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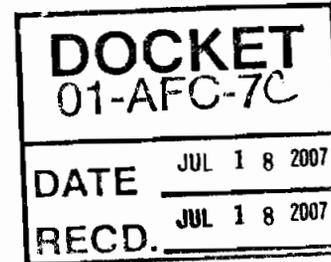
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July 18, 2007



*Flex your power!  
Be energy efficient!*

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"....

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- 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,

 FOR

GARY CATHEY, Chief  
Office of Airports

c: FAA SFO ADO