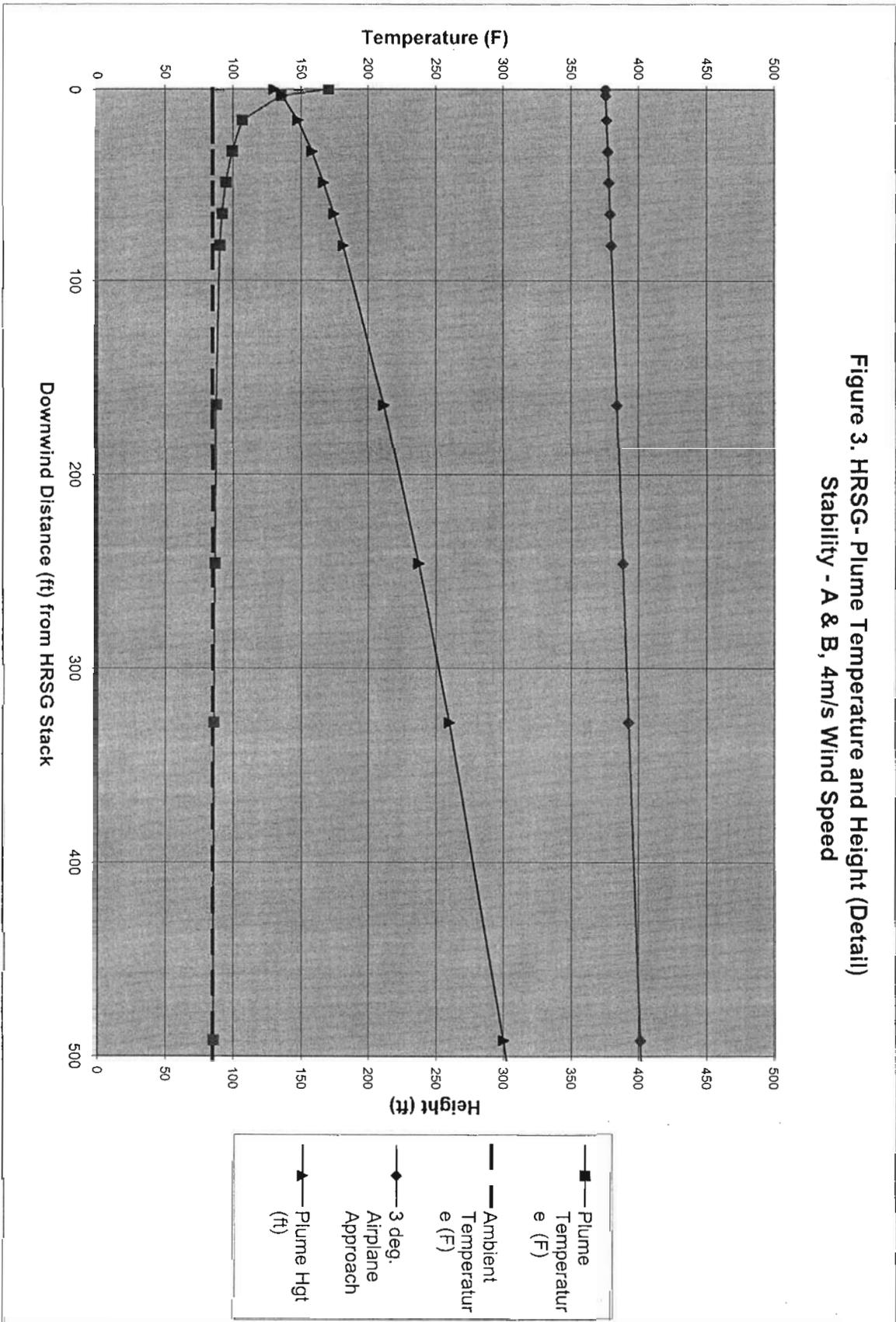


Figure 4. HRSG - Plume Temperature and Height (Detail)
 Stability - C, 4m/s Wind Speed

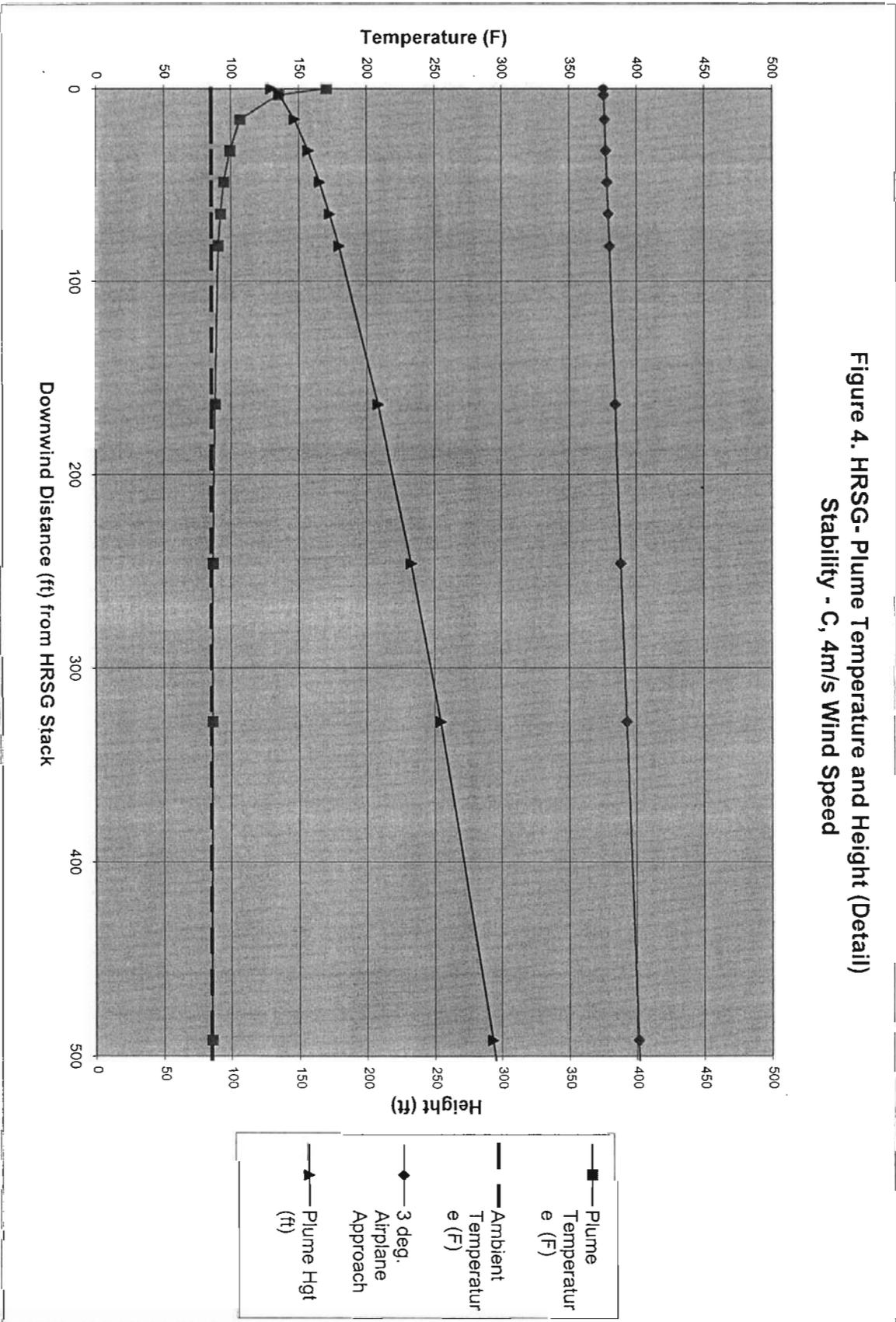


Figure 5. HRSG- Plume Temperature and Height (Detail)
 Stability - C, 8 m/s Wind Speed

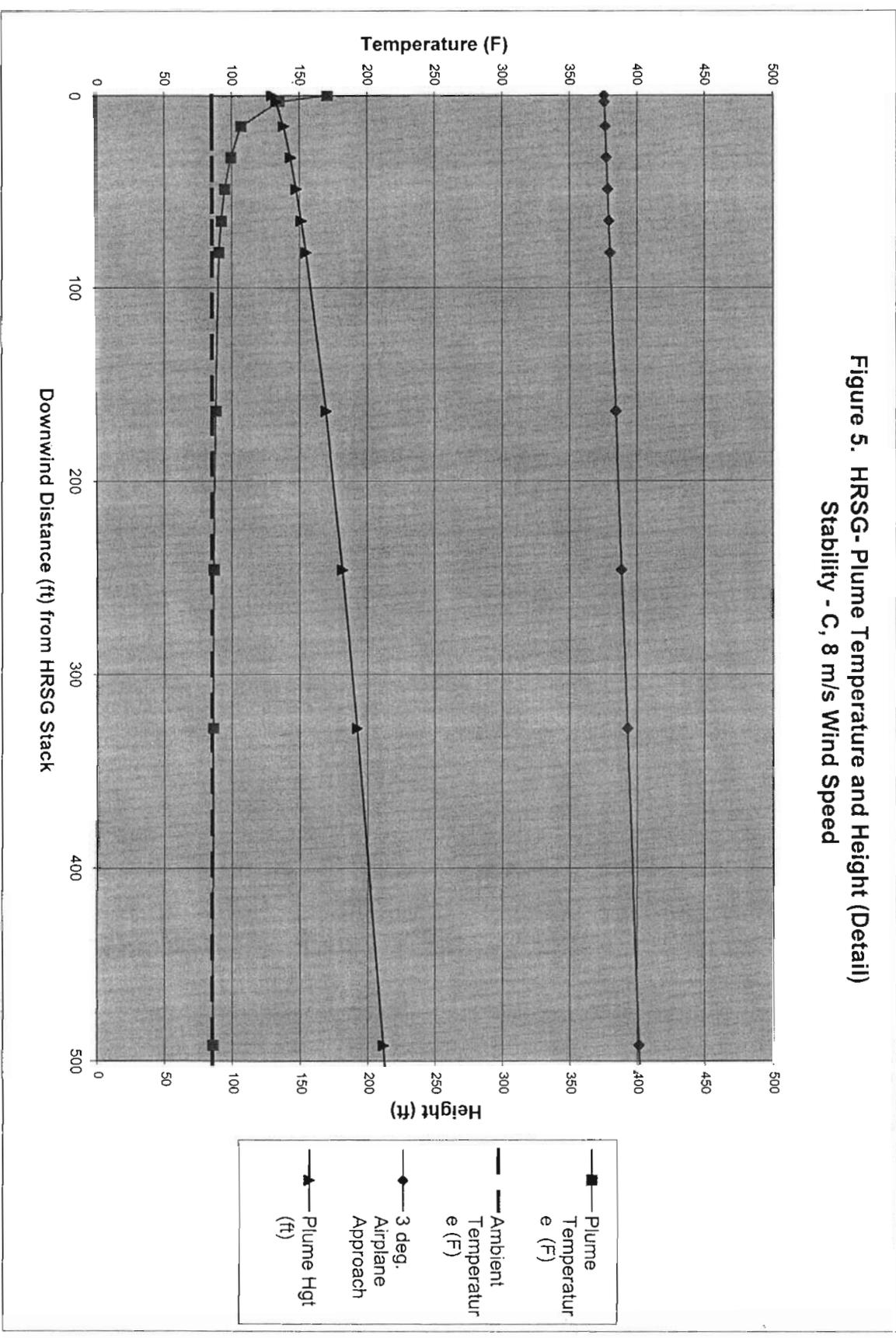


Figure 6. HRSG - Plume Temperature and Height (Detail)
 Stability - D, 4 m/s Wind Speed

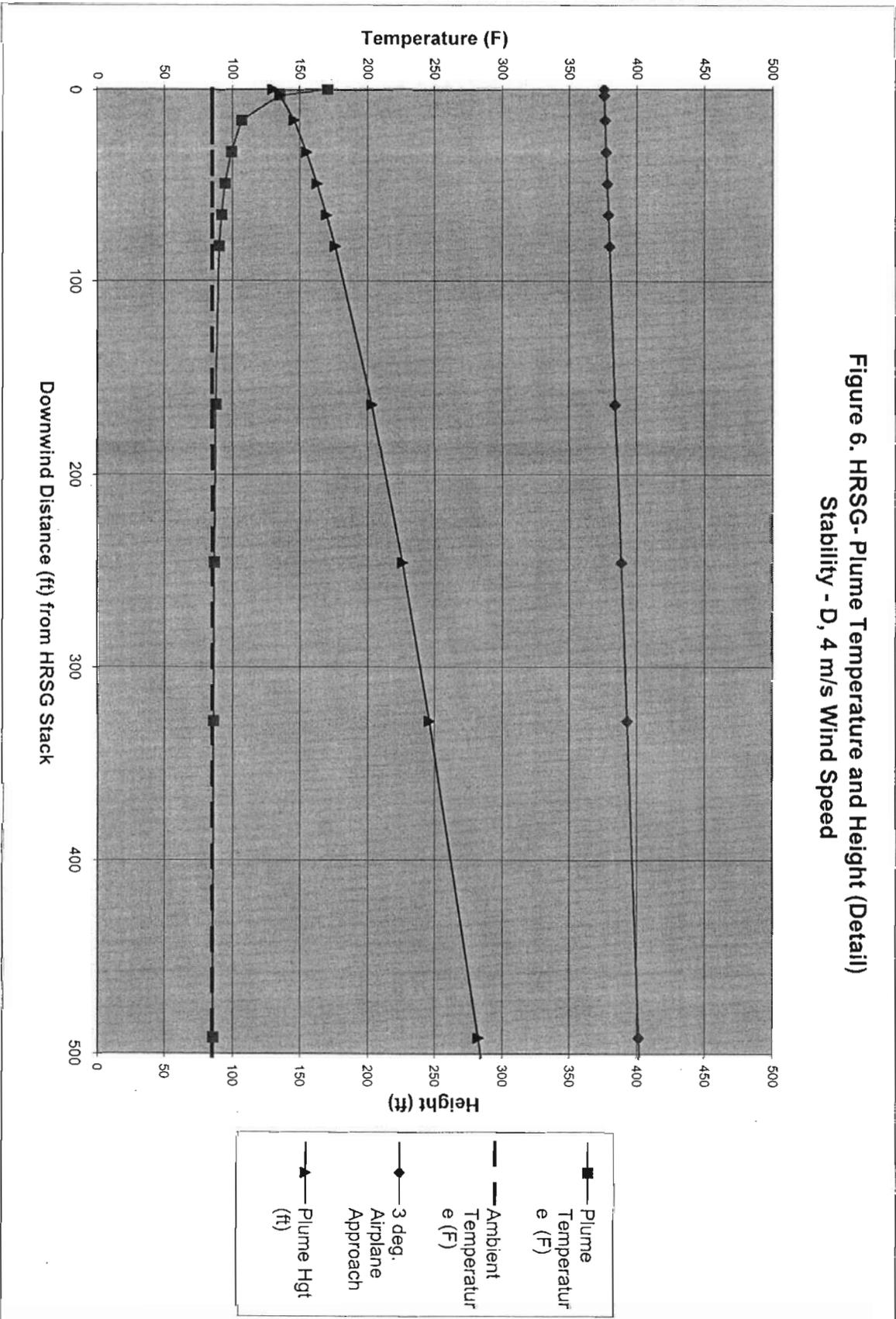


Figure 7. Cooling Tower- Plume Temperature and Height (Detail)
 Stability - A & B, 1m/s Wind Speed

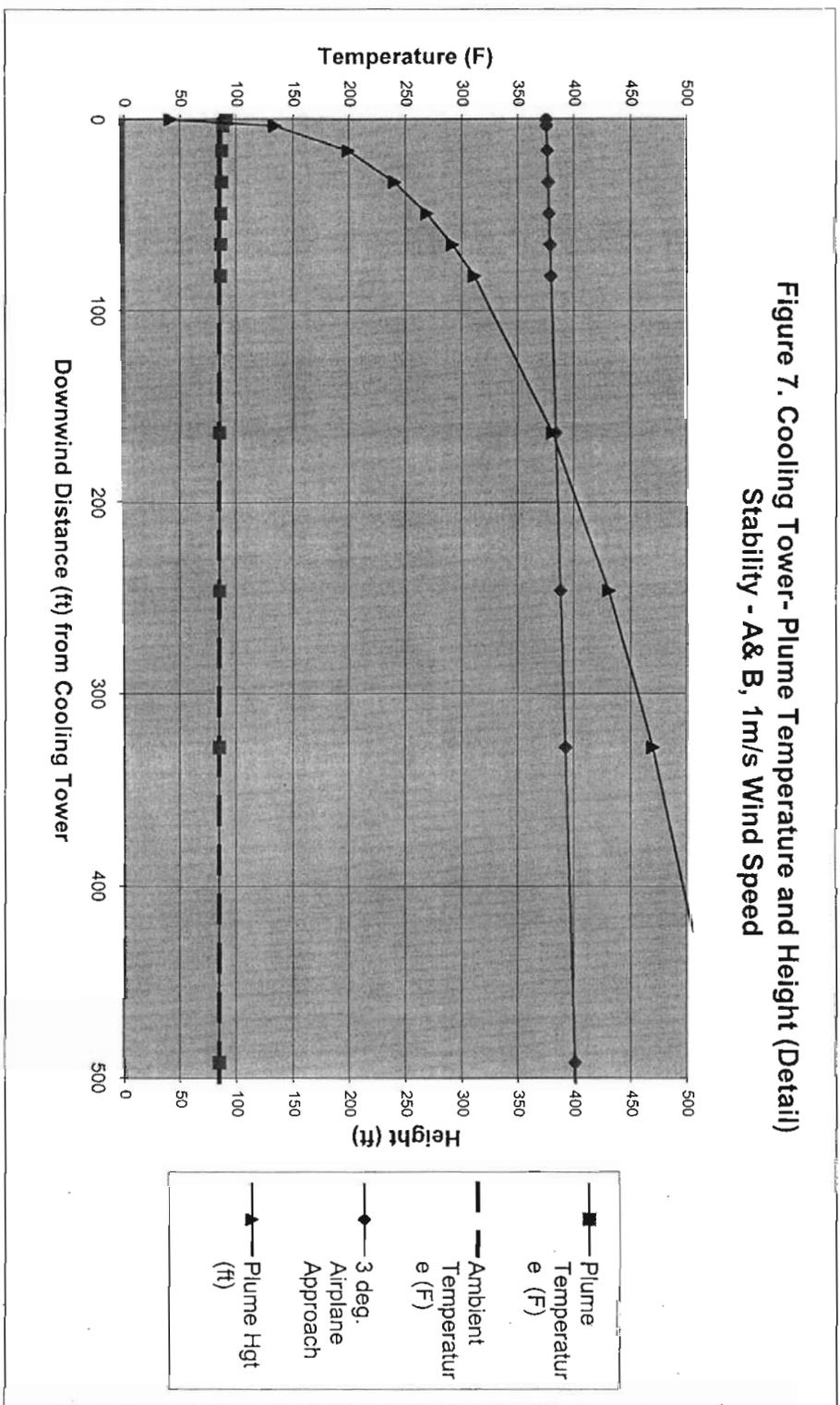


Figure 8. Cooling Tower - Plume Temperature and Height (Detail)
 Stability - A & B, 2 m/s Wind Speed

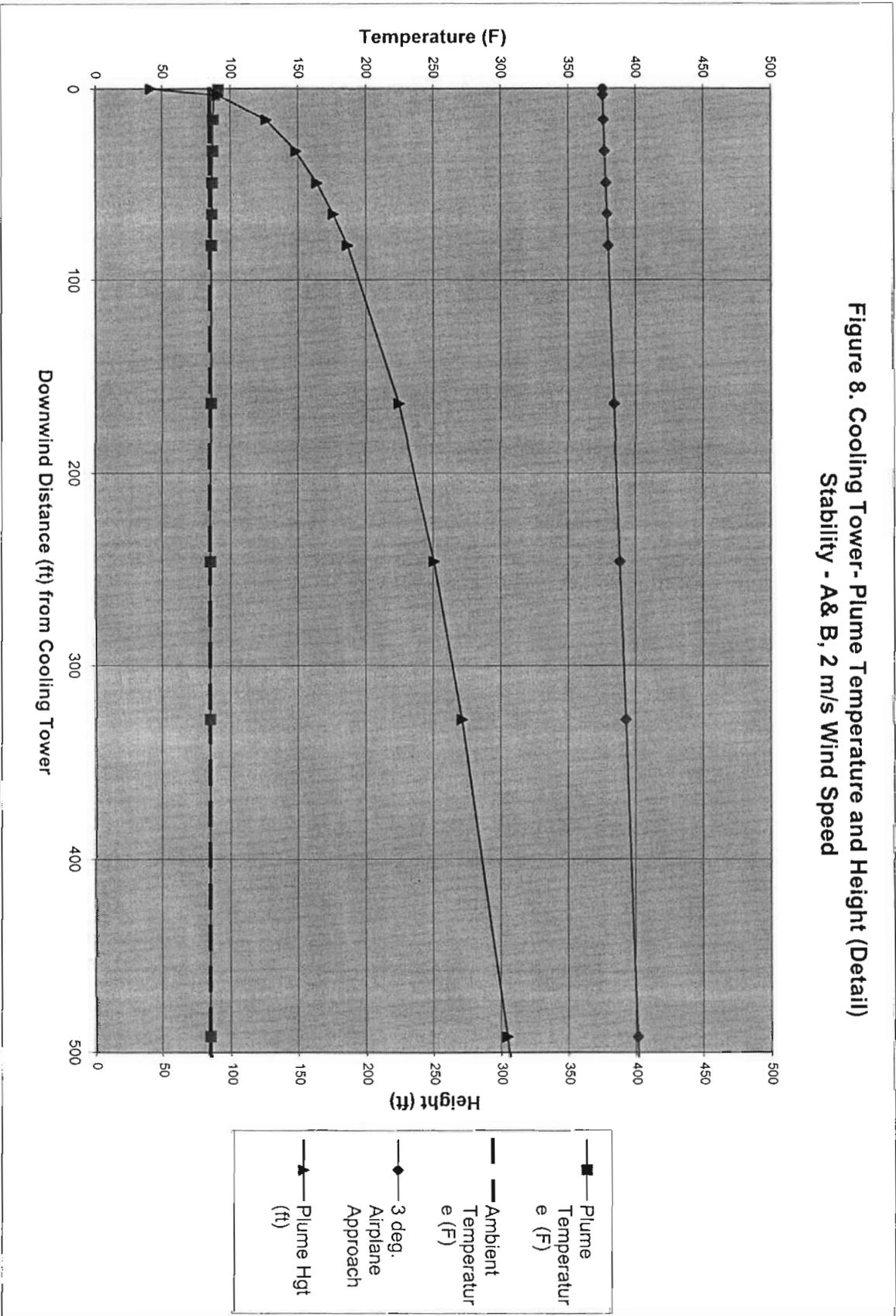


Figure 9. Cooling Tower- Plume Temperature and Height (Detail)
 Stability - A & B, 4m/s Wind Speed

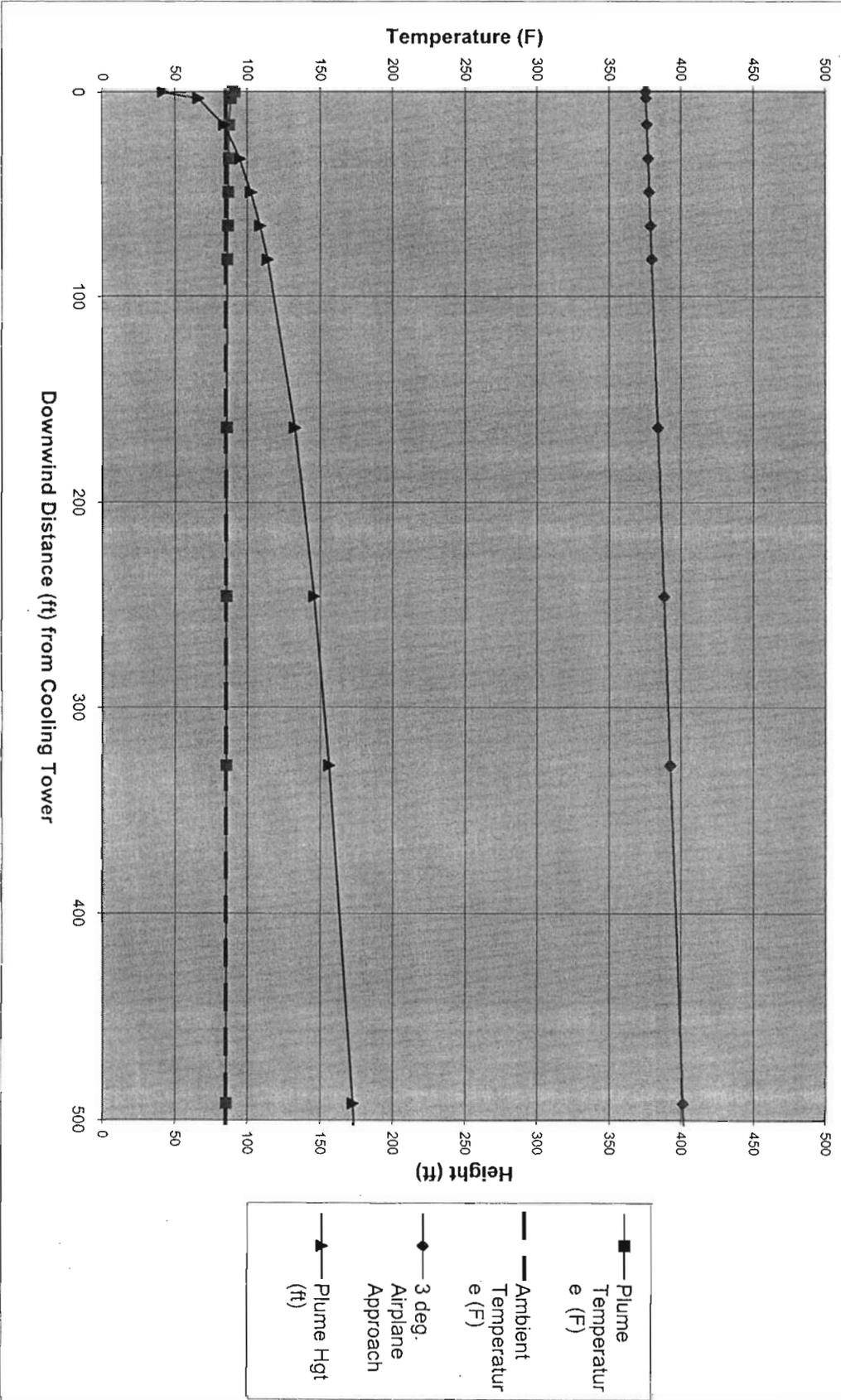


Figure 10. Cooling Tower- Plume Temperature and Height (Detail)
 Stability - C, 4m/s Wind Speed

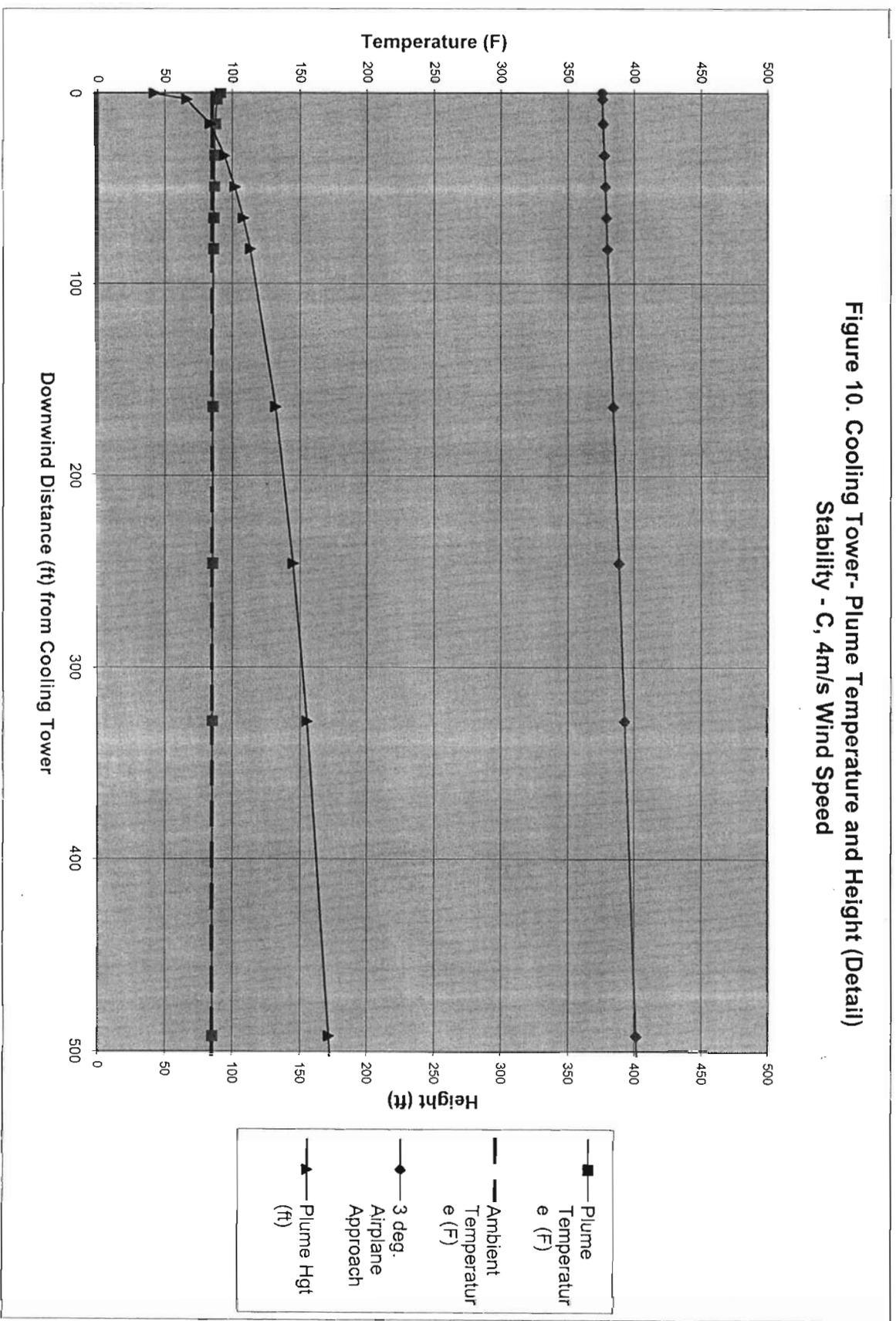


Figure 11. Cooling Tower- Plume Temperature and Height (Detail)
 Stability - C, 8 m/s Wind Speed

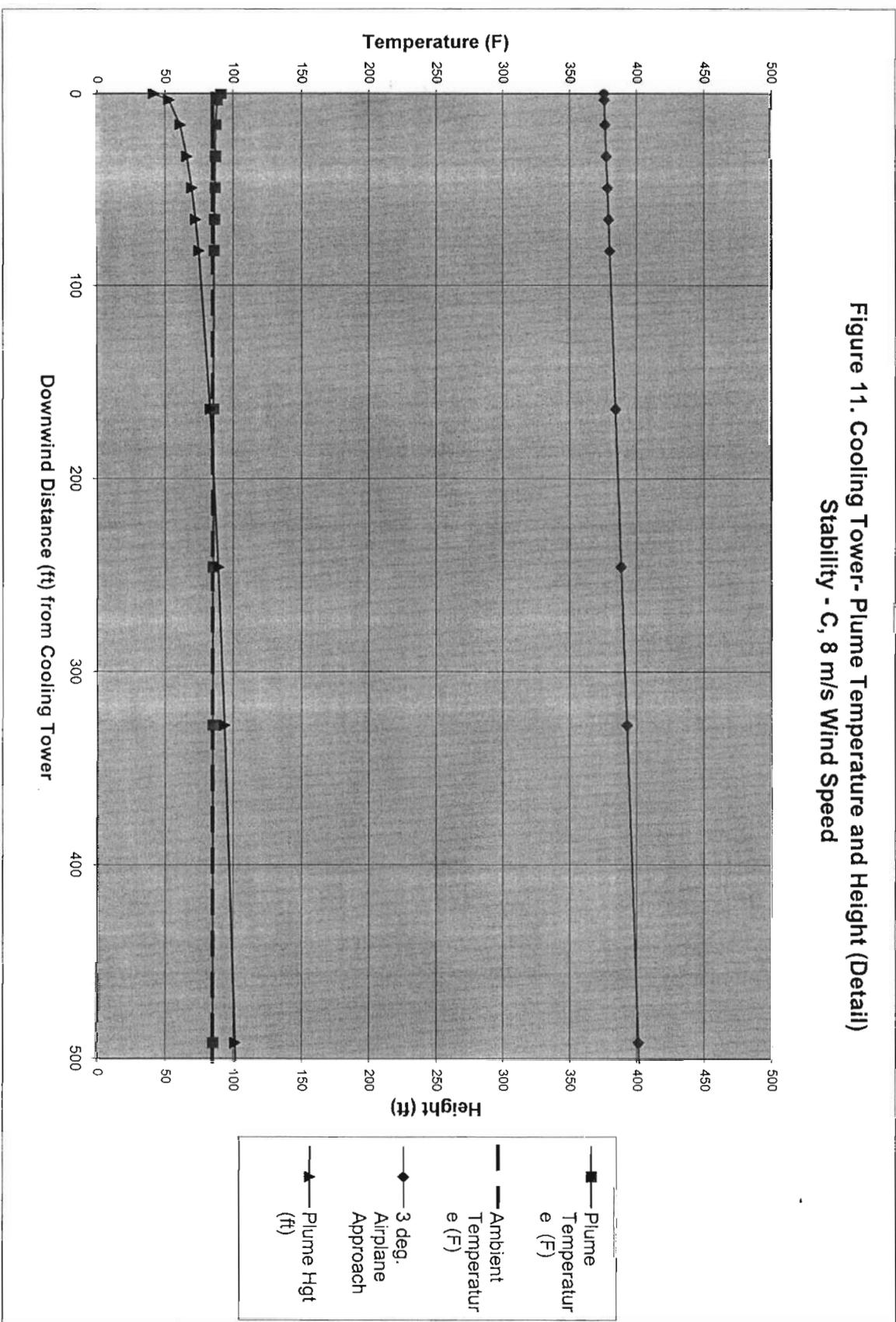
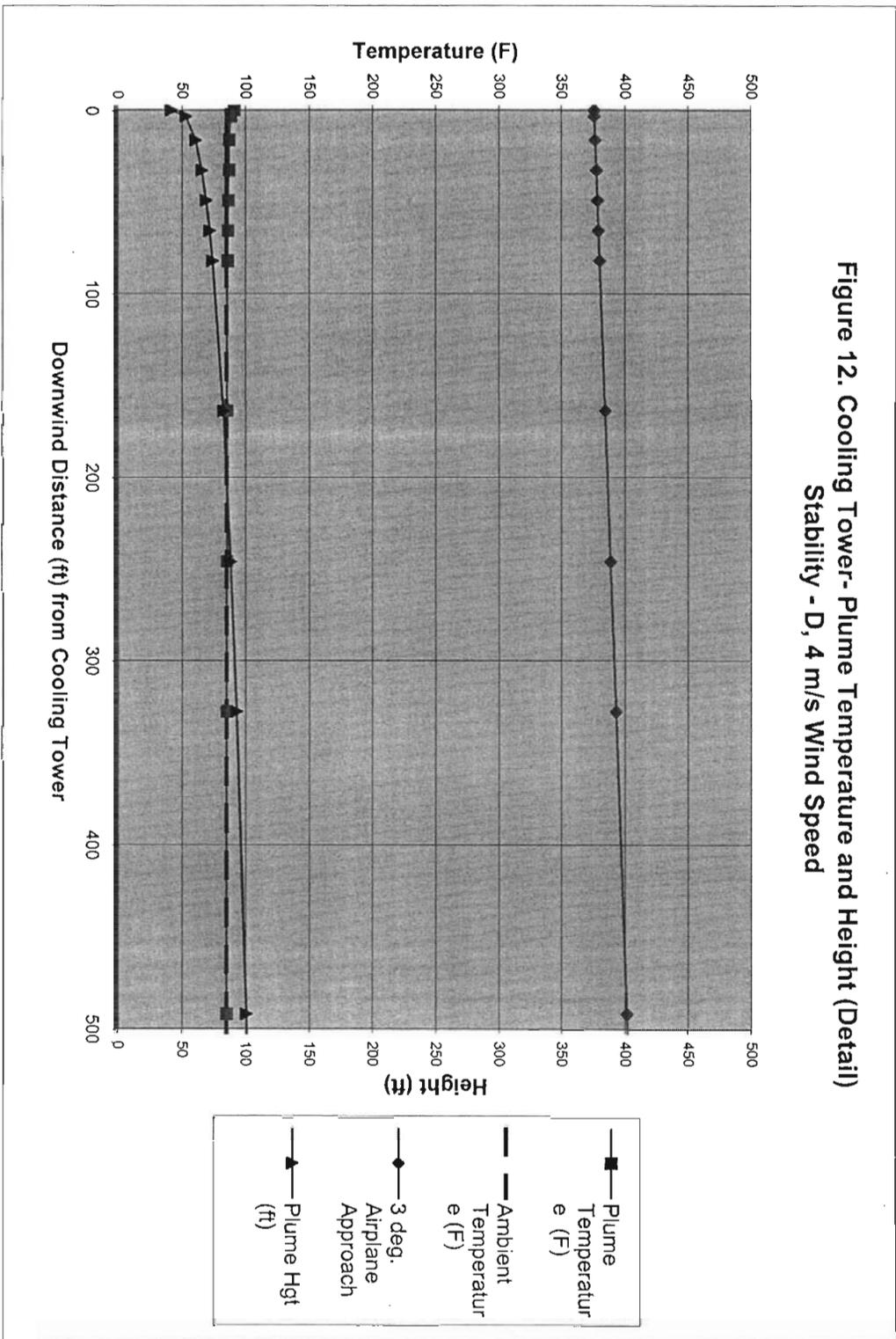


Figure 12. Cooling Tower- Plume Temperature and Height (Detail)
 Stability - D, 4 m/s Wind Speed

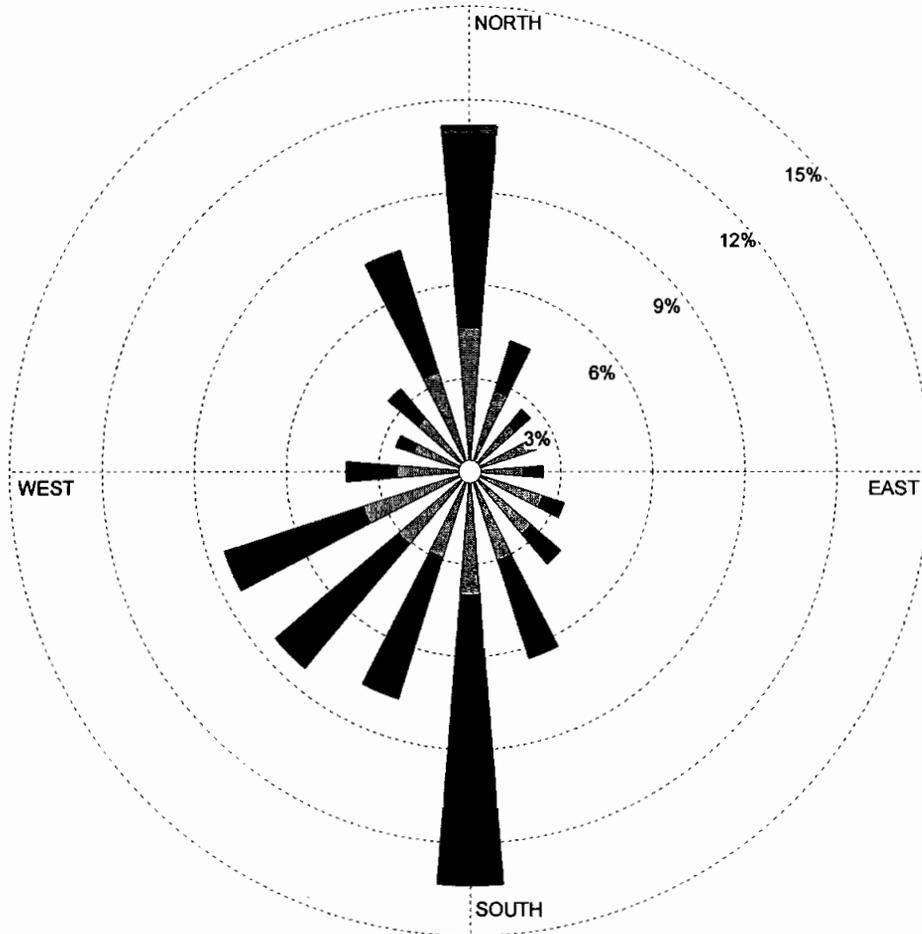


WIND ROSE PLOT:

Figure 13. Blythe Riverside County Airport, 1995-1999

DISPLAY:

Wind Speed
Direction (blowing from)



WIND SPEED
(m/s)

-  ≥ 11.1
-  8.8 - 11.1
-  5.7 - 8.8
-  3.6 - 5.7
-  2.1 - 3.6
-  0.5 - 2.1

Calms: 7.66%

COMMENTS:

DATA PERIOD:

1995-1999
Jan 1 - Dec 31
00:00 - 23:00

COMPANY NAME:

Blythe Energy Project

MODELER:

S. Marks

CALM WINDS:

7.66%

TOTAL COUNT:

37171 hrs.

AVG. WIND SPEED:

3.61 m/s

DATE:

10/26/2004

PROJECT NO.:

043-7639

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

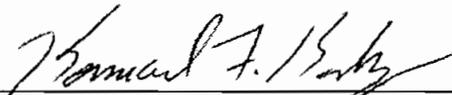
Application for Certification for the
Blythe Energy Project, Phase II

DECLARATION OF KENNARD F.
KOSKY

I, **KENNARD F. KOSKY**, declare as follows:

1. I am presently employed by Golder Associates as a Principal.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Gainesville, Florida on July 14, 2005.



KENNARD F. KOSKY

**TRAFFIC AND TRANSPORTATION
Testimony of Robert Looper**

I. Name: Robert Looper, P.E.

II. Purpose:

My testimony addresses consistency of the operation of the Blythe Energy Project, Phase II (BEP II) with the Comprehensive Land Use Plan (CLUP) prepared for the Blythe Airport

III. Qualifications:

I am a Professional Engineer and the Project Director for the 520 MW Phase II - Blythe Energy Project. I have been the principal developer for the Blythe Energy projects dating to the initial filings with the California Energy Commission in 1998. I have developed energy projects in partnership with companies that include Duke Energy, PP&L Global, Florida Power & Light, Oglethorpe Power Co., Caithness Energy and others. Affiliated companies have been directly involved in the development and construction of over 6,000 MW of new power plants in the past 7 years. I have over 28 years experience working principally with private industries involved in the development and operation of water, power and general civil projects.

IV. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

V. Summary:

I directed and assisted in the preparation of BEP II's application to the Riverside County Airport Land Use Commission (ALUC) for its determination that BEP II is consistent with the CLUP. The ALUC erroneously determined that the BEP II was inconsistent with the CLUP. The ALUC determination is advisory only. The City of Blythe as the land use agency with jurisdiction over the land use in the area, adopted Resolution No 04-897 overriding the ALUC's advisory opinion. That resolution and the accompanying City of Blythe Staff report are attached to this testimony.

I agree with the City of Blythe Staff report and Resolution 04-897 and that the City of Blythe made all appropriate findings required to support the override. I further believe that with the conditions imposed by the City of Blythe in its Resolution the BEP II is consistent with the CLUP and will not impact aircraft operations at the Blythe Airport.

I further disagree with the conclusions made by CEC in its Final Staff Assessment (in the Land Use Section) that the City of Blythe's findings are inappropriate or unsupported.

I agree with all the CEC Staff proposed Conditions of Certification in the Traffic and Transportation Section of the FSA, with the exception of **TRANS-5**.

I understand that CEC Staff agreed to the following modification to **TRANS-5** at the Prehearing Conference on June 24, 2005. The proposed modification is provided for the Committee's use.

TRANS-5 The project owner shall prepare a construction traffic control and implementation plan for the project and its associated facilities. The project owner shall consult with the affected local jurisdiction(s), Caltrans (if applicable) and the Blythe School District, in the preparation of the traffic control and implementation plan. The project owner shall provide a copy of the local jurisdiction's, Caltrans, and school district written comments and a copy of the traffic control and implementation plan to the CPM.

The traffic control and implementation plan shall include and describe the following minimum requirements:

- Timing of heavy equipment and building materials deliveries and related hauling routes;
- Redirecting construction traffic with a flag person;
- Signing, lighting, and traffic control device placement;
- ~~Timing of construction work hours and arrival/departure intervals outside of peak traffic periods;~~
- Coordinating measures for eliminating any traffic safety hazards to school buses and school children on or near the construction worker travel and truck routes;
- Ensuring safe access to the main entrance;
- Ensuring access for emergency vehicles to the project site;
- Developing a emergency notification plan in case of a hazardous materials release including alternative transportation routes if I-10 was closed to traffic;
- Closing of travel lanes on a temporary basis;
- Ensuring access to adjacent residential and commercial property during the construction of all linears; and
- Devising a construction workforce ridesharing plan.

The project owner shall submit the proposed traffic control and implementation plan to the affected local jurisdiction,

school district(s) and Caltrans (if appropriate) for review and comment. The project owner shall provide to the CPM a copy of the transmittal letter submitted to the affected local jurisdiction, school district(s) and Caltrans requesting their review of the traffic control and implementation plan. The project owner shall provide any comment letters to the CPM for review and approval.

Verification: At least 30 calendar days prior to site mobilization, the project owner shall provide a copy of the traffic control and implementation plan to the CPM for review and approval with documentation of review and comment by the reviewing agencies. The reviewing agencies shall have 30 calendar days to review the plan.

PUBLIC HEARING

TO: Mayor and City Council
FROM: City Manager
SUBJECT: Proposed Override of Airport Land Use Commission Decision
Blythe Airport Project Phase II (BEP II)
DATE: July 13, 2004

BACKGROUND

At its March 21, 2002 meeting the Riverside County Airport Land Use Commission (ALUC) found the proposed second Blythe Energy power plant (BEP II) inconsistent with the Comprehensive Land Use Plan (CLUP) for the Blythe Airport. The ALUC previously found the first Blythe Energy power plant (BEP I) consistent with the CLUP. The CLUP is a planning document that establishes guidelines for development around public airports. There are five geographic zones surrounding the airport to be considered.

- 1.) Emergency Touchdown Zone (ETZ)
- 2.) Inner Safety Zone (ISZ)
- 3.) Outer Safety Zone (OSZ)
- 4.) Extended Runway Centerline Zone (ERC)
- 5.) Traffic Pattern Zone (TPZ)

Per correspondence from the ALUC (Attachment 1), the Commission found those portions of BEP II within the ETZ, OSZ and ERC zones inconsistent with the CLUP. Interestingly, the ALUC did not find BEP I inconsistent with the CLUP, although BEP II is aligned further out of the flight pattern than BEP I. To follow is a staff generated summary of the restrictions within the zones referenced in the ALUC notification letter:

- 1.) ETZ - No significant obstructions, including but not limited to larger trees, heavy fences, walls, tall and steep berms, retaining walls, non-frangible street light and sign standards, billboards within 5,000 feet length of the airport's primary surface, but only 125 feet wide on both sides of the runway centerline.
- 2.) OSZ - No public utility stations, plants within 5,000 feet length or 750 feet width on both sides of the runway centerline.
- 3.) ERC - No uses involving as the primary activity, manufacture, storage or distribution of explosives or flammable materials within 10,000 feet length, or 1,000 feet width of the runway centerline.

DISCUSSION

By City staff calculation the BEP II site is right at 5,000 feet (i.e. length) east of the Blythe Airport but more than 800 feet south (i.e. width) of the runway centerline which places it outside the dimension "box" for both ETZ and OSZ. According to the Land Use Compatibility

Guidelines for Airport Safety Zones (Riverside County Comprehensive Land Use Plan) both the ETZ and the OSZ extend (for jet aircraft) 5,000 feet in length from the primary surface, but 125 feet and 750 feet respectively in width on both sides of the runway centerline (Attachment 2). In addition, the proposed power plant does not have as its primary activity the manufacture, storage or distribution of explosives or flammable material as prohibited in the ERC zone. Per City's staff interpretation BEP II is not inconsistent with the CLUP. Notwithstanding, staff believes the benefits associated with the BEP II would outweigh any marginal inconsistency with the CLUP in the ETZ, OSZ or ERC zones.

FINDINGS:

Staff believes the cumulative benefits with BEP II exceed the ALUC's finding of inconsistency with the CLUP and an override by the City Council is therefore consistent with the purposes of Section 21670 of the Public Utilities Code. This position is based on the following findings:

1. By staff's calculation the BEP II site is right at 5,000 feet east of the Blythe Airport (i.e. length) which is physically the furthest extent or beyond the ETZ and OSZ area, but more than 800 feet south of the runway centerline (i.e. width) which is outside the ETZ and OSZ dimensional areas. Further, while within the 10,000 feet of the ERC zone, the proposed power plant does not have as its primary activity the manufacture, storage or distribution of explosives or flammable materials as prohibited in the ERC zone.
2. On April 22, 2003, the operator of Blythe Energy No. 1 (BEP I) submitted a Program to Investigate Potential Cooling Tower Impacts on Aircraft Safety to the CEC (Attachment 3). The program outlines a course of action to quantify the issue of plumes, followed up by a review of ". . . the operation of the cooling towers to determine what technical options may exist to improve cooling tower thermal dispersion." If necessary, and appropriate, any technical options to improve the dispersion of thermal plumes identified in study of BEP I will likewise be required for BEP II.
3. If it is ultimately determined appropriate by over-flight study of BEP I, there is an ability to change the left hand traffic pattern to right hand turns for runway 26, totally removing both BEP I and BEP II out of the flight pattern. This would be a least desired option, not considered before exhausting technical options to improve dispersion of thermal plumes.
4. The Blythe Airport is an essential asset in the isolated Palo Verde Valley, yet it is an asset that financially struggles. The Master Plan for Blythe Airport (prepared by Coffman Associates, Inc.) includes a Capital Improvement Plan (Attachment 4). The existing BEP I and proposed BEP II provide a realistic local share revenue source to fund the identified improvements. These upgrades are essential to more adequately support and generate economic growth and development at the Blythe Airport and the Palo Verde Valley.

5. The City of Blythe has pursuant to an MOU with Blythe Energy the ability to purchase 50 MW of electricity from BEP I and/or BEP II. With the legal ability to be restored by California to implement a community choice aggregation program (PUC Section 366.2), the City can purchase and sell electricity at lower competitive rates. Reliable and less expensive electricity is a competitive advantage that is important in marketing and advancing the economic interests of the Blythe Airport and the surrounding Palo Verde Valley.
6. The BEP II will not create adverse environmental impacts (e.g. noise, cultural, biological, air pollution) for the Blythe Airport or the Palo Verde Valley. The BEP II is subject to an intensive review and approval process by the California Energy Commission (CEC) that identifies those elements of the project requiring mitigation, and those mitigation measures are monitored and enforced by the CEC through the project's Conditions of Certification. The CEC review and approval process is intensive by design to protect the public health, safety and welfare. If BEP II passes environmental muster as determined by the CEC, construction of the project provides property tax revenue as a local funding source to finance infrastructure improvements (e.g. water and sewer) that are necessary to realistically promote Blythe Airport and its surrounding area.
7. BEP II will also provide property tax revenue to support local schools, public safety and community recreation.
8. Without a City Council override of the ALUC, it is almost absolutely certain the BEP II project will dead-end at a time when California desperately needs power generation plants to be built.

CONCLUSION

The Airport Land Use Commission is established under the State Aeronautics Act (Public Utilities Code Section 21670 et. al.) and is charged with formulating a land use plan for an area of two miles surrounding each public use airport in its jurisdiction. Their role is to promote the safety and continued operation of the airport. They are, however, an advisory body "... to the involved jurisdiction ..." in the performance of their charge. Provisions are made in the Public Utilities Code for the local jurisdiction to overrule ALUC determinations with two-thirds vote of the local governing body. However, there are liability implications if the local governing body exercises the option to override the Commission's recommendation. Further, such an override must be based on findings - in this case findings that the benefits associated with BEP II are in the best interest of the Blythe Airport, the City of Blythe and Palo Verde Valley, and that the cumulative benefits of the project offset any inconsistency with the CLUP, and that a City Council override is therefore consistent with the purposes of Section 21670 of the Public Utilities Code. Staff believes the findings articulated herein this report support a City Council override of the ALUC. Consistent with AB332, staff has notified the ALUC and Caltrans Aeronautics Division (45 days prior to the City Council meeting) of the City's intention to consider an override of the ALUC's decision for BEP II, and their advisory comments (per AB 332) are attached herewith as Attachments 5 and 6 respectively.

CONDITIONS OF APPROVAL

The City of Blythe believes the imposition of the same conditions imposed upon BEPI would ensure that BEP II would be consistent with the CLUP. To address the recent pilot complaints, Caltrans Aeronautics has recommended additional conditions to be implemented for BEP I. Further, Caltrans Aeronautics recommended modification the VFR traffic pattern to eliminate overflight of BEP II for approaches to Runway 26. With the implementation of these conditions, the City of Blythe can make the findings required under the Public Utilities Code to support overruling of the ALUC determination that BEP II is inconsistent with the CLUP. Based on the above findings, staff believes siting BEP II in the proposed location is consistent with the purposes of Section 21670 of the Public Utilities Code and therefore staff will recommend the override the ALUC decision that BEP II is inconsistent with CLUP conditioned upon the satisfaction of the following Conditions of Approval. With these conditions, we hereby find that the Blythe Energy Project, Phase II (BEP II) is consistent with the intent of the State law as identified in Public Utilities Code Section 21670.

1. Prior to the development of the BEP II Project, recordation of the map, or sale to an entity exempt from the Subdivision Map Act, the project proponents shall convey an avigation easement to the Blythe Airport for all portions of the project including offsite power lines owned by the project proponent within the Airport Influence Area.
2. All outdoor lighting shall be hooded or shielded to prevent either spillage of lumens or reflections into the sky (downward facing).
3. Incorporate noise attenuation measures into any office portion of the building construction to ensure interior noise levels are at or below 45-decibels.
4. Signs for this project should be approved by the City of Blythe prior to any development of the site.
5. Lighting plans for any additional development shall be reviewed and approved by an airport lighting consultant and the Airport Operator prior to placement.
6. No obstruction of the "FAR Part 77 Conical Surface" shall be permitted.
7. Any use which would direct a steady light or flashing light of red, white, green or amber colors associated with the 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 Blythe Airport, other than an FAA-approved navigational signal light or visual approach slope indicator shall be prohibited.
8. 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 Blythe Airport shall be prohibited. All plans for surfaces shall be reviewed by the airport operator and their appointed consultant for this concern prior to construction and any recommended changes or condition adhered to and monitored over the life of the permit.
9. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise effect safe air navigation within the area shall be prohibited.

10. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation shall be prohibited.
11. The Project Proponent shall facilitate the following changes to the Blythe Airport Operations:
 - a. Request the Federal Aviation Administration (FAA) to modify the existing Remark in the Airport Facility Directory (AFD) to advise pilots not to fly over the existing power plant. Have "Power plant 1 mile east of airport producing thermal plumes." changed to "Power plant 1 mile east of airport producing thermal plumes; avoid low-altitude direct overflight."
 - b. Request the FAA to depict the location of the facility on the Airport Diagram and each of the instrument approach plates in the Terminal Charts published for the Blythe Airport. Add a Remark similar to the one proposed for the AFD.
 - c. Add a Remark to the airport's Automated Surface Observation System (ASOS). The remark should advise pilots to avoid low-altitude direct overflight of the power plant.
 - d. Ensure a Remark, similar to the one proposed for the AFD, is published in comparable non-government issued flight publications (i.e., *Flight Guide* by Air-guide Publications, Inc., etc. and *Pilots Guide to California Airports* by Optima Publications).
 - e. Ensure the facility is obstruction marked and lighted to visually alert pilots of the location of the plume producing towers. Marking and lighting should be accomplished in accordance with FAA Advisory Circular 70/7460-1K, *Obstruction Marking and Lighting*.
 - f. Condition deleted by City Council at the meeting.
 - g. With concurrence from the FAA, modify the Visual Flight Rules (VFR) traffic pattern to Runway 26 from left-hand turns to right-hand turns. This repositions aircraft in the traffic pattern for Runway 26 from flying on the south side of the runway, to flying on the north side of the runway, which avoids overflight of the proposed facility.
 - h. Explore the feasibility of displacing the threshold to Runway 26 to provide an obstruction-free 50:1 approach slope.
12. BEP II shall incorporate those flight safety-related modifications to its operations that are determined appropriate by further over-flight study of BEP I, including the implementation of identified technical options that exist to improve cooling tower thermal plume dispersion. These modifications shall be required to ensure flight safety. Any failure to comply in a timely manner with these identified operational modifications deemed necessary for flight safety shall be considered as non-compliance with the CEC imposed Conditions of Certification, and grounds for seeking a revocation of BEP II operating license.

RECOMMENDATION

It is recommended that the City Council approve Resolution No. 04-897 overriding the negative advisory vote of the Riverside County Airport Land Use Commission on siting the Blythe Energy Project Phase II (BEP II) one mile east of the Blythe Airport.

Respectfully submitted,

A handwritten signature in black ink that reads "Les Nelson". The signature is written in a cursive style and is positioned above a horizontal line.

Les Nelson
City Manager

Attachment

RESOLUTION NO. 04-897

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BLYTHE CONTAINING FINDINGS IN SUPPORT FOR OVERRIDING THE NEGATIVE ADVISORY VOTE OF THE AIRPORT LAND USE COMMISSION ON SITING THE BLYTHE ENERGY PROJECT PHASE II (BEP II) ONE MILE EAST OF THE BLYTHE AIRPORT

WHEREAS, the City Council of the City of Blythe at its regularly scheduled meetings of May 25, 2004 and July 13, 2004 considered the negative advisory vote by the County of Riverside Airport Land Use Commission as it relates to siting the Blythe Energy Project Phase II (BEP II) one mile east of the Blythe Airport; and

WHEREAS, the City Council considered the following findings in their review and override of the Airport Land Use Commission negative advisory vote:

1. That BEP II is not physically located within the ETZ and OSZ restriction zones nor does the plant have as its' primary use an activity that is prohibited within the ERC zone.
2. That based on study of BEP I, appropriate flight safety improvements will be incorporated into BEP II, including technical options that exist to improve cooling tower plume dispersion.
3. That BEP II will provide residents and businesses in California and the Palo Verde Valley a reliable and cost efficient source for electricity.
4. That reliable and less costly electricity is critical for advancing the economic and agricultural interest of the Palo Verde Valley.
5. That BEP II will not create adverse environmental impacts for the Palo Verde Valley.
6. That an intensive review of BEP II by the California Energy Commission(CEC) has identified those elements of the project requiring mitigation and those mitigation measures shall be enforced by the CEC as Conditions of Certification.
7. That BEP II will provide approximately \$3 million annually in property tax to support local schools, public safety and recreation.
8. That BEP II will be another cornerstone in the development of the Blythe Industrial Park, serving as a catalyst in extending water and sewer infrastructure to Blythe Airport, and creating new jobs for this community.
9. That without a City Council override, the BEP II project is almost certainly dead-ended at a time when California desperately needs power generation plants to be constructed.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Blythe does hereby override the negative advisory vote of the Airport Land Use Commission as it relates to siting the Blythe Energy Project Phase II (BEP II) one mile east of the Blythe Airport, pursuant to the State Aeronautics Act, Chapter 4, Article 3.5, Section 21670 (et. al.), subject to the following Conditions of Approval:

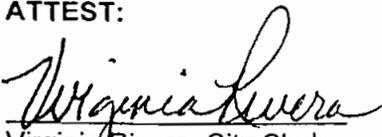
1. Prior to the development of the BEP II Project, recordation of the map, or sale to an entity exempt from the Subdivision Map Act, the project proponents shall convey an avigation easement to the Blythe Airport for all portions of the project including offsite power lines owned by the project proponent within the Airport Influence Area.
2. All outdoor lighting shall be hooded or shielded to prevent either spillage of lumens or reflections into the sky (downward facing).
3. Incorporate noise attenuation measure into any office portion of the building construction to ensure interior noise levels are at or below 45-decibels.
4. Signs for this project should be approved by the City of Blythe prior to any development of the site.
5. Lighting plans for any additional development shall be reviewed and approved by an airport lighting consultant and the Airport Operator prior to placement.
6. No obstruction of the "FAR Part 77 Conical Surface" shall be permitted.
7. Any use which would direct a steady light or flashing light of red, white, green or amber colors associated with the 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 shall be prohibited.
8. 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 shall be prohibited. All plans for surfaces shall be reviewed by the airport operator and their appointed consultant for this concern prior to construction and any recommended changes or condition adhered to and monitored over the life of the permit.
9. Any use which would generate smoke or water vapor or which would attract large concentrations of birds, or which may otherwise effect safe air navigation within the area shall be prohibited.
10. Any use which would generate electrical interference that may be detrimental to the operation of aircraft and/or aircraft instrumentation shall be prohibited.
11. The Project Proponent shall facilitate the following changes to the Blythe Airport Operations:
 - a. Request the Federal Aviation Administration (FAA) to modify the existing Remark in the Airport Facility Directory (AFD) to advise pilots not to fly over the existing power plant. Have "Power plant 1 mile east of airport producing thermal plumes." changed to "Power plant 1 mile east of airport producing thermal plumes; avoid low-altitude direct overflight."

- b. Request the FAA to depict the location of the facility on the Airport Diagram and each of the instrument approach plates in the Terminal Charts published for the Blythe Airport. Add a Remark similar to the one proposed for the AFD.
 - c. Add a Remark to the airport's Automated Surface Observation System (ASOS). The remark should advise pilots to avoid low-altitude direct overflight of the power plant.
 - d. Ensure a Remark, similar to the one proposed for the AFD, is published in comparable non-government issued flight publications (i.e., *Flight Guide by Air-guide Publications, Inc.*, etc. and *Pilots Guide to California Airports* by Optima Publications).
 - e. Ensure the facility is obstruction marked and lighted to visually alert pilots of the the location of the plume producing towers. Marking and lighting should be be accomplished in accordance with FAA Advisory Circular 70/7460-1K, *Obstruction Marking and Lighting*.
 - f. Condition deleted by City Council at the Meeting.
 - g. With concurrence from the FAA, modify the Visual Flight Rules (VFR) traffic pattern to Runway 26 from left-hand turns to right-hand turns. This repositions aircraft in the traffic pattern for Runway 26 from flying on the south side of the runway, to flying on the north side of the runway, which avoids overflight of the proposed facility.
 - h. Explore the feasibility of displacing the threshold to Runway 26 to provide an obstruction-free 50:1 approach slope.
12. BEP II shall incorporate those flight safety-related modifications to its operations that are determined appropriate by further over-flight study of BEP I including the implementation of identified technical options that exist to improve cooling tower thermal plume dispersion. These modifications shall be required to ensure aircraft/airport safety. Any failure to comply in a timely manner with these identified operational modifications deemed necessary for flight safety shall be considered as non-compliance with the CEC imposed Conditions of Certification, and grounds for seeking a revocation of BEP II operating license.

PASSED, APPROVED AND ADOPTED this 13th day of July 2004, by the following called vote, to wit:

AYES: Crain, Grotke, Hernandez, Soto, Thomas
 NOES: None
 ABSENT: None


 Robert A. Crain, Mayor

ATTEST:

 Virginia Rivera, City Clerk
 (SEAL)



ATTACHMENT 1
APR 0 1 2002

AIRPORT LAND USE COMMISSION
RIVERSIDE COUNTY

March 26, 2002

CHAIR
William Cobb
Corona/Riverside

VICE CHAIRMAN
Allen Graff
Riverside

COMMISSIONERS

Ed Adkison
Riverside

Paul Gill
Moreno Valley

Patrick Williams
San Jacinto

Walt Snyder
Palm Desert

Marge Tandy
City of Hemet

STAFF

Keith D. Downs
Executive Director
A.I.C.P., A.A.A.E

5555 Adington Ave.
Riverside, CA 92504
Tel: (951) 351-0700

CITY OF BLYTHE
235 North Broadway
Blythe, CA 92225
Attn: Robert Casias

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW
File No.: BL-02-100
Related File: Change of Zone 2001-02 and General Plan Amendment
2001-02

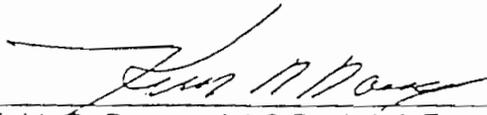
Dear Applicant:

On March 21, 2002, the Riverside County Airport Land Use Commission (ALUC), found: 1) those portions within OSZ, ETZ and ERC zone on the above-referenced project inconsistent with the Comprehensive Land Use Plan (C.L.U.P.) for Blythe Airport, and 2) that those portions within the TPZ be found consistent with the CLUP plan.

Should you have any questions regarding this action, please contact me at (909) 351-0700.

Sincerely,

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

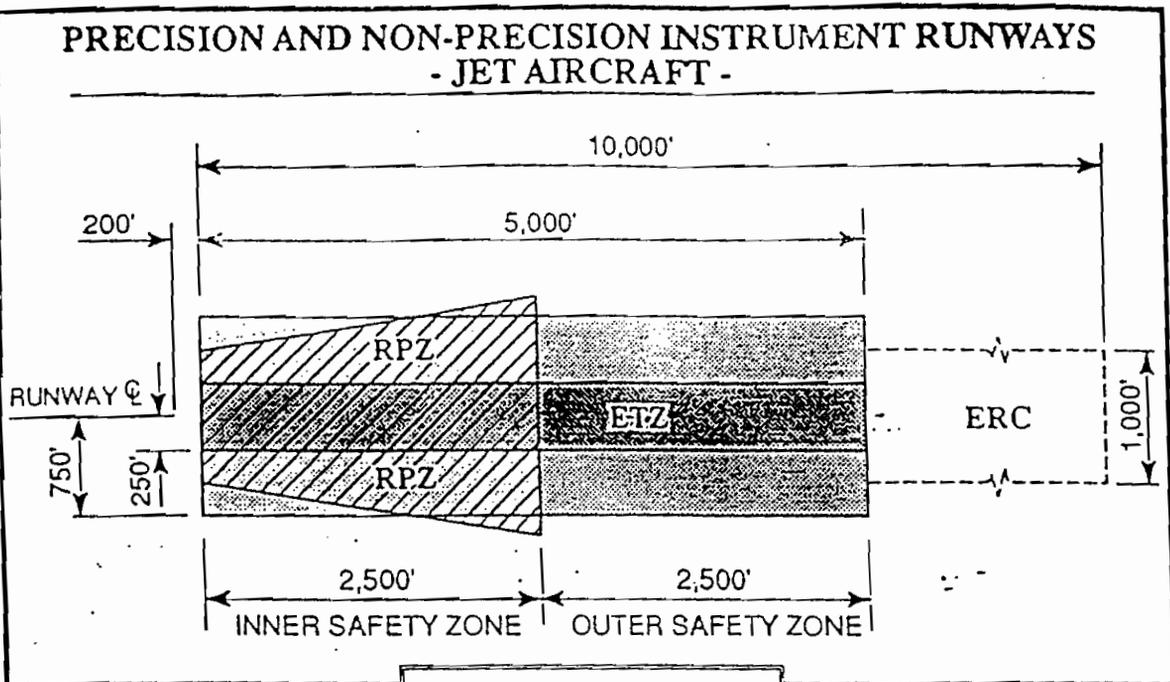

Keith D. Downs, A.I.C.P., A.A.A.E.
Executive Director

KDD:pam

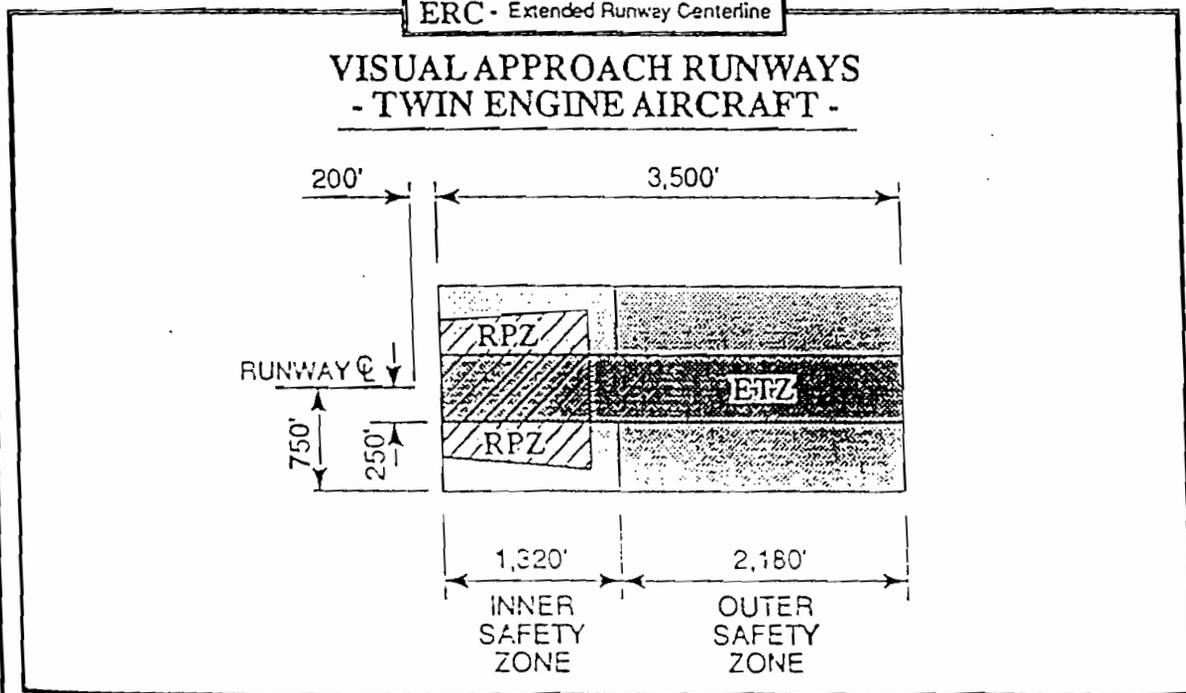
cc: ALUC Staff

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91SP04-3A-52002



LEGEND
 RPZ - Runway Protection Zone
 ETZ - Emergency Touchdown Zone
 ERC - Extended Runway Centerline



SOURCE: Airport Land Use Planning Handbook: A Reference and Guide for Local Agencies, prepared for California Department of Transportation, Division of Aeronautics by Metropolitan Transportation Commission and Association of Bay Area Governments, 1983, p. 97.

3.4 SAFETY COMPATIBILITY GUIDELINES

The State has suggested the creation of five safety zones around airports. The zones are intended to promote land use planning and regulation which will promote the safety of persons on the ground while reducing the risks of serious harm to aircraft crews and passengers making forced landings in the immediate airport environs.

The State provides for several options in the definition of the safety zone boundaries and in the scope of land use regulations applying within the boundaries. The specific scope of the guidelines proposed for use in Riverside County are discussed here. They are described in Table 3B. All but the TPZ zone are shown in Exhibit 3A.

TABLE 3B
Land Use Compatibility Guidelines for Airport Safety Zones

Safety Zone	Dimensions (ft.)		Maximum Pop/DU Density ²	Maximum Lot Coverage By Structures	Land Use
	Length	Width ¹			
ISZ - Inner Safety Zone	1,320 to 2,500 ³	1,500	0	0	No petroleum or explosives. No above-grade powerlines.
OSZ - Outer Safety Zones	2,180 to 2,500 ⁴	1,500	Uses in structures: ⁹ 25 persons/ac. Uses not in structures: 50 persons/ac.	25% of net area	No residential No hotels, motels No restaurants, bars No schools, hospitals, government services No concert halls, auditoriums No stadiums, arenas No public utility stations, plants No public communication facilities No uses involving, as the primary activity, manufacture, storage, or distribution of explosives or flammable materials
ETZ - Emergency Touchdown Zone	3,500 to 5,000 ³	500	0	0	No significant obstructions ⁵
TPZ - Traffic Pattern Zone	F.A.R. Part 77 horizontal surface		—	50% of gross area or 65% of net area	Discourage schools, auditoriums, amphitheaters, stadiums Discourage uses involving, as the primary activity, manufacture, storage, or distribution of explosives or flammable materials ⁸
ERC - Extended Runway	5,000 ⁷	1,000	3 du/net ac. Uses in structures: ⁹ 100 persons/ac.	50% of gross area or 65% of net area	No uses involving, as the primary activity, manufacture, storage, or distribution of explosives or flammable materials ⁸

¹Width of zones is centered on the extended runway centerline.

²Pop/DU - population or dwelling unit.

³Length is measured from the primary surface. The shorter length is for visual runways serving twin or single engine propeller aircraft, the longer for precision and non-precision instrument runways or runways serving jets.

⁴Length is measured from the ISZ. The shorter length is for visual runways serving twin and single engine propeller aircraft, the longer for precision and non-precision instrument runways or runways serving jets.

⁵Significant obstructions include but are not limited to large trees, heavy fences and walls, tall and steep berms and retaining walls, non-fragible street light and sign standards, billboards.

⁶Applies only to runways with precision or non-precision approaches or serving jet aircraft.

⁷Length is measured from the OSZ.

⁸This does not apply to service stations involving retail sale of motor vehicle fuel if fuel storage tanks are installed underground.

⁹A "structure" includes fully enclosed buildings and other facilities with fixed seating and enclosures limiting the mobility of people, such as sports stadiums, outdoor arenas, and amphitheaters.

**PROGRAM TO INVESTIGATE POSSIBLE INTERFERENCE TO AIRCRAFT
SAFETY FROM THE BLYTHE ENERGY PROJECT COOLING TOWERS**

April 22, 2003

The following is a program to be implemented by Blythe Energy to investigate and determine the extent of possible interference to aircraft operations at the Blythe Airport attributed to thermal and vapor emissions from the Blythe Energy project cooling towers. For the immediate concern, the City of Blythe has notified the FAA to issue an advisory notice to airman regarding the location of the Blythe Energy Power Plant cooling towers. The following plan outlines how Blythe Energy will proceed to investigate potential longer term issues.

1. Blythe Energy will institute a program to collect additional data on the extent of both the thermal and vapor plume from the cooling towers. The program will include:
 - Pictures of the cooling tower vapor plume at different plant output levels, temperatures and wind direction
 - FBO and other pilot reports of turbulence or visibility issues from flights landing and taking off from the Blythe Airport
 - Programmed test flights to be conducted at various altitudes under different ambient and plant operating conditions
2. Blythe Energy will review and update the original analysis (see Attachment A) performed on the cooling towers to model and predict the extent of the cooling tower thermal and vapor plume under different ambient conditions. The analysis will be completed with manufacturer as-built data from the cooling towers. Blythe Energy will also review the operation of the cooling towers to determine what technical options may exist to improve cooling tower thermal dispersion.
3. Blythe Energy with support from the City of Blythe and FBO will investigate cooling towers operating at other airports in the US. Airports with stacks and cooling towers in the landing pattern will be contacted and applicable accident history reports obtained.

4. The City of Blythe and Blythe Energy will work cooperatively with the FBO to review airport operations and determine what changes could be implemented to improve aircraft safety specifically related to landing on Runway 26. These options will include a review of;

- Existing maps, charts and informational books showing location of the powerplant
- Powerplant lighting
- Existing Visual Approach Slope Indicator glide slope
- Use of a Precision Approach Path Indicator to ultimately replace the VASI
- Placement of the practice ILS approach on Runway 17
- ILS glide path

The schedule for implementation of the program will involve several months to collect and review data to obtain a good matrix of climatic data and powerplant operating conditions. The powerplant will begin daily operations approximately June 1, 2003. A matrix for summer conditions can be developed during the months of June and July. After the processing of the summer data, and completion of Tasks 2-4, a status review meeting will be scheduled with the City of Blythe, FBO and other interested parties. A preliminary determination of interference to safe aircraft summer operations will be made. Issues arising from the status review meeting with the summer data will be addressed and necessary mitigation measures discussed.

Data depicting conditions during the cooler winter months will not be available until the winter of 2003-04. After processing of the winter data, another meeting will be conducted to review the combined data sets and a determination of interference to safe aircraft winter operations will be made. Any new issues will be addressed and mitigation proposed as necessary to resolve outstanding issues.

At the conclusion of this process, if the City, FBO or other parties are not satisfied with the results, they can move forward with the process and present their concerns in another venue.

SHORT TERM PLANNING HORIZON

FY 2001-2002				
1. Rehabilitate Runway 8-26	\$1,504,119	\$1,353,707	\$75,206	\$75,206
2. Rehabilitate Taxiway B	68,573	61,715	3,429	3,429
3. Rehabilitate Taxiway D	62,989	56,690	3,149	3,149
4. Pavement Preservation - Taxiways A1, A (East), C, AA, and I	66,309	0	59,678	6,631
5. Property Line Survey	25,000	22,500	1,250	1,250
SUBTOTAL FY 2001-2002	\$1,726,989	\$1,494,612	\$142,712	\$89,665
FY 2002-2003				
6. Rehabilitate Existing PCCP Apron	\$635,185	\$571,667	\$31,759	\$31,759
7. Pavement Preservation Runway 17-35	118,495	0	106,645	11,849
8. Pavement Preservation - Taxiways A (West), F and E	36,366	0	32,742	3,638
SUBTOTAL FY 2002-2003	\$790,060	\$571,667	\$171,146	\$47,247
FY 2003-2004				
9. Construct Apron Extension	\$406,600	\$365,940	\$20,330	\$20,330
10. Relocate Segmented Circle Outside of OFA	25,000	22,500	1,125	1,375
11. Reconfigure Taxiway A, Runway 26 Intersection	306,000	275,400	13,770	16,830
12. Construct Runway 26 Holding Apron	103,500	93,150	4,657	5,693
13. Construct New Exit Taxiway Exit Between Taxiway B and C	110,400	99,360	4,968	6,072
14. Construct Holding Apron and Runway 8	103,500	93,150	4,658	5,693
SUBTOTAL 2003-2004	\$1,055,000	\$949,500	\$49,508	\$55,992
FY 2004-2005				
15. Install MITL on Taxiway A, B, C, D, and I	\$480,000	\$432,000	\$21,600	\$26,400
16. Install Distance Remainure Signs on Runways 8-26 and 17-35	140,000	126,000	6,300	7,700
SUBTOTAL 2004-2005	\$620,000	\$558,000	\$27,900	\$34,100
FY 2005-2006				
17. Extend Taxiway C to Runway 17 & Construct Exit Taxiway	\$1,006,300	\$905,670	\$0	\$100,630
18. Construct Runway 17 Holding Apron	78,800	70,920	0	7,880
19. Pavement Preservation	580,000	522,000	0	58,000
SUBTOTAL 2005-2006	\$1,665,100	\$1,498,590	\$0	\$166,510
SUBTOTAL - SHORT TERM PLANNING HORIZON	\$5,857,149	\$5,072,369	\$391,267	\$393,514

INTERMEDIATE TERM PLANNING HORIZON

1. Construct ARFF Station	\$250,000	\$225,000	\$0	\$25,000
2. Purchase ARFF Vehicle	250,000	225,000	0	25,000
3. Rehabilitate Passenger Terminal Building (Reconfigure Restrooms, Expand Terminal to the North for secure departure lounge and bag claim area).	495,000	0	0	495,000
4. Install PAPI on Runway 8-26 and 17-35	450,000	405,000	0	45,000
5. Construct Aircraft Wash/Maintenance Facility	100,000	0	0	100,000
6. Install REIL's on Runway 17-35 and 8	106,000	95,400	0	10,600
7. Install MALSR on Runway 26	750,000	675,000	0	75,000
8. Install HIRL's on Runway 8-26	570,000	513,000	0	57,000
9. Construct Air Cargo/Terminal Access Road	275,000	247,500	0	27,500
10. Construct Air Cargo Apron (Phase I)	1,111,000	999,900	0	111,100
11. Construct Access Taxiways (Phase I)	206,800	186,120	0	20,680
12. Relocate Port-a-Pot Hangars	11,000	0	0	11,000
13. Pavement Preservation	700,000	630,000	0	70,000
SUBTOTAL - INTERMEDIATE TERM PLANNING HORIZON	\$5,274,800	\$4,201,920	\$0	\$1,072,880

1. Expand General Aviation Apron	\$429,000	\$386,100	\$0	\$42,900
2. Construct General Aviation Access Road	415,800	374,220	0	41,580
3. Construct Access Taxiways (Phase II)	136,400	122,760	0	13,640
4. Construct Terminal Apron	529,000	476,100	0	52,900
5. Construct New Passenger Terminal Building	1,500,000	1,350,000	0	150,000
6. Construct Terminal Access Road	142,500	128,250	0	14,250
7. Construct Terminal Parking	250,000	225,000	0	25,000
8. Construct Air Cargo Apron, Phase II	1,072,500	965,250	0	107,250
9. Shorten Runway 8-26 and Taxiways	2,855,000	2,605,500	0	249,500
10. Extend Runway 8-26 3,450 feet wide	2,162,500	2,046,250	0	216,250
11. Extend Taxiway A and Connectors 140 feet wide	1,969,000	1,772,100	0	196,900
12. Extend Runway 17 450 feet wide	200,000	180,000	0	20,000
13. Extend MITL 3,450 feet wide & Install Distance Signs	230,000	216,000	0	24,000
14. Relocate PAPI - Runway 8	72,000	64,800	0	7,200
15. Relocate ILS Localizer	500,000	450,000	0	50,000
16. Relocate REIL's - Runway 8	14,000	12,600	0	1,400
17. Widen Taxiway A and Connectors to 75 feet	522,500	470,250	0	52,250
18. Relocate MITL's for Taxiway Widening	190,000	171,000	0	19,000
19. Pavement Preservation	1,900,000	1,710,000	0	190,000
SUBTOTAL - LONG TERM PLANNING HORIZON	\$16,140,200	\$14,526,180	\$0	\$1,614,020
TOTAL - CAPITAL IMPROVEMENT PROGRAM	\$27,272,149	\$23,800,469	\$391,267	\$3,008,414





ATTACHMENT 5
PAGE 1 OF 3

AIRPORT LAND USE COMMISSION RIVERSIDE COUNTY

April 15, 2004

CHAIR
Ric Stephens
Riverside

City of Blythe City Council
235 North Broadway
Blythe, CA 92225
ATTN: Les Nelson

VICE CHAIRMAN
Dave Hogan, Alt.
City of Temecula

RE: AIRPORT LAND USE COMMISSION (ALUC) DEVELOPMENT REVIEW
File No.: BL-02-100
Related File No.: Change of Zone and General Plan Amendment
APN No.: 824-101-10, 11, 12 and 13

COMMISSIONERS

Arthur Butler
Riverside

Dear Mr. Nelson:

Simon Housman
Rancho Mirage

We received your letter of May 26, informing the ALUC of the override that the City Council intends described in that letter. On June 15, 2004, the Riverside County Airport Land Use Commission (ALUC) reviewed that information and moved to forward the following comments:

Don Goldenbaum
Riverside

1. The new plan would place the site in Zones B-1, C and D. Many of the same concerns are listed in the zones, such as Hazards to Flight and the discouragement of Critical Community Infrastructure facilities (see page 2-14 and 2-15 of new plan).

Marge Tandy
City of Hemet

2. The list of mitigations in the proposed conditions include the aviation easement, but the power lines were not captured in the previous easement.

Sam Pratt
City of Temecula

3. The displacement of the threshold diminishes the ultimate and current utility of the runway for heavier aircraft. Possibly the runway should be relocated to facilitate flight away from the power plant and it's plumes.

Mark Lightsey
Hemet

4. That Unit # 1 only operate when unit #2 has reached or exceeded 90% of its output, which would shift as much of that dangerous plume south of the runway as possible.

STAFF
Keith D. Downs
Executive Director
A.I.C.P., A.A.A.E.

1555 Airport Ave
Blythe, CA 92225
Tel: (951) 345-3453

Sincerely,

444-122-0000

RIVERSIDE COUNTY AIRPORT LAND USE COMMISSION

Keith D. Downs, A.I.C.P., A.A.A.E.
Executive Director

KDD:jg

cc: ALUC Staff
Commissioners
Austin Wiswell, Caltran Aeronautics

CHAPTER 2 COUNTYWIDE POLICIES

Zone	Locations	Maximum Densities / Intensities				Req'd Open Land ³	Additional Criteria	
		Residential (d.u./ac) ¹	Other Uses (people/ac) ²				Prohibited Uses ⁴	Other Development Conditions ⁵
		Aver- age ⁶	Single Ac ⁷	with Bonus ⁸				
A	Runway Protection Zone and within Building Restriction Line	0	0	0	0	All Remaining	<ul style="list-style-type: none"> › All structures except ones with location set by aeronautical function › Assemblages of people › Objects exceeding FAR Part 77 height limits › Storage of hazardous materials › Hazards to flight⁹ 	<ul style="list-style-type: none"> › Avigation easement dedication
B1	Inner Approach/Departure Zone	0.05 (average parcel size ≥20.0 ac.)	25	50	65	30%	<ul style="list-style-type: none"> › Children's schools, day care centers, libraries › Hospitals, nursing homes › Places of worship › Bldgs with >2 aboveground habitable floors › Highly noise-sensitive outdoor nonresidential uses¹⁰ › Aboveground bulk storage of hazardous materials¹¹ › Critical community infrastructure facilities¹² › Hazards to flight⁹ 	<ul style="list-style-type: none"> › Locate structures maximum distance from extended runway centerline › Minimum NLR of 25 dB in residences (including mobile homes) and office buildings¹³ › Airspace review required for objects >35 feet tall¹⁴ › Avigation easement dedication
B2	Adjacent to Runway	0.1 (average parcel size ≥10.0 ac.)	100	200	260	No Req't	Same as Zone B1	<ul style="list-style-type: none"> › Locate structures maximum distance from runway › Minimum NLR of 25 dB in residences (including mobile homes) and office buildings¹³ › Airspace review required for objects >35 feet tall¹⁴ › Avigation easement dedication
C	Extended Approach/Departure Zone	0.2 (average parcel size ≥5.0 ac.)	75	150	195	20%	<ul style="list-style-type: none"> › Children's schools, day care centers, libraries › Hospitals, nursing homes › Bldgs with >3 aboveground habitable floors › Highly noise-sensitive outdoor nonresidential uses¹⁰ › Hazards to flight⁹ 	<ul style="list-style-type: none"> › Minimum NLR of 20 dB in residences (including mobile homes) and office buildings¹³ › Airspace review required for objects >70 feet tall¹⁵ › Deed notice required
D	Primary Traffic Patterns and Runway Buffer Area	(1) ≤0.2 (average parcel size ≥5.0 ac.) or ¹⁶ (2) ≥5.0 (average parcel size ≤0.2 ac.)	100	300	390	10%	<ul style="list-style-type: none"> › Highly noise-sensitive outdoor nonresidential uses¹⁰ › Hazards to flight⁹ 	<ul style="list-style-type: none"> › Airspace review required for objects >70 feet tall¹⁵ › Children's schools, hospitals, nursing homes discouraged¹⁷ › Deed notice required
E	Other Airport Environs	No Limit	No Limit ¹⁸			No Req't	› Hazards to flight ⁹	<ul style="list-style-type: none"> › Airspace review required for objects >100 feet tall¹⁵ › Major spectator-oriented sports stadiums, amphitheaters, concert halls discouraged beneath principal flight tracks¹⁸
* Height Review Overlay		Same as Underlying Compatibility Zone				Not Applicable	Same as Underlying Compatibility Zone	<ul style="list-style-type: none"> › Airspace review required for objects >35 feet tall¹⁴ › Avigation easement dedication

Table 2A

Basic Compatibility Criteria

NOTES:

- ¹ Residential development must not contain more than the indicated number of dwelling units (excluding secondary units) per gross acre. Clustering of units is encouraged. See Policy 4.2.5 for limitations. Gross acreage includes the property at issue plus a share of adjacent roads and any adjacent, permanently dedicated, open lands. Mixed-use development in which residential uses are proposed to be located in conjunction with nonresidential uses in the same or adjoining buildings on the same site shall be treated as nonresidential development. See Policy 3.1.3(d).
- ² Usage intensity calculations shall include all people (e.g., employees, customers/visitors, etc.) who may be on the property at a single point in time, whether indoors or outside.
- ³ Open land requirements are intended to be applied with respect to an entire zone. This is typically accomplished as part of a community general plan or a specific plan, but may also apply to large (10 acres or more) development projects. See Policy 4.2.4 for definition of open land.
- ⁴ The uses listed here are ones that are explicitly prohibited regardless of whether they meet the intensity criteria. In addition to these explicitly prohibited uses, other uses will normally not be permitted in the respective compatibility zones because they do not meet the usage intensity criteria.
- ⁵ As part of certain real estate transactions involving residential property within any compatibility zone (that is, anywhere within an airport influence area), information regarding airport proximity and the existence of aircraft overflights must be disclosed. This requirement is set by state law. See Policy 4.4.2 for details. Easement dedication and deed notice requirements indicated for specific compatibility zones apply only to new development and to reuse if discretionary approval is required.
- ⁶ The total number of people permitted on a project site at any time, except rare special events, must not exceed the indicated usage intensity times the gross acreage of the site. Rare special events are ones (such as an air show at the airport) for which a facility is not designed and normally not used and for which extra safety precautions can be taken as appropriate.
- ⁷ Clustering of nonresidential development is permitted. However, no single acre of a project site shall exceed the indicated number of people per acre. See Policy 4.2.5 for details.
- ⁸ An intensity bonus may be allowed if the building design includes features intended to reduce risks to occupants in the event of an aircraft collision with the building. See Policy 4.2.6 for details.
- ⁹ Hazards to flight include physical (e.g., tall objects), visual, and electronic forms of interference with the safety of aircraft operations. Land use development that may cause the attraction of birds to increase is also prohibited. See Policy 4.3.7.
- ¹⁰ Examples of highly noise-sensitive outdoor nonresidential uses that should be prohibited include amphitheatres and drive-in theaters. Caution should be exercised with respect to uses such as poultry farms and nature preserves.
- ¹¹ Storage of aviation fuel and other aviation-related flammable materials on the airport is exempted from this criterion. Storage of up to 6,000 gallons of nonaviation flammable materials is also exempted. See Policy 4.2.3(c) for details.
- ¹² Critical community facilities include power plants, electrical substations, and public communications facilities. See Policy 4.2.3(d) for details.
- ¹³ NLR = Noise Level Reduction, the outside-to-inside sound level attenuation that the structure provides. See Policy 4.1.6.
- ¹⁴ Objects up to 35 feet in height are permitted. However, the Federal Aviation Administration may require marking and lighting of certain objects. See Policy 4.3.6 for details.
- ¹⁵ This height criterion is for general guidance. Shorter objects normally will not be airspace obstructions unless situated at a ground elevation well above that of the airport. Taller objects may be acceptable if determined not to be obstructions. See Policies 4.3.3 and 4.3.4.
- ¹⁶ Two options are provided for residential densities in *Compatibility Zone D*. Option (1) has a density limit of 0.2 dwelling units per acre (i.e., an average parcel size of at least 5.0 gross acres). Option (2) requires that the density be *greater than* 5.0 dwelling units per acre (i.e., an average parcel size *less than* 0.2 gross acres). The choice between these two options is at the discretion of the local land use jurisdiction. See Table 2B for explanation of rationale. All other criteria for *Zone D* apply to both options.
- ¹⁷ Discouraged uses should generally not be permitted unless no feasible alternative is available.
- ¹⁸ Although no explicit upper limit on usage intensity is defined for *Zone E*, land uses of the types listed—uses that attract very high concentrations of people in confined areas—are discouraged in locations below or near the principal arrival and departure flight tracks. This limitation notwithstanding, no use shall be prohibited in *Zone E* if its usage intensity is such that it would be permitted in *Zone D*.

Table 2A, continued

Mr. Les Nelson
June 24, 2004
Page 2

ATTACHMENT 6
PAGE 2 OF 2

If what is stated in Finding #1 is accurate, and the proposed location is outside of all safety zones except the ERC, then this is a valid finding. The finding that the power plant will not have as its primary activity the manufacture, storage, or distribution of explosives or flammable materials as prohibited in the ERC is also valid. However, I would expect to see some information in a finding that would indicate how the generation of smoke or water vapor, which may affect safe air navigation within the area, would be mitigated. There is policy within the Blythe Comprehensive Land Use Plan found in Table 7A that reads, "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" are prohibited in all safety zones.

If you have any questions or need assistance, please do not hesitate to contact us at (916) 654-5470.

Sincerely,


R. AUSTIN WISWELL, Chief
Division of Aeronautics

c: Keith Downs, Riverside County ALUC
Bill Pfanner, California Energy Commission

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

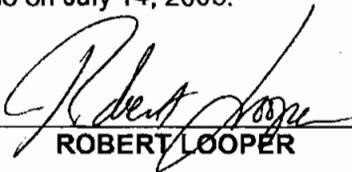
Application for Certification for the
Blythe Energy Project, Phase II

**DECLARATION OF ROBERT
LOOPER**

I, **ROBERT LOOPER**, declare as follows:

1. I am presently employed by Caithness Blythe II, LLC as Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Boise, Idaho on July 14, 2005.



ROBERT LOOPER

VISUAL RESOURCES

VISUAL RESOURCES

Testimony of Jeffrey G. Harvey, Robert Looper, Thomas Cameron and Robert E. Gavahan

- I. Name: Jeffrey G. Harvey
Robert Looper
Thomas Cameron
Robert E. Gavahan

II. Purpose:

Our testimony addresses the Visual Resources issues related to the construction and operation of the Blythe Energy Project, Phase II (BEP II).

III. Qualifications:

Jeffrey G. Harvey: I am self-employed as the Principal and Senior Scientist for the Harvey Consulting Group, LLC, (HCG, LLC), and was previously the California General Manager for Greystone Environmental Consultants, Inc., in Sacramento, California. I have 24 years of professional experience as a consultant in project planning and environmental reporting for local, state, and federal government agencies, nonprofit environmental groups, and private resource developers. In that time I have organized and managed more than 250 projects, leading multi-disciplinary teams of scientists, engineers, lawyers, economists, and planners. Projects have included environmental reports and assessments, and special resource analyses for a variety of proposals including water transfers, water conservation, energy development, mining, policy analysis of state-wide water resources and energy systems management problems, large mixed land use developments, public infrastructure projects, aggregate mining, and recreation resorts. I was the Project Manager for environmental planning for the Blythe Energy Project beginning in 1998 and BEP II since 2001. I have been responsible for preparation of environmental documentation including the AFC, permitting documents, and related submittals to the CEC. I prepared the water resources analyses for the AFC, and the subsequent response to Data Requests.

Robert Looper: I am a Professional Engineer and the Project Director for the 520 MW Phase II - Blythe Energy Project. I have been the principal developer for the Blythe Energy projects dating to the initial filings with the California Energy Commission in 1998. I have developed energy projects in partnership with companies that include Duke Energy, PP&L Global, Florida Power & Light, Oglethorpe Power Co., Caithness Energy and others. Affiliated companies have been directly involved in the development and construction of over 6,000 MW of new power plants in the past 7 years. I have over 28 years experience working

principally with private industries involved in the development and operation of water, power and general civil projects.

Tom Cameron: I am a Project Manager retained by Caithness Blythe II. I hold a B.S. degree in engineering. I have 25 years experience in the energy field. I am responsible for managing the permitting activities for development of the BEP II. I am a principal and Vice President of Mountain View Power, Inc., LLC, Project Manager of Summit Power NW LLC, and President/Managing Director of Cameron & Associates, a power industry consulting firm. I was Project Director for the Blythe Energy Project and am also currently Project Director for the Summit Westward Project, a 520 MW Combined Cycle facility using the Siemens V84.3a technology; Vice President and Project Manager for the Bennett Mountain Power Plant, a 160 MW Simple Cycle facility using Siemens 501F technology; Vice President and Project Manager for the Lake Side Power Plant, a 535 MW Combined Cycle facility using Siemens 501 F technology. I have held assignments as Project Manager for Siemens Power Corporation in charge of design, procurement, equipment manufacturing, construction, and commissioning of several large gas turbine power projects, including the 520 MW Bridgeport Energy Project, using the Siemens V84.3a technology. This was the first project of its type using the new Siemens technology in the world. During execution of these projects, my responsibilities included project management, cost and schedule control, technical and commercial contract negotiations, selection and coordination of vendors, engineering firms, and erection contractors, supervision of engineering and site staff, preparation of bid specifications, coordination of construction management, startup coordination and customer interfaces. A detailed resume is included in Appendix A.

Robert E. Gavahan: I am a Project Engineer employed by Power Engineers Collaborative, LLC. I hold a B.S. degree in mechanical engineering from the University of Minnesota. I have 15 years experience in the energy field. I am responsible for the plant engineering related to the development of the BEP II. My qualifications are more completely detailed in the resume attached in Appendix A.

IV. 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.

V. Summary:

We have reviewed the Visual Resources Section of the Final Staff Assessment and while we agree with many of the Proposed Conditions of Certification, we

Blythe Energy Project, Phase II

Visual Resources
Testimony of Jeffrey G. Harvey
Testimony of Robert Looper
Testimony of Thomas Cameron
Testimony of Robert E. Gavahan

disagree that the construction of the BEP II will result in any significant visual resource impacts. Our opinion is based on the facts that Staff has made no showing, why the construction of BEP II is different than the construction of BEP. Staff found no visual construction impact in BEP and the Commission Decision found not visual impacts related to construction of BEP. These opinions were based on the theoretical methodology employed by Staff to predict visual impacts.

We were involved in ongoing compliance during the construction of BEP. We know of no complaint filed with the contractor or BEP owner relating to visual impacts during construction. In fact, we have asked City representatives as well as Charles Hull and Jennifer Wellman of the City of Blythe are unaware of any complaints filed with the City during the construction of BEP. This is empirical evidence that the predictions for BEP contained in the Decision were, in fact accurate.

There is no reason to expect any different result in BEP II. Staff has not identified any new sensitive receptors, but instead have recommended **VIS-1** which requires extremely burdensome screening activities to be employed during construction activities. Construction activities do not block any scenic view or vista and are temporary. For these reasons Condition of Certification **VIS-1** should be deleted.

Additionally, we request the deletion of **VIS-5**, which requires submittal and approval of a detailed landscape plan. The frontage of BEP II along Hobsonway is part of ongoing City of Blythe landscaping coordinated with BEP. CB II has agreed to provide funds to the City of Blythe to complete landscaping in accordance with their criteria. Any landscaping should be done in accordance with the City of Blythe's preferences and ongoing program. The City has plans for water and sewer line improvements along Hobsonway as well as other infrastructure improvements that impact landscaping treatment along this major thoroughfare. The landscaping improvements are best directed by the City to coordinate with those plans. In addition, we believe that with the treatment of the structures in accordance with Proposed Conditions of Certification **VIS-4** and **-6** there is no residual visual impact requiring landscaping. Staff's assertion that landscaping is necessary to ensure compliance with the City of Blythe's standards, if applicable, should necessitate approving the City of Blythe's wishes to retain sole control over the landscaping along Hobsonway.

CBII proposed modifications to **VIS-7** in its Prehearing Conference Statement, dated June 24, 2005. Staff made additional modifications to **VIS-7** that are acceptable to us. The modification is presented below for the Committee's use.

VIS-7 The project owner shall install minimal signage visible to the public, which shall a) have unobtrusive colors and finishes that prevent

excessive glare; and b) be consistent with the policies and ordinances of the City of Blythe. The design of any signs required by safety regulations shall conform to the criteria established by those regulations.

Verification: *Prior to installation of the sign,* ~~The project owner shall provide a copy of the plans for the sign to notify the CPM and the City of Blythe for review and comment and to the CPM for review and approval that appropriate signage has been installed and is ready for inspection prior to the start of commercial operation, and shall provide the CPM with electronic color photographs of the signage. If the CPM determines that signage requires changes, the project owner shall complete the changes within 60 days and notify the CPM that the changes have been completed.~~

Scott Galati

From: Robert Looper [rlooper@spellc.com]
Sent: Thursday, July 14, 2005 2:59 PM
To: Scott Galati
Subject: FW: Visual Impact

Robert Looper
1015 W. Hays
Boise, ID 83702
208-331-1898 (Office Phone)
208-343-1218 (Fax)
208-870-5371 (cell)
rlooper@spellc.com

-----Original Message-----
From: rob [mailto:rob@theholtgroup.net]
Sent: Thursday, July 14, 2005 1:44 PM
To: Charles Hull; rlooper@spellc.com
Cc: Jennifer Wellman
Subject: Re: Visual Impact

None!

----- Original Message -----
From: "Charles Hull" <CHull@cityofblythe.ca.gov>
To: <rlooper@spellc.com>
Cc: "Jennifer Wellman" <jwellman@cityofblythe.ca.gov>; <rob@theholtgroup.net>
Sent: Thursday, July 14, 2005 12:50 PM
Subject: Re: Visual Impact

> None come to mind Bob. Jennifer Wellman and Rob Holt are copied to
> see if they have any recorded complaints/B
>
>>> "Robert Looper" <rlooper@spellc.com> 07/14/05 01:35PM >>>
> Butch,
>
>
>
> Were there any recorded complaints during Blythe 1 construction
> regarding the "Visual impact" of the construction site. Not dust
> issues, but actual people who complained that the site should be
> screened during construction?
>
>
>
>
>
> Thanks,
>
>
> Bob
>
>
>
>

>
> Robert Looper
>
> 1015 W. Hays
>
> Boise, ID 83702
>
> 208-331-1898 (Office Phone)
>
> 208-343-1218 (Fax)
>
> 208-870-5371 (cell)
>
> rlooper@spellc.com
>
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>

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

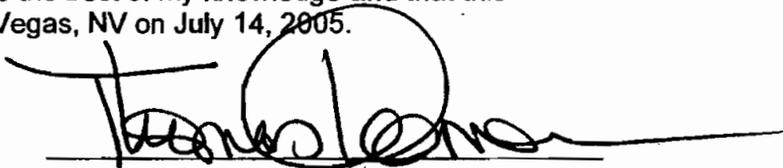
Application for Certification for the
Blythe Energy Project, Phase II

DECLARATION OF THOMAS
CAMERON

I, Thomas Cameron, declare as follows:

1. I am presently retained by Caithness Blythe II as the Project Manager for the Blythe Energy Project, Phase II.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to **Visual Resources** for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Las Vegas, NV on July 14, 2005.

A handwritten signature in black ink, appearing to read "Thomas Cameron", written over a horizontal line. The signature is stylized and cursive.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

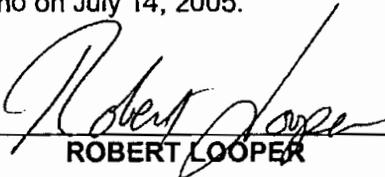
Application for Certification for the
Blythe Energy Project, Phase II

DECLARATION OF ROBERT
LOOPER

I, **ROBERT LOOPER**, declare as follows:

1. I am presently employed by Caithness Blythe II, LLC as Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Visual Resources for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Boise, Idaho on July 14, 2005.


ROBERT LOOPER

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

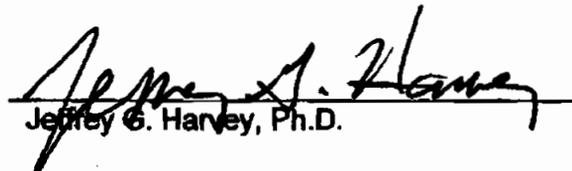
DOCKET NO. 02-AFC-1

Application for Certification for the
Blythe Energy Project, Phase IIDECLARATION OF
Jeffrey G. Harvey, Ph.D.

I, Jeffrey G. Harvey, Ph.D., declare as follows:

1. I am presently self-employed as the Principal and Senior Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Visual Resources for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Sacramento, CA on July 12, 2005.



Jeffrey G. Harvey, Ph.D.

SOCIOECONOMICS

SOCIOECONOMICS
Testimony of Jeffrey G. Harvey

I. Name: Jeffrey G. Harvey, Ph.D.

II. Purpose:

My testimony addresses socioeconomic issues pertaining to the Water Conservation Offset Program (WCOP) associated with the Blythe Energy Project II.

III. Qualifications:

I am self-employed as the Principal and Senior Scientist for the Harvey Consulting Group, LLC, (HCG, LLC), and was previously the California General Manager for Greystone Environmental Consultants, Inc., in Sacramento, California. I have 24 years of professional experience as a consultant in project planning and environmental reporting for local, state, and federal government agencies, nonprofit environmental groups, and private resource developers. In that time I have organized and managed more than 250 projects, leading multi-disciplinary teams of scientists, engineers, lawyers, economists, and planners. Projects have included environmental reports and assessments, and special resource analyses for a variety of proposals including water transfers, water conservation, energy development, mining, policy analysis of state-wide water resources and energy systems management problems, large mixed land use developments, public infrastructure projects, aggregate mining, and recreation resorts.

I hold degrees in Geography, including a B.A. (emphasis in physical geography), and M.A. (emphases in environmental planning, water resources development, and impact analysis) from CSU Chico, and a Ph.D. from UCLA, (emphases in environmental and policy, natural resources management, western water resources, and impact analysis).

I have worked on western water, energy and related natural resources policy issues since 1983, including power plant and hydroelectric power development, water development, management, and planning, and analyses of land and agricultural water use practices and conservation. For the past 6 years I have been the Transfer Program Consultant to the San Diego County Water Authority (SDCWA) for the agricultural water transfer of up to 200,000 acre-feet of Colorado River water between SDCWA and the Imperial Irrigation District. A more detailed resume is included in Appendix A.

I was the Project Manager for environmental planning for the Blythe Energy Project beginning in 1998. I have been responsible for preparation of environmental documentation including the AFC, permitting documents, and related submittals to the CEC. I prepared the water resources analyses for the AFC, and the subsequent response to Data Requests.

IV. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

V. Summary:

The project will utilize groundwater for cooling and other purposes. Up to two (2) wells will be developed on-site, approximately 500-600 feet deep, and capable of pumping up to 2,500 gpm; maximum water use is estimated to total 3,300 acre-feet per year (af/yr). A voluntary Water Conservation Offset Program (WCOP) has been developed for the project and includes retirement or rotational fallowing of farmland. The Program will include about 786 acres within the Palo Verde Valley and/or Palo Verde Mesa to offset annual water use for the life of the project. The need for a WCOP was thoroughly litigated for the original Blythe Energy Project proposal. The Commission's Decision in that case (March 22, 2001, pages 200 through 208) summarizes the key issues, and concludes that: "The need for a Water Conservation Offset Program is not driven by a finding of adverse environmental impact, or need to mitigate under existing LORS. Therefore, the WCOP, in this case, is sufficient to satisfy the Commission's concerns." (page 208). (underline emphasis added).

The FSA recommendation for proposed conditions of certification, Socio-2 (FSA p.4.8-13) includes a limitation on the proposed Water Conservation Program (WCOP) that "...only acreage used to grow "highly mechanized" crops is allowed to participate in the WCOP." This condition is designed to prevent BEP II from including farm lands that produce what CEC staff has characterized as "labor intensive crops such as orchards, melons, citrus [which is included in orchards] and vegetable crops." (FSA, p.4.8-6) This condition places an unnecessary limitation of the WCOP, and is not supported by any finding of potential impacts. This comment also fails to recognize that crops (except citrus trees) are rotated on lands and what may be planted one year, may change the next. Lands are not branded as "labor intensive" crops or not. Citrus in fact are primarily drip irrigated systems on the Mesa requiring less labor to irrigate than conventional flood irrigation in the valley. This aside, the socioeconomic analysis performed by staff concludes that the potential job loss attributable to the Water Conservation Offset Program is not considered to be significant. No

mitigation is needed, and the proposed Condition of Certification presented in Socio-2 should be rejected.

Staff's socioeconomic assessment of potential job loss attributable to rotational fallowing or retirement of farmlands to offset water use is based upon a 2002 assessment conducted for the proposed interbasin water transfer between the Palo Verde Irrigation District (PVID) and the Metropolitan Water District of Southern California. That transfer project could include rotational fallowing of more than 26,000 acres each year for the next 35-years. The job loss ratio of 0.00805 applied to that project, and used by staff for the BEP II assessment, produces an estimate of farm labor displaced from the 786 acres taken out of production for the WCOP of 6.33 full-time equivalent (FTE) jobs. The staff assessment concludes that: "*Staff does not consider this to be significant.*" (FSA, p. 4.8-7); and reiterates further in the assessment: "*Staff expects that implementation of the WCOP would result in a loss of about 6.33 FTE jobs, which is not considered significant.*" (FSA p. 4.8-13).

Staff's assessment includes a note that the acreage to job loss ratio depends upon the mix of crops taken out of production, and that "labor intensive" crops such as orchards, melons and vegetables could have a higher job loss ratio. Staff could not quantify the "labor intensive" crop ratio, and when staff inquired of the author of the original 2002 socioeconomic assessment, he reported that he could not provide a number either. Despite having found that the job loss is not a significant impact, and being unable to determine a figure for "labor intensive" crops, staff has recommended a condition of certification to exclude "labor intensive" crops from participating in the WCOP.

The voluntary Water Conservation Offset Program (WCOP) developed for the project and described in Section 7.13, includes retirement or rotational fallowing of farmland. The target acreage for the WCOP includes a total of 786 acres, to be acquired and confirmed prior to commercial operation, selected from any of the eligible acreage on the Palo Verde Valley floor (104,500 total acres) or the Palo Verde Mesa (total of about 4,000 acres of 16,000 total within PVID). This approach has been taken intentionally to provide flexibility and maintain economic neutrality for this market-based transaction.

The Program will include about 786 acres within the Palo Verde Valley and/or Palo Verde Mesa to offset annual water use for the life of the project. If the rotational fallowing option is employed, no farmlands will be permanently retired or converted from agricultural use, and no adverse impacts to farmlands will occur. The WCOP does include a criterion that retired lands may not be converted to any use that relies upon Colorado River water during the life of the project. However, if lands are

permanently retired, the program will have potential impacts associated with loss of productive farmlands. However, CBII has agreed to Condition of Certification **LAND-3** which would require the purchase of equivalent farmland acreage to be preserved for farming in perpetuity.

Such mitigation, not only would adequately mitigate potential farmland impacts, would mitigate for any potential farming job losses, associated with permanent retirement of irrigated lands for the WCOP. In fact, since the mitigation would create farmland preserved in perpetuity the duration of farmland jobs may be longer than the security of equivalent farm jobs on the property that participates in the WCOP.

We do not accept the additional proposed condition Socio-2, and request that the Commission reject it for the following reasons:

- No basis has been provided to impose this limitation, no threshold of significance has been identified, and the condition is not related to any finding of significant impacts.
- Staff's assessment of job loss has not accounted for the net gain in employment attributable to the project, which represents a significant short-term and long-term benefit to overall employment in the Blythe area. The 2002 assessment for the MWD transfer addressed affects of a project that would displace jobs without offsetting economic benefits to the larger community. In contrast, this project generates substantial net benefits in both employment and general revenues to the community of Blythe. During the construction of BEP, over 60 local residents of the Blythe area were employed. Currently, over 25 full time jobs have been created at the BEP site. In addition, several local contractors are used for landscape maintenance, site maintenance and other misc. support activities.
- Imposition of this measure eliminates approximately 40 to 50 percent of the farmed lands in the Palo Verde Valley and 100 percent of the farmed lands on the Palo Verde Mesa from participation.
- The WCOP proposes flexibility for either 1) rotationally fallowing farmed lands, or 2) retirement of farmed lands for the life of the project. If rotational fallowing is employed, citrus orchards will be excluded (simply because trees cannot be rotationally irrigated). If retirement of lands is employed, Condition **LAND-3** already stipulates that the project must secure or participate in a farmland trust program for an equal amount of acreage in perpetuity.

Securing farmland in this manner also secures farm labor employment.

- The City of Blythe realizes the significant net increase in area employment and long-term socioeconomic benefits versus the potential loss of six agricultural related jobs in connection with the Water Conservation Offset Program is a net positive result for the City. (Les Nelson, City Manager, and Charles Hull, Assistant City Manager, City of Blythe, pers.comm. with Jeff Harvey, 07/15/05

STATE OF CALIFORNIA

**Energy Resources
Conservation and Development Commission**

In the Matter of:

DOCKET NO. 02-AFC-1

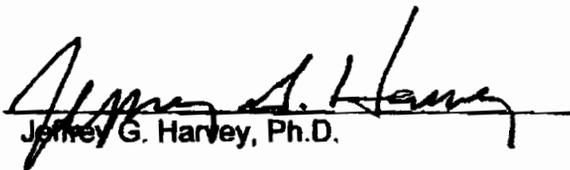
**Application for Certification for the
Blythe Energy Project, Phase II**

**DECLARATION OF
Jeffrey G. Harvey, Ph.D.**

I, Jeffrey G. Harvey, Ph.D., declare as follows:

1. I am presently self-employed as the Principal and Senior Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Socioeconomics for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Sacramento, CA on July 12, 2005.


Jeffrey G. Harvey, Ph.D.

WORKER SAFETY AND FIRE PROTECTION

WORKER SAFETY AND FIRE PROTECTION
Testimony of Thomas Cameron and Robert E. Gavahan

I. Name: Thomas Cameron
Robert E. Gavahan

II. Purpose:

Our testimony addresses the Worker Safety and Fire Protection issues related to the construction and operation of the Blythe Energy Project, Phase II (BEP II).

III. Qualifications:

Tom Cameron: I am a Project Manager retained by Caithness Blythe II. I hold a B.S. degree in engineering. I have 25 years experience in the energy field. I am responsible for managing the permitting activities for development of the BEP II. I am a principal and Vice President of Mountain View Power, Inc., LLC, Project Manager of Summit Power NW LLC, and President/Managing Director of Cameron & Associates, a power industry consulting firm. I was Project Director for the Blythe Energy Project and am also currently Project Director for the Summit Westward Project, a 520 MW Combined Cycle facility using the Siemens V84.3a technology; Vice President and Project Manager for the Bennett Mountain Power Plant, a 160 MW Simple Cycle facility using Siemens 501F technology; Vice President and Project Manager for the Lake Side Power Plant, a 535 MW Combined Cycle facility using Siemens 501 F technology. I have held assignments as Project Manager for Siemens Power Corporation in charge of design, procurement, equipment manufacturing, construction, and commissioning of several large gas turbine power projects, including the 520 MW Bridgeport Energy Project, using the Siemens V84.3a technology. This was the first project of its type using the new Siemens technology in the world. During execution of these projects, my responsibilities included project management, cost and schedule control, technical and commercial contract negotiations, selection and coordination of vendors, engineering firms, and erection contractors, supervision of engineering and site staff, preparation of bid specifications, coordination of construction management, startup coordination and customer interfaces. A detailed resume is included in Appendix A.

Robert E. Gavahan: I am a Project Engineer employed by Power Engineers Collaborative, LLC. I hold a B.S. degree in mechanical engineering from the University of Minnesota. I have 15 years experience in the energy field. I am responsible for the plant engineering related to the development of the BEP II. My qualifications are more completely detailed in the resume attached in Appendix A.

IV. 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.

V. Summary:

We have reviewed the Worker Safety and Fire Protection section of the Final Staff Assessment (FSA) and agree with its conclusions that the BEP II will not create significant adverse environmental impacts to worker safety and fire protection and will comply with all applicable laws, ordinances, regulations and standards. We further agree with all Proposed Conditions of Certification contained in the Worker Safety and Fire Protection section of the FSA except **WORKER SAFETY-2** and **3**. CBII proposed modifications to **WORKER SAFETY-2** and requested **WORKER SAFETY-3** be deleted in its Prehearing Conference statement dated June 24, 2005. Staff proposed modifications to **WORKER SAFETY-2** and **WORKER SAFETY-3**. We agree to Staff's modifications. Both conditions are reproduced below for the Committee's use.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- An Operation Injury and Illness Prevention Plan;
- An Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Protection and Prevention Program (8 CCR § 3221); and
- Personal Protective Equipment Program (8 CCR §§ 3401-3411).

~~The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the Cal/OSHA Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders. The Operation Fire Protection Plan and the Emergency Action Plan shall also be submitted to the City of Blythe Fire Department and the Riverside County Fire Department for review and comment.~~

Verification: At least 30 days prior to the *first start-up of combustion turbine of operation*, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety & Health Program. ~~It shall incorporate Cal/OSHA Consultation Service's comments, if any, stating that they have reviewed and accepted the specified elements of the proposed Operations and Maintenance Safety and Health Plan.~~ The project owner shall provide a

letter from the City of Blythe Fire Department and the Riverside County Fire Department stating that they have reviewed and commented on the Operations Fire Protection and Prevention Plan and the Emergency Action Plan.

WORKER SAFETY-3 Prior to the delivery of *anhydrous ammonia* any hazardous materials to the project site, the project owner shall train the personnel at the BEP II facility to the level of Hazmat Technician ***that is required to assist the City of Blythe or Riverside County Fire Departments in the responding to an anhydrous ammonia hazardous materials incidents.*** ***The training shall meet or exceed that described in NFPA 472, PSHA 29 CFR 1910.120, and EPA 40 CFR part 311.***

Verification: At least thirty (30) days prior to the delivery of hazardous materials to the site, the project owner shall provide the CPM with a letter indicating the number of employees that have been trained as Hazmat Technicians.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

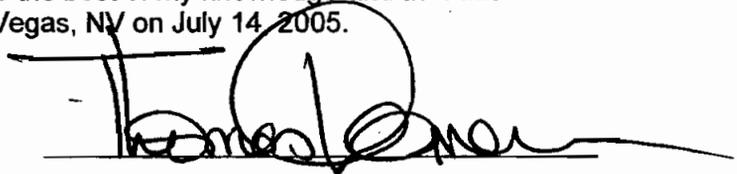
Application for Certification for the
Blythe Energy Project, Phase II

DECLARATION OF THOMAS
CAMERON

I, Thomas Cameron, declare as follows:

1. I am presently retained by Caithness Blythe II as the Project Manager for the Blythe Energy Project, Phase II.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to **Worker Safety and Fire Protection** for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Las Vegas, NV on July 14, 2005.

A handwritten signature in black ink, appearing to read "Thomas Cameron", is written over a horizontal line. The signature is stylized and includes a large circular flourish.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

Application for Certification for the
Blythe Energy Project, Phase II

DECLARATION OF
ROBERT E. GAVAHAN

I, Robert Gavahan, declare as follows:

1. I am presently employed by Power Engineers Collaborative, a provider of engineering services to Caithness Blythe II as the project engineer for the provision of owners engineer services.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Worker Safety and Fire Protection for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at West Allis, WI on June 14, 2005.



HAZARDOUS MATERIALS

HAZARDOUS MATERIALS
Testimony of Thomas Cameron

I. Name: Thomas Cameron

II. Purpose:

My testimony addresses the Hazardous Materials issues related to construction and operation of the Blythe Energy Project, Phase II (BEP II).

III. Qualifications:

Tom Cameron: I am a Project Manager retained by Caithness Blythe II. I hold a B.S. degree in engineering. I have 25 years experience in the energy field. I am responsible for managing the permitting activities for development of the BEP II. I am a principal and Vice President of Mountain View Power, Inc., LLC, Project Manager of Summit Power NW LLC, and President/Managing Director of Cameron & Associates, a power industry consulting firm. I was Project Director for the Blythe Energy Project and am also currently Project Director for the Summit Westward Project, a 520 MW Combined Cycle facility using the Siemens V84.3a technology; Vice President and Project Manager for the Bennett Mountain Power Plant, a 160 MW Simple Cycle facility using Siemens 501F technology; Vice President and Project Manager for the Lake Side Power Plant, a 535 MW Combined Cycle facility using Siemens 501 F technology. I have held assignments as Project Manager for Siemens Power Corporation in charge of design, procurement, equipment manufacturing, construction, and commissioning of several large gas turbine power projects, including the 520 MW Bridgeport Energy Project, using the Siemens V84.3a technology. This was the first project of its type using the new Siemens technology in the world. During execution of these projects, my responsibilities included project management, cost and schedule control, technical and commercial contract negotiations, selection and coordination of vendors, engineering firms, and erection contractors, supervision of engineering and site staff, preparation of bid specifications, coordination of construction management, startup coordination and customer interfaces. A more detailed resume is included in Appendix A.

IV. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

V. Summary:

I have reviewed the Hazardous Materials section of the Final Staff Assessment and agree with the Staff Proposed Conditions of Certification except **HAZ-2, 11** and **12**. CBII proposed modifications to these conditions in its June 24, 2005 Prehearing Conference Statement. After discussion with Staff at the June 29, 2005 Prehearing Conference, Staff agreed to delete **HAZ-12** and agreed to CBII's proposed modifications to **HAZ-2**. I agree with following Staff revisions to **HAZ-11**. These revisions are reproduced below for the Committee's use.

HAZ-2The project owner shall concurrently provide a Business Plan (including a Hazardous Materials Management Plan) and a Risk Management Plan (RMP) to the Certified Unified Program Authority – (CUPA) (Riverside County Hazardous Materials Division) and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). After receiving comments from the CUPA, the EPA, and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final Business Plan and RMP shall then be provided to the CUPA and EPA for information and to the CPM for approval.

Verification: At least 60 days prior to receiving any hazardous material on the site *to support plant commissioning and operations*, the project owner shall provide a copy of a final Business Plan to the CPM for approval. At least sixty (60) days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the CUPA for information and to the CPM for approval.

HAZ-11 The project owner shall install an ammonia sensor on the discharge from the scrubber on the anhydrous ammonia refrigeration unit containment building that can be remotely read in the power plant control room and remotely read by a laptop computer operated by power plant personnel, the Blythe Fire Department and the Riverside County Fire Department. This sensor and all other sensors located inside the containment building shall be able to detect ammonia concentrations within a range of at least 10 to 20,000 ppm and shall be reported to the power plant control room on a real-time recordable basis. Additionally, the project owner shall:

1. Perform a process safety evaluation of hazards associated with the chilling system and provide anhydrous ammonia release prevention features for the chilling system equipment and containment structure to enhance the safety of operators and emergency response personnel;
2. require that any routine maintenance or repair work on the anhydrous ammonia refrigeration unit is conducted only during normal daytime work hours;

3. require that maintenance or repair on any filter train be conducted only under lockout/tagout safety procedures;
4. provide handheld ammonia vapor detectors and direct that they be used by workers whenever entering the ammonia refrigeration unit containment building; and
5. conduct joint training and exercises at least annually with the Blythe Fire Department, the Riverside County Fire Department, the Riverside County Hazardous Materials Response Team, the Blythe Police Department, and site staff.

Verification: At least sixty (60) days prior to delivery of anhydrous ammonia to the facility, the project owner shall provide *the* final design drawings and specification for the above systems, ***the results and recommendations of the process safety evaluation of hazards associated with the chilling system, and an agreement with the Blythe Fire Department, the Riverside County Fire Department, the Riverside County Hazardous Materials Response Team, and the Blythe Police Department to conduct joint training and exercises with site personnel at least annually*** to the CPM for review and approval.

HAZ-12 DELETED

With the Conditions of Certification as modified above, the BEP II will comply with all applicable hazardous materials laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

DOCKET NO. 02-AFC-1

Application for Certification for the
Blythe Energy Project, Phase II

**DECLARATION OF THOMAS
CAMERON**

I, Thomas Cameron, declare as follows:

1. I am presently retained by Caithness Blythe II as the Project Manager for the Blythe Energy Project, Phase II.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to **Hazardous Materials** for the Blythe Energy Project, Phase II (California Energy Commission Docket Number 02-AFC-1).
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 at Las Vegas, NV on July 14, 2005.



A handwritten signature in black ink, appearing to read "Thomas Cameron", is written over a horizontal line. The signature is stylized and cursive.

CULTURAL RESOURCES

CULTURAL RESOURCES
Testimony of Thomas Cameron

I. Name: Thomas Cameron

II. Purpose:

My testimony addresses the Cultural Resources issues related to the construction and operation of the Blythe Energy Project, Phase II (BEP II).

III. Qualifications:

I am a Project Manager retained by Caithness Blythe II. I hold a B.S. degree in engineering. I have 25 years experience in the energy field. I am responsible for managing the permitting activities for development of the BEP II. I am a principal and Vice President of Mountain View Power, Inc., LLC, Project Manager of Summit Power NW LLC, and President/Managing Director of Cameron & Associates, a power industry consulting firm. I was Project Director for the Blythe Energy Project and am also currently Project Director for the Summit Westward Project, a 520 MW Combined Cycle facility using the Siemens V84.3a technology; Vice President and Project Manager for the Bennett Mountain Power Plant, a 160 MW Simple Cycle facility using Siemens 501F technology; Vice President and Project Manager for the Lake Side Power Plant, a 535 MW Combined Cycle facility using Siemens 501 F technology. I have held assignments as Project Manager for Siemens Power Corporation in charge of design, procurement, equipment manufacturing, construction, and commissioning of several large gas turbine power projects, including the 520 MW Bridgeport Energy Project, using the Siemens V84.3a technology. This was the first project of its type using the new Siemens technology in the world. During execution of these projects, my responsibilities included project management, cost and schedule control, technical and commercial contract negotiations, selection and coordination of vendors, engineering firms, and erection contractors, supervision of engineering and site staff, preparation of bid specifications, coordination of construction management, startup coordination and customer interfaces. A detailed resume is included in Appendix A.

IV. To the best of my 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 my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

V. Summary:

I have reviewed the Cultural Resources section of the Final Staff Assessment and agree with the Staff Proposed Conditions of Certification except **CUL-6** and **CUL-9**. CBII proposed modifications to these conditions in its Prehearing

Conference Statement , dated June 24, 2005 and after discussion at the workshop held immediately after the Prehearing Conference on June 29, 2005, Staff made additional revisions that are acceptable. They are reproduced here for the Committee's use.

CUL-6 The project owner shall ensure that the CRS, alternate CRS, or CRMs shall monitor ground disturbance of previously undisturbed sediments full time in the vicinity of the project site, linears and ground disturbance at laydown areas or other ancillary areas to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner. In the event the project owner **determines** believes that full-time monitoring is not necessary in certain locations, **a letter or email with a detailed justification for the decision to reduce** the project owner, CRS and the CPM shall meet to discuss the level of monitoring **shall be provided to the CPM for review and approval and to Western prior to any reduction in monitoring.** that is required and agree on any revisions to the monitoring plan.

CRMs shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

The CRS and the project owner shall notify the CPM and Western by telephone or e-mail of any incidents of non-compliance with the conditions of certification and/or applicable LORS upon becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.

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

A Native American monitor shall be obtained to monitor excavations in undisturbed sediments in areas where Native American artifacts 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 shall be monitored.

Verification: During the ground disturbance phases of the project, if the project owner wishes to reduce the level of monitoring occurring at the project, **a letter or email identifying the area(s) where the project owner recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval and to Western. Documentation justifying a reduced level of**

monitoring shall be submitted to the CPM and Western at least 24 hours prior to the date of planned reduction in monitoring. The project owner, the CRS, the CPM and Western will meet to discuss the monitoring requirements prior to approval of any reduction in monitoring. the project owner, CRS and CPM will meet to discuss the future monitoring requirements and agree on any revision to the monitoring plan. Any changes in the plan shall be forwarded to Western as well.

During the ground disturbance phases of the project, the project owner shall include in the MCR to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring. Copies of daily logs shall be retained and made available for audit by the CPM and Western.

Within 24 hours of recognition of a non-compliance issue with the conditions of certification and/or applicable LORS, the CRS and the project owner shall notify the CPM and Western 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. In the event of any 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 of the resolution measures, shall be provided in the next MCR.

If Native American artifacts are discovered in undisturbed sediments, the project owner shall send notification within one week to the CPM and Western identifying the person(s) retained to conduct Native American monitoring. The project owner shall also provide a plan identifying the proposed monitoring schedule and information explaining how Native Americans who wish to provide comments will be allowed to comment. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

CUL-9The project owner shall invite tribal leaders, elders and/or representatives of the Salt River Pima-Maricopa Indian Community, the Fort Yuma Quechan Tribe, the Chemehuevi Indian Tribe and the Fort Mojave Indian Tribe to bless the project area and conduct other appropriate ceremonies. As recommended in "Blythe Energy Projects American Indian Ethnographic Assessment Study, Final Report," participants shall be provided with adequate compensation in the form of a consulting fee and

reimbursement for travel, meal and lodging costs, if lodging is necessary. Members of the Tukic-speaking Cahuilla groups, Yuman-speaking Cocopah, Kumeyaay, Pai, and Yavapai tribes, the Twenty-nine Palms Band of Mission Indians (Chemehuevi) and Maricopa members of the Gila River and Ak-Chin Pima-Maricopa Indian Community shall also be notified of the site visit and invited to attend and conduct appropriate ceremonies. The project owner shall also invite Western's Historic Preservation Officer, the CPM and City of Blythe officials to the blessing. The date(s) for the blessing and ceremonies shall be **within 30 days prior to** of ground disturbing activities or at a time mutually convenient to the tribes, project owner, Western's Historic Preservation Officer, the CPM and the City of Blythe officials.

Verification: ~~Within~~ **At least 30 days prior to** of the ground disturbing activities, the project owner shall provide copies of the invitation letters to the CPM. If additional time and correspondence is required to arrive at a mutually convenient time, copies of all correspondence to finalize the blessing/ceremonies date shall be provided to the CPM. Within 10 days of the blessing ceremony, the project owner shall provide a list of attendees to the CPM.

If all the tribes indicate they are not interested in a blessing ceremony, the project owner shall, prior to ground disturbance, provide to the CPM for review and Western copies of telephone logs and correspondence with the aforementioned tribes documenting that the tribes have declined to accept the offer for the blessing ceremony. Within 15 days of CPM acceptance of the documentation demonstrating that the ceremony is not desired, the project owner shall provide a letter to all parties listed in this condition notifying them that the ceremony is no longer desired.

It is my professional opinion that with the Conditions of Certification contained in the Cultural Resources Section of the FSA, as modified above, construction and operation of the BEP II will comply with all applicable cultural resources laws, ordinances, regulations and standards and will not result in significant environmental impacts.