U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Office of the Regional Administrator

P.O. Box 92007
Los Angeles, CA 90009

SEP 18 2007

James S. Adams, MA
Environmental Office, MS 40
California Energy Commission
1516 9th Street
Sacramento, CA 95814-5504

RE: Russell City Energy Center Impact on Hayward Airport

Dear Mr. Adams:

The Flight Standards Division of the FAA Western-Pacific Region was requested by the San Francisco Airports District Office to comment on the impact of the Russell City Energy Center (RCEC) on flight operations at the Hayward Municipal Airport. Flight Standards reported that the thermal plumes from the heat recovery steam generator stacks and cooling towers could present a hazard to aircraft in the Hayward flight pattern for runway 10R/28L.

The basis for this conclusion is the January 2006 FAA study, Safety Risk Analysis of Aircraft Overflight of Industrial Exhaust Plumes (DOT-FAA-AFS-420-06-1). The study presumption was that high efflux temperature or velocity from industrial facilities may cause air disturbances via exhaust plumes, resulting in two potential hazards to aircraft. One hazard is turbulence that could result in airframe damage or negative affects on aircraft stability in flight. The other is the possible adverse impact of high levels of water vapor, engine/aircraft contaminants, icing and restricted visibility. As cited in the above study, "These hazards taken individually or collectively could possibly result in the loss of the aircraft or fatal injury to the crew, as well as substantial damage to ground facilities."

The study concluded that the accident/incident rate for overflights of exhaust plumes is acceptably small. Not withstanding the safety data and the Target Level of Safety utilized in the study, ".....the FAA believes that flight over or around plume generating facilities should be avoided as there is a *potential* (however low) for aircraft upset at close proximity to high velocity plumes." The study specifically recommends that aircraft avoid overflight of plumes at less than 1000 feet above the exhaust stack.

The proposed RCEC site is located 1.56 miles southwest of Hayward, abeam the approach end of runway 28L. The recommended traffic pattern for general aviation aircraft of the type that operate at Hayward is 1.50 miles abeam, a distance of 360 feet inside of the position of the RCEC. It is common for aircraft to deviate from the 1.5 mile recommendation on the basis of wind and other traffic. The Hayward airport is populated by pilots of varying experience levels, from those with considerable flight time down to student pilots.

It is not reasonable to expect pilots to look for the exhaust stacks and cooling towers on the ground, then see and avoid any visible plumes while attending to their primary responsibility of safely operating the aircraft, looking for other traffic in the pattern, and responding to Air Traffic Control instructions.

Modifying the traffic pattern for 10R/28L to avoid the RCEC is not a feasible option to mitigate the risk. Pattern altitude for runways 10R/28L is 600 above the ground, which is lower than standard. This altitude is dictated by the overflight of air carrier aircraft on approach to Oakland International Airport and cannot be raised. The pattern cannot be shifted to the other side of the Hayward Airport due to the existence of a separate traffic pattern for runways 10L/28R.

It should be noted that the study cited a Notice to Airmen (NOTAM) for Temporary Flight Restrictions (FDC 4/0811). The NOTAM states, "In the interest of national security and to the extent practicable, pilots are strongly advised to avoid the airspace above, or in proximity to such sites as power plants (nuclear, hydro-electric, or coal), dams, refineries, industrial complexes, military facilities, and other similar facilities." It will be virtually impossible for pilots to comply with this NOTAM if the RCEC is built at the proposed location.

Flight Standards' position that the RCEC poses a risk to aircraft in the Hayward traffic pattern for runways 10R/28L is based on a valid Safety Risk Analysis and appears to be consistent with the California Energy Commission's staff assessment, as stated in its July 5, 2007, letter to the Ms. Marion Blakely, Federal Aviation Administrator.

Should you need any assistance or have any questions, please contact David Butterfield, Aviation Safety Inspector, at (310)725-7230.

Richard Combs

for William C. Withycombe
Regional Administrator

Cc: Paul Kramer, Jr., CEC

From: <laurie.suttmeier@faa.gov>
To: <pkramer@energy.state.ca.us>
Date: 9/18/2007 5:10 PM
Subject: FAA Written Response regarding Hayward Powerplant Issue

CC: <George.Aiken@faa.gov>, <David.Butterfield@faa.gov>

Paul,

We wanted to let you know that the FAA has drafted written guidance and is in the process of mailing this correspondence to you. I believe it should be in the mail today - so you should receive it in a day or two.

The FAA is very sensitive to the fact that our safety concerns were voiced rather late in the airspace process. To that end, we worked diligently this past week to pull together the various internal parties to revisit the issue and determine the next steps. David Butterfield of the FAA's Flight Standards division has provided the technical background into the issue at hand. Although we are still working to coordinate a Divisional contact for this particular issue, the information in the correspondence headed your way should provide a better understanding of the concerns raised by the FAA.

Please feel free to distribute a copy of the letter to the appropriate people. Rest assured, the FAA will continue to work with you on this issue.

Sincerely,

Laurie Suttmeier

Laurie Suttmeier
Acting Manager, Safety & Standards Branch
Federal Aviation Administration
AWP-620
(310) 725-3620

From: <David.Butterfield@faa.gov>
To: <Pkramer@energy.state.ca.us>
Date: 9/19/2007 7:26 AM
Subject: AWP-1 Letter
Attachments: AWP1 ltr to CEC 091807.pdf

CC: <Ron.Waterman@faa.gov>, <Roland.J.McKee@faa.gov>

Paul,

Per your request, the attached pdf file is an advanced copy of the signed letter from the FAA Western-Pacific Region Administrator to Jim Adams. He should be in receipt of the original copy by tomorrow. This is Flight Standard's technical analysis, pending further review. I will make a site visit tomorrow to the proposed RCEC location and the Hayward Air Traffic Control Tower. I have requested track data on the VFR traffic pattern in order to correlate the pattern, as flown, relative to the proposed site. I will keep you advised.

David Butterfield
Flight Standards
AWO/AWP-230.9
310.725.7230
310.725.6857 FAX