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 OPENING BRIEF ON CONTESTED SUBJECT AREAS

February 11, 2008

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Pursuant to the Notices of Evidentiary Hearing Dates and Hearing Order (dated December 4, 2007 and December 20, 2007) and the Briefing and Scheduling Order (dated January 18, 2008), Eastshore Energy Center ("Eastshore") hereby files its Opening Brief on Contested Subject Areas. This Brief addresses the contested subject areas of Air Quality, Alternatives, Environmental Justice, Land Use, Local System Effects, Noise and Vibration, Public Health and Traffic and Transportation.

Eastshore has not briefed areas where there is no controversy between the parties in the case. The uncontested subject areas include: Biological Resources, Cultural Resources, Engineering and Facility Design (including Power Plant Efficiency and Reliability), Geology and Paleontology, Hazardous Materials, Socioeconomic Resources (not including Environmental Justice issues), Soil and Water Resources, Transmission Line Safety and Nuisance, Transmission System Engineering, Visual Resources, Waste Management, and Worker Safety and Fire Protection.

I. EASTSHORE HAS MET ITS BURDEN TO PRESENT SUBSTANTIAL EVIDENCE TO SUPPORT CERTIFICATION

Eastshore has met its burden of "presenting sufficient substantial evidence to support the findings and conclusions required for certification" of the Eastshore Energy Center ("Eastshore Project"). (20 Cal. Code Regs. § 1748(d)).

The Warren-Alquist Act (Cal. Pub. Resources Code § 25000 et seq.) specifies that the California Energy Commission's (CEC) Committee's ("Committee") written decision on Eastshore's Application for Certification (AFC) must contain all of the following:

- Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety.
- Findings regarding the conformity of the proposed site and related facilities with: standards adopted by the CEC or other agencies to safeguard public health and safety; minimum standards of efficiency for the operation of any new facility; applicable air and water quality standards; and other relevant local, regional, state, and federal standards, ordinances, regulations, or laws.

- Necessary modifications, mitigation measures, conditions, or other specific provisions relating to the manner in which the proposed facilities are to be designed, sited, and operated in order to protect environmental quality; assure safe and reliable operation of the facility; comply with applicable standards, ordinances, regulations or laws.
- A discussion of any public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits.

(Cal. Pub. Resources Code § 25523 and 20 Cal. Code Regs. § 1752).

The record clearly demonstrates that Eastshore has presented substantial evidence regarding the proposed design, construction and operation of the Eastshore Project and its potential impacts to support certification. Eastshore has proposed specific mitigation measures and accepted additional mitigation measures proposed by CEC Staff ("Staff") to address potential impacts from the Eastshore Project. These mitigation measures ensure the Eastshore Project will be constructed and operated to protect environmental quality and assure public health and safety. The evidence also shows that the Eastshore Project will comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS).

A. The Eastshore Project Will Comply With Applicable LORS, Assure Public Health and Safety and Protect Environmental Quality

The uncontroverted evidence presented in the uncontested subject areas plainly shows that the Eastshore Project will be constructed and operated in compliance with applicable LORS, will assure public health and safety, and will protect environmental quality.

In the contested subject areas of Air Quality, Alternatives, Environmental Justice, Land Use, Local System Effects, Noise and Vibration, Public Health, and Traffic and Transportation, the evidence shows:

- Traffic and Transportation: All of the opposition groups' transportation safety concerns are based on the erroneous assumption that the Eastshore Project would affect aircraft flying into and out of the Hayward Executive Airport. Hard scientific and technical evidence demonstrates, however, that the Eastshore Project's plume will not cause a hazard to overflying aircraft. Thus, the Eastshore Project will be consistent with all applicable traffic and transportation LORS.
- Land Use: The Eastshore Project will be similar to other permitted uses in the Industrial District, where the Eastshore Project site is located. Moreover, the Eastshore Project will not cause a hazard to overflying aircraft and, in turn, will not impact existing or future operations at the Hayward Airport. Therefore, the Eastshore Project is consistent with all of the City of Hayward's land use LORS.

- Noise and Vibration: Staff's inconsistent and unduly restrictive application of noise standards is unnecessary to meet LORS or keep project impacts below significance levels. The Eastshore Project will not cause any significant and adverse noise impacts at the nearest residence (R1) or at the Fremont Bank (R2). Eastshore understands local community concerns about noise and hereby commits to reduced project-only noise levels.

- Environmental Justice: The CEC's environmental justice methodology is consistent with all applicable policy and guidance, and Staff correctly applied the methodology in concluding that the Eastshore Project will not have a disproportionate effect on an environmental justice population.

- Air Quality: The evidence provided by Eastshore, Staff and the Bay Area Air Quality Management District (BAAQMD) demonstrate the Eastshore Project's compliance with LORS and protection of air quality. Eastshore requests a revision to Condition of Certification AQ-SC8 to expand the geographic area from which Eastshore can obtain Emission Reduction Credits consistent with BAAQMD requirements. Furthermore, Eastshore requests a change in the interpollutant offset trade ratio to 3 to 1 for SO_2 to PM_{10} consistent with BAAQMD policy and practice and because Staff presented a flawed and unsupported analysis for its interpollutant trade ratio. Despite concerns expressed by other parties, the BAAQMD's fireplace retrofit program is a feasible, established and effective mitigation measure.

- Public Health: Condition of Certification Public Health-1 is unnecessary to protect the public health and safety. Eastshore's proposed revision to Public Health-1 to require testing of only one engine exhaust stack is consistent with BAAQMD requirements in the Final Determination of Compliance (FDOC) and protects public health. Testing four engines is unnecessary. Furthermore, no approved test for acrolein exists, therefore, Eastshore cannot perform a test for acrolein.

- Alternatives: Staff correctly concluded that no feasible alternative exists for the Eastshore Project. Moreover, each alternative identified by Staff constitutes a "no project" alternative because any alternative site requires a new AFC with associated delays that would force Eastshore to terminate the Project. In addition, any alternative site that requires an interconnection location other than the Eastshore substation does not meet the Eastshore Project's objectives.

- Local System Effects: Staff correctly concluded that the Eastshore Project will reduce transmission system losses, which equals savings to ratepayers, provide a local generation facility, increases the system's reactive margin, and reliably connect to existing the California Independent System Operator (CAISO) grid. However, Staff's conservative approach minimized the extent of Eastshore's benefits to the local system.

The following discussion reviews the evidence presented in each of these areas. A thorough examination of the evidence demonstrates that the Eastshore Project complies with applicable LORS, assures public health and safety, and protects environmental quality.

B. Eastshore Takes Issue With the Procedural Aspects of the Evidentiary Hearing

Eastshore calls the Committee's attention to the conduct of the Intervenor Parties during the evidentiary hearing. Specifically, Eastshore takes issue with the conduct of Intervenor Group Petitioners.

Intervenor Group Petitioners, like many of the parties, submitted or attempted to submit additional exhibits or new information to the record during the evidentiary hearing. Unlike the other parties, however, Group Petitioners did not distribute copies of these documents in a timely manner. When other parties had new or supplemental information, they distributed copies to the other parties before the hearing commenced for the day, or as soon as was reasonably possible. In contrast, Group Petitioners failed to abide by this courtesy, choosing to reveal that it had new information in its possession at the last possible moment. This tactic deprived the other parties of sufficient time to review and respond to Group Petitioners' new and potentially important information. Eastshore believes that this was a deliberate trial tactic on the part of Group Petitioners and calls the Committee's attention to the party's egregious behavior.

II. TRAFFIC AND TRANSPORTATION

The Eastshore Project site is located approximately 1.3 miles from the Hayward Executive Airport and, therefore, the parties analyzed whether the Eastshore Project will have any impact on overflying aircraft. (Eastshore, Confirmation of Distances Requested by Hearing Officer at 3 (Feb. 1, 2008.)) The evidence in these proceedings demonstrates that such an impact will not occur. This section walks through the evidence regarding aviation impacts and explains why the Eastshore Project will not create an airspace hazard. This section then identifies how the Eastshore Project satisfies each of the applicable laws, ordinances, regulations, and standards related to aviation impacts.

A. The Eastshore Project Will Not Cause A Hazard To Aircraft Flying In And Out Of Hayward Airport

Opponents of the Eastshore Project argue that the Eastshore Project will cause a safety hazard based on the underlying assumption that the plumes will affect aircraft flying into and out of the Hayward Executive Airport. This underlying assumption, upon which the opponents and

Staff base *all* of their transportation arguments, is plainly wrong. First, the possibility of an aircraft ever encountering a plume from the Eastshore facility is extremely remote; statistics show that almost no aircraft will ever fly over the Eastshore Project at altitudes and distances potentially impacted by the plume. (Ex. 20, M. Graves Testimony Regarding Thermal Plumes and Aviation at 2 ("there is a . . . 15 in one billion chance that an aircraft will encounter a thermal plume from Eastshore").) And, second, actual physical measurements from overflights of a comparable facility clearly demonstrate that, for those few aircraft that will fly over the plumes, the plumes will not create a safety hazard. (Ex. 20, Final Report on Turbulence Felt In a Light Helicopter Caused by a Power Plant Thermal Plume at 11.) Third, a panel of Federal Aviation Administration (FAA) safety experts concluded that "the risk associated with plumes is deemed acceptable without restriction, limitation or further mitigation." (Ex. 39 at ii.) Therefore, the CEC should similarly find that the Eastshore Project will not cause a significant aviation hazard, does not require further mitigation, and is in compliance with all applicable traffic and transportation LORS, and should disregard the opponents' unsubstantiated claims to the contrary.

1. Actual Overflight Measurements From A Comparable Facility Demonstrate That The Eastshore Project's Plume Will Not Cause An Aviation Hazard

Despite the fact that over 30 years of FAA records (representing more than 849 million flight hours) fail to account for a single accident or incident attributed to overflight of a thermal industrial plume, the CEC Final Staff Assessment ("FSA") asserts that the Eastshore Project could cause a safety hazard to overflying aircraft and, consequently, will not conform to all applicable LORS pertaining to traffic and transportation. (12/18/2007 RT 282: 12-18; Ex. 200 at 4.10-23 – 4.10-25; Ex. 20, M. Graves Testimony Regarding Thermal Plumes and Aviation at 3.) Specifically, the FSA states that the Eastshore Project is inconsistent with the Alameda County Airport Land Use Policy Plan ("Airport Plan") and the Airport Approach Zoning Regulations in the City of Hayward Municipal Code, chapter 10, article 6 ("Airport Approach Zoning Regulations"). (Ex. 200 at 4.10-23 – 4.10.25.) The FSA also states that the effect on airspace safety caused by the Eastshore Project, in conjunction with the recently-approved Russell City Energy Center ("RCEC" or "Russell City Project"), "would be a significant cumulative impact under CEQA [California Environmental Quality Act]. . . ." (Ex. 200 4.10-29.) Staff's assertion of LORS noncompliance is based entirely on the supposition that the Eastshore Project would

constitute an aviation hazard at its proposed location. (12/18/2007 RT 282: 12-18; Ex. 200 at 4.10-23 – 4.10-25.) Eastshore disagrees with the FSA statements and has submitted evidence demonstrating that Staff's conclusions are wrong.

a. The Barrick Fly-Over Test Flight Program Simulated Worst-Case Conditions At The Eastshore Project

To support Eastshore's modeling which demonstrates that the Eastshore Project's plume will not pose an aviation hazard and to address the concerns expressed by Staff, Eastshore retained experts in aircraft and meteorological studies and an experienced helicopter pilot to obtain turbulence measurements in conditions that simulated the airspace over the Eastshore Project ("Barrick Fly-Over Test Flight Program" or "Barrick Fly-Over Test"). (12/18/2007 RT 61: 19-25; Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 1.)

The Barrick plant, near Reno, Nevada, was identified as a comparable and nearly identical power plant upon which to perform the study. (12/18/2007 RT 62: 1-7.) The Barrick plant is of the exact number of engines, and engine make, model, size, and technology as the proposed Eastshore Project. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Cause by a Power Plant Thermal Plume at 1.) Like Eastshore, the Barrick plant has 14 internal combustion engines, 11 of which were operating on the day of the study. (12/18/2007 RT 62: 7-11; 12/18/2007 RT 65: 16-22.) The primary difference between Barrick and Eastshore is that the Barrick stacks are arranged in groups of threes and fours, instead of individual stacks arranged linearly as proposed for Eastshore. (12/18/2007 RT 62: 10-16; 12/18/2007 RT 256: 13-17.) A second distinction is that the Eastshore Project's stacks will be 15 feet taller than the stacks at Barrick. (12/18/2007 RT 76: 2-3.) These minor distinctions, however, did not affect the reliability of the Barrick Fly-Over Test's results. In fact, the experts explained that the arrangement of the stacks at the higher altitude of the Barrick plant will result in stronger updrafts than expected at the Eastshore Project; in other words, the Barrick plant's plumes will cause higher levels of turbulence than will the Eastshore Project's plumes. (Ex. 20, Testimony of G. Darvin and W. Corbin at 11; 12/18/2007 RT 62: 17-21.) Thus, the Barrick plant was an ideal test facility because it will cause similar—in fact, more severe—effects on overflying aircraft. (12/18/2007 RT 62: 5-9; Ex. 20, Testimony of G. Darvin and W. Corbin at 11-12.)

The experts performed the Barrick Fly-Over Test Flight Program in conditions that closely simulated what Staff identified as the worst-case scenario for aircraft flying over the Eastshore Project. (12/18/2007 RT 260: 11-14; Ex. 200 at 4.10-44.) First, the Barrick Fly-Over Test accounted for Staff's concern that the Eastshore Project's plume will likely be invisible to pilots; on the day of the Fly-Over Test, the Barrick plume was invisible. (Ex. 200 at 4.10-21; 12/18/2007 RT 62: 23-25; 12/18/2007 RT 73: 12-16.) Moreover, the weather was cold and calm, which is the most conducive condition for the formation of thermal plumes. (12/18/2007 RT 260: 11-14; Ex. 200 at 4.10-44.)

Intervenor Paul Haavik insinuated at the hearing that the cool conditions at Barrick may have resulted in lower turbulence levels due to a reduced need to run the cooling radiator fans, but this argument misses the mark. (12/18/2007 RT 260: 108.) The experts chose to perform the Barrick Fly-Over Test Flight Program during cool temperatures, even though radiator fans will not be running at full speed, because Staff specifically identified cool, calm weather as the worst possible conditions for potential turbulence. (12/18/2007 RT 260: 9-15; Ex. 200 at 4.10-44.) Moreover, Eastshore's expert, Mr. Greg Darvin, testified that the radiator fans at the Eastshore Project will not increase the velocity of the plume because the radiator fans will have a separate effect on turbulence levels. (12/18/2007 RT 257: 9-11.)

Staff's flawed modeling of the potential thermal plume impacts to aircraft concluded that the impacts from the radiator fans will be greater than the impacts from the stack. (Ex. 200 at 4.10-43.) The Fly-Over Test results clearly demonstrated that the modeling assumptions resulted in unrealistically exaggerating the effects of the updrafts from the radiator fans. Indeed, the Barrick Fly-Over Test confirms that the radiator fans' ability to cause turbulence is minimal. Even though the radiator fans were running at 45% of maximum speed, the helicopter experienced zero turbulence as a result of flying over the radiator fans. The only turbulence recorded by the instruments in the helicopter was caused by the thermal plume from the stacks. (12/18/2007 RT 247: 23-25, 248: 1-23; 12/18/2007 RT 259: 4.) Thus, the oppositions' and Staff's attempt to focus on the updrafts from the radiator fans, as opposed to the effect caused by the thermal plume from the stacks, is without technical merit. The Barrick Fly-Over Test Flight Program took place with a very susceptible (light) aircraft and during the worst possible turbulence conditions that could face pilots flying over the Eastshore Project.

b. The Measurements Accurately Demonstrate Little-To-No Turbulence

To further ensure the reliability of the Barrick Fly-Over Test Flight Program, the expert consultants used a Robinson R44 lightweight four-seat helicopter, which is one of the same models that are used to train student pilots at the Hayward Executive Airport. (12/18/2007 RT 63: 2-7.) The Robinson R44 was instrumented to contain a GPS system to measure position and altitude and a vertical accelerometer to measure vertical acceleration (i.e., turbulence). The instrument package was calibrated to record data at a rate of 100 times per second. (12/18/2007 RT 63: 7-11; Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 5.) The experts classified the vertical acceleration measurements according to the FAA's Aeronautical Information Manual operating definitions as either "light" (0.20 -0.49 g), "moderate" (0.5-0.99 g), "severe" (1.0-1.99 g), or "extreme" (2 g and higher). (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 4-5.)

The helicopter crew flew over the Barrick plant twelve times in total. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 7.) The first pass over the Barrick plant was from east-to-west starting at 700 feet above ground level (AGL). Subsequent east-to-west passes were made at lower and lower altitudes, working down to below 300 feet AGL. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 7.) Then, the helicopter flew passes from north-to-south starting at 500 feet AGL and working down to below 300 feet AGL. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 7.) Although the onboard experts recorded their lowest levels at 300 feet AGL in their report, Mr. Blumenthal explained during the hearing that the GPS system in the helicopter recorded altitudes at approximately 250 feet AGL. (12/18/2007 RD 66: 13-21.) The low altitude turbulence measurements are very conservative because this altitude is 350 feet lower than the 600 foot AGL traffic pattern altitude for Hayward Executive Airport. (Ex. 20, Testimony of M. Graves, Attachment 10 at 1; Ex. 20, Testimony of M. Graves, Attachment 11 at 2.) It is also fifty feet lower than the lowest recorded altitude of an aircraft (approximately 300 feet AGL) in the vicinity of the Eastshore site. (Ex. 208; Ex. 417, Ex. 418.)

During the fly-overs, the instruments recorded little to no turbulence. During nine passes, the vertical accelerometer failed to record even "light" turbulence. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by the Power Plant Thermal Plume at 11.) For the other three passes, the accelerometer recorded turbulence in the lower half of the "light" turbulence range. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume at 11, 17.) For the three passes that registered low-level "light" turbulence, the GPS system indicated that the helicopter's altitude was approximately 250 feet AGL, which is approximately fifty feet below the level that any aircraft have been recorded as flying in the vicinity of the Eastshore site. (Ex. 208; Ex. 417; Ex. 418.)

In addition to the recorded measurements, the pilot, Mr. Claudio Bellotto, provided qualitative observations of turbulence for each pass over the Barrick plant based on his many years of experience. (12/18/2007 RT 68: 2-5; Ex. 20, Testimony of C. Bellotto at 1.) Consistent with the quantitative measurements, Mr. Bellotto reported that the only turbulence he encountered, when encountered at all, was "very light," and he stated that there was "no noticeable effect of the plume on his ability to fly the helicopter." (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by the Power Plant Thermal Plume at 11, 16, 17; 12/18/2007 RT 68: 15; 70: 23-25.) Mr. Bellotto testified that, had he not been informed of the plumes, "I would have never noticed that I was flying through plumes or even over a power plant at all." (12/18/2007 RT 72: 1-3.) Mr. Bellotto's expert judgment is particularly useful in analyzing the effect of the thermal plume because he is an experienced pilot and a certified FAA flight instructor. (Ex. 20, Testimony of C. Bellotto at 1.) Mr. Bellotto testified that he had no concern about the thermal plume's effect on the ability of either experienced or student pilots to handle aircraft. (Ex. 20, Testimony of C. Bellotto at 4.)

The Barrick Fly-Over Test Flight Program provides substantial scientific and physical evidence that the Eastshore Project will not cause a safety hazard to overflying aircraft. The thermal plumes produced by the Eastshore Project will, at most, cause "light" turbulence. (*See generally* Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by the Power Plant Thermal Plume.) The Barrick Fly-Over Test Flight Program's results demonstrate that such an impact, if felt at all, will not impact a pilot's control over the operation of an aircraft.

2. The Opponents' Evidence That The Eastshore Project's Plume Could Cause A Safety Hazard Is Unreliable

a. Staff Improperly Applied An Australian Regulatory Approach To Model Impacts on Aircraft

In contrast to the Barrick Fly-Over Test's hard evidence, the CEC Staff and opponents to the Eastshore Project rely on a simplified modeling methodology to assert that the thermal plume could create an aircraft hazard.[1] This simplified method uses calm winds only, and it not recommended for use in Australia by a regulatory agency that reviews these types of analyses. The Staff's modeling is unreliable and should be given little or no weight in comparison to Eastshore's actual scientific measurements.

Staff improperly utilized only a portion of the methodology approved by the Australian Government Civil Aviation Safety Authority's Advisory Circular (CASA AC) to determine that, "the Eastshore [P]roject may, under certain weather conditions, disturb atmospheric stability to 480 AGL or higher." (Ex. 200 at 4.10-20.) The Staff applied only bits and pieces of the methodology endorsed by the CASA AC, instead of applying all of its procedures. (Ex. 20, Testimony of W. Corbin and G. Darvin at 10.) This approach resulted in a technically inaccurate, piecework analysis that fails to properly characterize a full and accurate picture of the safety issues associated with the Eastshore Project. First, Eastshore's meteorological experts, Mr. William Corbin and Mr. Gregory Darvin, explained that Staff incorrectly applied a standard for initial screens of thermal plume velocities.

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[1] All of the opponents' witnesses based their opinions on the assumption that the Eastshore Project's thermal plume will cause a hazard to overflying aircraft. The opponents either relied on the Staff's faulty modeling analysis or no thermal plume analysis at all to reach their ultimate conclusions.

- Mr. Gary Cathey relied on the Staff's modeling analysis when forming his concerns about the safety of aircraft that will fly over the Eastshore Project's alleged "high-velocity thermal plume." (12/18/2007 RT 188: 14-25, 189: 1-20.)
- Mr. Jay White relied on the Staff's modeling analysis to conclude that the Eastshore Project's thermal plume will be hazardous to overflying aircraft. (12/18/2007 RT 265: 14-22.)
- Mr. David Butterfield did not even consult a thermal plume analysis when opining that the FAA's generic safety measures should be applied to the Eastshore Project. (12/18/2007 RT 275: 11-13.)
- Mr. Andy Richards did not point to any authority for his conclusion that the Eastshore Project's plume could interfere with existing traffic patterns in the Bay Area. (12/18/2007 RT 274: 18-21.)
- Dr. Robert Bauman relied on the Staff's modeling analysis to determine that the Eastshore Project's thermal plume could result in the City of Hayward losing financial assistance from the FAA. (12/18/2007 RT 269: 7-10.)
- Ms. Carol Ford relied on the Staff's modeling analysis to determine that Eastshore Project's thermal plume will ultimately hinder the local economy. (12/18/2007 RT 265: 14-22.)

> [T]he [FSA] incorrectly asserts that the 4.3 m/s [standard for plume velocity] is a standard in Australia that cannot be exceeded. Instead, 4.3 m/s, *calculated as an average*, is a trigger for further assessment, a screening-level criterion.

(Ex. 20, Testimony of W. Corbin and G. Darvin at 1 *citing* CASA AC § 6.3 and Attachment A.) By applying the 4.3 m/s standard as an absolute or peak value, instead of the approved average value, the Staff analysis failed to present a valid assessment of plume velocity. (Ex. 20, Testimony of W. Corbin and G. Darvin at 10 (citing CASA AC § 6.3 and Attachment A).) Moreover, "[i]f the Staff wishes to apply the Australian screening threshold of 4.3 meters/second as either a standard or screening tool, then the Commission should also apply the correct and entire assessment methodology that was designed to accompany the Australian advisory rather than just the first step." (Ex. 20, Testimony of W. Corbin and G. Darvin at 10 (citing CASA AC §§ 8.2, 8.3.)) Instead, the FSA performed an incomplete analysis that is technically short of the required steps because it focused only on the initial screening tool to reach its conclusions, "which produces an unrealistic result . . . ." (Ex. 20, Testimony of W. Corbin and G. Darvin at 10 (citing CASA AC §§ 8.2, 8.3.))

Staff incorrectly applied another CASA AC significance level, as well. Staff attempted to calculate the thermal plume's peak altitude by multiplying the average velocity by 2.0. (Ex. 200 at 4.10-20.) However, Mr. Corbin and Mr. Darvin explained that, while the 2.0 multiplier is a standard that can be used to establish peak velocity, "it will not produce any information about the altitude at which the peak velocity occurs." (Ex. 20, Testimony of W. Corbin and G. Darvin at 10.)

Staff's analysis unrealistically assumed that there will be no separation between the stacks at the Eastshore Project, even though two groups of three and four stacks will be separated by 10.8 meters and each stack within a group will be separated by 5.4 meters. As such, Staff's calculation instantly merges the plumes together regardless of the physical separation (where there will be zero stack velocity) and completely ignores the Australian merging calculation method. (Ex. 20, Testimony of W. Corbin and G. Darvin at 8.) Likewise, Staff analysis failed to account for the dead space that will exist between each of the Eastshore Project's radiator fans, which will have zero vertical velocity. (Ex. 20, Testimony of W. Corbin and G. Darvin at 8.) Both of these errors result in an excessive and flawed overestimation of the Eastshore Project's vertical velocity and plume heights. (Ex. 20, Testimony of W. Corbin and G. Darvin at 8-9.)

Finally, Staff's analysis is unrealistic because it did not account for any horizontal winds, even though it is a well-known phenomenon that winds increase dramatically with height and that calm winds are almost non-existent in the region. (Ex. 20, Testimony of W. Corbin and G. Darvin at 7.) The CASA AC discredits the Staff's approach by stating that "[t]his has often led to an overly conservative estimate of aviation impacts, and is [*sic*] some cases unnecessary restriction on aircraft operations or even refusal of [a] proposal." (Ex. 20, Testimony of W. Corbin and G. Darvin at 7 (quoting CASA AC § 8.3.)

In sum, Staff's analysis is full of holes and inconsistencies and cannot be backed up or verified with actual test data. Therefore, the Staff's analysis is unreliable. The CEC should disregard Staff's flawed analysis and all of the statements and conclusions based on Staff's analysis, including those of the intervening parties who confirmed at the hearing that they relied exclusively on Staff's modeling analysis. (12/18/2007 RT 188: 14-15, 189: 1-20; 12/18/2007 RT 265: 14-22; 12/18/2007 RT 269: 7-10; 12/18/2007 RT 265: 14-22.)

b. Mr. Cathey's Flight Over The Sutter Facility Is Unreliable And Irrelevant

Staff also submitted testimony by Mr. Gary Cathey regarding a flight that Mr. Cathey made over the Sutter Facility on December 18, 2003. (12/18/2007 RT 122: 2-25, 123: 1-22; Ex. 728.) This evidence is both unreliable and irrelevant to the proceedings at hand. According to Mr. Cathey's testimony, he experienced turbulence at "approximately 1,000 feet" during the flight and that the turbulence "jeopardized controllability and maneuverability of the aircraft." (12/18/2007 RT 122: 23, 123: 2-4.) Mr. Cathey's field notes from this flight contradict his statements, suggesting that Mr. Cathey's testimony is not reliable. According to his field notes, Mr. Cathey only noticed "1 bump; very minor – poss. air pocket" at 1,500 feet and "the closer you get to the ground, the more natural turbulence there is." (Ex. 728.) The field notes make no reference to turbulence at 1,000 feet or to any turbulence that could interfere with flight operations.

Furthermore, Mr. Cathey's flight was not representative of the conditions that will exist over the Eastshore Project. In contrast to the Eastshore Project's proposed 14 internal combustion engines, the Sutter Facility is a 500 MW natural gas fueled, combined cycle, electric generation facility that uses two 170 MW gas turbine/generators. (12/18/2007 RT 62: 7-11; CEC Final Decision 97-AFC-2 at 10 (April 1999).) The stacks at the Sutter Facility are 145 feet tall

versus 70 feet at Eastshore. (12/18/2007 RT 75: 19; CEC Final Decision 97-AFC-2 at 99 (April 1999).) The thermal heat produced by the Sutter Facility is cooled by an air cooled condenser (ACC). The horizontal area of the ACC for Sutter is roughly the size of a football field and is roughly 3 to 4 times larger than the radiators for Eastshore, but reject approximately 17 times more heat than Eastshore. (*Id.* at 99.) In order to achieve this higher level of heat reject, Sutter's ACC must move a much greater amount of air, which like the higher heat rejection rate, causes a much higher vertical velocity and therefore generates more turbulence. The ACC is also over 100 feet high at Sutter. (*Id.*) The Sutter Facility's ACC displaces air at significantly higher momentum and buoyancy than would the fans at the Eastshore Project. Because of these differences, the turbulence caused by the Sutter Facility's plume will certainly be much greater than any effect that will be associated with the plume at the Eastshore Project. Therefore, the evidence regarding Mr. Cathey's flight over the Sutter Facility is irrelevant, unreliable, not based on a scientific flight test plan, and clearly countermanded by Eastshore's actual scientific evidence from the Barrick Fly-Over Test Flight Program.

B. Because The Eastshore Project Will Not Cause A Safety Hazard For Aircraft, The Eastshore Project Is Consistent With All LORS

1. The Eastshore Project Is Consistent With The Airport Plan

The current approved version of the Airport Plan is dated July 16, 1986 ("1986 Airport Plan"). (Ex. 535.) Although the Alameda County Airport Land Use Commission ("Alameda County ALUC") has released draft revisions to the 1986 Airport Plan, Eastshore asserts that only the 1986 Airport Plan is determinative to the proceedings at hand. (Ex. 535; Ex. 56; Ex. 534.) Even if the CEC decides to consider more recent versions of the Airport Plan, however, the Eastshore Project complies with every version of the document.

a. The Eastshore Project Is Consistent With The Safety Elements In The 1986 Airport Plan

The Eastshore Project site is approximately 1.3 miles (6,590 feet) south of the Hayward Executive Airport's runways and, thus, one safety policy set forth in the 1986 Airport Plan apply. (Eastshore, Confirmation of Distances Requested by Hearing Officer at 3 (Feb. 1, 2008.)) The 1986 Airport Policy does not permit uses that will cause "electrical interference, glare, smoke, disorienting lighting . . . [or] large concentrations of birds." (Ex. 535 at 56; *see also* Ex. 535 at 12-13.) The Eastshore Project complies with this requirement. The Eastshore Project will not

create any visual impediments to aircraft; in fact, Staff has even noted that the plume will likely be invisible. (Ex. 200 at 4.10-21.) Thus, the Eastshore Project is consistent with the 1986 Airport Plan.

b. Staff's Determination That The Eastshore Project Is Inconsistent With The Airport Plan Is Incorrect

Although Staff ultimately disagreed with Eastshore's position regarding consistency with the Airport Plan, Staff noted that "[the Eastshore] Project elements appear consistent with the safety elements and hazards to flight [in the Airport Plan]." (Ex. 200 at 4.10-23 – 4.10-24.) Staff's decision to ignore the obvious consistencies is based on statements by the FAA regarding generic policies to minimize safety effects associated with thermal plumes. (Ex. 200 at 4.10-23 – 4.10-24.) The generic safety policies do not account for the actual conditions that will exist at the Eastshore Project, however, and are therefore irrelevant. (*See* Ex. 39 at 16-17.)

First, the FAA issued a determination that the level of risk caused by the Eastshore project "is of the order of 1×10^{-9} or less" and, therefore, "is deemed acceptable without restriction, limitation or further mitigation." (Ex. 39 at 16; Ex. 39 at iv.) The FAA's Safety Risk Analysis then proceeds to identify a number of generic FAA recommendations in the context of making an already safe condition safer. (*See* Ex. 39 at 16-17.) The record in no way suggests that the FAA considered the specific conditions at the Eastshore Project when identifying these generic safety recommendations. Indeed, the only support for applying the FAA's generic recommendations to the Eastshore Project is testimony by the FAA's representative, Mr. David Butterfield, at the December 18, 2007 hearing. (12/18/2007 RT 281: 18-25, 282: 1-9.) Mr. Butterfield acknowledged, however, that he had not even consulted a thermal plume analysis when determining whether the FAA's generic mitigation measures should be applied to minimize the effect of the Eastshore Project's plume. (12/18/2007 at 275: 11-12.) Thus, the CEC should disregard Mr. Butterfield's testimony because he had no scientific of factual basis for his opinion.

Despite the lack of connection between the FAA's generic recommendations and the Eastshore Project, Staff relied on the FAA's statements that the pilots should "avoid direct over-flight of industrial plumes below 1,000 feet AGL" as a hard-and-fast safety requirement to ensure compliance with the Airport Plan. (Ex. 200 4.10-23 – 4.10-24.) However, Staff erroneously concludes that, because pilots must transit the Hayward Executive Airport at 600

feet AGL when flying over the Eastshore site, the measure is infeasible. (Ex. 200 4.10-21.) Staff also noted that a "see-and-avoid" measure (that is, a direction to pilots "to look for the exhaust stacks and cooling towers on the ground, then see and avoid any visible plumes . . .") will unreasonably burden pilots flying into and out of the Hayward Executive Airport. (Ex. 200 at 4.10-21 (citing FAA 2007a).)

Regardless of feasibility, these FAA safety measures are unnecessary here because the Eastshore Project will not cause a hazard to overflying aircraft. As explained above, based on actual scientific measurements, the Eastshore Project will create no turbulence above approximately 250 feet AGL and only "light" turbulence at 250 feet AGL. (12/18/2007 RT 66: 13-20.) There is no need to require that pilots fly 750 feet above the highest altitude in which "light" turbulence exists, (i.e., 1,000 feet AGL). Moreover, because the Eastshore Project will not create a hazard for aircraft, there will be nothing for pilots to "see-and-avoid." Therefore, Staff's decision is misplaced at best.

c. Even Though The New Draft Airport Plan Is Not Applicable Here, The Eastshore Project Is Consistent With The Revisions

Since 1986, the Alameda County ALUC has issued two different draft versions of the Airport Plan. The first revision is dated July 2007 ("July 2007 Airport Plan"). (Ex. 56.) Then, the Alameda County ALUC issued a second revision to the Airport Plan in December of 2007 ("December 2007 Airport Plan," Ex. 534), which was not even available for public distribution until January 16, 2008.

As explained above, Eastshore asserts that only the 1986 Airport Plan is determinative in this proceeding. The 1986 Airport Plan is the only document that the Alameda County ALUC has approved and that contains effective policies. Indeed, even the most recent draft version states "[t]he policies presented in this [Airport Plan] shall become effective . . . on the date that the Alameda County ALUC adopts the plan. Until that time, the policies set forth in the 1986 [Airport Plan] shall remain in effect." (Ex. 534 at 2-2.)

Despite the fact that the 1986 Airport Plan is the only applicable adopted version of the document, the opponents have gone to great lengths to present different airspace safety elements than the Alameda County ALUC approved in 1986. On January 14, 2007, Alameda County introduced the December 2007 version of the Airport Plan, which contains two brand-new airport safety requirements. (Ex. 534.) First, the December 2007 Airport Plan would create a

new safety zone area surrounding the Hayward Executive Airport where the Eastshore site is located. (Ex. 534 at Figure 3-4; 1/14/2008 RT 189: 16-25, 190: 1-15.) The December 2007 Airport Plant would only permit power plants within the new safety zone, "Zone 7," "if no other suitable site outside [the airport influence area] is available." (Ex. 534 at 3-20.) Second, the December 2007 Airport Plan states that "sources of dust, heat, steam, smoke, or *thermal plumes* that may impair pilot vision or *create turbulence within the flight path*" are to be avoided." (Ex. 534 at 3-22 (emphasis added).)

These safety requirements are so new that they do not even appear in the July 2007 version of the document. (*Compare* Ex. 534 at 3-20, 3-22 *with* Ex. 56 at 3-40 – 3-42.) The recent addition of these requirements and the fact that both requirements relate to power plants strongly suggests that Alameda County ALUC staff incorporated the requirements in response to opposition to the RCEC and Eastshore Projects. (1/14/2007 RT 153: 17-24, 154: 18-25, 155, 1-4, 156: 19-25, 157: 1-2.) Eastshore objects to the Alameda County ALUC's apparent tactics, especially when it has been demonstrated that the RCEC and Eastshore Projects will not affect aircraft flying into and out of the Hayward Executive Airport. (CEC Final Decision 01-AFC-7C at 188 (Oct. 2007); *see generally* Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume.)

Even if the CEC decides to consider the most recent draft version of the Airport Plan (December 2007), the Eastshore Project is consistent with this version. As previously explained, the Eastshore Project will not create turbulence within the Hayward Executive Airport's flight path. The highest point at which the Eastshore Project's thermal plume will create turbulence is 250 feet AGL and aircraft do not pass over the Eastshore site below approximately 300 feet AGL. (12/18/2007 RT 66: 13-20; Ex. 208; Ex. 417; Ex. 418.) Thus, the Eastshore thermal plume will not "create turbulence within the flight path." (Ex. 534 at 3-22.)

Moreover, as explained in section VIII of this brief, "Alternatives," there are no suitable alternatives to the Eastshore site for the Eastshore Project. Indeed, even Dr. Suzanne Phinney, Staff's expert consultant, testified that Staff rejected all other site alternatives because, "they would not meet the project objectives." (1/14/08 RT 81: 11-12.) Thus, the Eastshore Project complies with the December 2007 Airport Plan because, even though the Eastshore site is located within Zone 7, "no other suitable site outside [the airport influence area] is available." (Ex. 534 at 3-20.)

2. The Eastshore Project Is Consistent With The Airport Approach Zoning Regulations

Staff erroneously decided that the Eastshore Project is inconsistent with the City of Hayward's Airport Approach Zoning Regulations, Hayward Municipal Code Chapter 10, Article 6. Based on its flawed modeling analysis, Staff determined that the Eastshore Project "could present a hazard to aircraft flying at pattern altitude during certain weather conditions" and, thus, was inconsistent with the Airport Approach Zoning Regulations' stated purpose. (Ex. 200 at 4.10-25.) As explained above, however, Staff's modeling analysis is inaccurate and cannot provide support for any conclusions regarding the Eastshore Project's effects on the airspace.

The purpose of the Airport Approach Zoning Regulations is:

> promoting the health, safety and general welfare of the inhabitants of the City of Hayward by preventing the creation or establishment of airport hazards, thereby protecting the lives and property of the users of the Hayward Air Terminal and of the occupants of the land in its vicinity, and preventing destruction or impairment of the utility of the airport and the public investment therein.

(Ex. 409 at § 10-6.00.)

The results from the Barrick Fly-Over Test Flight Program clearly demonstrate that the Eastshore Project will not obstruct the airspace for aircraft flying into and out of the Hayward Executive Airport. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume.) Thus, despite the Staff's contention to the contrary, the Eastshore Project will not "present a hazard to aircraft . . ." and, in turn, is consistent with the purpose expressed in section 10-6.00 of the Airport Approach Zoning Regulations. (Ex. 200 at 4.10-25.)

C. The Eastshore Project Will Not Result In Significant Adverse Cumulative Impacts

Because Staff and opponents of the Eastshore Project mistakenly believed that the Eastshore Project's thermal plume will create an aircraft hazard, Staff concluded that the Eastshore Project will contribute to significant unavoidable cumulative effects on the Hayward Executive Airport airspace. (Ex. 200 at 4.10-29.) Like all of the other conclusions that are based on the Staff's flawed modeling analysis, this conclusion is incorrect.

Under CEQA, a lead agency must find that a project has a significant effect on the environment if "[t]he project has possible environmental effects that are individually limited but cumulatively considerable." (14 Cal. Code Regs. § 15065(a)(3).) "Cumulatively considerable"

means "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (14 Cal. Code Regs. § 15065(a)(3).) In this case, cumulative impacts could arise as a result of the Eastshore Project's effects in combination with the effects of the RCEC, which is a 600 MW, natural-gas fired, combined-cycle power plant that the CEC approved approximately 3,000 feet west of the Eastshore site. (Ex. 200 at 4.10-26.)

As explained above, Staff considered two potential mitigation measures for the Eastshore Project: requiring pilots to "avoid direct over-flight of industrial plumes below 1,000 feet AGL" and directing pilots "to look for the exhaust stacks and cooling towers on the ground, then see and avoid any visible plumes . . . ." (Ex. 200 at 4.10-23 – 4.10-24, 4.20-21.) The CEC imposed both of these mitigation measures in conjunction with the RCEC approval. (Ex. 200 at 4.10-29.) Thus, multiple opponents voiced concern that the airspace surrounding the Hayward Executive Airport will be too complicated for pilots should the CEC impose the same mitigation measures to the Eastshore Project. (Ex. 200 at 4.10-28 – 4.10-29 (citing comments by the FAA and California Department of Transportation, Division of Aeronautics).)

Regardless of any effects caused by the RCEC and the mitigation measures associated with the RCEC, it will be impossible for the Eastshore Project to contribute to adverse airspace effects. Where a project does not create any negative impacts individually, there are no effects to contribute to combined impacts. As demonstrated by the Barrick Fly-Over Test, the Eastshore Project will not have a negative effect on aircraft flying into and out of the Hayward Executive Airport and, thus, no mitigation measures are necessary. (*See generally* Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by the Power Plant Thermal Plume.) Therefore, despite Staff's determination to the contrary, the Eastshore Project could not, "in conjunction with the mitigation for the RCEC, . . . increase[] the potential for serious impairment to the utility of the airport by increasing the complexity of the airspace." (Ex. 200 at 4.10-29.) In simple terms, the Eastshore Project will not create an adverse cumulative impact on airspace safety.

D. The Eastshore Project Does Not Inhibit Present Or Future Uses Of The Hayward Executive Airport

Opponents to the Eastshore Project presented several theories about how the Eastshore Project's thermal plume could ultimately impact the local economy. (12/18/2007 RT 208: 11-

15.) One of the Group Petitioners' witnesses, Ms. Carol Ford, opined that if a dangerous thermal plume existed, pilots will avoid flying into the Hayward Executive Airport and, in turn, will not spend money at surrounding businesses. (12/18/2007 RT 210: 1-15.) A second witness, Mr. Andy Richards, noted that any changes in the traffic pattern at Hayward Executive Airport that might be necessary to avoid a hazardous thermal plume will affect operations at the Oakland International Airport and, in turn, "would have a significant impact on the economy of the Greater Bay Area." (12/18/2007 RT 178: 4-7.) Third, the City of Hayward's witness, Dr. Robert Bauman, opined that a thermal plume hazard could result in the revocation of funding for construction projects to develop future operations the Hayward Executive Airport. (12/18/2007 RT 144: 10-21.)

Each of these opinions, however, is based solely on the erroneous assumption that the Eastshore Project's thermal plume will actually cause a hazard to overflying aircraft. (12/18/2007 RT 210: 1-7; 12/18/2007 RT 269: 7-10.) None of the opponents' witnesses performed individual thermal plume analyses to support their assumption. (12/18/2007 RT 265: 14-22; 12/18/2007 RT 274: 18-21.) In fact, Dr. Baumann even admitted during the hearing that he was "not certain . . . what the evidence is as to the safety issue." (12/18/2007 RT 143: 6-7.)

The best that any witness could do was point to the Staff's flawed modeling analysis as evidence that the Eastshore Project could create a hazard to overflying aircraft. (12/18/2007 RT 265: 14-22; 12/18/2007 RT 272: 12-18.) As previously explained, however, Staff's modeling analysis is technically flawed, inaccurate, and contradicted by the Barrick Fly-Over Test Flight Program and does not provide reliable support for any conclusions. Instead, the actual scientific evidence in these proceedings demonstrates that the Eastshore Project's thermal plume will have no impact on overflying aircraft. (*See generally* Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by the Power Plant Thermal Plume.) Therefore, the economic fears expressed by the opponents are completely unfounded. The Eastshore Project will not negatively impact the airspace and, in turn, will not affect current or future operations at the Hayward Executive Airport or the local economy.

III. LAND USE

The Eastshore Project site is located within the City of Hayward's limits and, thus, the City of Hayward's land use LORS apply in this proceeding. (Ex. 200 at 4.5-9.) Certifying a

power plant in an urban area is a delicate task because of the multitude of policies to consider, such as economic impacts, neighborhood effects, and human effects. All power projects in load centers face this task, but it is necessary to ensure that sufficient local power is generated to satisfy urban demands. This section walks through the land use LORS that apply to the Eastshore Project and explains how the Eastshore Project satisfies each one.

A. The Eastshore Project Is Consistent With The Airport Approach Zoning Regulations

Staff erroneously decided that the Eastshore Project is inconsistent with the City of Hayward's Airport Approach Zoning Regulations, Hayward Municipal Code Chapter 10, Article 6. Based on its flawed modeling analysis, Staff determined that the Eastshore Project "could present a hazard to aircraft flying at traffic pattern altitude flying over the project site" and, thus, was inconsistent with the Airport Approach Zoning Regulations' stated purpose. (Ex. 200 at 4.5-24.) As explained above in the section on Traffic and Transportation, however, Staff's modeling analysis is flawed and inaccurate, and cannot provide support for any conclusions regarding the Eastshore Project's effects on the airspace because Staff improperly applied the CASA AC-approved methodology and failed to account for the actual physical conditions that will exist at the Eastshore Project. (*See* Section II, *supra*, Traffic and Transportation; Ex. 20, Testimony of W. Corbin and G. Darvin at 1-2, 7-11.) Staff also completely ignores a formal FAA review and determination prepared by a panel of FAA aviation safety experts that indicates that "the risk associated with plumes is deemed acceptable without restriction, limitation or further mitigation" based on a review of over 30 years of general aviation safety records that disclosed not a single safety incident related to plumes. (Ex. 39 at ii.)

The purpose of the Airport Approach Zoning Regulations is:

> promoting the health, safety and general welfare of the inhabitants of the City of Hayward by preventing the creation or establishment of airport hazards, thereby protecting the lives and property of the users of the Hayward Air Terminal and of the occupants of the land in its vicinity, and preventing destruction or impairment of the utility of the airport and the public investment therein.

(Ex. 409 at § 10-6.00.)

In this case, the results from the Barrick Fly-Over Test Flight Program clearly demonstrate, based on actual scientific measurements, not theoretical modeling, that the Eastshore Project will not create an airport hazard or obstruct the airspace for aircraft flying into

and out of the Hayward Executive Airport. (Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume.) The highest point at which the Eastshore Project's plume will create "light" turbulence will be 250 feet AGL, but aircraft do not pass over the Eastshore site below approximately 300 feet AGL. (12/18/2007 RT 66: 13-20; Ex. 208; Ex. 417; Ex. 418.) Thus, despite Staff's erroneous conclusion to the contrary, the Eastshore Project will not present "a hazard to aircraft . . ." and, therefore, is consistent with the purpose expressed in section 10-6.00 of the Airport Approach Zoning Regulations. (Ex. 200 at 4.5-24.)

B. The Eastshore Project Is Consistent With The Airport Plan

1. Only The 1986 Version of The Airport Plan Is Applicable In These Proceedings

The Alameda County ALUC approved the current version of the Airport Plan in 1986. (Ex. 535.) Since 1986, the Alameda County ALUC has issued two different draft versions of the Airport Plan. The first revision is dated July 2007. (Ex. 56.) Then, the Airport Land Use Commission issued a second revision to the Airport Plan in December of 2007. (Ex. 534.)

As explained above in section II of this brief, "Traffic and Transportation," Eastshore asserts only the 1986 Airport Plan is relevant to this proceeding. The 1986 Airport Plan is the only document that the Alameda County ALUC has approved and that contains currently effective policies. Indeed, even the most recent draft version expressly states,

> [t]he policies presented in this [Airport Plan] shall become effective . . . on the date that the Alameda County ALUC adopts the plan. Until that time, the policies set forth in the 1986 [Airport Plan] shall remain in effect.

(Ex. 534 at 2-2.)

Despite the fact that the 1986 Airport Plan is the only applicable version of the document, the opponents have gone to great lengths to present different airspace safety elements than the Alameda County ALUC approved in 1986. As explained above in "Traffic and Transportation," section II, Eastshore takes issue with Alameda County's recent revisions to the Airport Plan because it appears that the recent changes were aimed at hindering the Eastshore Project's certification process. (1/14/2007 RT 153: 17-24, 154: 18-25, 155, 1-4, 156: 19-25, 157: 1-2.)

2. The Eastshore Project Is Consistent With the 1986 Airport Plan

a. The 1986 Airport Plan's Safety Elements

The Eastshore Project site is approximately 1.3 miles (6,590 feet) south of the Hayward Executive Airport's runways and, thus, one safety policy set forth in the 1986 Airport Plan apply. (Eastshore, Confirmation of Distances Requested by Hearing Officer at 3 (Feb. 1, 2008).) The 1986 Airport Policy does not permit uses that will cause "electrical interference, glare, smoke, disorienting lighting . . . [or] large concentrations of birds." (Ex. 535 at 56; *see also* Ex. 535 at 12-13.) The Eastshore Project complies with this requirement. The Eastshore Project will not create any visual impediments to aircraft; in fact, Staff has even noted that the plume will likely be invisible. (Ex. 200 at 4.10-21.) Thus, it is evident that the Eastshore Project is consistent with the 1986 Airport Plan.

Staff's disagreement with Eastshore's position is based on the FAA's references to generic recommendations to further reduce the safety effects associated with thermal plumes. (Ex. 200 at 4.5-9.) However, these generic safety policies must be viewed within the context in which they were offered by the FAA: to make an already acceptably safe condition safer, not as a necessary mitigation to remedy unsafe circumstances. Furthermore, these FAA references are general and do not account for the actual conditions that will exist at the Eastshore Project and, therefore, are not necessarily applicable. (*See* Ex. 39 at 16-17.) Indeed, the only support for application of the FAA's generic recommendations to the Eastshore Project is testimony by the FAA's representative, Mr. David Butterfield, at the December 18, 2007 hearing. (12/18/2007 RT 281: 18-25, 282: 1-9.) Mr. Butterfield acknowledged, however, that he had not even consulted a thermal plume analysis when determining whether the FAA's generic mitigation measures should be applied to minimize the effect of the Eastshore Project's plume. (12/18/2007 RT 275: 11-12.) Thus, the CEC should disregard Mr. Butterfield's testimony because he had no scientific basis for his opinion.

Despite the lack of connection between the FAA's generic recommendations and the Eastshore Project, Staff relied on the FAA's statements that the pilots should "avoid direct over-flight of industrial plumes below 1,000 feet AGL" as a hard-and-fast safety requirement to ensure compliance with the safety elements in the Airport Plan. (Ex. 200 at 4.5-9.) However, Staff erroneously concludes that, because pilots must transit the Hayward Executive Airport airspace at 600 feet AGL when flying over the Eastshore site, the measure is infeasible. (Ex. 200

at 4.5-9; *see also* Ex. 400 at 4.10-21.) Staff also noted that a "see-and-avoid" measure (that is, a direction to pilots "to look for the exhaust stacks and cooling towers on the ground, then see and avoid any visible plumes . . .") will unreasonably burden pilots flying into and out of the Hayward Executive Airport. (Ex. 200 at 4.5-9; *see also* Ex. 200 at 4.10-21 (citing FAA 2007a).)

Regardless of feasibility, these FAA safety measures are entirely unnecessary here because the Eastshore Project will not cause a hazard to overflying aircraft. As explained above, the Eastshore Project will create no turbulence above approximately 250 feet AGL and only "light" turbulence at 250 feet AGL. (12/18/2007 RT 66: 13-20.) Aircraft do not fly over the Eastshore site at 250 feet AGL; 300 feet AGL is the lowest altitude that any aircraft has been recorded flying in the vicinity of the Eastshore site. (Ex. 208; Ex. 417; Ex. 418.) Thus, there is no need to consider the proposed mitigation measures because the evidence demonstrates that pilots will not encounter effects from the Eastshore Project's thermal plume and there is no aviation safety risk to mitigate.

b. The 1986 Airport Plan's Expansion Policy

Based on the decision regarding the Airport Plan's safety elements, Staff also determined that the Eastshore Project is inconsistent with the Airport Plan's policy to promote orderly expansion of Bay Area airports. (Ex. 200 at 4.5-23.) Staff decided that the alleged effects from the Eastshore Project's thermal plume will hinder the Hayward Executive Airport's operations and future development. (1/14/2008 RT 109: 9-10.) This decision is entirely dependent upon the erroneous assumption that the Eastshore Project's thermal plume could cause a hazard to overflying aircraft. (1/14/2008 RT 109: 9-10.) The results of the Barrick Fly-Over Test overcome this assumption by demonstrating that the thermal plume will not impact pilots' abilities to handle their aircraft. (*See generally* Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by the Power Plant Thermal Plume.) Therefore, the record demonstrates that the Eastshore Project will not negatively impact the airspace and, in turn, will not be inconsistent with the orderly expansion of airports in the Bay Area.

3. The Eastshore Project Is Consistent With The December 2007 Airport Plan

As explained above, Alameda County introduced the December 2007 Airport Plan, a draft document, which contains two new airport safety requirements. (Ex. 534.) First, the December 2007 Airport Plan will create a new safety zone area surrounding the Hayward

Executive Airport where the Eastshore site is located. (Ex. 534 at Figure 3-4; 1/14/08 RT 189: 16-25, 190: 1-15.) The December 2007 Airport Plant will only permit power plants within the new safety zone, "Zone 7," "if no other suitable site outside [the airport influence area] is available." (Ex. 534 at 3-20.) Second, the December 2007 Airport Plan states that "sources of dust, heat, steam, smoke, or *thermal plumes* that may impair pilot vision or *create turbulence within the flight path*" are to be avoided." (Ex. 534 at 3-22 (emphasis added).)

Despite these recent revisions, the Eastshore Project is still consistent with the December 2007 Airport Plan. As previously explained, the Eastshore Project will not create turbulence within the Hayward Executive Airport's flight path. The highest point at which the Eastshore Project's thermal plume will create turbulence is 250 feet AGL, but aircraft do not pass over the Eastshore site below approximately 300 feet AGL. (12/18/2007 RT 66: 13-20; Ex. 208; Ex. 417; Ex. 418.) Thus, the Eastshore Project's thermal plume will not "create turbulence within the flight path." (Ex. 534 at 3-22.)

Moreover, as explained in section VIII of this brief, "Alternatives," there are no suitable alternatives to the Eastshore site for the Project. Indeed, Dr. Suzanne Phinney, Staff's expert consultant, testified that Staff rejected all other site alternatives because, "they would not meet the project objectives." (1/14/08 RT 81: 11-12.) Thus, the Eastshore Project complies with the December 2007 Airport Plan because, even though the Eastshore site is located within Zone 7, "no other suitable site outside [the airport influence area] is available." (Ex. 534 at 3-20.)

C. The Eastshore Project Is Consistent With The City Of Hayward's Zoning Ordinances

Even though power plants are not specifically identified as a permitted use within an industrial zone, the Eastshore Project is still consistent with the City of Hayward's zoning ordinance. This is because the Eastshore Project will not be more objectionable than other uses in the Industrial District and it satisfies all other applicable zoning standards.

1. Hayward Municipal Code § 10-1.140

The City of Hayward's Exclusionary Zoning Ordinance states,

> When a use is not specifically listed in the sections devoted to "Uses Permitted," it shall be assumed that such uses are prohibited unless it is determined by the Planning Director or on appeal to the Planning Commission that the use is similar to and not more objectionable or intensive than the uses listed. Further, uses are permitted and conditions to use are established within each district as set forth herein.

(Ex. 408 at § 10-1.140.) In this case, the Hayward City Council officially interpreted the Exclusionary Zoning Ordinance's application to power plants when it adopted Resolution No. 01-104 on July 10, 2001. (Ex. 50.) Resolution No. 01-104 states that the RCEC is consistent with the uses in an industrial zone because power generation is similar to manufacturing, which is a permitted use in the Industrial District. (Ex. 50 at 1.) The Eastshore Project is similar to the RCEC, but Eastshore is a less intensive land use because it will be a much smaller peaker facility, whereas the RCEC is a base load facility with approximately five times the generating capacity of Eastshore. (Ex. 17 at 7, 8.) Therefore, the same rationale that applied to Resolution No. 01-104 applies here: the Eastshore Project will not be more objectionable than other uses in the Industrial District.

Staff's determination that the Eastshore Project's thermal plume will create an inconsistency with the Exclusionary Zoning Ordinance is wrong. (Ex. 200 at 4.5-15.) Staff based this determination on its flawed modeling analysis, which incorrectly suggested that the Eastshore Project's thermal plume could cause a hazard for overflying aircraft and, in turn, could impair current and future operations at the nearby Hayward Executive Airport. (Ex. 200 at 4.5-15.) Eastshore's expert meteorologists, Mr. Corbin and Mr. Darvin, demonstrated that Staff's analysis is unreliable because it improperly applied the CASA AC-approved methodology and failed to account for the actual physical conditions that will exist at the Eastshore Project. (Ex. 20, Testimony of W. Corbin and G. Darvin at 1-2, 7-11; *see also generally* Section II, *supra*, Traffic and Transportation.) Moreover, the Barrick Fly-Over Test Flight Program proved that the thermal plume will not impair flights over the Eastshore Project. (*See generally* Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume.) Thus, Staff's conclusion that the Eastshore Project is inconsistent with the Exclusionary Zoning Ordinance is unfounded.

2. Hayward Municipal Code § 10-1.3200 *et seq.*

Eastshore concedes that, even though power generation will not be more objectionable than other uses in the Industrial District, the zoning regulations require a Conditional Use Permit (CUP) because the Eastshore Project will utilize Group A hazardous materials. (Ex. 408 at § 10-1.1620(b).) However, Eastshore asserts that the Eastshore Project satisfies all of the requirements to obtain a CUP.

A CUP is appropriate where all of the following conditions exist:

a. The proposed use is desirable for the public convenience or welfare;
b. The proposed use will not impair the character or integrity of the zoning district and surrounding area;
c. The proposed use will not be detrimental to the public health, safety, or general welfare; and
d. The proposed use is in harmony with applicable City policies and the intent and purpose of the zoning district involved.

(Ex. 408 at § 10-1.3225.)

Eastshore agrees with the Staff's conclusion that the Eastshore Project will satisfy the standards in section 10-1.3225(a) – (c). (Ex. 17 at 4; Ex. 200 at 4.5-16 – 4.5-17.) First, the Eastshore Project will satisfy subsection (a) because "it would support the sustainability of the area's power grid, contributing indirectly to public convenience and welfare." (Ex. 200 at 4.5-16.) Electricity is a necessity for everyday life and a healthy economy, and most of the peak power generated at Eastshore will be dedicated for use in the immediate surrounding area. (Ex. 200 at 4.5-16; 1/14/2008 RT 19: 19-20.) The City of Hayward's argument that alternative sites will result in fewer detrimental impacts is misguided. (1/14/2008 RT 142: 13-18.) As explained by Staff's witness, Dr. Suzanne Phinney, all other site alternatives "would not meet the project objectives." (1/14/2008 at 81: 11-12.)

Second, pursuant to subsection (b), Resolution No. 01-104 confirms that power plants constitute a use similar to a permitted use in the Industrial District and, thus, the Eastshore Project will not impair the character or integrity of the Industrial District. (Ex. 50; Ex. 200 at 4.5-17.) The City of Hayward argues that the Eastshore Project's stacks will result in undesirable visual impacts, but this argument is unsubstantiated. (Ex. 404 at 1-2; 1/14/2008 RT 142: 19-25 – 143: 1-20.) The City's expert witness on this point, Mr. David Rizk, admitted that he neither prepared nor submitted an analysis of the Eastshore Project's visual impacts to support his opinion. (1/14/2008 RT 180: 14-23.) In contrast, Eastshore's Application for Certification includes extensive analysis of the potential visual impacts associated with the Eastshore Project and concludes that,

> The site is located in an industrial area of the City of Hayward, in which visual resources such as scenic corridors, areas of natural beauty, and scenic recreation areas are not designated . . . . The presence of the proposed power plant would not create a substantial change in the character or visual quality of nearby views toward the site.

(Ex. 1 at 8.11-15.) Moreover, Staff correctly noted in the FSA that the Eastshore stacks will be,

> comparable to other industrial/manufacturing structures within 0.5 mile of the proposed project site, including Gillig Inc. and Berkeley Farms, and the proposed stacks are not as tall as the existing Rohm & Haas stack (180 feet) or the twin stacks of the [RCEC] (145 feet), which the city supports.

(Ex. 200 at 4.5-17.) Thus, despite the City's attempt to cast doubt on whether the Eastshore Project will fit in with the aesthetics of the surrounding area, the record shows that the Eastshore Project is consistent with the character and integrity of the Industrial District.

The Eastshore Project also will satisfy subsection (c) because Staff and Eastshore have agreed that particulate matter and nitrogen oxides emissions will be mitigated to a level of insignificance. (Ex. 200 at 4.1-26 – 4.1-27, 4.1-45; Ex. 15. at 2-3.) Although the City of Hayward asserts that "local air quality impacts cannot be mitigated," both Staff's and Eastshore's analyses indicate otherwise. (*Compare* Ex. 404 at 2; Ex. 401 at 8; 1/14/2008 RT 144: 5-9 *with* Ex. 200 at 4.1-26 – 4.1-27, 4.1-45; Ex. 15. at 2-3.) Thus, the City's argument is contrary to evidence in the record.

Finally, the record demonstrates that the Eastshore Project will be in harmony with all applicable policies and zoning designations as required by subsection (d). Staff's contrary conclusion is based solely on the Staff's erroneous belief that the Eastshore Project's plume will cause a hazard to overflying aircraft and, in turn, will impair current and future operations at the Hayward Executive Airport. (Ex. 200 at 4.5-15, 4.5-18.) However, as explained above, the modeling analysis that Staff used to reach this conclusion is unreliable and the Barrick Fly-Over Test Flight Program demonstrated that the thermal plume will not impair flights over the Eastshore Project. (Ex. 20, Testimony of W. Corbin and G. Darvin at 1-2, 7-11; Ex. 20, Final Report on Turbulence Felt in a Light Helicopter Caused by a Power Plant Thermal Plume.) Thus, there will not be an indirect effect on the Hayward Executive Airport's current and future operations and, in turn, the Eastshore Project will not be inconsistent with section 10-1.140 of the Hayward Municipal Code.

In sum, the Eastshore Project satisfies all of the standards necessary to obtain a CUP. Therefore, the Eastshore Project is consistent with the City's zoning ordinances even though it is not specifically identified as a permitted use within an industrial zone.

D. The Eastshore Project Is Consistent With The City Of Hayward's General Plan

The Eastshore Project site is situated squarely within the General Plan's Industrial District, which, by definition, is devoted to industrial uses. (Ex. 200 at 4.5-12.) As explained above, the Eastshore Project is consistent with uses in the Industrial District. Indeed, the City of Hayward City Council effectively announced this when it issued Resolution No. 01-04, which states that power generation at the RCEC is similar to manufacturing and, thus, is similar to permitted uses in the Industrial District. (Ex. 7 at 1.) Therefore, because the Eastshore Project will be similar to the RCEC—in fact, the Eastshore Project, at one fifth the generating capacity of RCEC, will be a less intensive land use than the RCEC—the Eastshore Project also will be consistent with uses in the Industrial District. (Ex. 17 at 7, 8.)

a. Resolution No. 07-028 Misstates The Applicable Facts And Standards

The City of Hayward recently attempted to backtrack on the statement in Resolution No. 01-04 by issuing a second resolution, Resolution No. 07-028, which states that the Eastshore Project will not be,

> in harmony with the applicable General Plan policies that seek to 'promote and protect the appearance of the Business and Technology corridor to encourage quality development' in that the 6.2-acre site proposed for the power plant is near the eastern edge of the industrial area of the City, abutting residential areas . . . .

(Ex. 404 at 2.)

The City's Resolution skews both the facts and the standards in these proceedings. First, the City mischaracterizes the proximity of residential areas as "abutting" the Eastshore Project when, in actuality, the closest residential development is one-third to one-half mile away from the site. (Ex. 4.5-12.) The closest residence (R1) is located 1592 feet from the Eastshore site as calculated in the February 1, 2008 letter to Susan Gefter confirming distances. Second, the City's policy to encourage information-based industry is both unenforceable and undefined. Although the City adopted the current General Plan (and, hence, the policy) in 2002, the City did not identify the area within proximity to the Eastshore site as a Business and Technology corridor and has never enacted or codified an ordinance to make the policy enforceable. (Ex. 404 at 2; 1/14/2008 RT 177: 3-6.) Moreover, the policy recommends that the City adopt zoning district designations to identify the types of industry that the City intends for different areas in

the Industrial District. (Ex. 406 at 2-19; 1/14/2008 RT 176: 25, 177: 1-2.) To date, five years later however, the City has not adopted any district encompassing the Eastshore Project site. (Ex. 200 at 4.5-11; 1/14/2008 RT 225: 14-25, 226: 1-3.)

b. Contrary To CEQA, Resolution No. 07-028 Contains Premature And Baseless Conclusions Regarding The Environmental Effects That The Eastshore Project Will Cause

A comparison of Resolution No. 01-04 and Resolution No. 07-028 demonstrates that the City of Hayward took an inconsistent—and unjustified—approach to evaluating the Eastshore Project. When evaluating the RCEC, the City recognized that it was only making a conclusion regarding land use conformity as shown by Resolution No. 01-04's references only to zoning classifications, General Plan designations, and the proposed and existing uses in the area. (Ex. 50 at 1.) The City properly refrained from making any determinations about the environmental effects of the RCEC, allowing the CEC to make such decisions following a full environmental review. In contrast, Resolution No. 07-028 is replete with conclusory statements regarding alleged environmental impacts that the Eastshore Project will cause, such as "air quality impacts related to particulate matter and nitrogen oxide emissions," "highly visible 70-foot tall venting stacks," and "air quality and hazardous materials impacts related to the use and transport of aqueous ammonia and emission of particulate matter and nitrogen oxides." (Ex. 404 at 1-2.)

The City's statements in Resolution No. 07-028 are in direct violation of CEQA's mandate that agencies make environmental decisions "based on substantial evidence in light of the whole record," not "argument, speculation, unsubstantiated opinion or narrative . . . ." (Cal. Pub. Res. Code § 21082.2(a).) The four-page report from the City of Hayward's Director of Community and Economic Development to the City Council and Mayor, upon which the City Council relied as support for Resolution No. 07-028, failed to include a full environmental review. (Ex. 307 at 3-6.) Indeed, the only environmental analysis that existed as of March 17, 2007 was Eastshore's AFC, but the AFC provides no support for the City's conclusory statements. (*See* Ex. 1 (dated Sept. 22, 2006).) Furthermore, transcripts from City Council meetings demonstrate that the City knew it was making a decision before completion of the environmental process and that its premature statements were intended to persuade the CEC's ultimate decision. At the March 2, 2007 City Council meeting, City Councilwoman Halliday admitted,

> . . . I'm usually in favor of you know getting all the information uh before making a decision . . .Um, but you know here um, clearly um, there are enough concerns um air quality, hazardous materials um visual impacts, noise, um and what really concerns me I think most is that unlike other decisions that I get to make along those lines I don't really get any say here with the rest of this council in determining what we um can do to mitigate those concerns . . . .

(Ex. 51 at 1.) Likewise, Mayor Sweeney stated,

> . . . I think that this process that the state has with the Energy Commission is a difficult one but if the City is going to make its voice heard I think we need to engage in this process early and that's why it's important to make a strong statement early in the process . . . .

(Ex. 51 at 5.) In short, the City was motivated by politics, not substantial evidence, when it issued Resolution No. 07-028. Therefore, CEC should disregard the City's conclusions in Resolution No. 07-028 because they are baseless and inconsistent with the City's approach to evaluating power plants with the General Plan, and fly in the face of the CEQA's directive that environmental determinations be based on "substantial evidence," not "speculation." (Cal. Pub. Res. Code § 21082.2(a), (c).)

E. The CEC Should Disregard The County's Redevelopment Plans

The CEC should reject Alameda County's attempt to inject these proceedings with extraneous information in attempt to blur the applicable standards of significance. Alameda County introduced evidence regarding the County's redevelopment goals for Mount Eden and San Lorenzo, which are within miles of the Eastshore Project location. (1/14/2008 RT 165: 3-7.) As evidence of these goals, the County submitted the Redevelopment Plan for the Eden Area Redevelopment Project, the Eden Area Redevelopment Project Five-Year Implementation Plan FY 2004/05 -2008/09, the Joint Redevelopment Project Five-Year Implementation Plan FY 2004/05 – 2008/09, and the Redevelopment Plan for the Alameda County – City of San Leandro Redevelopment Project. (Ex. 506; Ex. 508; Ex. 509; Ex. 510.) However, none of these documents qualifies as a relevant LORS because these documents only apply to the unincorporated areas in Alameda County, whereas the Eastshore Project site is within the City of Hayward's boundaries. (Ex. 200 at 4.5-2 – 4.5-3; Ex. 17 at 11.) Thus, the Eastshore Project will "not impact either adopted or proposed plans for these unincorporated areas." (Ex. 17 at 11.)

Indeed, even Alameda County's attorney admitted during the January 14, 2008 hearing that the CEC need not consider the County's redevelopment plans. (1/14/2008 RT 255: 7-11.)

If the CEC decides to take the County's redevelopment plans into consideration, Eastshore cautions that the County has not submitted any studies to support its argument that the Eastshore Project could harm neighboring property values. (1/14/2008 RT 174: 6-9.) Indeed, the County has not even stated that such an impact *would* occur; the County simply hypothesized that people *might* perceive the Eastshore Project in a negative light, which in turn *could* have a negative impact on property values. (1/14/2008 RT 254: 12-22.) In short, the County's argument is mere speculation and the CEC should not rely upon speculation in determining whether to certify the Eastshore Project.

IV. NOISE AND VIBRATION

The Eastshore Project, as it is designed, satisfies both the CEC's CEQA-equivalent significance threshold and local LORS noise requirements. First, with regard to the nearest residential receptor, Staff concedes that the Eastshore Project complies with the LORS. The Project's impacts also register below the CEC's significance threshold at residential receptor, R1. Eastshore proposes that Staff apply a consistent means of obtaining existing nighttime noise levels and use the same method of analysis as the combined-cycle Russell City Project. This would result in an increase of *less than* 5 dBA, and is therefore below the CEC's significance threshold. Nonetheless, Eastshore proposes to commit to a 48 dBA project-only noise level at R1. Using Staff's measurement of the four quietest nighttime hours, would result in an increase of 5 dBA and would therefore be consistent with the CEC's stated significance threshold.

Second, with regard to the adjacent Fremont Bank commercial property, receptor R2, the Eastshore Project satisfies the LORS. Even when the more stringent commercial use noise standard is applied, the Project's impacts fall below the LORS "conditionally acceptable" noise level limit. The Eastshore Project also substantially meets the CEC's significance threshold at Fremont Bank because Staff's requirement to limit the Project's noise contribution so that there is only a 2 dBA increase in the ambient noise level is unreasonable and could be technologically infeasible.

Fremont Bank is not a noise sensitive receptor, rather, it is a commercial use located within an industrial zone. Staff agrees that a commercial office building is not typically

considered a sensitive receptor (12/18/2007 RT 347:1-2). To require a power plant or any other industrial source to limit its operational noise contribution so that the resulting ambient noise level increases by only 2 dBA above the current noise level is highly restrictive, unreasonable and potentially precedent setting. As stated in Exhibit 18, Staff's limit at the bank is well below the limit that Caltrans would use for determining an impact at residential uses, let alone commercial facilities. (Ex. 18 at 2, referencing the 2006 Caltrans *Traffic Noise Analysis Protocol*). The Federal Aviation Administration considers commercial uses such as the Fremont Bank to be compatible with airports and has not established a threshold of incompatibility for such uses. Because the Eastshore Project satisfies both the CEC and City of Hayward LORS noise requirements, Staff's Condition of Certification Noise-4 needs to be revised (see below for Eastshore's proposed revision).

Staff presents its restrictions on noise in Condition of Certification Noise-4 ("Noise-4"). (Ex. 200 at 4.6-20). Noise-4 requires Eastshore to implement noise mitigation measures to ensure the Eastshore Project operation alone will not exceed Staff-recommended noise levels at two locations. First, at the nearest residential monitoring location R1 (2765 Depot Road), Staff requires noise from plant operation alone not to exceed an average of 46 dBA during the four quietest consecutive hours of the night. Second, at R2 (the northern wall of the north building of the Fremont Bank Operational Center or "Fremont Bank"), Staff requires noise levels due to plant operation alone not to exceed an hourly average of 60 dBA.

Staff argues that these noise restrictions are necessary to satisfy the requirements of both Hayward LORS and the CEC's CEQA-equivalent significance standard.

The Eastshore Project, as it is designed, would not cause any significant and adverse noise impacts at R1 or R2. However, Eastshore is willing to commit to a noise level of 48 dBA at R1 and 69 dBA at R2 and will demonstrate that such limits comply with even Staff's more restrictive evaluation of existing noise levels.

A. The Project Would Not Result in Noise Impacts at RI (Residential Monitoring Location at 2765 Depot Road)

1. Staff Admits the Eastshore Project Will Comply with LORS at R1

The Hayward Noise LORS are entitled "Noise Guidelines for Review of New Development" and are found in Appendix N of the City of Hayward General Plan ("noise guidelines"). (Ex. 1 at 8.5-7). As explained in the FSA, the noise guidelines use an L_{dn} metric

and require the evaluation of mitigation measures for projects that would cause the L_{dn} level to increase by 3 dBA or more in an existing residential area. (Ex. 200 at 4.6-9). The noise guidelines also state that the allowable noise level shall be adjusted up to the ambient noise level. (Ex. 200 at 4.6-9). The ambient noise level at R1 is 63 dBA L_{dn}, which is equivalent to 57 dBA L_{eq}. Combining the predicted Project noise level of 49 dBA with the ambient level of 57 dBA L_{eq} results in 58 dBA L_{eq}, which represents an increase in the ambient noise level of only 1 dBA. (Ex. 200 at 4.6-9). Staff states that this increase "is not noticeable" and therefore, "noise due to the operation of the Eastshore Project would be in compliance with the LORS at R1." (Ex. 200 at 4.6-9). Nonetheless, Eastshore commits to meeting an Eastshore Project noise level of 48 dBA at R1.

2. Staff Advocates an Inconsistent Nighttime Noise Average in the Eastshore and Russell City Cases

Staff's conclusion results from applying an incorrect standard, and applying it inconsistently between projects. Staff uses Eastshore's existing ambient noise measurements, found in the AFC, to establish a baseline for the comparison of predicted Project noise with existing ambient noise. (Ex. 200 at 4.6-5). Noise Table 2 presents Staff's summary of measured noise levels. (Ex. 200 at 4.6-6). The measured L_{90} noise level for R1 during nighttime hours was 44 dBA. (Ex. 200 at 4.6-6) However, Staff notes that its L_{90} calculations were based on the "*four* quietest consecutive hours of the nighttime." (Ex. 200, Noise Table 2 at Note 1, emphasis added and 12/18/2007 RT 337:16-18). Eastshore notes that the Eastshore Project R1 location is the same parcel as the Russell City Project R2 location. This is based on the fact that the distances from the Russell City R2 monitoring location to Industrial Boulevard and Depot Road and the photograph of the Russell City R2 location all correspond to the same parcel used for the Eastshore R1 location. (Ex. 200 at 4.6-6 and Russell City AFC at 8.7-2 and Figure 8.7-2). Furthermore, the FSA provides no technical or other basis for employing an extreme baseline that by definition will exaggerate project noise impacts and applying that standard uniquely to this project, apart from commenting that it is "prudent." (Ex. 200 at 4.6-10).

The 2007 Russell City FSA (Ex. 29) uses figures obtained from the 2007 Russell City Amendment, which in turn obtained its figures from the 2001 Russell City AFC. (Ex. 29 at 4.6-3; 2007 Russell City Amendment at 3-109; and Russell City AFC at 8.7-6). The RCEC AFC states that it uses the eight hours between 10 p.m. and 6 a.m. to calculate its L_{90} nighttime

average for this same residential receptor. (RCEC AFC at 8.7-6). In addition, the 2002 RCEC FSA also employs an eight-hour average to arrive at its average nighttime sound level for this same residential location. (2002 RCEC FSA at 4.6-6). Therefore, in the 2002 Russell City AFC and the 2007 Russell City Amendment, Staff uses the eight hours between 10pm and 6am to establish the average nighttime sound level for the same receptor for which Staff is now proposing a four-hour average.

Given Staff's use of a four-hour average in the Eastshore case and an eight-hour average in the RCEC case for the same residential receptor, Staff is advocating an inconsistent ambient noise measurement standard. It is not reasonable to apply a more restrictive limit to a peaking facility that is not likely to fully operate at night. Staff should be consistent in its application of noise measurements. Eastshore recommends using the eight quietest hours between 10pm and 6am. That would result in an average L_{90} noise level at R1 of 45.7 dBA, as opposed to Staff's figure of 44 dBA. (12/18/2007 RT 331:19-24).

3. The Project's Contribution to the Nighttime Ambient Noise Level at R1 Would Not Be Adverse or Significant

It should go without saying that applying standards consistently in project assessments is essential to the ultimate fairness and utility of the CEC's decisions. Even though CEC decisions are not precedential, it is important that they not be arbitrary. Staff must therefore be consistent in its application of noise measurements. Eastshore recommends using the eight hours between 10pm and 6am. That would result in an average L_{90} noise level at R1 of 45.7 dBA, as opposed to Staff's figure of 44 dBA. (12/18/2007 RT 331:19-24), and would eliminate the phantom impact that Staff's approach creates. As explained by Mr. Farhang, using an ambient noise level of 45.7 dBA at R1 in combination with Eastshore's proposed project-only operation noise contribution of 49 dBA would result in an increase of less than 5 dBA. (12/18/2007 RT 331:19-24). This would be an increase of less than 5 dBA, beneath the significance threshold set by Staff. (12/18/2007 RT 334:9-13 and Ex. 200 at 4.6-10, 11).

One of the factors identified by Staff in assessing the significance of an increase between 5 and 10 dBA is the duration of the increase. Staff correctly notes that the Eastshore Project will be permitted to operate up to 4,000 hours per year and that the expected annual average operation of the plant will be 1,739 hours per year (less than 20% of the year). (Ex. 200 at 4.6-16-4.6-17). Given the limited hours and the intermediate/peaking nature of the facility, it is

expected that nighttime operation would be limited and full-load nighttime operation (the conditions evaluated by Staff) would be even more limited.

Nonetheless, Eastshore proposes to commit to a 48 dBA project-only noise level at R1. Using Staff's average of the four quietest nighttime hourly L_{90} metric of 44 dBA, this results in a combined level of 49 dBA. This is 5 dBA above the existing 44 dBA background level and is consistent with Staff's stated significance threshold of up to a 5 dBA increase at a residential setting. (Ex. 200 at 4.6-10). As previously noted for the RCEC Project, Staff utilized an existing level of 46 dBA for this same area. Using an existing level of 46 dBA, combined with a project contribution of 48 dBA, yields 50 dBA or a 4 dBA increase over the existing ambient noise level.

The resulting levels are generally below or consistent with the existing levels during the hours that full-load operation is most likely. In addition, the impact during nighttime hours would not represent a significant increase under the CEC's commonly applied significance criteria. Therefore, Eastshore proposes the following revision to Noise-4:

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the noise levels due to plant operation alone, ~~during the four quietest consecutive hours of the nighttime,~~ to exceed an average of ~~46~~**48** dBA measured at or near monitoring location R1 (2765 Depot Road). **No new pure-tone components at R1 shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.** The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the exterior noise levels due to plant operation alone to exceed an hourly average of ~~60~~ **69** dBA measured at the northern wall of the north building of the Fremont Bank's Operational Center (25151 Clawiter Road).

~~No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.~~

A. When the project first attains a sustained output of 95 percent or higher of its rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring location R1, **or at other locations acceptable to the CPM.** ~~or at a closer location acceptable to the CPM.~~ This survey during the power plant's full-load operation shall also include the measurement of one-third octave band sound-pressure levels to ensure that no new pure-tone noise components have been caused by the project.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, that is closer to the plant (for example, 400 feet from the plant boundary). This measured level will then be mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

B. During the period of this survey, the project owner shall conduct a short-term noise survey during the daytime hours, from 7 a.m. to 10 p.m., at or near the northern wall of the north building of the Fremont Bank's Operational Center, or at another location acceptable to the CPM, in order to measure the power plant's contribution to the exterior noise level at the Bank. ~~This survey during the power plant's full-load operation shall also include the measurement of one-third-octave-band sound-pressure levels to ensure that no new pure-tone noise components have been caused by the project.~~

C. If the results from the noise survey indicate that the power plant average noise levels at the affected receptor sites exceed the above values during the above specified time periods, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

D. If the results from the noise survey indicate that pure tones are present **at R1**, mitigation measures shall be implemented to eliminate those pure tones.

Verification: The survey shall take place within 30 days (or when otherwise approved by the CPM) when the project first attains a sustained output of 95 percent or higher of its rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing those measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

B. The Eastshore Project Would Not Result in Noise Impacts at R2 (Monitoring Location at the Proposed Project Site)

1. Fremont Bank is Not a Sensitive Receptor

Sensitive receptors are defined as "residences, hospitals, libraries, schools, places of worship, or other facilities where quiet is an important attribute of the environment within the area impacted by the proposed project." (20 CCR § 2012(g)(4)(A)). In fact, Staff conceded that

commercial uses such as Fremont Bank are not generally considered sensitive receptors. (12/18/2007 RT 347:1-2).

The CEC has even stated that the former nearby site of the Russell City Project, also located within the industrial zone, was "not a sensitive location" where sleep interference would be a concern. (Russell City 2002 Final Commission Decision at 196). That statement implies that any location within Hayward's industrial zone is not considered a sensitive location unless sleep interference is a concern.

2. Fremont Bank is a Commercial Use Located in an Industrial Zone

Staff has stated that uses such as Fremont Bank are considered commercial uses. (12/18/2007 RT 338:11-12 and 346:4-5). Pursuant to the Hayward Zoning Ordinance and Zoning Map, Fremont Bank is situated within the Industrial Zone. (Ex. 18 at 2). Therefore, it is a commercial use located within an area zoned for industrial uses, and such uses within an industrial zone should have no expectation of a quiet environment.

As Mr. Farhang points out in his testimony:

> [W]hen commercial uses such as the Fremont Bank locate in existing industrial zones, they do so knowingly. The expectation that commercial uses willingly locating in industrial zones should be afforded a strict interpretation of the commercial noise guidelines when the area is already zoned for industrial use, is tantamount to imposing a potential use penalty or encumbrance on neighboring industrial property that is inconsistent with the underlying zoning designation.

(Ex. 18 at 2).

Intervenor Paul Haavik's witness, Beth Fancher, did not make any affirmative showing that the Eastshore Project's noise contribution would affect Fremont Bank's ability to conduct its operations. Ms. Fancher testified that much of the work done at Fremont Bank occurs on the telephone and offered the well-intentioned speculation that noise from the Eastshore Project could "very possibly . . . affect our business." (12/18/2007 RT 323:1-2). This is not reliable evidence, particularly as Ms. Fancher also testified that she does not have any work experience analyzing facility noise impacts, nor does she have any formal training in noise analysis. (12/18/2007 RT 324:24-325:4). Ms. Fancher confirmed, further, that she was not employed at the Clawiter Road location of Fremont Bank when the Project site was used as an automotive parts stamping facility. (12/18/2007 RT 325:5-9).

Hayward's noise guidelines (Figure 1 of Appendix N to the Hayward General Plan) present the acceptable levels of noise exposure measured in L_{dn} or CNEL for different land use

categories in a chart labeled "Land Use Compatibility Standards for Community Noise Environments." (Ex. 1 at 8.5-7). Figure 1 interprets noise levels to be either "normally acceptable," "conditionally acceptable," "normally unacceptable," or "clearly unacceptable." (Ex. 1 at 8.5-7). The "normally acceptable" level of noise means that the land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. "[C]onditionally acceptable" means conventional construction but with closed windows and fresh air supply systems or air conditioning that will normally suffice as noise insulation features. (Ex. at 8.5-7). Staff conceded that the Fremont Bank building would fit the "conditionally acceptable" description. (12/18/2007 RT 349:16-21). For the industrial land use category, normally acceptable noise levels range up to 75 dBA L_{dn} and conditionally acceptable levels go up to 80 dBA L_{dn}. For the commercial land use category, normally acceptable noise levels range up to 70 dBA L_{dn} and conditionally acceptable noise levels extend up to 77 dBA L_{dn}. (Ex. 1 at 8.5-7 and 12/18/2007 RT 344:2-5).

It should be noted that in the RCEC 2002 Final Commission Decision, the Commission used the noise levels in Figure 1 of Appendix N to the Hayward General Plan that are attributable to the industrial use category, not commercial uses. (Russell City 2002 Final Commission Decision at 196). The Russell City 2007 Final Commission Decision references the 2002 Decision. (Ex. 29 at 4.6-3).

Eastshore proposes a project-only contribution of 69 dBA at the northern wall of the north Fremont Bank building. (Ex. 18 at 2; see proposed Noise-4 revision above). This noise level, in combination with the existing L_{dn} of 67 dBA would result in a combined noise level of less than 77 dBA L_{dn}. This complies with the applicable "conditionally acceptable" commercial guidelines. Even though Fremont Bank and the Eastshore Project are both located within the area zoned for industrial uses, Eastshore proposes to conform to the more stringent commercial use guidelines. (Ex. 18 at 2).

As stated in the more restrictive commercial use LORS, the maximum conditionally acceptable level of noise exposure for a building of similar construction to Fremont Bank is 77 dBA L_{dn}. (Ex. 1 at 8.5-7). As presented above, the Eastshore Project's operational impact would comply with a 77 dBA L_{dn}, thus meeting the more restrictive commercial use LORS standard. That effectively negates Staff's claim that the Project would not comply with local LORS.

Even when the more rigorous commercial use guidelines are applied to the Eastshore Project, the requirements set forth by the City of Hayward noise LORS would still be satisfied by the Project.

While the above noise guidelines are stated in terms of L_{dn}, which includes a penalty for increased sensitivity to noise at night (while people are sleeping), commercial and industrial properties' sensitivity to noise does not increase at night. A noise level of 70 dBA during the day and 60 dBA during the night would result in an L_{dn} of 70 dBA, as would a source that generated 64 dBA continuously. If the 70 dBA noise level during the day is acceptable, as in the first case, and the receiving land use does not experience increased sensitivity to noise at night, it would be inconsistent to state that a continuous noise level of 70 dBA would be unacceptable. It is therefore not appropriate to include a nighttime penalty when evaluating noise from a potentially continuous noise source at commercial or industrial properties.

Combining Eastshore's proposed 69 dBA level with Staff's daytime average of 62 dBA (Ex. 200 at 4.6-11) would result in a combined noise level of 70 dBA. This noise level conforms to the 70 dBA level specified as the limit of "normally acceptable" for commercial properties and is 5 dBA less than the limit for "normally acceptable" industrial properties. Even if Eastshore's argument regarding the inappropriateness of the nighttime penalty for a non-residential receiver are not taken into account, Eastshore has still demonstrated that a 69 dBA project level would result in compliance with the applicable "conditionally acceptable" LORS noise guidelines for commercial properties such as Fremont Bank.

3. Staff Unreasonably Proposes a Combined Project and Ambient Noise Level 2 dBA Above the Existing Ambient Noise Level

Staff employs an L_{eq} metric to determine the average daytime ambient noise level of 62 dBA at Fremont Bank. (Ex. 200 at 4.6-11). In Noise-4, Staff proposes Eastshore mitigate the project only noise level to below 60 dBA, thereby resulting in an ambient noise level of 64 dBA, a mere 2 dBA above the existing ambient noise level. (Ex. 200 at 4.6-11).

It is to be expected that a power plant operating within an industrial district will increase the ambient noise level within the immediately surrounding areas. But to require a power plant to limit its operational noise contribution to an increase of only 2 dBA above the current noise level is unreasonably restrictive and unobtainable. Eastshore's witness, Mr. Trewitt declared that it could be technologically infeasible to mitigate the Eastshore Project's noise impacts to such a

level. (12/18/2007 RT 351:14-16). Any proposed mitigation measure must be feasible, as stated in California Public Resources Code §§ 21002.

Fremont Bank is a commercial use located within an industrial zone. As stated above, commercial uses are generally not considered to be sensitive receptors. Fremont Bank should therefore at least be subject to the commercial noise guidelines set forth by the Hayward LORS. When those guidelines are applied to a building like Fremont Bank's, the Eastshore Project's noise impacts would comply with the LORS and would not be considered significant. In addition, Staff once again takes an inconsistent approach between the Russell City and Eastshore Projects by instituting an increase in noise level at a commercial building as a significance standard for the Eastshore Project, but not in RCEC. Staff's proposal in Noise-4 requiring Eastshore to mitigate its noise contribution so that the ambient noise level is only increased by 2 dBA is unreasonable and potentially technologically infeasible. For these reasons, Eastshore submits that the Project meets the standards set forth by the local LORS as well as Staff's own significance standards.

If such increases are to be evaluated at commercial or industrial areas, a more appropriate threshold would be similar to those used by Caltrans which establish a "substantial" noise increase threshold of 12 dBA above existing peak-hour L_{eq}. (Ex. 18 at 2, referencing the previously stated Caltrans Protocol). Evaluating or limiting increases in noise in commercial and industrial areas as proposed by Staff would limit the usefulness of such zones. One purpose of an industrial zone should be to allow potentially noisy and noise-insensitive uses to be located together. Imposing incremental or relative limits would severely impact the first noise sources to locate in such an area.

C. Staff Has Taken an Inconsistent Approach in its Application of Cumulative Impacts Analysis

Neither Staff nor the CEC makes any reference to the Eastshore Project in the cumulative impacts discussions of the RCEC Amendment FSA and the RCEC Amendment Final Commission Decision. Both documents were written in 2007, well after the Eastshore AFC was submitted to the CEC in September of 2006. This omission is glaring because both Staff and the CEC were fully aware of the Eastshore Project at the time these documents were written.

In contrast, Staff's cumulative impacts analysis in the Eastshore FSA readily identifies the RCEC Project as an additional noise impact source in the area. (Ex. 200 at 4.6-13). Staff should

be consistent in its analysis of cumulative impacts. Not doing so results in an arbitrary approach to LORS and CEQA conformance regarding power plant siting. Subjecting the Eastshore Project to a cumulative impacts analysis, but not Russell City, forces Eastshore to unfairly bear the burden of mitigating any potentially significant noise impacts from both projects. The Russell City Project, which is one mile away from R1, may have been able to reasonably comply with a lower limit at R1 but was not required to evaluate it. Nonetheless, Eastshore's proposed level of 48 dBA will comply the CEC's criteria as discussed below.

Using the same existing noise value of 46 dBA at R1 (the basis for the Russell City Project analysis, recalling that Eastshore's R1 location is equivalent to Russell City's R2 location), the proposed 48 dBA contribution from the Eastshore Project and the permitted level of 44 dBA from Russell City, results in 51 dBA, a 5 dBA increase. If the stated expected level of 43 dBA from Russell City is used, the result is less than a 5 dBA increase. Both scenarios demonstrate compliance with Staff's 5 dBA threshold of significance under full-load conditions from both the Eastshore and Russell City Projects. As stated previously, nighttime operation of Eastshore is not expected to be frequent and full-load nighttime operation even less.

V. ENVIRONMENTAL JUSTICE

A. The Eastshore Project Will Not Result in a Disproportionate Impact on an Environmental Justice Population

Staff correctly concluded that the Eastshore Project will not result in a disproportionate impact on an environmental justice population. (Ex. 200 at 7-1 – 7-3.) Staff identified significant indirect and cumulative adverse impacts in only two of the 11 sections of the FSA evaluated for environmental justice screening: Land Use and Traffic and Transportation. (*Id.*) However, the issues of land-use compatibility and aviation safety affect all people, regardless of minority or economic status. As a result, Staff determined that the Eastshore Project is not considered to have a disproportional impact on an environmental justice population. (*Id.* at 1-5.)

1. The Applicable Policy and Guidance Require an Analysis to Determine Whether Any Significant Impact Falls Disproportionately on an Identified Environmental Justice Population

California law defines environmental justice as ". . . the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and

enforcement of environmental laws, regulations, and policies." (Cal. Gov't Code, § 65040.12(e); Cal. Pub. Resources Code, § 71116(j).) The Office of Planning and Research coordinates California's environmental justice program but, outside the limited context of city and county general plans, it does not issue guidelines for addressing environmental justice matters. (Cal. Gov't Code, § 65040.12(a), (c).) The Office of Planning and Research does consult with the Resources Agency and the Resources Agency, in turn, directs the entities under its jurisdiction to consider environmental justice in the entities' decision-making process. (*Id.* at (b)(1); Resources Agency website, *Environmental Justice Policy* ("All Departments, Boards, Commissions, Conservancies and Special Programs of the Resources Agency must consider environmental justice in their decision-making process if their actions have an impact on the environment, environmental laws, or policies.").)

As an entity under the Resources Agency's jurisdiction, the CEC must consider environmental justice in its decision-making process. The Resources Agency provides some guidance on how to incorporate environmental justice in decisions. This guidance includes: identifying relevant populations that might be adversely affected, holding required public workshops and hearings at times and in locations that encourage meaningful public participation, and working in conjunction with other agencies on the state and federal level to ensure consideration of disproportionate impacts on relevant populations. (Resources Agency website, *Environmental Justice Policy.*) The Resources Agency's guidance therefore identifies demographic screening, public outreach, and impact analysis as important factors in implementing its environmental justice policy.

Two federal documents also provide guidance on how to incorporate environmental justice in a California entity's decision-making process. First, Executive Order 12898 requires that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects. . .on minority populations and low-income populations." (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994).) Second, the United States Environmental Protection Agency issued guidance that calls for a two-step environmental justice analysis: (1) does the potentially affected community include minority and/or low-income populations and, if it does, (2) are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the

community? (Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses, 3.2.1 (April 1998).) Thus, federal guidance identifies demographic screening and impact analysis as questions that must be addressed in order to incorporate environmental justice into the decision-making process.

2. The CEC's Methodology Complies with Applicable Policy and Guidance

The CEC's environmental justice approach is consistent with guidance from both the Resources Agency and the federal government. The CEC's approach "consists of: (1) specific public outreach efforts to notify, inform and involve community members, including non-English speaking people; (2) analysis of the applicable demographics to determine the percentage of minority and low-income population living in the potentially affected area; and (3) assessing the potential environmental and health impacts of the proposed project." (Ex. 710 (California Energy Commission website, *Environmental Justice: Frequently Asked Questions*); *see* Ex. 1 at 8.8A-1.).) The CEC's methodology mirrors the three primary factors outlined by the Resources Agency (public outreach, demographics, impact assessment) and includes both factors identified by the federal government (demographics and impact assessment).

a. Public Outreach

Public outreach for a proposed project is conducted on an on-going basis and begins with information on the proposed project being disseminated to all local area media and public libraries. (Ex. 710 (California Energy Commission website, *Environmental Justice: Staff Approach to Environmental Justice*); (Ex. 1 at 8.8A-1 – 2).) The CEC's Public Advisor's Office then contacts community individuals and groups, local leaders, and community activists to inform them of the project and the CEC's process. Concurrently, Staff makes similar contacts with the community to provide project details, answer questions about the project and application proceeding, and to explain Staff's analysis. Staff holds multiple local public participation workshops and hearings, with translators provided as needed. (Ex. 710.)

b. Demographics

Census-block data are used to develop a demographic screening map covering both a one and a six-mile radius around the proposed project. (*Id.*) The demographic screening map is used to identify whether a minority or low-income population of greater than 50 percent exists within

the potentially affected area. Areas with such populations are considered to have potential environmental justice issues.

c. Impact Assessment

If an identified environmental justice population exists, Staff analyzes whether there is a significant impact on the population as a whole and, if there is, whether the significant impact falls disproportionately on the environmental justice population. (*Id.*; Ex. 1 at 8.8A-3.) Generally, "technical staff follow a five-step analysis: (1) describe the existing setting; (2) analyze 'unique circumstances,' if any, of the affected population; (3) analyze the project's direct, indirect, and cumulative impacts; (4) assess and recommend appropriate mitigation; and (5) determine whether the project creates an unavoidable significant adverse impact on the affected population and, if so, consider whether the impact is disproportionate." (Ex. 710.)

3. Staff Followed its Methodology in Correctly Concluding that the Eastshore Project Will Not Result in a Disproportionate Impact on an Environmental Justice Population

a. Staff Conducted Extensive Public Outreach

CEC's public outreach complied with its methodology. CEC's outreach program is an ongoing process that is facilitated by both the Public Advisor's Office and Staff. The Public Advisor's Office creates a contact list that includes local elected officials, businesses, environmental groups, community groups, schools, day cares, elder care facilities, hospitals, and large employers within the project area. The contact list for Eastshore contains over 100 contacts, and specifically includes Chabot College. (12/17/2007 RT 449 12-19; 12/18/2007 RT 37 17-19.) Staff also creates a contact list, based on information submitted by the applicant and on Staff's own review, of relevant agencies and interested parties. Staff's contact list for Eastshore contains over 50 contacts. (12/17/2007 RT 449 20-25.) In addition, Staff maintains a contact list of property owners within 500 feet of any linear facilities and 1,000 feet from project property. (12/17/2007 RT 450 1-3.)

In addition to maintaining active contact lists, Staff made Eastshore's AFC and the subsequent Preliminary Staff Assessment available for review at eight area libraries. (Ex. 200 at 2-3, 2-4.) An Information Hearing and Site Visit were conducted at Chabot College on January 29, 2007. (Ex. 200 at 1-3.) Four publicly noticed workshops were subsequently held. (Ex. 200 at 1-3, 1-4 (March 19, 2007 – workshop to discuss Project Alternatives and Transmission System

Engineering; March 23, 2007 – Data Response and Issue Resolution Workshop; June 6, 2007 – joint status conference for both the Eastshore and Russell City Energy Center projects; August 17, 2007 – workshop on the Preliminary Staff Assessment.).) In response to its aggressive public outreach, Staff received over 1,500 written and verbal public comments by the time the FSA was published on November 9, 2007. (Ex. 200 at 1-4.) After the FSA was published, the CEC conducted an additional three days of evidentiary hearing where extensive public comment was again received. (12/17/2007 RT ; 12/18/2007 RT; 1/14/2008 RT.)

Despite being listed on the Public Advisor's Office contact list and despite the fact that the Information Hearing and Site Visit were held at Chabot College over one year ago, Chabot College complains that Staff did not identify Chabot College as an interested local agency. (12/17/2007 RT 486 2-25; RT 487 1-10; 12/17/2007 RT 301 19-24 (Public comment from Chabot College Trustee Gin ("Had the Board of Trustees been provided notice and been informed of the District's right to provide input and recommendations, you would have heard from us long ago.")); 12/18/2007 RT 25 20-25; 26 9-11 ("The public outreach ignored the Chabot-Las Positas Community College District...[a]nd we had to come in at the end trying to absorb a 700 page FSA in a couple of weeks.").) The CEC should ignore Chabot College's disingenuous protests. These arguments ignore the undisputed facts that the Public Advisor's Office included Chabot College on its notice list and the initial Information Hearing and Site Visit was held at the college over one year ago. (12/18/2007 RT 7-25.) In fact, the college administration distributed parking passes to Staff and participants and flyers were distributed around the campus. (12/18/2007 RT 3-12.) Chabot College made similar claims of inadequate notice when the CEC recently considered the RCEC. The CEC denied Chabot's claims. (*Commission Staff Response to Petitions For Reconsideration and Intervention*, Docket No. 01-AFC-7C at 5-7 ("Did Group Petitioners', Chabot, and the General Public Have Reasonable Opportunity to Participate in the Russell City Amendment Proceeding? **Yes.**" (emphasis in the original).) Chabot College had actual notice of the Eastshore Project through the Public Advisor's Office and constructive knowledge of the project as early as January 2007. (Civil Code, § 18 ("Every person who has actual notice of circumstances sufficient to put a prudent man upon inquiry as to a particular fact, has constructive notice of the fact itself in all cases in which, by prosecuting such inquiry, he might have learned such fact.").) Chabot College's claim

that it did not receive timely notice of the Eastshore proceedings is demonstrably untrue and should be rejected.

b. Staff Identified an Environmental Justice Population Within the Eastshore Project's Affected Area

Staff complied with its demographic-screening methodology to determine that a minority population exists within the Eastshore Project's affected area. No party has challenged Staff's determination. The purpose of the screening analysis is to determine whether a minority and or/ low-income population, defined as greater than 50 percent of the affected area's general population, exists. (Ex. 200 at 4.8-2; Ex. 1 at 8.8A-2.)

Staff reviewed Census 2000 information that shows the minority population by census block is 64 percent within a six-mile radius and 70 percent within a one-mile radius of the Eastshore Project. (Ex. 200 at 4.8-2.) Census 2000 by census-block group information shows that the low-income population is eight percent within the six-mile radius and seven percent within the one-mile radius. (*Id.*) Therefore, Staff determined that an environmental justice population existed.

c. Staff Concluded the Eastshore Project Would Not Have a Disproportionate Impact on the Environmental Justice Population

Because an identified environmental justice population exists, Staff analyzed whether any significant impact would disproportionately affect the environmental justice population. Staff identified indirect and cumulative adverse impacts in 2 of the 11 technical areas evaluated, land use and traffic and transportation. (Ex. 200 at 7-1 – 7-3.) Staff determined that, because the issues of land-use compatibility and aviation safety affect all people, regardless of ethnicity or economic status, the identified impacts would not have a disproportional impact on the environmental justice population. (*Id.*) Staff's analysis complied with its own methodology and, as noted above, with applicable policy and guidance.

Opposition to the Eastshore Project claims that CEC's methodology is not sufficient to comply with its obligation to consider environmental justice in its decision-making process and that Staff failed to follow its own methodology. First, the opposition's analysis is entitled to no weight. Second, each of the allegations is based on a misunderstanding of the applicable standards.

(i) *Opposition Relies on Testimony That is Entitled to Little or No Weight*

In order to substantiate allegations that CEC's methodology is not sufficient to comply with its environmental justice obligation, Chabot College relies on the purported expert testimony of Dr. Sperling and Alameda County relies on the purported expert testimony of Dr. Witt. (12/17/2007 RT 326; 12/17/2007 RT 363.) Dr. Sperling is not a qualified environmental justice expert and her testimony is therefore entitled to no weight. "A person is qualified to testify as an expert if he has special knowledge, skill, experience, training, or education sufficient to qualify him as an expert *on the subject to which his testimony relates.*" (Cal. Evid. Code, § 720(a) (emphasis added).) Dr. Sperling is trained as an anthropologist. (Ex. 605.) Dr. Sperling has received no training in environmental justice and she has never authored an article on environmental justice. (*Id.*) In fact, Dr. Sperling's first environmental justice analysis is the one she prepared opposing the Eastshore project. (12/17/2007 RT 345:10-13.) Expert testimony is to be given only the weight to which it appears to be justly entitled. (*McCarthy v. City of Manhattan Beach* (1953) 41 Cal. 2d 879, 890.) In this case, Dr. Sperling's testimony is entitled to no weight.

(ii) *Opposition Seeks to Expand the Applicable Environmental Justice Analysis to Claim that the CEC's Methodology is Inadequate*

Even if Dr. Sperling's testimony was entitled to some weight, which it is not, both Dr. Sperling and Dr. Witt's testimony admittedly takes issue with Staff's methodology. The argument is not that the methodology fails to comply with applicable policy and guidance. Instead, each witness advocates for an expanded environmental justice analysis that is outside any published and accepted guidelines or regulations. Dr. Sperling testified that the FSA is deficient because it analyzes multiple stressors in an additive, rather than a synergistic, manner. (12/17/2007 RT 335: 17-21; RT 337: 13:23.) When asked to clarify whether she believed Staff's methodology was inconsistent with any guidance published by a regulatory agency, Dr. Sperling candidly conceded, "[w]hether my testimony complies with the narrow, legal recommendations given the CEC is really not my issue." (12/17/2007 RT 343: 12-14.) Dr. Sperling believes the current methodology should be expanded to include consideration of synergistic effects, but that belief is not evidence that the CEC's methodology is inconsistent with applicable policy and guidance.

Dr. Witt concurs with Dr. Sperling's belief that the current methodology should be expanded to include consideration of synergistic effects. (12/17/2007 RT 369: 21-25.) But when

asked whether she was aware of any approved regulatory models that account for synergistic effects, Dr. Witt admitted that she was not. (12/17/2007 RT 374: 14-19 (Q: "Are you aware of any approved regulatory models that account for those synergistic effects?" A: "No, I am not.").)

Dr. Witt's advocacy for an expanded environmental justice analysis is further evidenced by her testimony's use of a European definition of environmental justice even though the California statutory definition appears in the FSA. (Ex. 532 at 1 ("A condition of environmental justice exists when environmental risks and hazards and investments and benefits are *equally* distributed with a lack of discrimination, whether direct or indirect, at any jurisdictional level; and when access to environmental investments, benefits, and natural resources are *equally* distributed; and when access to information, participation in decision making, and access to justice in environment-related matters are enjoyed by all.") (emphasis added); 12/17/2007 RT 379: 15:17.) The European definition is an equality standard while the California statutory definition is a fairness standard. (Cal. Gov't Code, § 65040.12(e); Cal. Pub. Resources Code, § 71116(j) (environmental justice means "...the *fair* treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.") (emphasis added).) Moreover, Dr. Witt uses a three-mile radius to identify a minority population instead of the one and six-mile radiuses used in the Staff's methodology. (Ex. 532 at 2.) Dr. Witt failed to offer an explanation for the discrepancy in her testimony. (12/17/2007 RT 381: 17-19.)

Dr. Sperling and Dr. Witt advocate for an expanded environmental justice analysis that differs significantly from any published and accepted guidelines or regulations. Dr. Sperling's testimony is entitled to no weight. And Dr. Witt failed to meaningfully critique Staff's methodology by using her own standards, which deviated from Staff's methodology, without explanation. Staff's methodology complies with all existing policy and guidelines and neither witness demonstrates otherwise.

(iii) *Chabot College's Claim that CEC Staff Failed to Follow Its Own Methodology is Based on a Misunderstanding of both the Methodology and the Facts*

In order to substantiate its claim that Staff failed to follow its own methodology, Chabot College relies on Dr. Sperling's testimony. As discussed above, Dr. Sperling's testimony is

entitled to no weight. However, a brief overview of Staff's analysis demonstrates that Staff has, in fact, followed its own methodology.

Staff's environmental justice analysis consists of three steps: (1) ongoing public outreach; (2) demographics; and (3) impact analysis. (Ex. 710; Ex. 1 at 8.8A-1.) Staff generally follows an internal five-step process in order to complete the impact analysis. (Ex. 710.) Chabot College claims that Staff failed to complete step two of its internal five-step process. (12/17/2007 RT 332: 16-22; RT 333 11-15; RT 480: 1-5.) Step two calls for an analysis of the "unique circumstances," if any, of the affected population. Chabot College has apparently confused step two's "affected population" to mean the affected *environmental justice* population. (12/18/2007 RT 11: 7-12 ("If you could point to pages in the FSA where you look to the unique circumstances of the affected *environmental justice* population I would appreciate it.") (emphasis added).) Step two explicitly contemplates an analysis of the unique circumstances of the "affected population," meaning the population as a whole in the affected area surrounding the proposed project, not the environmental justice population. (Ex. 710; 12/18/2007 RT 11: 13-15; 12/17/2007 RT 455: 1-9 ("The analysis is ensuring that there is an equal analysis of all people in the region, regardless of ethnicity or income.").)

Not only has Chabot College misinterpreted the express language of step two, but Staff did, in fact, analyze the unique circumstances of the affected population. The unique circumstances analysis takes place on a case-by-case basis for each of the 11 technical areas staff analyzed for environmental justice impacts. (12/18/2007 RT 14: 19-20.) The unique circumstances of three technical areas were discussed in detail at the evidentiary hearings. First, asthma in the City of Hayward was addressed in the public health section. (12/18/2007 RT 12: 21-25.) Second, the socioeconomic section addressed enrollment at school districts within the affected area, medical service response times and the availability of hospital beds if there was an accident during construction of the project, any potential housing shortages if there was a large influx of workers, and individual residents' concerns about property values. (12/18/2007 RT 15: 4-6; 12-15; 6-10; Ex. 200 at 4.8-13.) Finally, the noise section specifically discussed the noise impacts on a nearby residence. (12/18/2007 RT 39: 1-10.) Chabot College's claim that Staff failed to analyze the "unique circumstances" of the affected population is simply inaccurate.

After Staff analyzed the unique circumstances of the affected population, Staff evaluated the Eastshore Project's direct, indirect, and cumulative impacts and recommended appropriate

mitigation. (Ex. 200 at 7-1 – 7-3; Ex. 1 at 8.8A-3 – 8.8A-5.) Staff then determined that two of the 11 sections of the FSA would result in indirect and cumulative adverse impacts that could not be mitigated to a level of insignificance: Land Use and Traffic and Transportation. (Ex. 200 at 7-1 – 7-3.) Because Staff determined that the project would create unavoidable adverse impacts on the affected population, Staff then considered whether the adverse impact would disproportionately affect the identified environmental justice population. (*Id.*; Ex. 1 at 8.8A-3 – 8.8A-6.) However, the issues of land-use compatibility and aviation safety affect all people, regardless of minority or economic status. (*Id.* at 7-1 – 7-2.) As a result, Staff determined that the Eastshore project is not considered to have a disproportional impact on an environmental justice population. (*Id.* at 1-5; Ex. 1 at 8.8A-5 – 8.8A-6.) Staff arrived at this conclusion by complying with its methodology, which in turn complies with all applicable policy and guidance.

VI. AIR QUALITY

Eastshore disagrees with Staff's conclusions regarding the following two requirements presented in Condition of Certification AQ-SC8 ("AQ-SC8"). First, Staff states that AQ-SC8 is necessary to limit the geographic scope of the offset purchase area from which Eastshore can obtain Emission Reduction Credits (ERCs). Second, Staff asserts that AQ-SC8 is necessary to institute an interpollutant offset trade ratio of 5.3 to 1 for SO_2 to PM_{10}. The following discussion addresses the fallacy of Staff's reasoning in limiting the offset purchase area and requiring an extremely high interpollutant offset trade ratio.

In response to comments from other parties, the discussion explains Eastshore's support for the BAAQMD's wood stove and fireplace retrofit program as a feasible additional mitigation measure that will help minimize the Project's particulate matter impacts. The discussion also highlights how the Eastshore Project's location at the load center will reduce the amount of greenhouse gases (GHG) emitted. The discussion then questions the relevance of Mr. Sarvey's testimony and Dr. Zannetti's air quality modeling results and his experience with local regulations, permitting and modeling requirements.

A. AQ-SC8 Should be Modified to Allow an Expansion of the Offset Purchase Area

Staff's proposed language limiting the geographic scope from which Eastshore can obtain ERCs to the "areas of Oakland, Hayward, Fremont, San Jose and San Francisco" is unwarranted

and unnecessarily restrictive. (Ex. 200 at 4.1-46). Mr. Westbrook agreed with Staff's preference to use local or upwind offsets for ERCs to mitigate the Project's PM_{10} emissions but feared it may not be possible to obtain to those credits due to limitations in the marketplace. (12/17/2007 RT 21:15-19).

As explained by Mr. Westbrook, particulate matter is a regional air quality issue. Particulate levels in Hayward's ambient air on any given day may be from particulate transported from other locations in the Bay Area. (Ex. 15 at 1). Attachment 1 to Mr. Westbrook's testimony highlights the fact that it is not possible to identify a single "upwind" area from which to obtain ERCs because air flows in several different directions over Hayward and throughout the Bay Area. (Ex. 15 at 2). Due to the varied wind conditions in the Bay Area and the regional nature of particulate matter transport, ERCs from any location in the Bay Area would contribute to particulate matter benefits in the Hayward area. (Ex. 15 at 2).

Staff persists in its belief that confining the offset purchase area to the "inner Bay Area region" provides sufficient flexibility to Eastshore especially given the fact that Eastshore cannot provide "which specific ERCs are coming forward." (12/17/2007 RT 29:4-11). Mr. Westbrook and Eastshore agree with Staff's general locational preferences and support Staff's language in AQ-SC8 specifying the inner Bay Area as the preferred offset purchase area, but only as a first preference. (Ex. 53 at 5 and Ex. 15 at 2). With regard to Mr. Birdsall's claim that it must limit the offset purchase area to the inner Bay Area because Eastshore cannot identify specific ERCs, Mr. Westbrook explains:

> The ability to obtain ERCs from the market is uncertain and beyond Eastshore's control. Eastshore can only make a good faith effort to procure ERCs, but there is no guarantee that ERCs will be available during the period required by the CEC. The ERC supply is limited; ERC holders may not sell.

(Ex. 15 at 2 and 12/17/2007 RT 33:20-34:3). For the very reason that it is impossible to predict which ERCs will become available, Eastshore requests the flexibility to obtain them from a wider geographic area than the one offered by Staff. Eastshore's proposed revisions to AQ-SC8 are set out below. The inability to indicate which specific ERCs will be obtained should therefore, not be a reason for restricting the ERC purchase area.

The geographic area from which the applicant in the Russell City Project could obtain ERCs was not limited to any particular portion of the Bay Area. As clarified by Mr. Darvin, the

applicant in Russell City was permitted to purchase offsets from the entire region, including the northeastern part of the Bay Area. (12/17/2007 RT 32:18-23 and 35:6-12).

Eastshore proposes to revise the language of AQ-SC8 to allow Eastshore to make a good faith effort to obtain ERCs from Staff's preferred area. Mr. Westbrook explains that a good faith effort consists of "regular and documented contact with emission brokers and known ERC holders to establish interest in and completion of ERC transactions, during the period from start of facility construction until two years after start of construction." (Ex. 15 at 2). If Eastshore is unable to obtain ERCs from Staff's preferred areas despite a good faith effort, and other local programs such as the wood stove and fireplace retrofit program do not yield sufficient PM_{10}, $PM_{2.5}$ and SO_2 mitigation, Eastshore wishes to modify AQ-SC8 to allow ERCs from any location in the Bay Area. (Ex. 15 at 2-3 and Ex. 53 at 5).

Staff's proposed geographic restriction on the offset purchase area in AQ-SC8 is unreasonably restrictive because the nature of wind patterns in the Bay Area is varied and particulate matter dispersion is regional in nature. Moreover, there is no way to guarantee from where and when ERCs can be obtained. Finally, the applicant in the Russell City Project was not similarly constrained in geographic area. For these reasons, Eastshore proposes a modification of AQ-SC8 to allow an expansion of the offset purchase area to include the entire Bay Area if Eastshore cannot obtain ERCs within Staff's first preference area after a good faith effort. Eastshore's proposed condition is provided as a revision to AQ-SC8:

AQ-SC8 The project owner shall obtain and surrender emission reduction credits (ERCs) to offset 20.4 tons per year of PM10 emissions and 3.0 tons per year of SO2 emissions. The emission reduction credits **(ERCs)** shall originate**, to the extent feasible,** from sources in the areas of Oakland, Hayward, Fremont, San Jose, and San Francisco**. If project owner is unable to obtain ERCs from the aforementioned areas despite a good faith effort to do so, project owner shall be permitted to provide ERCs from any location within the BAAQMD.**

PM10 emissions during the November 1 through February 28 PM10 nonattainment season shall not exceed 6.8 tons and SO2 emissions shall not exceed 1.0 tons except as provided below. SO2 ERCs may be substituted for PM10 ERCs at a ratio of **3.0**~~5.3~~-to-1.0. Compliance with this condition will be established by use of the most recent District-approved source test data, and the average load-based (grams/bhp-hr) PM10 and SO2 emission rates from all engines tested.

The project owner shall notify the CPM if the project exceeds the PM10 emission limit in this condition. The owner shall surrender additional ERCs or other CPM-approved mitigation for any excess emission (equaling the difference between calculated actual emissions and the emission limit). Surrendering additional ERCs will establish a new, annual emission limitation equal to 6.8 tons PM10 and 1.0 tons SO2 plus the quantity of reductions surrendered for November 1 through February 28.

Fireplace or wood burning stove retrofits for Hayward residents**, or other CPM-approved mitigation,** may be used to satisfy any additional mitigation requirement and shall be credited using the following factors for each certified unit retrofit: 2 lb PM10/PM2.5 per year per fireplace without insert, 19 lb PM10/PM2.5 per year per fireplace with insert, and 24 lb PM10/PM2.5 per year per wood stove. The program may be made available to all residents in the cities of Fremont, Newark, Union City, San Leandro, Oakland, Emeryville, Albany, Piedmont, Berkeley, Alameda, and the unincorporated areas of Alameda County west of the Oakland/East Bay hills after twelve (12) months from the start date of the **mitigation** ~~fireplace retrofit /woodstove replacement~~ program. The emission reductions from any **CPM-approved mitigation program** ~~fireplace or wood-burning stove retrofits~~ , must occur in accordance ~~to~~ with the following schedule:

a. achieving 15% of the mitigation (3.1 tons per year) of PM10 within six (6) months after start of construction,

b. achieving 30% of the mitigation (6.2 tons per year) of PM10 within nine (9) months after start of construction.

c. achieving 50% of the mitigation (10.2 tons per year) of PM10 within twelve (12) months after start of construction.

d. achieving 80% of the mitigation (16.3 tons per year) of PM10 within eighteen (18) months after start of construction.

e. achieving 100% of the mitigation (20.4 tons per year) within twenty four (24) months after start of construction.

During the 24-month period following the start of construction, ERCs may also be used to supply additional mitigation.

Verification: **At least ninety (90) days before the start of construction,** ~~T~~the project owner shall submit to the CPM **a plan detailing the fireplace/woodstove replacement program, or other proposed mitigation, for approval. The plan should include at a minimum, the description of the program, the amount of rebates or other mitigation funding provided, the person (or agency) who oversees program implementation, the responsible person who reports to the CPM on the progress of the program implementation, the target milestones, and procedures to follow if target milestones have not been met.** ~~prior to initiating construction evidence of surrendering the emission reduction credits or evidence that sufficient emission reductions from any fireplace or wood stove retrofit program will be achieved in accordance with the specified schedule.~~ The project owner shall notify the CPM within 10 days of exceeding the PM10

emission limit in this condition. The owner shall surrender additional ERCs or other CPM-approved mitigation for any excess emission (equaling the difference between calculated actual emissions and the emission limit) within 60 days of the date that actual emissions exceed the limit in this condition. Quarterly status reports on the program meeting the milestones following the start of construction shall be submitted to the CPM.

(Ex. 53 at 5-7).

B. AQ-SC8 Should be Modified to Allow an Interpollutant Offset Trade Ratio of 3 to 1 for SO_2 to PM_{10}

Eastshore proposes an additional revision to AQ-SC8. (See Eastshore's proposed revisions to AQ-SC8 above). Staff currently recommends an SO_2 to PM_{10} interpollutant offset trade ratio ("offset trade ratio") of 5.3 to 1. Eastshore takes issue with both the ratio itself and how it was derived. This ratio is unnecessarily burdensome and Staff cannot back up its calculations used to arrive at the 5.3 to 1 offset trade ratio.

As explained by Mr. Westbrook, this ratio was achieved by following a methodology described in a report entitled *Analysis to Determine the Appropriate Trade-Off Ratios Between NOx, SOx, and PM_{10} Emissions from Shell Refinery*. This was the same methodology used to arrive at the BAAQMD-approved ratio of 3 to 1 that has been applied in several recent power plant projects. However, Staff deviated from the BAAQMD historic practice and selectively applied data to develop new ratio calculations in the Russell City Project that are technically flawed. Then, Staff simply adopted and relied upon the prior analysis and calculations it used in the Russell City Project, but failed to correct the technical problems with the new ratio calculations. (Ex. 15 at 3). Flawed calculations should not be relied upon by the CEC simply because the applicant in Russell City did not choose to adjudicate them and Staff did not correct them.

In fact, Mr. Westbrook testified that Staff's approach was "fraught with limitations and uncertainty" and used very limited data for such an important analysis. (Ex. 15 at 3 and 12/17/2007 RT 34:21-24). Eastshore has been unable to reproduce Staff's calculations using the commonly accepted technique for performing them as described in the report noted above and Staff has never completely explained or justified its calculation approach. Staff used data from only one day, the highest PM_{10} day, to calculate its offset ratio. In contrast, Eastshore averaged the highest $PM_{2.5}$ and PM_{10} days to determine the appropriate offset trade ratio. (Ex. 15 at 3). Eastshore finds no justification for Staff's singling out the use of only the highest PM_{10} day.

Emissions from power plants and all combustion sources are predominately $PM_{2.5}$. Using only the highest PM_{10} day without any consideration of the highest $PM_{2.5}$ day for a combustion source does not make any sense. In addition, Staff's calculation contains numerical errors. On this basis alone, Staff's proposed offset trade ratio should be rejected.

Furthermore, the limitations of Staff's approach are based on Staff's use of data from varied geographic areas and dates. First, the analysis is very sensitive to measured ambient SO_2 levels, but there are no SO_2 data for the Hayward area, only PM_{10} and sulfate data are available for Hayward. The ambient SO_2 data are only available from the areas near Bay Area refineries to the north. "Since the methodology used to develop the interpollutant ratio is intended to rely on a comparison of co-located sulfate and PM_{10} data, the use of geographically disparate sulfate and PM_{10} information is not valid and introduces widely fluctuating results." (Ex. 15 at 3). Second, as previously stated, the results depend upon which maximum PM_{10} or $PM_{2.5}$ day is selected for analysis because results can vary widely by date and monitor location. (Ex. 15 at 3). Finally, Mr. Westbrook offers that there is no clear basis for averaging ratios obtained from other area monitoring stations to represent the Hayward area. (Ex. 15 at 3).

Rather than rely on Staff's approach to the methodology, Mr. Westbrook independently prepared a similar analysis. He obtained sulfate and SO_2 data from the BAAQMD for October 26, 2006 and December 7, 2006 (high PM_{10} days) and December 25, 2006 (a high $PM_{2.5}$ day). (Ex. 15 at 3). Mr. Westbrook was not able to reproduce Staff's analysis. His calculations showed a wide variability in data that can result from this method. (Ex. 15 at 3 and Figure 2). "Just taking an average of the three dates would result in a ratio of 1.35:1 to 1.72:1, a 3:1 ratio would be too high by a factor of about 2." (Ex. 15 at 3). This means that Staff's recommended value based on a single day of 5.3 to 1 would be too high by a factor of about 3.4. (Ex. 15 at 3).

Although Staff has referred to the 5.3 to 1 ratio in the Russell City Project and claims that the chemistry of the inner Bay Area warrants use of that ratio, it has provided no data or calculations to justify the 5.3 to 1 ratio. (12/17/2007 RT 37:8-10 and 82:19-25). Mr. Westbrook testified that Staff chose an evaluation day and station data that may not represent peak particulate matter impact days that will occur during Eastshore operations. (Ex. 15 at 4). Furthermore, Staff has not provided technical justification for the data selected or that a straight average of modeled results from 2.29 to 7.84 represents an appropriate conversion ratio for the Hayward area. (Ex. 15 at 4). In fact, Mr. Westbrook declared: "We haven't seen calculations,

we haven't seen peer review of this information. We don't know how [S]taff came up with that number [the 5.3 to 1 offset trade ratio]." (12/17/2007 RT 82:16-18). What's more, the applicant in Russell City did not dispute Staff's 5.3 to 1 ratio, despite the fact that the analysis that was provided by the applicant to Staff proposed a 3 to 1 ratio. (12/17/2007 RT 32:24-33:3). Mr. Birdsall even admitted that no calculations were provided to support Staff's 5.3 to 1 ratio; he simply relied on the Russell City testimony. (12/17/2007 RT 161:21-22 and 162:20-24). In sum, the offset trade ratio calculated for the Russell City Project is a flawed and unsubstantiated precedent that should not be followed here.

In contrast, the 3 to 1 offset trade ratio proposed by Eastshore is an already conservative figure that has been used in multiple recent projects and has been approved by the BAAQMD. (12/17/2007 RT 83:1-4 and Ex. 15 at 4). Staff maintained that the 3 to 1 offset trade ratio is only appropriate on a regional level, not for the local effects of the Eastshore Project. (12/17/2007 RT 30:17-22).

Despite Staff's belief, the BAAQMD regularly employs the 3 to 1 ratio as a default ratio for projects in the Bay Area. The ERC Banking contact at the BAAQMD, David Burnell, confirmed that the default regional conversion ratio of 3 to 1 is still in effect and there are no plans to change the default value. (Ex. 13 at 6 and Ex. 15 at 4). Mr. Birdsall admitted that the 3 to 1 ratio had been used in past power plant cases. (12/17/2007 RT 37:3-5). In addition, Mr. Bateman of the BAAQMD verified that the 3 to 1 offset trade ratio was used in the San Francisco Electric Reliability Project. (12/17/2007 RT 163:23-164:8). A 3 to 1 or less ratio was also used or proposed in the Potrero Unit 7 Project, the GWF Henrietta Project, the Cosumnes Power Plant, the East Altamont Energy Center and the Pastoria Energy Facility. (Ex. 6 at 9). Based on the fact that the 3 to 1 offset trade ratio is supported by the BAAQMD policy, technical analysis and prior Bay Area precedent, it is demonstrated that this ratio is more than sufficient to provide a net air quality benefit. Furthermore, Staff's use of only the highest PM_{10} day without consideration of the highest $PM_{2.5}$ day to calculate the ratio for a combustion source cannot be justified. Therefore, AQ-SC8 should be modified to allow the SO_2 to PM_{10} interpollutant offset trade ratio of 3 to 1.

C. Eastshore's Proposed Wood Stove and Fireplace Retrofit Program is a Feasible Mitigation Measure That Will Help Minimize the Project's Particulate Matter Impacts

California Public Resources Code sections 21002 and 21100(b)(3) provide that mitigation measures be feasible and minimize the project's significant environmental effects by substantially reducing or avoiding them. The CEQA Guidelines state that the term "mitigation" includes "[c]ompensating for the impacts by replacing or providing substitute resources or environments." (14 CCR § 15370(e)). Eastshore's wood stove and fireplace retrofit program, in conjunction with the above-mentioned particulate matter mitigation measures, will help minimize the Project's $PM_{10}/PM_{2.5}$ impacts to air quality by providing a substitute resource. The retrofit program presents a feasible mitigation measure whereby fireplace or wood burning stove retrofits for Hayward residents may be used to satisfy $PM_{10}/PM_{2.5}$ emission reduction requirements. (Ex. 53 at 6).

The primary advantage of a wood stove and fireplace retrofit program is that it can provide highly localized results during the winter. This is because the emission reductions will occur during the winter at the time of greatest need for reductions. "In addition, the advertising and incentives can be focused in the closest communities to provide for local mitigation." (Ex. 12 at 12).

Staff has indicated its agreement with the retrofit program's potential ability to offset particulate matter emissions in the local area.

> [I]t is shown in the staff assessment that fireplaces are a very substantial source of particulate matter, especially on episode days when particulate matter concentrations get high. This is a local source that when reduced in the City of Hayward and other western Alameda County communities will, I think, directly and positively reduce particulate matter in this part of the Bay Area.

(12/17/2007 RT 42:2-10). Staff and Mr. Bateman from the BAAQMD went on to confirm that the BAAQMD is pursuing fireplace and wood burning stove regulations to be implemented in the future, which indicated to Staff that wood burning devices are serious sources of particulate matter and require regulatory controls. (12/17/2007 RT 42:11-15, 59:3-8 and Ex. 55 at 121). In fact, the BAAQMD institutes the "Spare the Air Tonight" program between November and February in order to reduce particulate matter in the air. (Ex. 55 Spare the Air Tonight Study at 1). The "Spare the Air Tonight" campaign seeks to reduce the particulate matter released from wood burning appliances by encouraging Bay Area residents to replace or refrain from using wood burning appliances. (Ex. 55 Spare the Air Tonight Study at 1).

In addition, wood burning appliance mitigation programs have been used for other power plants in California. (12/17/2007 RT 32:10-13, 92:1-3). "The wood stove and fireplace retrofit/replacement program will be patterned after the ongoing Santa Clara County Woodsmoke Rebate Program funded from the Silicon Valley Power (or Pico Power) project." (Ex. 12 at 12). Similar programs have been proposed or implemented for mitigation purposes for the Three Mountain Power Project, the Los Esteros Energy Facility, and the Russell City Project within the BAAQMD. (Ex. 12 at 12).

The November 2007 "BAAQMD Workshop Report for the Wood Smoke Reduction Program" ("Workshop Report") underscores the effectiveness of wood burning device retrofit programs. (Ex. 55 Workshop Report at 1). The Workshop Report states: "Wood-burning is the single greatest source contributing to PM concentrations, based on chemical analysis of deposited airborne PM." (Ex. 55 Workshop Report at 3). As shown in the Workshop Report, retrofitting high-emitting devices such as non-EPA certified stoves and inserts, as well as conventional fireplaces, with clean gas-burning inserts will clearly be effective mitigation. (Ex. 55 Workshop Report at 5). The particulate matter emissions from a conventional fireplace are 20 times higher than particulate matter emissions from an EPA-certified wood stove, and nearly 3,400 times more than from a fireplace insert that burns natural gas. (Ex. 55 Workshop Report at 5).

Specifically, the Santa Clara County program has proven to be very effective. The BAAQMD "Bay Area Woodstove Changeout Program" slides describe the detailed effectiveness for the Santa Clara County program (or Pico Power Plant program). (Ex. 55 Bay Area Woodstove Changeout Program). The slide entitled "Mitigation Calculations" shows that 12,003 pounds per year of PM_{10} reductions were achieved from retrofitting 644 devices using $206,000 in incentives. At $17 per pound PM_{10} per year eliminated, woodstove replacement in the South Bay Area has been demonstrated to be very effective. (Ex. 55 Bay Area Woodstove Changeout Program at slide 10). The BAAQMD staff will administer the wood stove and fireplace retrofit program for the Eastshore Project, and will closely track and verify actual emission reductions by wood-burning device type.

With the aid of the BAAQMD in administering the program, Eastshore's wood stove and fireplace retrofit mitigation measure will provide effective and real reductions in particulate matter for the Hayward area. (12/17/2007 RT 54:21-23).

D. The Eastshore Project's Location at the Load Center Will Reduce the Emission of Greenhouse Gases

The Eastshore Project's operation would result in an annual benefit in GHG emissions reductions on the grid. This is because the Project would reduce the amount of energy lost due to transmission of the energy to the Bay Area load that would have otherwise been delivered on the grid, resulting in a net energy savings. (Ex. 15 at 5). Mr. Westbrook confirms:

> Total greenhouse gas emissions on the grid will be reduced. Using the CEC Staff's estimated 18.5 to 24 GWh/yr energy savings and assuming natural gas generation is displaced at 500 tons/GWh, the annual CO2 emission reduction would be approximately 9,000 to 12,0000 tons/yr.

(Ex. 15 at 5).

Staff recommends Condition of Certification AQ-SC11 ("AQ-SC11"), which requires Eastshore to report quantities of relevant emitted greenhouse gases. (Ex. 200 at 4.1-33). Staff believes that AQ-SC11, along with GHG reporting requirements, will make the Eastshore Project consistent with state regulations and policies. (Ex. 200 at 4.1-33).

The CEC's 2007 Integrated Energy Policy Report (IEPR) supports the conclusion that power plants in California do not create "growth inducing" impacts, but instead respond to growth. Figure 2-6 of the IEPR shows that statewide annual peak demand is projected to grow, on average, 850 MW per year for the next 10 years. (IEPR at 45). The report then goes on to state that "[s]ystem operators must plan for sufficient electricity supplies or capacity to meet peak demand." (IEPR at 45). In a similar vein, the IEPR declares: "[r]eliable electricity service require that the state must have enough electricity generation capacity to cover load and reserves during peak demand periods." (IEPR at 48). Finally, the IEPR finds that electricity demand is expected to grow due to population increases in the hotter, inland areas and natural gas power plants have proven to be reliable providers of electricity. (IEPR at 218). The IEPR shows us that power plants do not create growth but are merely a state-mandated response to growth. This means that power plants situated at the load center, like the Eastshore Project, actually reduce GHG impacts because less energy will be lost in transmission to the ever-increasing demand in the Bay Area.

Furthermore, PG&E has an obligation to serve the public. This obligation has been reaffirmed by the California Public Utilities Commission (CPUC) in several decisions, including D.01-01-046. In that decision, the CPUC affirmed that regulated California utilities must serve

their customers, this is their obligation to serve. (CPUC D.01-01-046 at pp.1-2). "We strongly believe that the utilities themselves must be responsible and accountable for providing their customers reliable service and just and reasonable rates; this is the utilities' statutory obligation to serve." (CPUC D.05-01-055 at p.7 quoting D.04-01-050 at p.127). PG&E's obligation to serve means that it cannot control growth in load by limiting supply. PG&E must provide electricity in response to growth in load demand and load demand exists in the Bay Area. Therefore, power plants do not create growth inducing impacts because PG&E is obligated to respond to load demand.

E. Eastshore Questions the Relevance of the Testimony of Dr. Zannetti and Mr. Sarvey

Eastshore's air quality modeling followed both the BAAQMD protocols and the CEC requirements. However, Intervenor Alameda County's witness, Dr. Zannetti, claims that Eastshore's air modeling results are erroneous because they did not include the worst-case 1-hour NO_2 impact and did not include startup conditions. (12/17/2007 RT 144:3-10).

Dr. Zannetti has no experience with the BAAQMD's modeling protocols. When questioned about his familiarity with the BAAQMD's program or work on the Eastshore Project, Dr. Zannetti answered that he is not an expert in regulatory compliance nor is he familiar with the local regulatory process. (12/17/2007 RT 148:15-21). Moreover, Dr. Zannetti confirmed that he did not follow the BAAQMD's modeling guidelines for NO_2 emissions impacts. (12/17/2007 RT 150:8-10). In conducting his own modeling, Dr. Zannetti did not use the exit velocity stated by Eastshore and also used a different temperature. (12/17/2007 RT 150:22-151:9). Essentially, Dr. Zannetti failed to adhere to the BAAQMD's and CEC's guidelines and requirements for air quality modeling procedure. As a result, Dr. Zannetti's modeling results and conclusions should not be given great weight.

Dr. Zannetti also took issue with Eastshore's proposed ERCs and the need for local particulate matter mitigation. (12/17/2007 RT 145:6-10 and Ex. 500 at 5). As discussed above, Eastshore's proposed ERCs and wood stove and fireplace retrofit program will provide local and regional mitigation for the Project's particulate matter impacts.

In addition, Dr. Zannetti questions the use of Selective Catalytic Reduction (SCR) as a control device to reduce NO_x emissions, claiming that there is "sparse history of use" in the

United States. (Ex. 500 at 5). This is simply not true, the BAAQMD FDOC for the Eastshore Project states that SCR is the typical technology used for NO_x control. (Ex. 201 at 12).

While Dr. Zannetti's credentials in air quality are enough to qualify him as an expert in relation to his scientific analysis, his lack of experience with the regulatory process for the BAAQMD and the CEC diminishes the relevance of his testimony.

Eastshore cautions that Mr. Sarvey's credentials do not make him an expert in the field of power plant air quality analysis. Mr. Sarvey possesses neither an educational background nor a degree in air quality analysis. (Ex. 800 at 7). Additionally, Mr. Sarvey has no technical experience in air quality analysis nor has he indicated that he has ever performed any air quality modeling. (Ex. 800 at 7). Mr. Sarvey's primary interest is as an air quality intervenor in CEC power plant siting cases. Consequently, Mr. Sarvey's credentials should be reflected in the weight given to his testimony.

Mr. Sarvey testified that Eastshore's proposed mitigation for the Project's particulate matter impacts is not sufficient to mitigate the local impacts. (Ex. 800 at 4). As explained above, Eastshore believes that its proposed ERCs and a wood stove and fireplace retrofit program will more than adequately mitigate the Project's particulate matter impacts both regionally and locally.

Mr. Sarvey also suggests that the Eastshore Project has the potential to exceed the state's new standard for NO_2. (Ex. 800 at 5 and Ex. 801). In response to this assertion, Staff testified that it was aware of the new standard but that it had not yet been approved by the Office of Administrative Law and that the new standard is not being used in CEC staff assessments until it becomes law. (12/17/2007 RT 103:2-9). Staff provided further evidence that if and when the NO_2 standard becomes law, additional modeling would need to be created to assess a project's impacts against the new standard due to the difficulty in modeling the reactivity of NO_2 in the analysis. (12/17/2007 RT 104:17-25). "If the new, lower standard becomes law we would have to work with the Air Resources Board to figure out the proper modeling protocol for that short-term NO_2 standard." (12/17/2007 RT 105:4-7). In addition, the BAAQMD witness confirmed that the BAAQMD's "rules and regulations in this particular case did not require an ambient air quality impact analysis for NO2." (12/17/2007 RT 160:10-13).

In summary, although Dr. Zannetti has the scientific background in air quality analysis, he has no experience with the applicable regulatory process. Mr. Sarvey has considerable

interest in power plant air quality issues but he does not possess any experience or educational training in air quality analysis. Therefore, Eastshore questions the credibility and relevance of the testimony of both Dr. Zannetti and Mr. Sarvey.

VII. PUBLIC HEALTH

A. Condition of Certification Public Health-1 Is Unnecessary to Protect the Public Health and Safety

Eastshore takes issue with the air toxics testing program Staff has proposed in Condition of Certification Public Health-1 ("Public Health-1"). Staff's proposed condition would impose substantial cost for comprehensive testing that is unwarranted and unreasonable. Staff has presented a much more extensive and costly testing program than is necessary to validate the emission factors or the total risk predicted in the public health risk analysis. (Ex. 19 at 1). In fact, the BAAQMD has declared that it does not see a need for a more stringent condition. (12/17/2007 RT 256:19-25).

Eastshore advocates a revision to Public Health-1 to reflect the two changes described in the discussion below. First, the testing of one engine exhaust stack, as opposed to four, will ensure adequate collection of data for contaminant testing purposes. Second, it is not necessary to test for acrolein because there is no BAAQMD-approved test method at this time, rendering any measurements essentially meaningless from a regulatory standpoint and Eastshore's acrolein emissions will not present a risk to public health. Eastshore would agree to complete acrolein testing should the BAAQMD approve an acrolein test method. Consequently, Public Health-1 is unnecessary to protect the public health and safety. Eastshore's proposed condition is provided as a revision to Public Health-1:

> **PUBLIC HEALTH-1** The project owner shall, within 270 days of starting commercial operations, provide the results of a source test on the number of engine exhaust stacks required below and a human health risk assessment (HRA) to the Compliance Project Manager (CPM). The source test and human health risk assessment shall be conducted according to protocols reviewed and commented on by the Bay Area Air Quality Management District and reviewed and approved by the CPM, and shall be submitted to the CPM not less than 60 days after the date of starting commercial operations. The source test and HRA shall include the quantitative analysis and assessment of the following toxic air contaminants: acetaldehyde, ~~acrolein,~~ benzene, 1,3-butadiene, ethyl benzene, formaldehyde, naphthalene and all PAHs (including speciation

of all PAHs emitted in the gaseous and particulate phases), propylene, toluene, and xylenes. **Acrolein shall be included in source testing if the Bay Area Air Quality Management District or California Air Resources Board have developed an acceptable test method by the date source testing is completed.** The source test results and human health risk assessment shall confirm that the theoretical maximum cancer risk at the point of maximum impact is less than 10 in one million and the acute and chronic Hazard Indices are less than 1.0. If the health risk assessment shows a cancer risk greater than 10 in one million or a Hazard Index greater than 1.0, operation of the power plant shall be restricted to the number of engines that the CPM determines will represent a risk of less than 10 in one million or a Hazard Index of less than 1.0 until the project owner can certify that the risk of operating all engines does not create a theoretical maximum cancer risk greater than 10 in one million or an acute or chronic Hazard Index greater than 1.0 at the point of maximum impact.

~~The number of engine exhaust stacks to be sampled shall be determined in the following manner:~~

~~1. Four (4) engines shall be randomly chosen by the owner for stack testing and approved by the CPM. If stack testing results for each contaminant described above on all four engines falls within two standard deviations of the arithmetic mean of each individual contaminant, no further engines need be tested.~~

~~2. If any contaminants measured in the stack test fall outside two standard deviations of the arithmetic mean for that contaminant, an additional four (4) engines, chosen at random by the owner and approved by the CPM, shall be stack tested for all contaminants that fell outside two standard deviations of the arithmetic mean. If stack testing results for each contaminant described above on all eight engines tested fall within two standard deviations of the arithmetic mean of each individual contaminant, no further engines need be tested. The project owner may request relief from further stack testing requirements by providing the CPM a written request with documentation explaining that further testing would not result in a significant change in the health risk assessment results.~~

~~3. This process shall be continued until either the results for all engines tested fall within two standard deviations of the arithmetic mean of each individual contaminant for all engines tested or all fourteen (14) engines are tested.~~

One engine exhaust stack shall be sampled for valid data in three test runs, according to Bay Area Air Quality Management District-approved standards and procedures. If source testing is deemed valid by BAAQMD, non-detect data will be considered valid data. If testing of an engine yields non-valid test results for any single test run, additional engines will be tested until three valid test runs for all compounds are obtained from a single engine.

~~4.~~ The HRA described above shall be based on **the mean of** all **valid** data produced for **the** ~~all~~ engine(s) tested under this protocol. **Not detect values will be handled according to BAAQMD policies and procedures.**

Verification: Not less than sixty (60) days after the start of commercial operations, the project owner shall provide a copy of the source test and human health risk assessment protocols to the BAAQMD for review and comment and to the CPM for review and approval. Included in the test protocol shall be **a description of** the ~~list of four (4)~~ engine(s) ~~randomly~~ chosen for the initial sampling. ~~Subsequent to the initial testing, any additional engines chosen for testing shall be submitted to the CPM for review and approval. Not less than thirty (30) days after each group of source tests has been completed, the project owner shall provide the source test results to the BAAQMD and the CPM. If the source testing is consistent with item #2 above,~~ **T**he owner shall submit ~~the HRA to the BAAQMD for review and comment and to the CPM for review and approval not later than sixty (60) days after the date of the test. If additional tests are required, the project owner shall submit in sequence the next set of randomly chosen engines for testing to the CPM for approval until either all testing conforms to the protocol described above or all 14 engines are tested. When the project owner has fulfilled the requirement for testing as described above, the project owner shall submit all~~ test results and the HRA to the BAAQMD for review and comment and to the CPM for approval within sixty (60) days of the date of the last test or not later than 270 days after the date of starting commercial operations, whichever is sooner.

(Ex. 53 at 43-45).

The possibility that Staff would meet with Eastshore to discuss a revised Public Health-1 was entertained. Eastshore contacted Staff to discuss this matter further but Staff declined. Staff reasoned that due to the amount of parties involved in the proceeding and the level of public participation, it was not appropriate to discuss a revision to Public Health-1. (1/14/2008 RT 382:14-25).

1. Only One Engine Exhaust Stack Needs to be Tested

In Public Health-1, Staff proposes that Eastshore sample four engine exhaust stacks for contaminant testing purposes. (Ex. 200 at 4.7-23). Dr. Greenberg testified that evaluating four engines provides a much better level of confidence. He felt that testing just one does not give the needed level of assurance that the one engine will reflect the operation of all 14 engines. (12/17/2007 RT 199:16-21).

The BAAQMD does not require such an unnecessarily redundant evaluation process. The BAAQMD is just as concerned about the emission of toxics as Staff. However, this concern is addressed in the BAAQMD's FDOC Permit Condition 24. (Ex. 201 at 38). Permit Condition

24 requires a source test on only one of the 14 stacks. (Ex. 201 at 38). This Permit Condition is included in the FSA as Condition AQ-24. (Ex. 200 at 4.1-60). Mr. Westbrook described the BAAQMD's testing practices:

> The BAAQMD's level of testing is appropriate because it requires triplicate emission measurements to validate air toxics emission rates used in the health risk assessment. The BAAQMD typically requires the performance of three test runs for the majority of air toxics expected to significantly contribute to risk. The collection of triplicate data from a single engine is consistent with this longstanding BAAQMD practice.

(Ex. 19 at 2). The BAAQMD witness testified that he was satisfied by the testing of only one engine because he reviewed the toxics data for the identical engines located at the Barrick facility in Nevada and found that the emissions were very low. (12/17/2007 RT 256:19-25). Eastshore proposes a compromise condition that is more stringent than the BAAQMD's Permit Condition.

Condition AQ-24 requires source testing of one engine. Eastshore's proposed revisions address Staff's concerns about ensuring collection of adequate data. If after a source test on a single engine does not result in three valid test runs, Eastshore proposes that additional engines would be tested until three valid runs are obtained from an engine. (Ex. 19 at 2 and Ex. 53 at 44). All valid source test data will be used to calculate air toxic emission factors. (Ex. 19 at 2 and Ex. 53 at 44).

Although it is possible that there will be some air toxic emissions variability among the 14 engines given the inherent limitations of source testing for trace constituents, Mr. Westbrook does not expect any variability to have an impact on risk assessment conclusions. (Ex. 19 at 2). Many of the substances being tested have extremely low emissions and toxicity, meaning that even wide variability among the emission factors obtained from testing for these substances will still yield a small average change to the total risk contribution for these substances. (Ex. 19 at 2). It should be stressed that both Eastshore and Staff's health risk assessments show results well below the level of significance. (See Public Health Table 4, Ex. 200 at 4.7-13).

Dr. Greenberg's concerns regarding the use of surrogate emissions factors are unsubstantiated. (12/17/2007 RT 198:15-19). Dr. Greenberg testified that he was concerned that the California Air Resources Board emission factor database did not contain emission factors for the Eastshore Project's exact engines. (12/17/2007 RT 198:7-14). However, Mr. Westbrook explains why he expects the total risk predicted from the results of the measurement program

will be much less than the risk predicted using the original default emission factors. (Ex. 19 at 2). This is based on the fact that when natural gas is combusted, only trace air toxic compounds may be emitted. Mr. Westbrook further provides:

> The default emission factors used for the health risk assessment were obtained from older engines with no emission controls. The new, efficient Wartsila engines proposed for Eastshore will feature state-of-the-art emission controls for volatile organic compounds, including compounds listed in Condition Public Health-1. I expect that air toxic emissions will be much lower than the default emission factors obtained from older, uncontrolled engines. I also expect that many of the compounds will be below detection limits.

(Ex. 19 at 2).

Staff's proposal to evaluate four engines presents a much more extensive and costly testing program than is necessary to validate the emission factors or the total risk predicted in the public health risk analysis. (Ex. 19 at 1). Staff's measurement program requires the collection of duplicative and extraneous data from multiple and identical engines. Such extensive testing is not necessary to validate engine performance. As stated by Mr. Westbrook, the Eastshore Project will consist of 14 identical reciprocating engines. A source test on a single engine, with three valid test runs, is sufficient to confirm the emission factors used for Eastshore's health risk assessment, as well as the health risk assessment produced by the CEC for the FSA. (Ex. 19 at 1-2).

2. Public Health-1 Need Not Require Testing for Acrolein

In addition to requiring the redundant testing of four engines, Public Health-1 also requires Eastshore to test for acrolein. (Ex. 200 at 4.7-22). This is despite Dr. Greenberg's admission that he did not believe the Eastshore Project's acrolein emissions would reach any level of public health concern. (12/17/2007 RT 201:3-12 and Ex. 200 at 4.7-14 and 4.7-21). "Staff's analysis shows that . . . Eastshore emissions would not present a significant cancer risk to any member of the public, including low income and minority populations, and that noncancer hazards would not be caused by facility emissions." (Ex. 200 at 4.7-14).

Intervenors Chabot College and Group Petitioners spent a significant amount of time questioning Dr. Greenberg and the other witnesses about the effects of acrolein emissions on the surrounding community. They also questioned the validity of Staff's methodology used to determine that the acrolein emissions would not present a public health concern. Although much energy was expended in debating the health risks associated with acrolein and what methodology

Staff should have used, a very simple answer exists: Staff was required to use the risk assessment methodologies adopted by California agencies. (12/17/2007 RT 202:17-21, see below). Therefore, Intervenors Chabot College and Group Petitioners can continue to debate the merits of Staff's methodology, but the fact remains that the risk assessment could not have been legally conducted in any other fashion.

The fact that Staff is required to use California methodology for assessing risk is a major point that must be emphasized, particularly in light of the intervenors' and the public's hesitance to accept that fact. Dr. Greenberg testified that he employed the appropriate California values in arriving at his conclusion. (12/17/2007 RT 202:16-22). He was careful to make it clear to both the public and the intervenors that he was required to use the values promulgated by the California Environmental Protection Agency ("Cal-EPA"), the California Air Resources Board (CARB) and the Office of Environmental Health Hazard Assessment (OEHHA). (12/17/2007 RT 202:17-21 and Ex. 200 at 4.7-5). In fact, CARB has advised all of the California air districts not to base any type of permit decision on acrolein emissions. (12/17/2007 RT 220:6-9).

In response to Intervenor Group Petitioners' line of questioning, Dr. Greenberg stressed that the question is not one of acrolein's status as a toxic substance, rather it is the level of concentration of the substance that will cause a problem. And the amount of acrolein that will be emitted by the Eastshore Project will be below the level of concentration that will cause a problem. (12/17/2007 RT 229:13-17). "[N]o matter how I look at it using California values and toxicity values that there still is no impact." (12/17/2007 RT 202:24-203:1).

Dr. Greenberg went on to testify that since writing the Preliminary Staff Assessment (PSA) and FSA, OEHHA has decided to reduce the toxicity of acrolein by increasing the Reference Exposure Level from 0.19 micrograms per cubic meter of air to 2.3 micrograms per cubic meter. (12/17/2007 RT 203:3-9). That would make the hazard index drop even further, meaning that OEHHA has declared that acrolein is more than ten times less toxic to humans than previously established. (12/17/2007 RT 203:10-13). However, Dr. Greenberg continued to use the older, more stringent standard because the new standard has yet to be formally adopted. Even employing the previous OEHHA standard, Staff still found the Project's acrolein emissions to be less than significant. (12/17/2007 RT 203:20-21).

Based on its experience with the emission of aldehydes, which includes acrolein, the BAAQMD witness testified that he was not overly concerned about acrolein because its

emissions are generally very low. (12/17/2007 RT 257:20-22 and 258:1-8). In its FDOC, the BAAQMD states that per its Health Risk Screening Analysis Guidelines, acrolein is not included in the health risk assessment results. (Ex. 201 at 24). This is because, as stated above, CARB does not have certified emissions factors or an analytical test method for acrolein. (Ex. 201 at 24).

Furthermore, during Eastshore's cross examination, Dr. Greenberg revealed that the data obtained from the Barrick facility, which uses the same engines as the Eastshore Project, show that the formaldehyde emissions are more than a hundred-fold less than what Dr. Greenberg used in Staff's health risk assessment. (12/17/2007 RT 262:14-17).

Mr. Westbrook also disagrees with Staff's requirement to conduct source testing for acrolein because no accepted analytical test method for acrolein exists in California. (Ex. 19 at 3). However, if a method is developed by BAAQMD or CARB prior to the Eastshore compliance air toxics testing, then testing for acrolein would be appropriate. Otherwise, Mr. Westbrook suggests that the default emission factor for acrolein should be used for the updated health risk assessment. (Ex. 19 at 3). Eastshore has revised Public Health-1 to incorporate this suggestion (see above). (Ex. 53 at 43).

B. The Intervenors' Other Public Health Concerns Are Adequately Addressed

In addition to the acrolein and related risk assessment methodology issues, Intervenors Chabot College and Group Petitioners raised other public health concerns.

Intervenor Chabot College questioned Staff on the topic of environmental justice. Dr. Greenberg's testimony that he was required to abide by OEHHA standards and regulations addressed Intervenor Chabot's assertion that some environmental justice factors were not taken into consideration in Staff's health risk assessment. Dr. Greenberg answered by stating that he followed the OEHHA standards as required, whether they included all of Intervenor Chabot College's environmental justice concerns or not. (12/17/2007 RT 239:15-19 and 240:6-9). In addition, Staff presented analysis in the FSA showing that the Eastshore Project's emissions would not present a significant risk to any member of the public, including low income and minority populations. (Ex. 200 at 4.7-14). Dr. Greenberg also assured Intervenor Chabot College that the students at Chabot are included in the analysis just like an other member of the public. (12/17/2007 RT 252:18-22). Dr. Greenberg conclusively stated that if a hazard index created by a project fell below the level of significance, no one who was affected by the project,

including all sensitive receptors, would experience a significant adverse health impact. (12/17/2007 RT 267:17-25).

Intervenor Group Petitioners brought up the issue of the level of pollutants taken into consideration by Staff "for risk screening purposes" and whether it included start-up conditions and background toxic air contaminant levels. (12/17/2007 RT 272:5-12 and 273:17-20). Dr. Greenberg first replied that his analysis did not consider start-up because the start-up period is such a minimal amount of time and start-up test data does not exist. (12/17/2007 RT 273:8-16). He then stated that Staff did not account for background cancer risks because the methodology in California only requires Staff to look at the incremental contribution of the particular project. (12/17/2007 RT 273:21-25). This is due to the fact that if background cancer risk was included, no development activities could ever occur because the cancer risk level in the Bay Area is already above the level of significance. "What we are looking at for CEQA purposes is the incremental increase in cancer and is that below a level of significance." (12/17/2007 RT 274:4-15).

Intervenor Group Petitioners also questioned whether a statistical confidence interval was incorporated into the health risk assessment. (12/17/2007 RT 216:12-13). Dr. Greenberg responded that no statistical confidence interval was used in the health risk assessment because OEHHA does not require confidence intervals when conducting health risk assessments. (12/17/2007 RT 217:14-15).

VIII. ALTERNATIVES

A. No Feasible Alternative Exists for the Eastshore Project

Staff correctly concluded that no feasible alternative exists for the Eastshore Project. (1/14/2008 RT: 73 13-15.) Each alternative identified by Staff constitutes a "no project" alternative because an alternative site would require a new AFC with the inherent associated delays for regulatory approval. Further, an alternative site that requires an interconnection location other than the Eastshore Substation would have the additional complication of requiring a new System Impact Study. (Ex. 200 at 6-1; Ex. 10 at 7-8; Ex. 2 (Eastshore's System Impact Study); Ex. 12 at 35 (PG&E's Request for Offers (RFO) required each project to identify the specific point of interconnection and initiate an interconnection study.) Moreover, the

alternatives that specify an interconnection location other than the Eastshore Substation fail to meet the Staff-approved project objectives.

1. All Alternatives Constitute a "No Project" Alternative

a. Relocation to an Alternative Site Would Require a New Application for Certification Which Would Delay the Project and Cause Eastshore to Terminate its Development Effort

PG&E chose the Eastshore Project as the successful bidder in its RFO process in April 2006. (1/14/2008 RT 54: 7-10.) Eastshore subsequently executed a contract with PG&E that requires Eastshore to deliver 115.5 MW of safe and reliable electric supply capacity to PG&E's Eastshore Substation by May 2009. (Ex. 200 at 6-1.) Staff acknowledged that any relocation to an alternative site at this juncture would require Eastshore to submit a new AFC, including revised engineering and environmental analyses. (*Id.*) Preparing a new AFC for CEC approval and participating in public workshops and an evidentiary hearing to approve the alternative site would delay the project well beyond Eastshore's contracted delivery date of May 2009. (Ex. 10 at 3.) Even under the best of circumstances, a relocation of the Eastshore Project would delay the Project by at least 16-18 months. (Ex. 16 at 2.)

This delay would cause a substantial breach of Eastshore's contract with PG&E, requiring Eastshore to terminate the development effort. (Ex. 10 at 3.) Staff also acknowledged that a more rigorous AFC-level analysis could reveal significant obstacles to the alternatives that were not revealed by the more general alternatives analysis presented in the FSA. (Ex. 200 at 6-1.) As a result, preparing an AFC for any of the alternatives would require Eastshore to terminate its current development effort with no guarantee that the alternative site would ultimately be deemed suitable for development. Because relocation to an alternative site does not guarantee that the alternative would ultimately be acceptable and because relocation would require Eastshore to terminate its development effort, each alternative constitutes a "no project" alternative.

b. An Alternative Site that Requires an Interconnection Location Other than the Eastshore Substation Would Trigger a New System Impact Study, as Required by PG&E's Request for Offers

Two of the alternatives, in addition to requiring relocation, require interconnection locations other than the Eastshore Substation and, as a result, constitute "no project" alternatives. PG&E's RFO required each offer to submit a completed and current System Impact Study (SIS)

or, if a completed SIS did not exist, a copy of the completed SIS as soon as it became available. (Ex. 12 at 35-36.) Eastshore submitted an approved SIS and Facility Study (FS) with the AFC demonstrating that the proposed electrical interconnection to the Eastshore substation could be accomplished with no significant system impacts to PG&E's electrical system. (Ex. 12 at 7; Ex. 5 (SIS and FS (January 11, 2007).) Eastshore's SIS did not evaluate the system impacts of connecting to any substation other than the Eastshore substation. (Ex. 5.) A SIS is a location-specific study and does not provide analyses of alternative locations.

Any attempt by Eastshore to alter the point of interconnection would need to be reviewed by PG&E under a new SIS and FS with no assurance that the results of the study would be favorable. (Ex. 10 at 7.) Eastshore would lose its place in the transmission queue and would need to restart the SIS process from the beginning. (1/14/2008 RT 24: 22-25; RT 25: 1-7.) Completion of a SIS and FS typically takes 3 to 4 months. (Ex. 10 at 7.) Even if the results indicated that tying into an alternative substation could be accomplished without significant impacts, such a substation was not part of PG&E's originally bid evaluation. (*Id.*) Other bidders to the RFO could legitimately argue that PG&E's unilateral acceptance of an alternate substation deprived other bidders of the opportunity to similarly modify their bids.

Alternative sites that require an interconnection location other than the Eastshore Substation essentially constitute a "no project" alternative because the RFO requires a completed SIS and only the Eastshore Substation is contemplated in the previously completed SIS. (Ex. 12 at 35-36; Ex. 5.) Moreover, PG&E selected Eastshore's proposal after reviewing all the bids – and the accompanying SIS analyzing each bid's chosen interconnection location – that PG&E received in response to its RFO. (1/14/2008 RT 54: 7-10.) PG&E then executed a contract with Eastshore that identified the Eastshore Substation as the chosen interconnection point into PG&E's grid. (Ex. 200 at 6-1.) Staff Alternative Site D and Staff Alternative Site E each require interconnection to the Newark substation instead of the Eastshore Substation. (Ex. 200 at 6-9 – 6-10.) Each of these alternatives would, first, trigger a new SIS and, second, cause a substantial breach of Eastshore's contract with PG&E. Any attempt by Eastshore to retool its analysis and to change the interconnection location would create sufficient complication, delay, and uncertainty to eliminate the project for all practical purposes. These alternatives, then, essentially constitute a "no project" alternative.

c. Group Petitioners' Challenge to the Alternatives Analysis Relies on Dr. Lewis' Testimony, Which is Entitled to No Weight

Group Petitioners rely on Dr. Lewis' testimony to contest the alternatives analysis. (1/14/2008 RT 56-67.) Dr. Lewis is not a qualified alternatives expert and his testimony is therefore entitled to no weight. (Cal. Evid. Code, § 720(a); *McCarthy v. City of Manhattan Beach* (1953) 41. Cal.2d 879, 890.) Dr. Lewis has received no training in conducting alternatives analyses and he has never authored an article on power plant alternatives. (1/14/2008 RT 58: 25 ("I've just read a lot in the area."); RT 59 1-2; Ex. 716.) Dr. Lewis' first alternatives analysis is the one he prepared opposing the Eastshore Project. (1/14/2008 RT 59: 3-6.)

Even if his testimony were entitled to some weight, Dr. Lewis stated that "Eastshore is not needed" because there are "great ideas to avoid the need for peaking plants." Although this statement describes nothing more plainly than a "no project" alternative, Dr. Lewis nevertheless denied that his proposal supported the "no project" alternative. (1/14/2008 RT 60: 18-19; RT 63: 10-16.) Dr. Lewis' assertion underlies his lack of experience with CEQA and power plant alternatives analysis. In fact, when asked if he could reference a particular section of CEQA that was inconsistent with Staff's analysis, Dr. Lewis could not. (1/14/2008 RT 66: 19-23.) In this case, Dr. Lewis' testimony is entitled to no weight. What this ill-informed testimony boils down to is merely Dr. Lewis' unsubstantiated and wholly subjective preference for a "no project" alternative.

d. Staff Identified Several Local System Effects Benefits That Will Not Exist in the Absence of the Eastshore Project

Staff's discussion of the "no project" alternative identified several benefits that will not exist in the absence of the Eastshore Project. (Ex. 200 at 6-14.) First, Staff stated that other power plants would "likely" be constructed in the project area or in California to serve the demand that could be met by the Eastshore Project. These plants might use more fuel and emit more air pollutants than the Eastshore Project. (*Id.*) Second, if new power plants were not built, less efficient existing plants would operate more and with higher levels of pollutants in order to meet the demand that could be met by the Eastshore Project. (*Id.*) Finally, if the Eastshore Project is not built, the region will not benefit from the local, relatively clean, and efficient source of new energy generation that the Eastshore Project would provide. (*Id.*)

2. No Feasible Alternative Meets the Staff-Approved Project Objectives

Staff acknowledged that it "did not identify any feasible alternative that would meet the project objectives." (1/14/2008 RT 73: 13-15.) As part of its standard alternatives analysis, Staff reviewed Eastshore's AFC in order to evaluate Eastshore's identified project objectives. (1/14/2008 RT 81: 19-21.) Generally, Staff reviews an applicant's objectives and may or may not include all of them as the project objectives that Staff incorporates into its evaluation. (1/14/2008 RT 74: 14-18.) Here, Staff reviewed Eastshore's proposed objectives and agreed that the reasonable project objectives were: (1) to safely construct and operate a nominal 115.5 MW(net), natural-gas-fired, intermediate/peaking load generating facility; (2) *to deliver electricity to the PG&E Eastshore Substation at 115 kV without the need for system upgrades*, and; (3) to provide voltage support to the regional 230 kV transmission system. (Ex. 200 at 6-3 (emphasis added).)

Staff specifically considered and retained interconnecting at the Eastshore Substation as a reasonable project objective. (1/14/2008 RT 81: 24-25; RT 82: 1-2 ("[I]t was very central to the whole project."); RT 82: 24-25, RT 83: 1-4 (listing reasons why the objective was considered reasonable "...there was an RFO process and the discussions that took place in the hearings throughout the process...the testimony on local system effects..."); RT 82: 9-10 ("[O]bjective of connecting to the Eastshore substation was very important.").) Staff has the authority to review and eliminate any of applicant's project objectives. (1/14/2008 RT 74: 14-18.) Here, Staff reviewed Eastshore's proposed project objectives and retained inconnecting at the Eastshore Substation.

Staff initially examined twelve potential alternative sites. (Ex. 200 at 6-5.) Seven of the potential sites were investigated but rejected for a variety of reasons. (*Id.*) Staff considered the remaining five alternative sites in greater detail, but eventually rejected each one as either infeasible or for failure to meet the staff-approved project objectives. (*Id.* at 6-7 – 6-10; 1/14/2008 RT 73: 13-15.)

a. Tierra Alternative Site 1

This alternative site consists of land surrounding the Eastshore Substation. (Ex. 16 at 1.) However, this land is encumbered by several overhead power lines that would make development of the land infeasible. (*Id.* at Attachment 1; CEQA Guidelines § 15126.6(f)(1).)

A small triangular area of land on the east side of the substation could provide approximately 3.4 acres of available land with a 50' offset from the overhead power lines. (*Id.* at 1.) An approximately square area of land to the west of the substation would provide approximately 1.9 acres, also with a 50' offset from overhead power lines. This land is also suspected to have wetlands on both the south and west portions. (*Id.*) Therefore, in addition to PG&E's confirmation that the land is not available, the land is significantly encumbered by overhead power lines and wetlands on the west side that would restrict development to areas that are not adequately sized for the Eastshore Project. (*Id.* at 2; Ex. 13 at 20; Ex. 200 at 6-7.)

b. Tierra Alternative Site 2

This alternative site is located approximately 3,600 feet west of the proposed site, on an 8.72 acre industrial zoned private property currently used as a pallet yard. (Ex. 200 at 6-8.) Eastshore initially indicated that this site was under a purchase/lease agreement with another party. (Ex. 13 at 18.) Staff suggested that, because the site is still operating as a pallet yard, the site may potentially be available for sale or lease. (Ex. 200 at 6-8.) Whether or not the pallet yard has subsequently become available, it was not available during development and Eastshore has committed significant resources to the current proposed site. (Ex. 16 at 2.) Relocation of the site at this juncture would cause significant delay because a new AFC would need to be prepared. (*Id.*) As explained above, significant delay would require Eastshore to terminate the development and Tierra Alternative Site 2 therefore constitutes a "no project" alternative.

c. Tierra Alternative Site 5

For reasons described in Tierra Alternative Site 2, any movement from the currently proposed site would result in the "no project" alternative.

d. Staff Alternative Site D

First, for reasons described in Tierra Alternative Site 2, any movement from the currently proposed site would result in the "no project" alternative. Second, this location in Fremont connects to a substation other than the Eastshore Substation. (Ex. 200 at 6-9.) The site therefore fails to meet one of the project objectives specifically retained by Staff. Third, any relocation of the substation would trigger a new SIS on top of the AFC requirement identified in the Tierra Alternative Site 2 discussion and would cause a substantial breach of Eastshore's contract with PG&E. (Ex. 5.) Finally, one of the Eastshore Project's primary benefits is its status as a local

generation facility that is capable of serving the local area and supporting the 230 kV system. (Ex. 200 at 5.6-1; Ex. 16 at 3.) It is unclear whether these same benefits would be provided if the project connected at the Newark substation in Fremont.

e. Staff Alternative Site E

For reasons described in Tierra Alternative Site 2, any movement from the currently proposed site would result in the "no project" alternative. Furthermore, for reasons described in Staff Alternative Site D, any new interconnection location would not meet the project objective of connecting at the Eastshore Substation, relocation would require a new SIS and cause a substantial breach of Eastshore's contract with PG&E, and it is unclear whether a project connected at the Newark Substation would provide the same local benefits as Eastshore's current proposed site.

Staff correctly concluded that no feasible alternative exists for the Eastshore Project. Each alternative identified by Staff constitutes a "no project" alternative because an alternative site would require a new AFC with the inherent associated delays for regulatory approval and any alternative site that requires an interconnection location other than the Eastshore Substation would require a new SIS. Moreover, the alternatives that specify an interconnection location other than the Eastshore Substation fail to meet the Staff-approved project objectives.

IX. LOCAL SYSTEMS EFFECTS

A. Staff Correctly Concluded that Eastshore Will Result in a Variety of Benefits to the Local System

Staff correctly concluded that the Eastshore Project will result in a variety of benefits to the local system. (Ex. 200 at 5.6-1.) Local system effects are localized electrical benefits and impacts that can be attributed to the addition of a new generator to the electric transmission grid. (*Id.*) While Staff's conclusion that the Eastshore Project will result in a variety of benefits is correct, Staff's conservative analytical approach did not properly acknowledge additional benefits that the Eastshore Project will generate for the local system.

1. Eastshore Will Result in Reduced Transmission System Losses Which Equals Savings to Ratepayers, But Staff's Analysis Minimizes the Economic Savings Attributable to Eastshore

Staff correctly concluded that the Eastshore Project will result in reduced transmission system losses saving approximately 24 gigawatt hours (GWh) of energy, which will generate savings to ratepayers. (Ex. 200 at 5.6-4 – 5.6-6.) But Staff missed two important points: 1) Staff did not calculate the air quality emissions reductions due to the reduced system losses, and 2) Staff attributed the benefits of the combined Eastshore and RCEC Projects first to RCEC, leaving only the remainder for the Eastshore Project even though the Eastshore Project is first in the CAISO interconnection queue. (Ex. 200 at 5.6-5; 1/14/2008 RT 22: 25, RT 23: 1-2.)

Power shipped over transmission lines has associated line losses that are not seen if power is produced locally. (1/14/2008 RT 19: 8-10.) Resistance line losses are significant, especially on long, heavily loaded lines with a high load factor. (Ex. 200 at 5.6-4) Based on the projected 2008 northern California system summer peak demand without the Eastshore or RCEC Projects, transmission system losses will constitute 1,040 MW or 3.9 percent of the load for northern California. (*Id.*)

Adding the Eastshore Project reduces transmission system losses between 6.5 MW and 19 MW. (Ex. 200 at Appendix A, Tables I, III, and V.) Associated with that reduction is an annual energy savings of approximately 24 GWh, which is enough to power over 3,600 homes. (*Id.* at 5.6-5; 1/14/2008 RT 17: 7-9.) Staff calculated that a reduction in system losses of this magnitude would save ratepayers $1.2 to $1.7 million per year. (Ex. 200 at 5.6-5.) Over a twenty-year period, Staff calculated the present value of these savings at approximately $16 million. (*Id.*) Peter Mackin, Eastshore's Local System Effects expert, confirmed the benefits to the system in removing transmission losses on a percentage basis for the Eastshore Project are the same as those for Metcalf. (1/14/2008 RT 29: 1-4.) The only difference is the size of the facility. Except for Staff's failure to value and add emissions reductions in its calculations, Staff accurately concluded that the Eastshore Project provides a significant transmission system loss benefit to ratepayers.

a. Staff's Calculation Failed to Include the Value of Lower Emissions

In addition to monetary benefits from the Eastshore Project's ability to reduce transmission system losses, these loss savings act as energy that is produced without using

additional fuel or water and without producing additional plant emissions. (Ex. 200 at 5.6-5.) But Staff's calculations failed to acknowledge the value in decreased plant emissions. Instead, Staff valued the decrease in plant emissions at $0, which Staff acknowledged was "a *very* conservative assumption." (*Id.* (emphasis added).) Staff valued plant emissions at $0 even though Staff admitted that the Eastshore Project would provide "long-term environmental benefits relating to reduced fuel and water use and reduced emissions due to the reduction in electricity system losses." (Ex. 200 at 5.6-6.)

Both Peter Mackin and James Westbrook, Eastshore's Air Quality expert, concur that the decrease in plant emissions should have been included in Staff's calculation of Eastshore's Local System Effects benefits. (Ex. 14 at 4 (Peter Mackin) ("I believe some quantification of these benefits should be made."); Ex. 15 at 4-5 (James Westbrook).) Mr. Westbrook valued the decrease in plant emissions at "approximately $115,000 to $150,000." (Ex. 15 at 4.) In addition, Mr. Westbrook stated that the annual CO2 emission reduction would be approximately 9,000 to 12,000 tons/year and that there were additional environmental benefits, specifically the value of avoided air toxic emissions, that were not considered in Staff's calculations. (*Id.* at 4.) Staff's calculation of savings worth approximately $16 million over twenty years is therefore based on "very conservative assumption[s]" that represent the bare minimum financial benefit that the Eastshore Project will generate.

b. Staff Arbitrarily Carved Out RCEC's Portion of the Cumulative Benefits of the Two Projects First, Even Though Eastshore is Ahead of RCEC in the CAISO Interconnection Queue

Staff concluded that the Eastshore Project continues to provide significant benefits to ratepayers even when the Eastshore Project is considered with RCEC. (Ex. 200 at 5.6-5.) But when Staff considered the two projects together, Staff carved out RCEC's portion of the cumulative benefits first, even though the Eastshore Project is ahead of RCEC in the CAISO queue. (*Id.*; 1/14/2008 RT 23: 18-25, RT 24: 1; RT 22: 25, RT 23: 1-2.) Staff stated that "while the Eastshore would produce a loss savings of 9 MW by itself, the Eastshore would produce only 7 MW...of loss savings for operation of the Eastshore and RCEC together." (Ex. 200 at 5.6-5.) When asked whether it would have been more appropriate to carve out Eastshore first, given its status ahead of RCEC in the CAISO queue, Staff acknowledged "I guess we could have done it that way." (1/14/2008 RT 24: 2-6.) Not only is the Eastshore Project ahead of RCEC in the interconnection queue, but it has a considerably shorter construction schedule of 18 months

whereas RCEC has a 25 month construction schedule. (Ex. 200 at 3-4; Ex. 29 at 3-5.) Depending upon construction start dates, the Eastshore Project could also be online prior to RCEC. Staff's decision to assign cumulative benefits to RCEC first is arbitrary and minimizes the Eastshore Project's benefits.

Ultimately, Staff correctly concluded that the Eastshore Project will result in reduced transmission system losses which will generate savings to ratepayers. The Eastshore Project's demonstrated benefit exists even though Staff's two methodological errors, failure to value lower emissions and carving out RCEC's cumulative benefits ahead of the Eastshore Project's, minimize the amount of savings the Eastshore Project can reasonably be expected to generate.

c. Group Petitioners' Challenge to Staff's Transmission System Losses Calculation Misunderstands the Scope of the Calculation

Group Petitioners attempt to challenge Staff's analysis by claiming that, first, Staff failed to calculate the cost-savings per customer and, second, that Staff failed to include Eastshore's cost in the evaluation of transmission system losses. (1/14/2008 RT 38: 10-16; RT 39: 6-10.) Group Petitioners' challenge misunderstands the scope of Staff's calculation. Staff's calculation evaluates local system effects, not individual customer effects. (1/14/2008 RT 38: 13-20.) And the analysis of transmission system losses is not a full-blown cost-benefit analysis. (1/14/2008 RT 39: 11-14 ("These benefits that we are talking about here are purely from the losses, that's all. Not overall operation of the plant."); RT 40: 10-11 ("It is not a full cost-benefit analysis of the entire project.").) Group Petitioners cannot create a deficiency in Staff's calculation by merely stating that one exists. The scope of Staff's calculation was appropriate and Staff concluded that the Eastshore Project will reduce transmission system losses, which in turn will generate savings to ratepayers.

2. The Eastshore Project Will Provide a Local Generation Facility

One of the Eastshore Project's primary benefits is that it will serve as a local generation facility. (Ex. 200 at 5.6-1.) The local community currently imports the vast majority of its power. Electricity for the cities of Hayward, Fremont, and San Leandro is supplied primarily from the older Pittsburg and Contra Costa power plants located in the northern East Bay area. (*Id.* at 5.6-2.) Electricity is also imported via the Newark, Tesla, and Vaca-Dixon substations. (*Id.*; 1/14/2008 RT 20: 23-24 ("There is a huge import of power.").) The Eastshore Project will connect at the PG&E Eastshore Substation. As a result, power generated from the Eastshore

Project will serve the load demands of Hayward, Fremont, and San Leandro. (Ex. 200 at 5.6-1.) In fact, under certain outage conditions, the Eastshore Project will be the only major generator providing electricity to the Hayward area. (*Id.*)

Eastshore's expert witness, Peter Mackin, compared the Local System Effects analysis for the Eastshore Project to the Local System Effects analysis he performed for the Metcalf Project when Mr. Mackin worked for the CAISO. Mr. Mackin found the two situations identical in terms of the projects' ability to increase local load capacity. (1/14/2008 RT 29: 1-7 ("[I]f you look at San Jose in the Metcalf case and compare it to Hayward in the Eastshore case it's essentially an identical situation. [T]here was essentially no generation in the San Jose area before Metcalf.").) Mr. Mackin also stated that, while Metcalf was a much bigger project, Metcalf generated only about 30 percent of San Jose's load while the Eastshore Project's generation will be "almost equal" to the loads in Hayward and San Leandro. (1/14/2008 RT 29: 15-17.) As a result, Mr. Mackin concluded that "on a percentage basis Eastshore is much bigger relative to the area it is serving than Metcalf was." (1/14/2008 RT 29: 24-25, RT 30: 1.) Mr. Mackin agreed with Staff's conclusion that "on peak the power stays all within the 115 kV network serving Hayward, San Leandro and some south." (1/14/2008 RT 46: 21-23; *see* Ex. 200 at 5.6-2.) Mr. Mackin's testimony, which supports the conclusions reached by Staff, demonstrates that the Eastshore Project serves the local community.

a. Group Petitioners' Challenge to the Eastshore Project's Benefit as a Local Generation Facility Misunderstands the Nature of an Electric Utility

Group Petitioners claim that the Eastshore Project's status as a peaker plant somehow compromises the Project's benefit to the local community. (1/14/2008 RT 37: 5-8.) Group Petitioners misunderstand the nature of an electric utility. As stated by Staff: "[The general public] sometimes confuse electricity with other types of utilities. But really just having a plant ready and capable of producing power is serving." (1/14/2008 RT 46: 6-9.) Group Petitioners' challenge appears to share the general public's confusion. Criticizing the Eastshore Project's status as a peaker plant reflects a basic misunderstanding of electric utilities and overlooks the fact that electric power cannot be effectively stored. The ready capability of producing power, as Staff suggests, is therefore a highly valuable component of the local community's power supply. Staff correctly concluded that the Eastshore Project's status as a local generation facility is a primary benefit.

In fact, the Eastshore Project provides system support without running due to its 10 minute start time. (Ex. 1 at 1-16.) This short start time allows the engines to be available for non-spinning reserves without running and producing emissions or using fuel as with spinning reserves. (*Id.*) Furthermore, these engines provide operational flexibility to maximize plant efficiency near the most efficient heat rate of less than 8,800 BTU/kWh (HHV) over the entire output range of 6 to 115 MW. (*Id.*) This efficiency at lower output exceeds the efficiency available from a gas turbine. (*See* chart Ex. 1 at 1-16.) All of these features reduce the air quality and public health impacts from this project and the electric system while the Eastshore Project provides non-spinning or spinning reserves without the need to be on line and burning fuel. These features provide excellent efficiency while operating at the low end of the load range.

3. The Eastshore Project Will Increase the System's Reactive Margin

The Eastshore Project will increase reactive margins in the southern East Bay area and the San Francisco Peninsula, thereby improving voltage stability and system reliability. (Ex. 200 at 5.6-1; *Id.* at Appendix B; 1/14/2008 RT 17: 10-12; Ex. 1 at 5-6.) The Eastshore Project will add as much as 115 MW of real power and 80 MVAR of reactive power into the grid. (Ex. 200 at 5.6-1, *Id.* at Appendix B.) Reactive power supplies voltage support to transport electricity through the transmission facilities. If reactive power is insufficient, system voltages will decrease, which could lead to rolling blackouts and even the uncontrolled loss of load associated with voltage collapse. (Ex. 200 at 5.6-2.)

The Eastshore Project's reactive power output of 80 MVAR will increase the local reactive margins even under system contingency conditions. (Ex. 200 at 5.6-6; *Id.* at Appendix B, Table 1.) As a result, Staff correctly concluded that voltage stability and system reliability will be improved. (*Id.*) Eastshore agrees and no party has challenged Staff's conclusion.

4. The Eastshore Project Will Reliably Connect to the Existing CAISO-Controlled Grid

Based on studies from PG&E, the Eastshore Project can be connected to the CAISO-controlled grid with the projects identified in the current transmission plan. (Ex. 200 at 5.6-1, 5.6-6; Ex. 1 at 5-1 – 5-5.) There is no evidence that any existing facilities or additional facilities planned for the CAISO-controlled grid through 2008 will need to be modified because of the Eastshore Project. (Ex. 200 at 5.6-6.) There is also no evidence that the Eastshore Project's

interconnection would violate any planning standards or reliability criteria. (Ex. 200 at 5.5-7.) Staff correctly concluded that the Eastshore Project will reliably connect to the existing grid and no party has challenged Staff's conclusion.

The fact that the Easthore Project can connect into PG&E local transmission system without any system upgrades or deliverability upgrades further demonstrates the benefits provided by the Project at this location. The system can take the entire output of the Eastshore Project directly into the local transmission system (115 KV) to support the local system.

B. Staff's Approach Failed to Properly Acknowledge Additional Benefits

1. The Eastshore Project Will Add Operating Flexibility

Staff failed to adequately address the benefit the Eastshore Project will provide PG&E and the CAISO in the form of additional operating flexibility. Peter Mackin, Eastshore's Local System Effects expert, stated that operational experience shows that one or more elements of the power system are usually out of service. (Ex. 14 at 3.) Staff's Eastshore planning study assumes that initially all elements of the power system will be in service. (*Id.*) Mr. Mackin stated that the Eastshore Project's ability to add generation in the load center will increase the load serving capability of the system overall. "This additional load serving capability provides the Transmission Operator with additional flexibility to deal with unanticipated contingencies or higher than expected levels of load." (Ex. 14 at 3-4.) The Eastshore Project's ability to add operating flexibility is a Local System Effects benefit that should be added on top of the specific benefits quantified by Staff.

The Eastshore Project will result in a variety of benefits to the local system. First, the Project will reduce annual transmission system losses by approximately 9 MW, with an associated energy savings of approximately 24 GWh, which will save ratepayers approximately $16 million over a twenty-year period. This conservative calculation does not include the associated decrease in plant emissions, valued at approximately $150,000/year, or the estimated decrease in CO2 of between 9,000 and 12,000 tons/year. Second, the Eastshore Project will provide a local generation facility. Third, the Eastshore Project will increase the system's reactive margin. Fourth, the Eastshore Project will reliably connect to the existing CAISO-controlled grid. Finally, the Eastshore Project will add operating flexibility.

X. CONCLUSION

The above sections clearly demonstrate that the Eastshore Project will be consistent with all applicable state, local, and regional standards, ordinances, and laws and with the specified mitigation will not cause a significant environmental impact. Therefore, Eastshore respectfully requests that the CEC certify the Eastshore Project.

DATED: February 11, 2008 DOWNEY BRAND LLP

By: _____
Jane E. Luckhardt

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 (AFC Accepted 11/8/06) **PROOF OF SERVICE** (Revised 1/18/08)

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:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 06-AFC-6
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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DECLARATION OF SERVICE

I, Lois Navarrot, declare that on February 11, 2008, I deposited copies of the attached **EASTSHORE ENERGY CENTER'S OPENING BRIEF ON CONTESTED SUBJECT AREAS** 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.

Lois Navarrot

Lois Navarrot