DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
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Flex your power!
Be energy efficient!

November 1, 2007

Mr. Bill Pfanner, Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5504

Dear Mr. Pfanner:

The California Department of Transportation (Department), Division of Aeronautics has reviewed the proposed establishment of the East Shore Energy Center (ESEC) located in the City of Hayward. As previously stated, the Department supports projects that improve mobility or provide a net gain to the people of California. Providing clean, affordable, and efficient energy certainly qualifies. We are very concerned that the proposed creation of another power plant, and the associated high velocity thermal plumes within the traffic pattern zone buffer area of the Hayward Executive Airport (HWD), would compound and magnify the problems created by the approval of the Russell City Energy Center (RCEC). These two facilities would be located only a short distance away from each other. Our concerns with the proposed RCEC as stipulated in our letter (enclosed) dated July 17, 2007, remain unchanged. The potential hazards to navigable airspace created by the construction of this facility revolve primarily around the proximity of the power plant relative to Runway 10R/28L at HWD.

We feel the peak centerline velocities emitted from the proposed plant must be thoroughly studied and that their effects upon low flying aircraft must be evaluated. As you know, the traffic pattern altitude for HWD is only 600 feet Above Ground Level. We do not believe that the combined effects of thermal plumes created by *two* proposed power plants can be mitigated to the degree that flight safety would not be compromised. We do not agree that the recommended mitigation measures for RCES are satisfactory for ESEC, as this would only further restrict a pilot's ability to maneuver an aircraft while flying to or from the airport. Aircraft pilots should not be subjugated to avoid flying in areas while configuring an aircraft for landing at or departing the airport. We support the relocation of the plant at a sufficient distance that would not negatively impair a pilot's ability to control or maneuver his/her aircraft.

As previously stated, we strongly recommend that the California Energy Commission (Commission) consider permitting future power generating facilities at locations at least two to three miles from airports, and even greater distances when aligned with runways and instrument approaches. The Department appreciates the opportunity to comment on this proposal, and looks forward to working with the Commission in ensuring safe and efficient use of California resources.

Sincerely,

GARY CATHEY, Chief
Office of Airports

c: Brent Shiner, Manager, Hayward Executive Airport
FAA, Burlingame, SFO-677

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Flex your power!
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July 18, 2007

Mr. James S. Adams, MA
Environmental Office, MS 40
California Energy Commission
1516 9th Street
Sacramento, CA 95814

Dear Mr. Adams:

We reviewed several documents related to the proposed Russell City Energy Center (RCEC) and have the following comments:

1. The traffic pattern altitude (TPA) for Runway 10R/28L at Hayward Executive Airport (HWD) is 650' above Mean Sea Level (MSL).
2. The proposed RCEC is located about 1.5 nm south of and perpendicular to the approach end of Runway 10R/28L
3. The location of the proposed power plant is within the lateral limits of Class D airspace for Hayward Executive Airport. Two-way radio contact must be established with the Air Traffic Control (ATC) facility (i.e. tower) providing ATC services prior to entry. The airspace is restricted from the surface up to but not including 1500' MSL. ATC typically expects aircraft to be at TPA *prior to entering* the traffic pattern.
4. The location of the proposed power plant is below but within the lateral limits of Class C airspace for Oakland International Airport. Two-way radio contact must be established with the ATC facility (i.e. tower) providing ATC services and an operable Mode C radar beacon transponder is required prior to entry. The airspace is restricted from 1500' MSL up to but not including 3000' MSL.
5. The location of the proposed power plant is below but within the lateral limits of Class B airspace for San Francisco International Airport. An ATC clearance is required to enter and operate within this area. The airspace is restricted from the 3000' MSL up to 10,000' MSL.
6. The location of the proposed power plant is about 5.5 nm from the approach end of Runway 29 at Oakland International Airport. An aircraft on the Instrument Landing System (ILS) glideslope to Runway 29 would be at approximate elevation of 1833 feet MSL.
7. The California Energy Commission (CEC) Staff Report titled "RCEC Staff Assessment, Part 1 & Part 2 Combined", Executive Summary states in part that:
   - Page 4.10-10: "The City of Hayward has provided staff with aircraft tracking diagrams for the month of April 2007 that show over 40 aircraft (including single engine aircraft and Helicopters) flew over or within 150 horizontal meters (480 feet) of the RCEC site. Flight elevations ranged from 470 feet above ground level (AGL) to 1,000 feet AGL."
   - Page 4.10-9: "aviation authorities have established that an exhaust plume with a vertical velocity in excess of 4.3 meters per second (m/s) may cause damage to an aircraft airframe or upset an aircraft when flying at low levels"....

- Page 4.10-11: "Staff has applied the 4.3 m/s criterion as a minimum threshold determination for a potential aviation safety hazard on aircraft over a plume generating power plant."
- Page 4.10-11, Table 4: shows 4.49 m/s velocity at 900 feet over the gas turbine and 4.44 m/s at 1,000 feet over the cooling towers.

8. Although both FAA Aeronautical Study No.s 2007-AWP-1245-OE and -1246-OE conclude that the proposed structure "... would not be a hazard to air navigation...", neither study discussed if the thermal effects from the plumes (turbulence and decreased visibility) was specifically evaluated in the analysis process. The submittal information contained in the Obstruction Evaluation/Airport Airspace Analysis database does not provide sufficient information regarding the effects of plume velocities for evaluation purposes. We suspected that only the physical exhaust stack structure(s) themselves were considered, not the associated plumes generated when the power plant is in operation. We confirmed this to be the case in a conversation with the FAA Airspace Determination Specialist on July 17, 2007.
9. FAA Safety Study Report titled "Safety Risk Analysis of Aircraft Overflight of Industrial Exhaust Plumes" (DOT-FAA-AFS-420-06-1) dated JAN 2006 states in part that historically, the number of accidents due to aircraft overflying exhaust stacks is "deemed acceptable without restriction, limitation, or further mitigation" (pg. iv, P4, S2). However, to minimize the hazards of *low level* flight above exhaust gas stacks, it also recommends several amendments to the following FAA documents: Aeronautical Information Manual (AIM), Airport/Facility Directory, FAA Order 7400.2, and Advisory Circular 70/7460-2K - "Proposed Construction of Objects That May Effect Navigable Airspace". In part, the recommendations state that the AIM should be amended to read: "...overflight at less than 1000 feet vertically above plume generating industrial sites should be avoided". It also states that FAA Order 7400.2 should be amended to "consider a plume generating facility as a hazard to air navigation when expected flight paths pass less than 1000 feet above the top of the object (i.e. the exhaust stacks)". It does not appear that this recommended policy change was incorporated into the current airspace determination process.

Therefore, given the above, we share the concerns of the California Energy Commission regarding the safety of low-level flight at traffic pattern altitude over the proposed RCEC power plant near Hayward Executive Airport, California.

Sincerely,

Original Signed by

GARY CATHEY, Chief
Office of Airports

c: FAA SFO ADO

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE EASTSHORE ENERGY CENTER IN CITY OF HAYWARD BY TIERRA ENERGY

Docket No. 06-AFC-6

PROOF OF SERVICE
(Revised 10/12/2007)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

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DECLARATION OF SERVICE

I, April Esau, declare that on November 5, 2007, I deposited copies of the attached Comments of the California Department of Transportation on the Eastshore Energy Center in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of the California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

April Esau