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06-AFC-6	
DATE	JUL 28 2008
RECD.	JUL 30 2008

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

**APPLICATION FOR
CERTIFICATION FOR THE
EASTSHORE ENERGY CENTER IN
HAYWARD BY TIERRA ENERGY**

DOCKET NO. 06-AFC-6
(AFC Accepted 11/8/06)

**EASTSHORE ENERGY CENTER'S SUPPLEMENT TO THE MOTION TO REOPEN
THE EVIDENTIARY RECORD**

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July 28, 2008

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Eastshore Energy Center ("Eastshore") hereby supplements its July 16, 2008 Motion to Reopen the Evidentiary Record on traffic and transportation. Eastshore previously petitioned the Committee to allow Eastshore to submit supplemental evidence in the form of an additional summer overflight test.

As stated in the Motion to Reopen the Evidentiary Record, Eastshore proposes to prepare a protocol to submit to all other parties and the Federal Aviation Administration ("FAA") and California Department of Transportation ("Caltrans") Division of Aeronautics for comment, conduct the second overflight test, and submit the results of the second overflight test to the Committee for its consideration. Eastshore has requested until the end of September 2008 to complete the protocol and second overflight test.

During the July 21, 2008 Committee Conference, Energy Commission Staff ("Staff") and intervenors argued that Eastshore's Motion to Reopen the Evidentiary Record should be denied because a second overflight test would provide no new information. Eastshore disagrees with this conclusion and presents its reasoning and responses to Staff's and intervenors' arguments below.

The Second Overflight Test Will Alleviate Zoning and General Plan Concerns Related to Aviation Impacts

One of the first points made by Staff, Alameda County and the City of Hayward ("Hayward") in arguing against reopening the evidentiary record was that despite any further evidence of plume impacts to aircraft obtained from a second overflight test, the presence of a powerplant at the proposed site would still create a safety hazard by complicating the air traffic

pattern. (7/21/2008 RT 4: 3-10; 6: 4-9; and 11: 17-25.) Staff and Hayward argued that this would still violate the zoning code and General Plan, regardless of any plume impacts. Staff in particular made the contention that Hayward's General Plan policies are unrelated to the aviation issue and Eastshore's proposed second overflight test cannot alleviate those concerns.

(7/21/2008 RT 4: 3-10.)

Eastshore responds that Staff actually stated in the Final Staff Assessment ("FSA") that the Eastshore project was in conformance with the General Plan, but for the aviation issue. (FSA at 4.5-30.)

Eastshore believes it is poor public policy for the Committee to grant such deference to Hayward's determination that the project does not conform to its land use policies when Hayward has so explicitly advocated against the project. Such deference sets an alarming precedent for future municipalities to create land use conformity issues for any power project where they may not otherwise exist. Eastshore remains surprised that the Committee continues to defer to Hayward's interpretation of its General Plan. Hayward has repeatedly applied its General Plan policies in an illogical and inconsistent manner. In interpreting its General Plan in favor of the similar Russell City Energy Center ("Russell City") project but not for the Eastshore project located in the same land use zone, Hayward has blatantly revealed a preference for Russell City. As a state agency that must maintain the interests of the State of California as its highest priority, the Energy Commission cannot defer to a city that has so obviously shown a preference for one project over another. Due to this bias, Hayward cannot render an objective interpretation of its General Plan and the Committee should therefore disregard Hayward's reading of the General Plan.

Furthermore, Hayward's inconsistent treatment of the Eastshore project and Russell City, which constitute the same type of use in the same land use zone, demonstrates that Hayward exercised its discretion in an arbitrary and capricious manner. (*See Endangered Habitats League v. Orange County (Rutter Development)* (2005) 131 Cal.App.4th 777, 782 (explaining that the arbitrary and capricious standard applies to a municipality's determination regarding a project's consistency with the municipality's general plan).) Hayward does not have unfettered discretion to apply – or not apply – policies in its general plan. Nor does Hayward have discretion to fabricate the existence of a new planning zone, such as a Business and Technology Corridor, and then apply it to assert nonconformity, when no such planning zone has been established in any

adopted City Ordinance or General Plan map. Section 65862 of the California Government Code demonstrates the Legislature's intent that municipalities treat land uses within land use zones uniformly. Furthermore, Hayward's inconsistent General Plan interpretations are constitutionally questionable. An agency's inconsistent enforcement of land use laws, where equal conditions exist, is subject to review under the due process and equal protection clauses of the United States Constitution. (See, e.g., *City of Banning v. Desert Outdoor Advertising, Inc.* (1962) 209 Cal.App.2d 152, 154; and *Kuzinich v. County of Santa Clara* (9th Cir. 1982) 689 F.2d 1345, 1349.)

In response to Hayward and Alameda County's statement that a second overflight test cannot resolve the problems due to the constriction of airspace, Eastshore asserts that a second overflight test could potentially prove that no safety hazard exists, and therefore any concerns regarding complicating aircraft traffic patterns would be alleviated. That is precisely the point of the second overflight test. If the summer overflight test can conclusively show that aircraft would not be affected by the project's plumes, there would be no need to see and avoid flying over the project and therefore there would be no effect on aviation traffic patterns.

Eastshore Will Seek Input from Other Parties and Aviation Safety Agencies in Developing the Protocol

Staff and Hayward contended that all three agencies concerned with the aviation aspect of the project (FAA, Caltrans Aeronautics and Alameda County Airport Land Use Commission ("ALUC")) have recommended the Eastshore project be denied certification and therefore a second overflight test would not change this result. (7/21/2008 RT 4: 14-21; 5: 1-16; and 8: 10-15.) Staff also stated that these agencies would need the opportunity to review the data gathered from the second overflight test and reach an independent conclusion. (7/21/2008 RT 5: 8-16.)

Eastshore agrees with Staff regarding the necessary participation and review by the agencies and responds that these agencies would be involved, to the greatest extent possible, in the development of the summer overflight test protocol. Eastshore had insufficient time before conducting the Barrick overflight test to solicit comments from the other parties or the aviation safety agencies. Eastshore intends to seek the input of these aviation-related agencies to develop a protocol that best meets their concerns and provides convincing evidence to these expert agencies that flights over Eastshore would not be affected.

Eastshore's Motion is Timely and Supported by Good Cause

Alameda County made the allegation that Eastshore's proposed summer overflight test is not timely. Alameda County claimed that because the Committee set a December 7, 2007 cut off date for the submission of testimony, Eastshore cannot submit data from a summer overflight test as evidence without a showing of good cause, pursuant to "20 Cal. Code of Regulations Section 1754(b)." (7/21/2008 RT 9: 17-25; and 10: 1-16.) Upon closer inspection, Eastshore does not see any reference to "good cause" in Section 1754(b). Regardless, Eastshore can show that its proposed submission is both timely and supported by good cause to reopen the evidentiary record.

In order to address Staff's concern about radiator fan plumes, Eastshore needs to conduct the overflight when the test facility's radiator fans are running with a high heat rejection load. This means the test plant must be running during the hotter summer months. Eastshore could not have properly prepared for and conducted a overflight test during summer months because the Preliminary Staff Assessment ("PSA"), where the aviation impacts became an issue significant enough to warrant a overflight test, was not released until mid-August 2007 and the FSA, where Staff revised its aviation impact analysis from the PSA, was not published until November 2007, long after the opportunity to conduct a warm-weather overflight test had passed.

Furthermore, if Staff had believed the project's purported impacts on aviation were truly significant, it would have made mention of its concerns within the first 30 days of the Eastshore AFC being deemed data adequate on November 2, 2006. There was no mention of aviation impacts in Staff's December 28, 2006 Issue Identification Report either. Instead, Staff waited until March 1, 2007 to enquire about potential aviation issues in its third round of data requests. (Data Requests 68-73.)

Due to the fact that Staff delayed indicating its aviation impact concerns and the impossibility of conducting this test during the winter, good cause does in fact exist to reopen the evidentiary record to allow the summer overflight test. Therefore, Eastshore's Motion to Reopen the Evidentiary Record is timely.

Higher Elevation Creates More Severe Effects on Overflying Aircraft

In voicing its objection to Eastshore's Motion to Reopen the Evidentiary Record, Alameda County asserted that the difference in elevation between the project site and the proposed test site in either Reno, Nevada or Arvada, Colorado is too great to provide accurate

results. (7/21/2008 RT 12: 15-22; and 13: 1-17.) Eastshore counters that stacks at the higher altitude of the Barrick or Plains End plants result in stronger updrafts than expected at the Eastshore project; in other words, the higher altitude facilities' plumes will cause higher levels of turbulence than will the Eastshore project's plumes. (Ex. 20, Testimony of G. Darwin and W. Corbin at 11; 12/18/2007 RT 62: 17-21.) This is uncontroverted in the evidentiary record. The attachment provides a further technical explanation to explain why overflight at a higher altitude would show increased, not decreased, impacts.

Thus, any tests of Wartsila engines at altitudes greater than the Eastshore elevation would be conservative for estimating Eastshore impacts. These tests of similar installations to Eastshore are the most appropriate method to determine the magnitude of vertical velocities of plumes from the proposed facility on aviation operations.

Therefore, the Barrick and Plains End plants are ideal test facilities because they will cause similar—in fact, more severe—effects on overflying aircraft.

The Cancellation of the Power Purchase Agreement Does Not Lessen PG&E's Need for New Generation in Northern California

Intervenor Sarvey raised the issue of the impact of Eastshore's cancellation of its Power Purchase Agreement ("PPA") with Pacific Gas & Electric ("PG&E"). (7/21/2008 RT 19: 20-25; and 20: 1-6.) Eastshore recognizes that it did in fact cancel its PPA with PG&E due to the inability to obtain a timely decision from the Committee. Without knowledge of how the Committee would decide on the Eastshore project, Eastshore was unwilling to risk millions of dollars in potential damages to maintain the PPA with PG&E.

PG&E's Application for Expedited Approval of the Tesla Generating Station ("Tesla Application") clearly states PG&E's immediate need for generation in Northern California. PG&E asserts that it seeks expedited approval to build the 560 MW Tesla facility in order to meet the demand for electricity and procurement goals of the California Public Utilities Commission ("CPUC") by 2012. PG&E specifically states that "the need for new generation resources remains." (Tesla Application at 12.) The need is so great that PG&E has applied for expedited approval to purchase the Tesla project. Although the need for new generation in the Bay Area is clearly desperately needed, PG&E has unfortunately failed to make that statement in support of the Eastshore project.

Just because the PPA is no longer valid does not mean that the Eastshore project is any less of an important asset to the PG&E system. The project has been re-bid and because PG&E has already selected it once, there is a very strong possibility that it will do so again. And much like the Tesla project, which the Energy Commission spent considerable time siting and permitting and which has not yet been built, the Eastshore project could just as easily become a valuable addition to the PG&E system in the future.

The Committee Should Not Rely Solely on Modeling and Should Take Into Account Actual Evidence Before Making a Final Decision

Eastshore raises concerns regarding the Committee and Staff's strict reliance upon modeling to reach its conclusion that the project will pose a significant impact on aviation safety. A singular reliance upon modeling provides only an approximation, yet the Committee has rejected Eastshore's factual data, which reveals the entire aviation impact picture, as insufficient. Not only has the Committee relied only upon modeling evidence, but Eastshore believes the modeling evidence relied upon is patently false, due to its incomplete nature. The second overflight test Eastshore proposes will allow the Committee to base its decision on a complete, factual data set, not guesstimates provided from incomplete, faulty modeling.

As stated in its Motion to Reopen the Evidentiary Record, but worth repeating here, Eastshore is concerned that Staff and the Committee relied only upon the modeling conducted by Staff for a projection of potential aviation impacts from the Eastshore project. Eastshore notes that it has serious concerns about the screening-level analysis conducted by Staff. In addition, Staff only conducted a screening-level analysis for the Eastshore project where a full protocol analysis was necessary, requiring detailed modeling once the threshold conditions were met.

Eastshore notes that the full analysis includes the complete Katestone Environmental analysis of both calm and varied weather conditions, this means not simply looking at the calm case scenario but also including meaningful weather data for various other wind and temperature scenarios. The Presiding Member's Proposed Decision ("PMPD") states that the FAA had agreed with Staff's modeling analysis and references Staff's citations to the Australian Civil Aviation Safety Authority ("CASA") Advisory Circular (Exhibit 26). (PMPD at 353-354.) However, Eastshore points out that the CASA Advisory Circular specifically states that you cannot rely on a calm case scenario alone, but must take into account the full analysis, which includes all weather data for various conditions. (Ex. 26 at 4-5.) This is because calm weather

conditions rarely occur in the field. Therefore, if the Committee is going to cite to the FAA's acceptance of the CASA Advisory Circular, it must require Staff to abide by the full requirements of the CASA methodology.

Eastshore finds it astounding that the Committee has chosen to rely entirely on Staff's inadequate modeling in making its proposed decision. This is particularly troubling considering that Eastshore has offered actual evidence and proposes to offer further actual and scientific measurements that will meet all of the Committee's concerns, as well as those of the other parties and the aviation-safety agencies. For this reason, the evidentiary record should be reopened to permit Eastshore to conduct a second overflight test.

Eastshore questions whether the Committee really desires to know what the Eastshore project's impacts on aviation will be. Otherwise, it is difficult to explain why the Committee has chosen to rely on mere theoretical speculation when actual evidence has been provided. The speculation the Committee is relying upon has been offered by Staff in the form of false and inadequate modeling and Mr. Gary Cathey's unreliable and unrepresentative field notes from a 2003 overflight of the Sutter Energy Center, a large gas turbine facility with an air-cooled condenser. (12/18/2007 RT 122: 2-25, 123: 1-22; Ex. 728.) Moreover, the FAA itself has not yet provided any definitive indication of its position. In contrast, Eastshore has provided hard and factual scientific measurements from its first overflight test and is willing to engage the other parties and aviation agencies in developing a protocol and conduct a second overflight test. Eastshore believes that it is in the Energy Commission and public's best interest to conclusively establish what, if any, aviation impacts the Eastshore project will create rather than rely on simple speculation and conjecture.

Eastshore agrees that this has been a very long and trying process for all parties involved but points out that Eastshore is the applicant. As the applicant, Eastshore has perhaps been most severely affected by the delays. The proposed schedule laid out by Ms. Gefter explaining the timeline of events were the Committee to reopen the evidentiary record is excessively long. The Committee does not need nearly an additional year to analyze one aspect of a project whose total application process should have taken only a year to begin with.

Conclusion

Eastshore hereby submits this supplement to its July 16, 2008 Motion to Reopen the Evidentiary Record in order to submit the results of a second overflight test. With input from the

other parties, Staff, the Committee and the aviation safety agencies in creating a protocol, Eastshore believes that the second overflight test will provide valuable new information and will address the concerns stated during the July 21, 2008 Committee Conference.

DATED: July 28, 2008

DOWNEY BRAND LLP

By: 
Jane E. Luckhardt

Explanation For Why Vertical Plumes Will Rise Higher At Higher Altitude

In considering whether measurements of plume velocities at significantly different elevations are comparable, or to what degree they may be different, the primary issue is how the dynamics of plume rise are affected by the atmosphere at these elevations. Plume rise is a function of both momentum (velocity) and buoyancy (heat and/or density) forces acting on an exhaust plume. For exhaust gases from engines such as the Wartsila, both momentum and buoyancy forces are important factors. Initially, plume rise from these engines is dominated by the momentum of the exhaust as it exits the stack. As the exhaust is mixed with the surrounding ambient air the momentum is quickly dissipated and buoyancy forces take over to cause the plume to continue to rise. Since momentum forces are not significantly affected by elevation related atmospheric conditions, it is the buoyant portion of plume rise that needs to be examined to see what effects atmospheric conditions at different elevations may have on a plume.

In developing the plume rise formulations that are used today as the backbone for air quality modeling analysis (Briggs' 1969 "Plume Rise" and the 1975 "Plume Rise Predictions"), it was found that pressure and viscosity (density) are not significant factors and have negligible effects on plume rise. In Briggs "Plume Rise Predictions", Chapter 3 in lectures on Air Pollution and Environmental Impact Analysis (1975) one of the assumptions in formulating the basic equations that affect plume rise (conservation of mass, buoyancy, and momentum) was that density variations are considered negligible in the inertial terms of the equation for mass (but not for the buoyancy term). However, the buoyancy flux* (flux is the rate of flow) term used in plume rise equations for regulatory applications is usually cast in terms of temperature differences, not density.

In most of the fundamental published works on plume dynamics by Briggs, Turner, Weil, and others, the buoyancy flux term is shown to be inversely proportional to atmospheric density, as discussed in Briggs (1975)¹. For dispersion modeling analysis, this effect is typically ignored since the effects of a lower atmospheric density at elevations significantly above sea level would tend to increase plume rise and decrease ground level concentrations. However, for purposes of estimating plume vertical velocities, any experiments performed at elevations significantly above sea level would show an increase in the vertical velocity over similar conditions experienced at the Eastshore facility.

Thus, any tests of Wartsila engines at altitudes greater than the Eastshore elevation would be conservative for estimating Eastshore impacts. These tests of similar installations to Eastshore are the most appropriate method to determine the magnitude of vertical velocities of plumes from the proposed facility on aviation operations.

¹ The buoyancy flux equation shown in the plume vertical velocity calculations seen to date is a simplified form that assumes stack gases have approximately the same heat capacity and molecular weight as ambient conditions and ignores differences in atmospheric density and ambient pressure based on elevation changes.

Brigs, G.A., 1969; Plume Rise. USAEC Critical Review Series, TID-250785, NTIS, 81 pp

Briggs, G. A. 1975: Plume rise predictions. Lectures on Air Pollution and Environmental Impact Analyses, D.A. Haugen, Ed. Amer. Meteor. Soc., Boston, 59-111

Briggs, G.A., 1984: Plume rise and buoyancy effects. Atmospheric Science and Power Production, D. Randerson, Ed., U.S. Dept. of Energy DOE/TIC-27601, NTIS DE94005177, 327-366

Turner, J.S., 1973; Buoyancy Effects in Fluids. Cambridge University Press, 367 pp.

Weil, J.C., 1982: Source buoyancy effects in boundary layer diffusion. Workshop on the Parameterization of Mixed Layer Diffusion, Physical Sciences Laboratory, New Mexico State University, Las Cruces, 235-246.

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PROOF OF SERVICE
(Revised 7/18/08)

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, Lois Navarrot, declare that on April 28, 2008, I deposited copies of the attached **EASTSHORE ENERGY CENTER'S SUPPLEMENT TO REOPEN THE EVIDENTIARY RECORD** in the United States mail at Sacramento, California 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.

A handwritten signature in cursive script, appearing to read "Lois Navarrot", written in black ink.

Lois Navarrot