CALIFORNIA ENERGY COMMISSION
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March 16, 2007

David Rizk, AICP
Planning Manager
City of Hayward
777 B Street
Hayward, California 94541

RE: Land Use Issues
Russell City Energy Center and Eastshore Energy Center

Dear Mr. Rizk:

As you are aware, the California Energy Commission is conducting a review of an amendment, filed by the Russell City Energy Company, LLC, to relocate the Russell City Energy Center project, certified in September 2002, to four parcels fronting Depot Road. We are also reviewing an Application for Certification (AFC), filed by Eastshore Energy, LLC, to construct and operate the Eastshore Energy Facility on Clawiter Road, approximately 3,000 feet east of the Russell City site.

Energy Commission staff are in the discovery portion of their review for these projects, which includes detailed analyses in compliance with the California Environmental Quality Act (CEQA). Although the Energy Commission has exclusive jurisdiction to license (approve the siting, construction, and operation) of thermal power plants in California that have a generating capacity of 50 megawatts or more, and is the Lead Agency under CEQA, we are also under an explicit statutory mandate to determine whether a project can be constructed and operated in a manner consistent with the requirements a city or county would typically impose. A license generally would not be issued for a project that did not conform with local laws, ordinances, regulations, or statutes (LORS) unless it was judged to be required for the public convenience and necessity, and more prudent and feasible means of achieving that convenience and necessity were not available.

General Plan and Zoning Consistency

The Eastshore Energy Center would be a nominal 115.5-megawatt, natural gas-fired facility that would operate up to 4,000 hours per year and would have 14 stacks, each approximately 70 feet tall. The proposed site for the project is at 25101 Clawiter Road, within the boundaries of the Industrial Corridor, as defined in the 2002 Hayward General Plan, and the Industrial Zoning District (HMC §10-1.1600). The Eastshore project site is also located in a portion of Hayward that has a land use designation of Industrial Corridor, and the 2002 Hayward General Plan appears to express an intent by the City to diversify Industrial Corridor development away from heavy industrial and manufacturing uses (HGP Land Use, pp. 12-21). This observation is reinforced by reports from the Planning staff to the Planning Commission and City Council on the

Eastshore project, which recommended that the project be considered inconsistent with both the General Plan and Industrial Zoning Code. Although power plants are not specifically called out in the Industrial Zoning code as a permitted use, power plant operation has been previously identified by the Hayward City Council as similar to manufacturing uses currently existing within the Industrial Corridor and consistent with the intent and purpose of the Industrial Zoning district (Resolution #01-104). However, on March 13, 2007, the City Council adopted Resolution #07-028, which declared the siting of the Eastshore project at 25101 Clawiter Road to be inconsistent with the Hayward 2002 General Plan policies. It also determined the power plant to be inconsistent with the Hayward Industrial Zoning District provisions (HMC §10-1.1600).

The Russell City Energy Center would be a base-load, 600 megawatt, natural gas-fired, combined-cycle facility, with nine cooling towers (64 feet tall) and two 145-foot-tall Heat Recovery Steam Generator (HRSG) stacks. The project was originally certified for construction at 3636 Enterprise Avenue in Hayward on September 11, 2002. As part of the original certification process, the Hayward City Council adopted Resolution #01-104 on July 10, 2001, which determined that the siting of the Russell City Energy Center at 3636 Enterprise Avenue was consistent with the General Plan, conformed with the Industrial Corridor land use designation, was a use similar to a permitted use (manufacturing) in the Industrial Zoning district, and was similar to other uses existing within the Industrial District at that time. On October 11, 2005, when relocation of the project was under initial discussion, the Hayward City Council adopted Resolution #05-125, supporting a proposed exchange of property between the Applicant and the City and construction of the Russell City Energy Center on the new site. The Hayward General Plan was significantly revised in 2002 and now specifically addresses development within the Industrial Corridor. The original Russell City project site was not evaluated under these provisions, but the new site is subject to the requirements of the revised document. The City Council did not address consistency of the new site with the 2002 General Plan or current Municipal Code as part of the 2005 resolution and did not amend the original site-specific #01-104 resolution.

Despite the City Council's determination on Eastshore (referenced above), Hayward Planning staff have indicated orally that they consider the new Russell City location consistent with both the Zoning Code and General Plan. Energy Commission staff have not been able to reconcile this conclusion as both locations are within the Industrial Corridor and Industrial Zoning District, are similar in design and operation, use the same hazardous materials and transportation route, and are only about 3,000 feet apart. Additionally, although the Eastshore facility would be somewhat closer to nearby residential areas, the Russell City facility would be nearly as visible, given the additional stack height, generally level topography of the area, and types of intervening structures. As expressed in the Planning staff's report to the City Council in 2001, power plant operation fits under the primary use classification of "manufacturing" in the Industrial Zone, in that the conversion of natural gas by mechanical equipment into electric power constitutes a form of manufacturing. This description would apply to both facilities. Finally, although the General Plan recommends consideration be given to division of the

Industrial Corridor into multiple use-specific districts, we know of no formal action that has been taken to exclude the areas surrounding the Russell City or Eastshore locations from the "manufacturing" uses previously identified. Based on current LORS, it would appear that both the Russell City and Eastshore sites should receive similar consistency determinations.

Aviation Impacts

Both the Russell City and Eastshore facilities are gas-fired power plants that would create thermal plumes above a series of stacks and cooling towers. Energy Commission staff have determined that thermal plumes may disturb atmospheric stability to more than 1,000 feet above ground level (agl). According to HMC §10-6.35, "no use may be made of land within any airport approach zone, airport turning zone, or airport transition zone in such a manner as to...endanger the landing, takeoff, or maneuvering of aircraft." Both project sites are located within the boundaries of the Airport Approach Zoning Plan for Hayward Executive Airport. Aircraft regularly fly over both project sites during normal airport operations at altitudes below 1,000 feet agl. Recently adopted southern noise abatement departure and arrival patterns for helicopters further increase the potential for low level overflight of these plumes. Small single and two-engine aircraft, rotor craft (such as helicopters), and ultra-light or experimental aircraft are particularly susceptible to low level turbulence and constitute a major portion of aircraft operations at the Hayward airport.

Information included in Appendix 3.1B of the Russell City Amendment Application and Table 8.1-11 of the Eastshore AFC indicate plume velocities in excess of those previously identified in aviation safety studies as potentially hazardous to aircraft. A 2004 safety advisory circular [AC 139-05(0)], prepared by the Australian Government Civil Aviation Authority (AGCAA), noted that "aviation authorities have established that an exhaust plume with a vertical velocity in excess of 4.3 meters (14 feet) per second may cause damage to an aircraft airframe or upset an aircraft when flying at low levels". FAA safety analysts have accepted the information contained in this advisory as a valid representation of hazardous exhaust velocities. The Heat Recovery Steam Generator (HRSG) stacks for the Russell City project would generate plumes with a vertical exit velocity of 71 to 74 feet per second (21.6 to 22.6 meters per second) at stack height during full load operation. The cooling tower plumes are estimated at exit velocities of 34 feet (10.3 meters) per second at stack height during full load operation for each cell. For the Eastshore project, there will be no visible plumes or cooling towers, but the thermal plume from each of the 14 stacks would be similar to those from the Russell City HRSG stacks, with an exit velocity of approximately 72 feet (22 meters) per second.

Plume integrity and velocities at higher altitudes and the extent of turbulence that could be created are still being determined. However, Energy Commission experience with a power plant in the City of Blythe confirms that thermal plumes can impact aircraft flying over the stacks at low altitudes. Additionally, plumes are thermally buoyant during colder weather and more likely to maintain their vertical velocity at higher altitudes

under calm, cool conditions. Although a plume-abated tower, as proposed for the Russell City facility, reduces the visual plume, it strengthens the plume's thermal buoyancy, increasing the potential for turbulence at low altitudes.

Plume behavior and characteristics are still being modeled by the project applicants and these results will be submitted to the Federal Aviation Administration, Alameda County Airport Land Use Commission, City of Hayward Public Works Department, and other interested parties for review and comment. However, based on information received to date, it appears that both the Russell City and Eastshore projects may have the potential to pose a hazard to aircraft within the Airport Approach Zoning Plan boundaries and would, therefore, be inconsistent with HMC §10-6.35 and §10-1.140 (Exclusionary Zoning Ordinance), which indicates that uses that are not specifically listed as "Uses Permitted" within a Zoning District are prohibited unless it can be determined the use is "...not more objectionable or intensive than the uses listed."

As noted above, the Planning staff recommendations to the Planning Commission and City Council regarding the Eastshore project conformity with current codified City of Hayward LORS, and recent City Council action on this issue, have raised issues regarding both the Russell City and Eastshore projects. The potential for impacts to aviation safety within the Airport Approach Zoning Plan area should also be considered. Your comments and any additional information you could provide that would assist Energy Commission staff in determining the significance and applicability of these and any other potential land use issues or impacts would be greatly appreciated.

We are interested in receiving your input on the following matters:

- Any land use-related actions the City of Hayward would normally require of an applicant prior to issuance of any permit for projects similar to the proposed Russell City and Eastshore projects. Please identify the type of permit(s), related LORS, and any determinations that might be necessary as part of the approval process.
- Planning staff's interpretation of the consistency of the project sites and operations, for both the Russell City and Eastshore Energy Centers, with the Hayward 2002 General Plan policies, Industrial Zoning District requirements, use restrictions contained in the Airport Approach Zoning Regulations (HMC §10-6.35) and the Exclusionary Zoning Ordinance (HMC §10-1.140), and any other applicable City of Hayward LORS. Please address the specific differences between the Russell City and Eastshore projects that supports the Planning staff's conclusion that Eastshore is inconsistent and the Russell City project consistent with City LORS. Include specific LORS, citations, and references supporting the Planning staff's interpretation.
- Actions proposed by the Planning staff, Planning Commission, or City Council to formally consider the consistency of the new Russell City site, with regards to the Eastshore decision, 2002 General Plan policies, and/or Municipal Code requirements.

- Recommendations for conditions or mitigations to reduce the significance of any identified potential issue or impact that the City of Hayward would normally consider adequate to resolve the issue or lessen the impact.

Energy Commission staff's preliminary assessment of these projects will be completed by early summer and we would like to incorporate your comments and address any concerns you may have regarding either project in these evaluations. Once the preliminary staff assessment is complete, it will be released for public review, allowing you the opportunity to comment once again on the discussion of LORS conformity and environmental issues. Energy Commission staff are also available to meet with you or your staff to discuss the Energy Commission's licensing process and specific issues related to these projects. It would be helpful if we could receive your input no later than April 13, 2007. Please contact Shaelyn Strattan at (916) 651-0966 if you have any questions. If you will need additional time, please let us know when you will be able to respond.

Thank you for your assistance.

Sincerely,

Paul C. Richins, Manager
Environmental Office
Energy Facilities Siting Division

cc: Docket
Russell City Energy Center (01-AFC-7 Amendment 1)
Eastshore Energy Center (06-AFC-6)
Proof of Service lists for Russell City and Eastshore Energy Centers
Alameda County Airport Land Use Commission
City of Hayward Public Works Department
Manager, Hayward Executive Airport
FAA, Environmental Planning and Compliance Section (ATTN: Joe Rodriguez)