



**CHABOT
LAS POSITAS**

COMMUNITY
COLLEGE
DISTRICT

February 6, 2009

**Via Email weyman@baaqmd.gov
And Via Hand Delivery**

Weyman Lee, P.E.
Senior Air Quality Engineer
Bay Area Air Quality Management District
939 Ellis Street,
San Francisco, California 94109

**Re: Objections And Comments to Draft "Amended Federal
'Prevention of Significant Deterioration' Permit" For The
Russell City Energy Center, BAAQD Application No. 15487**

Dear Mr. Lee:

On behalf of the Chabot-Las Positas Community College District, this is to set forth our objections and comments to the proposed amended Federal Prevention of Significant Deterioration Permit (or PSD permit) which you propose to issue in response to the application by Russell City Energy Center, or more recently identified as Russell City Energy Company (also RCEC), to build a 600 megawatt thermal power plant located approximately just over one mile due west from our Chabot Community College Campus.

Due to the important significant health and safety issues presented to our students, faculty and staff, we have retained counsel who has consulted with an expert on these matters and have the following objections and comments.

Preliminary Considerations:

Initially, we refer you to the attached California Energy Commission staff's February 4, 2008 Memorandum entitled "Final Distances Table" (also docketed that same day) to the hearing officer in the *Eastshore Energy Center*, Application No. 06-AFC-6. This lays out the multiple uses and activities in this metropolitan area bordered by highways Interstate 880 and 92; the San Mateo Hayward Bridge, as well as the close-by Hayward General Aviation and Oakland International Airports.

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In addition to Chabot's approximate 15,000 student body, supported by approximately 1,100 faculty and staff, the CEC Staff's February 4, 2008 report reflects the presence of several other schools in the area, both large elementary and high schools. As we argued in the *Eastshore* proceeding before the CEC, an environmental justice analysis must be applied to this application in light of the demography of this area.

As I noted in my oral comments at your January 22, 2009 public hearing, many of our students who attend Chabot are non-white and lack medical insurance coverage, consisting of groups who are particularly sensitive to such external environmental degradation which would result due to the emissions from the RCEC facility in an area which is not in attainment under the national ambient air quality standards (NAAQS) for both ozone 8 and PM 2.5. In this regard, we were disturbed by your hearing officer's announcement at the January 22, 2009 hearing that the area was in attainment when in fact it is not. We also refer you to the testimony of Dr. Sandra Witt of Alameda County's Public Health Department presented at the *Eastshore* evidentiary hearing concerning the chronic health issues presented to the families in the nearby communities entitled "Race, Class, and the Patterns of Disease Distribution in Hayward; Decision - Making that Reinforces Health Inequality."¹

A. Incorporation Of Comments By Other Organizations

Initially this is to also refer to and incorporate by reference the other comments that are being or have been submitted to you on behalf of the Sierra Club and by Earthjustice and the Environmental Law Clinic of Golden Gate University on behalf of Citizens Against Pollution. We fully agree that the District should not issue this PSD permit as proposed because it fails to satisfy federal PSD and nonattainment new source review requirements. Specifically, we also agree that given the lapse of eighteen months as discussed by the Law Clinic, as a matter of law this the new source review permit must be revisited.

We also agree that in particular this PSD permit as proposed fails to satisfy the requirements of best available control technology (BACT) requirements and that this failure will cause and contribute to violations of the Clean Air Act. We also agree that there was no 2002 PSD permit issued, and therefore it is incorrect to title or approach this application as an "amended" PSD permit. Additionally, as discussed below, given the significant change in the load duty cycle now proposed, this must be viewed as an entirely new application unrelated to the 2002 proceedings resulting in review of a different project in another location.

¹ This is attached as Exhibit 6 to the comments by the Environmental Law Clinic of Golden Gate Law School on behalf of Citizens Against Pollution.

We also agree with the County of Alameda that a second public hearing should be scheduled to allow the public an adequate opportunity to meaningfully participate in these proceedings.

B. The Proposed Load Duty Cycle Is Inconsistent With RCEC's Baseload Design Which Necessitates BACT Requirements For Start Ups And Shut Downs To Prevent The High Emission Spikes Presenting Health Hazards To The Community.

1. The Proposed Permit Imposes No Limitations On Start Up And Shut Downs And Allows Very High Daily Emissions To Accommodate High Emission Spikes Due To Unlimited Start Ups And Shut Downs.

Presently this permit imposes no limit on the number of high emission startups, apparently intended to provide maximum operational flexibility. The permit states:

To provide maximum operational flexibility, **no limitations will be imposed on the type, or quantity of gas turbine start-ups or shutdowns.** Instead, the facility must comply with daily and annual (consecutive twelve-month) mass emission limits at all times.

(BAAQMD Statement of Basis (SOB), p. 121.)

The permit allows very high daily emissions, 4,805 lb/day (2.4 tons/day) NO_x, 20,000 lb/day (10 tons/day) CO, and 495 lb/day (0.5 tons/day) VOC,² although establishing annual limits that reflect continuous baseload operation at relatively low emission levels with relatively few startups/shutdowns. Annual emission limits are 134.6 tons per year (tpy) NO_x, 389.3 tpy CO, and 28.5 tpy VOC.³

The very high daily emission limits for NO_x, CO, and VOC in the proposed permit, however, effectively represents *no* daily limit. There is no credible mix of cold startup, hot startup, shutdown, and steady-state operating scenarios that could come close to generating 2.4 tons/day NO_x, 10 tons/day CO, and 0.25 tons/day of VOC. The probable approach RCEC will use to allow frequent startups with high short-term (3-6 hours) emissions while staying under the annual emissions cap is to slightly over control NO_x emissions during steady-state operation.

Projected startup/shutdown NO_x emissions, at 70 tons per year ("tpy"), will be approximately 60 percent of the potential NO_x emissions of 115 tpy generated during

² SOB, p. 125, condi. 10. Lower daily emission limits apply under certain conditions, SOB, p. 127, condi. 22.

³ SOB, 128, condi. 23.

normal operation.⁴ Carbon monoxide (CO) emissions will be generated overwhelmingly by startup/shutdown events, at 1,197 tpy, compared to 140 tpy of CO emissions during normal operations. The high startup/shutdown NOx and CO emissions are a result of attempting to adapt a combined cycle plant designed for baseload duty to cycling duty without any modifications or upgrades to minimize startup/shutdown emissions.

As your Statement of Basis acknowledges, p. 10, this facility is designed for conventional baseload operation using Siemens' *older* Westinghouse 501FD2 gas turbines.⁵ Baseload operation, meaning continuous operation at or near the design output of the plant, generally results in only a handful of startups and shutdowns each year. Startup/shutdown emissions may be a relatively minor component of overall annual emissions in a baseload application, even if individual startup/shutdown events produced significant emissions. However the proposed duty cycle described by RCEC for this permit is "intermediate to baseload," with the *potential* for *daily* startups and extended weekend downtime following by a cold start.⁶

A review of over three years of continuous emissions monitoring data for the functionally identical Metcalfe Energy Center, from June 2005 through August 2008, shows a typical NOx level at steady-state of 1.7 ppm and CO level of 0.0 to 0.5 ppm. (We refer you to the June 2005 through August 2008 monthly BAAQMD CEMS reports for Metcalf Energy Center.) RCEC could readily maximize the number of high emission startups by over controlling NOx emissions during steady-state operation, for example from 1.7 ppm to 1.2 ppm, and thereby create "space" under the annual emissions RCEC cap for frequent high emission startup events.⁷

2. High Emission Spikes Which Present Health Hazards To The Surrounding Communities Also Directly Contributes To Short Term Exceedances Of The 8 Hour Ozone Standards In Violation Of The Clean Air Act.

⁴ Startup and shutdown emissions calculated from data provided in CEC July 2007 Final Staff Assessment and Table 2 and Table 3 of SOB, pp. 12-13. See Attachment for details of startup and shutdown emission calculations.

⁵ That these are "older Westinghouse 501F2 units" is acknowledged by Siemens representatives as well as the reflected by other comments by industry representatives.

⁶ Barbara McBride of Calpine's November 13, 2008 E-mail to Weyman Lee entitled "RCEC vs. FP 10 emissions."

⁷ Based on our information, selective catalytic control (SCR) vendors generally design the SCR to achieve NOx control levels well below the actual guarantee to ensure that the SCR can meet the guarantee level under all foreseeable conditions. The NOx control level is controlled by the amount of ammonia injected to the SCR – therefore the greater amount of ammonia injected and released, a recognized toxic and hazardous element, the greater the NOx control.

We object to the proposed permit's above approach as fundamentally flawed since it would expose the local population, including our students, faculty and staff, to frequent high emission "spikes" from the RCEC on an hourly or daily basis, although the *annual* emissions would be comparable to those of similar plants operating in a continuous baseload mode. Requiring state-of-the-art startup/shutdown Best Available Control Technology (BACT) control technology for the RCEC would dramatically reduce these startup emission spikes and provide increased protection to sensitive populations living and working in the neighboring vicinity of the RCEC.

Likewise, as the District is aware, NOx and volatile organic chemicals (VOC) are precursors to ozone. Also, NOx and VOC are components of secondary PM 2.5 formation. High emissions of NOx and VOC during a cold startup of over 6 hours (or 360 minutes) or a hot start of over 3 hours (180 minutes) as allowed by this proposed permit as proposed would directly impact and aggravate the short term non-attainment exceedances of the 8-hour ozone standard contrary to the Clean Air Act which you have been delegated to enforce for the District. The PM2.5 standard is also a short-term standard measured over a 24-hour period. The BAAQMD is in non-attainment of 8-hour ozone and PM 2.5.⁸ Rigorous startup/shutdown BACT requirements must be imposed on RCEC to minimize the impact of RCEC emissions on 8-hour ozone standard and 24-hour PM 2.5 standard exceedance events.

C. The Statement Of Basis Is Seriously Flawed In That It Mistakenly Asserts That Siemens Equipment Is Not Available When In Fact It And Other Alternatives Are Commercially Available And In Operation.

The Statement of Basis states the following at page 41:

Siemens, whose equipment is being proposed for the Russell City Energy Center, is developing a low-load operation flexibility (LLOF) system for its turbines, but it has not yet been validated and is not commercially available at this time.

This statement allegedly attempts to excuse the RCEC from achieving low startup emissions requirements so that Calpine can utilize older turbines at RCEC. This excuse is reflected in footnote 31 on page 40 of the Statement of Basis:

Note that the project was originally permitted in 2002, before Fast Start technology was developed, and **the applicant purchased its equipment at that time based on the [what would otherwise be now expired] initial permits. Retrofitting that equipment now to incorporate Fast "Start technology would require a complete redesign of the project and the purchase of new equipment.** Furthermore, Siemens stated that emissions performance cannot be guaranteed unless

⁸ BAAQMD webpage, "Ambient Air Quality Standards & Bay Area Attainment Status": http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm

the company supplies a fully integrated power plant with Fast Start technology (i.e. Flex Plant 10).

As I pointed out at the January 22, 2009 hearing, the District's delegated duty is to enforce the Clean Air Act. As the U.S. Supreme Court observed in *Alaska Department Of Environmental Conservation v. Environmental Protection Agency et al.* (2004) 540 U.S. 461, economic considerations must be justified within a larger context of satisfying the Clean Air Act. As the Court explained:

The Clean Air Act's (CAA or Act) Prevention of Significant Deterioration (PSD) program, 42 U. S. C. §7477, was designed to ensure that the air quality in "attainment areas," i.e., areas that are already "clean," *will not degrade*, see §7470(1). The program ***bans construction of any major air pollutant emitting facility not equipped with "the best available control technology"*** (BACT). §7475(a)(4). The Act defines BACT as "an emission limitation based on the **maximum degree of [pollutant] reduction ... which the [state] permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable** for [the] facility." §7479(3).

(Emphasis added.) Your duty is "to protect public health and welfare from any actual or potential adverse effect . . ." (42 U.S.C. §7470.) Here, in an almost "*Don Quixote*" story, this permit appears based on a mistaken underlying presumption that BACT must be built around out of date equipment. We submit that this alone establishes that this permit as proposed as a matter of law fails to satisfy the minimum analysis required under the Clean Air Act. (See *Department of Alaska, supra*, affirming EPA's stop work order on ground that BACT analysis adopting "economically less onerous" technology violated Clean Air Act.)

Additionally, the statement that "a low-load operation flexibility (LLOF) system for its turbines. . . it has not yet been validated and is not commercially available at this time" simply is factually wrong. Given this mistake would result in unnecessary and substantial emissions, the District must revisit these points.

Several years ago Siemens developed fast-start technology for its combined cycle plants to address a power market where high natural gas prices make combined cycle plant operation uncompetitive during periods of low electricity demand (nighttime hours). Two combined cycle fast start plant models were developed. The Flex-Plant (FP)⁹ 10 for peaking to intermediate duty applications, using a simplified once-through heat recovery steam generator (HRSG), and the FP 30 high efficiency fast start plant using a high efficiency HRSG for intermediate to baseload applications. Siemens

⁹ The Flex-Plant or FP is a trade-mark technology. All references to "FP" are to the trade marked technology.

explains the philosophy behind the fast-start turbine concept in its 2005 paper entitled “Fast Cycle Capability for New Plants and Upgrade Opportunities”.¹⁰

Nowadays, many operating combined cycle plants are shifted to intermediate load and new plants are specified for cycling load regimes because of today’s high gas prices. Therefore features for high operational flexibility like short start-up and shutdown times are emphasized by customers. Also the focus of Siemens Reference Power Plant (RPP) development changed according to these market requirements. In the past, the RPPs were designed for baseload operation with a low number of starts per year. *Start-up time for a 400 MW single shaft plant after overnight shutdown (approx. eight hours) was 90 minutes. As an answer to the changed market requirements, Siemens developed a fast start-up concept and implemented it into the RPPs. With this design, a reduction of the single shaft start-up time after overnight shutdown of approx. 50% is achieved.* Target of the development of a cycling plant was to ensure highest operating flexibility without baseload disadvantages.

(Emphasis and italics added.) Siemens describes the specific attributes of the FP 10 and FP 30 now present on the market as follows:

- SCC6-5000F 2x1 Flex-Plant 30TM, a highly efficient (57+% net) 590 MW plant, which can be started up in half the time of traditional F-class plants.
- SCC6-5000F 1x1 Flex-Plant 10TM, a 275 MW plant with 48% net efficiency, which can generate 150 MW within 10 minutes.

The applicant (or Calpine) proposes to use the older Siemens-Westinghouse 501FD2 turbines at RCEC which represents the “traditional F-class plant” that the FP 30 was designed to supersede. Based on our investigation, **hot startup emissions for FP 30 plants result in 28 lb NO_x and approximately 250 lb CO. This is a dramatic reduction over the District’s determination of hot startup BACT for RCEC turbines of 125 lb NO_x and approximately 2514 lb CO.**¹¹ Identifying Siemens FP 30 fast start technology as startup BACT for RCEC would result in a nearly 80 percent reduction

¹⁰ H. Emberger, E. Schmid, E. Gobrecht – Siemens Power Generation Germany, *Fast Cycling Capability for New Plants and Upgrade Opportunities*, published by Siemens AG, 2005.

¹¹ Jan. 29, 2009 telephone conversation with John Copen, author of “Introduction to the Complementary Fired Combined Cycle Power Plant,” Siemens technical paper presented at PowerGen International 2006, Orlando, Florida in November 2006.

in NOx and a 90 percent reduction in CO from hot startups, the primary source of startup emissions.¹²

The Statement of Basis, p. 13, also identifies as a component of startup/shutdown BACT for the RCEC turbines a cold startup interval of 360 minutes and a hot startup interval of 180 minutes. (See discussion above concerning direct impact on exceedances of the federal 8-hour ozone standard.) This likewise needs to be revisited. As the CEC's Final Staff Assessment for Metcalfe reflects, the main Siemens competitor in the "F-class" combined cycle power plant market is General Electric (GE). GE has developed fast startup capability for its new F-class combined cycle power plants using the trade name Rapid Response. The GE Rapid Response 530 MW combined cycle plant is designed for intermediate or baseload duty and has a full-load efficiency of 56.4 percent. GE states the Rapid Response combined cycle plant can reach 60 percent of full load within 17 minutes of a hot start and 100 percent of full load within 45 minutes of a cold start.¹³ Such reductions in start up times, of course, drastically reduce the amount of emissions released.

GE also has developed retrofit turn-down software for existing GE F-class combined cycle plants that dramatically reduce startup emissions. This software is known as OpFlex.¹⁴ OpFlex has demonstrated the capacity, when combined with early injection of ammonia to the NOx catalytic control system (known as "selective catalytic reduction" – or SCR), to achieve hot startup NOx levels equivalent to those achieved with FP 30 fast start technology, 28 lb NOx per hot startup, which is far better than the 125 lb NOx which this permit presently contemplates.¹⁵

Alternatively, the District should examine requiring RCEC startup/shutdown emissions to meet the same levels being achieved in-practice on older model F-class turbines with OpFlex equivalent upgrade software and early ammonia injection. If the LLOF does not fully achieve the emission reductions already achieved in practice with

¹² Perhaps the District's error may be attributable to the fact that Siemens has also developed OpFlex-equivalent software to reduce air emissions during startup events. From what we understand from Mr. Copen, this software was developed for newer versions of the Siemens-Westinghouse 501FD turbine only, specifically the 501FD3 and the 501FD4. It is not currently available for the earlier (or older) models of the 501FD, such as the 501FD2, which Calpine proposes for the RCEC.

¹³ H. Elahi – GE Energy, Generation Technologies Complimenting Large Penetration of Renewables, Power Point presentation, Increasing Renewable Energy In the Western Grid Summit, Ft. Collins, Colorado, September 28, 2007, p. 5.

¹⁴ OpFlex is another trademark product and all future references to "OpFlex" are to that trademarked product.

¹⁵ SDG&E 2007 Quarterly Variance Reports submitted to the San Diego Air Pollution Control District.

OpFlex and early ammonia injection, then the number of startups and shutdowns authorized for RCEC should be proportionately reduced to provide the same startup/shutdown emissions reduction achievable with OpFlex and early ammonia injection.

We submit that based on our investigation, there are many off-the-shelf alternatives, both new F-class combined cycle alternatives and upgrade packages to operational facilities, that dramatically reduce startup/shutdown emissions relative to the startup/shutdown emission limits identified by the District as startup/shutdown BACT for RCEC. We submit, however, that this Statement of Basis fails to provide any sound technical basis for concluding that by simply following "operating instructions" for the older 501FD2 gas turbine, this represents state-of-the-art startup/shutdown BACT for the RCEC gas turbines. This simply is wrong.

D. State Of The Art BACT Must Be Required To Address The District's Present Short Term Non-Attainment Problems Which Will Become Worse With RCEC's Frequent Startup/Shutdowns Characteristic Of Load-Following Combined Cycle Plants As Proposed.

The Statement of Basis asserts at page 19 the following:

Because emissions are greater during startups, shutdowns and combustor tuning periods than during steady-state operation, **the BACT limits established in the previous sections for steady-state operations are not *technically feasible* during these periods. As these limits are not "achievable" during these operating modes, they are not "Best Available Control Technology" as defined in the Federal PSD Regulations. Therefore, alternate BACT limits must be specified for these modes of operation.** To do so, the Air District has conducted an additional Top-Down BACT analysis specifically for startups, shutdowns, and tuning periods.

(Emphasis added.) We seriously disagree that BACT limits are not "technically feasible" during startups and shutdowns. We refer the District to the over two year public record history of Palomar Energy in San Diego.

First, the NOx emissions limit identified in the Statement of Basis as Permit Condition 23, 134.6 tons per year (tpy), is equivalent to the steady-state NOx limit of 2 ppm being met continuously over a projected 8,324 hours per year of operation. This NOx limit will put startup/shutdown emissions under a *de facto* plantwide emissions cap. Again, this will allow RCEC the option of over controlling NOx emissions (and therefore release additional ammonia) during steady-state operation to compensate for high startup/shutdown emissions instead of utilizing state-of-the-art startup/shutdown BACT on the RCEC turbines.¹⁶

¹⁶ This is reflected in condition no. 23:

Further, we object placing startup/shutdown emissions under such a plantwide cap given its failure to protect the neighboring community from short-term high emissions and health risks generated during startup events. Such an annual cap as presently proposed does not protect the public from short-term high emissions generated during startup events. As reflected by the District's publication entitled "A Day in the Life of Ozone," at http://www.baaqmd.gov/pio/ozone_day.htm, and "Particulate Matter," <http://www.baaqmd.gov/pln/pm/index08212008.htm>, it is NOx and volatile organic compounds (VOX) emitted from fossil fuel plants such as RCEC as proposed which are the precursors to ambient PM which presents serious health risks.

In this regard, we refer you to the attached copy of Alameda's County Public Health Department's July 18, 2008 correspondence from Dr. Anthony Iton in the *Eastshore* proceeding asking the CEC to "**postpone approval of any new power plant**" until the findings of the California Air Resources Board Study receive "full review and consideration by the community, the environmental science and public health community," among others.

Likewise, in *Indeck-Niles Energy Center*, PSD Appeal No. 04-01 (2004), slip. Opn. p. 13, there the EAB relied on *MDEQ v. Browner* (6th Cir. 2000) 230 Fed.3d 181, 183-186, where the Court affirmed the EPA's rejection of Michigan's Clean Air Act's (CAA) rules as not meeting the Clean Air Act's requirements because of the improper exclusions of startup/shutdown emissions. In doing so, the EAB specifically noted: "Notably, Petitioner did not raise in his appeal an issue directly related to the potential applicability of the permit's short-term BACT concentrations limits during periods of turbine startup and shutdown." (*Ibid.*) Most significantly, the EAB noted that such an attempted exemption, such as here, "is potentially a much more serious concern that the issue of public review" than presented by that particular appeal. (*Ibid.*)

The District's Statement of Basis, page 41, attempts to justify this effective exemption by contending there is insufficient available data examining alternatives. The Statement relies on a April 2007 letter to assert that only a few months of data are available for Palomar Energy, in San Diego, which optimized its operating procedures and reduced its startup emissions by applying the OpFlex control software and early ammonia injection. Although the District admits Palomar's success is "encouraging," it claims supporting data is limited and therefore it is not possible to determine what reductions are attributable to the OpFlex control software and early ammonia injection.

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23. The owner/operator shall not allow cumulative combined emissions from the Gas Turbines and HRSGs (S-1, S-2, S-3 & S-4), S-5 Cooling Tower, and S-6 Fire Pump Diesel Engine, including emissions generated during gas turbine start-ups, combustor tuning, and shutdowns to exceed the following limits during any consecutive twelve-month period:
- | | | |
|-----|--|----------------------------|
| (a) | 134.6 tons of NOx (as NO ₂) per year | (Offsets, PSD) |
| (b) | 389.3 tons of CO per year | (Cumulative Increase, PSD) |
| (c) | 28.5 tons of POC (as CH ₄) per year | (Offsets) |
| (d) | 86.8 tons of PM ₁₀ per year | (Cumulative Increase, PSD) |
| (e) | 12.2 tons of SO ₂ per year | (Cumulative Increase, PSD) |

This is simply an incorrect summary of the documented success of the changes made at Palomar Energy. Most significantly, *twenty two months have elapsed since that April 2007 letter* and there are now approximately 30 months of data documenting these efforts. In fact, based on our examination, San Diego Gas & Electric (SDG&E) provides an exact breakdown for emissions reductions attributable to OpFlex and early ammonia injection. This system has been in operation nearly 30 months, not “a few months,” and has performed consistently throughout this period. We refer you to SDG&E Report, entitled “OpFlex and Early Ammonia Effects on Startup emissions,” San Diego County APCD Variance No. 4073, dated March 6, 2007, which documents the breakdown for emissions reduction.¹⁷

The Statement of Basis also asserts the following:

Without a *manufacturer* guarantee, the Air District cannot conclude with any certainty that this technology will obtain the predicted reductions. Predictions of potential performance are not, by themselves, sufficient evidence on which to require this technology as BACT.

(SOB, p. 41, italics added.) This is incorrect. The District is within its regulatory authority to use over two years of continuous emissions monitoring system (“CEMS”) data from Palomar Energy, a similar facility, as the basis for startup/shutdown limits at RCEC without a manufacturer guarantee.

The Statement concludes “that OpFlex and similar low-load turn-down technologies are not technically feasible for use in reducing startup emissions at this time.” (SOB, p. 42.) Again, this assertion is contradicted by the public records available for Palomar Energy. Two years of startup/shutdown CEMS data for Palomar Energy is a sufficient record upon which to establish startup/shutdown emission limits for RCEC based on the use of OpFlex (or the Siemens equivalent) and early ammonia injection.

Further, SDG&E has developed an exact apportionment of emission reductions attributable to OpFlex and early ammonia injection that can be directly transferred to the RCEC permit. SDG&E has established an extensive and verifiable record demonstrating

¹⁷ The following is one of the tables provided summarizing the reduction results:

Regular Startup Summary Table:

	Startup Emissions before Opflex/Early NH3	Reduction Attributable to Early NH3 Inj.	Reduction Attributable to OpFlex	Recent Regular Startup Results – Note 1 (Nov. 2006 – Feb. 2007)
NOx (lbs.)	120	45	47	28
CO (lbs.)	35	0	25	10

Note 1: Excludes startups after lengthy shutdown (>24 hours) or after HRSG forced cool down for maintenance.

the technical feasibility of OpFlex and early ammonia injection at Palomar Energy. The Statement of Basis's determination that OpFlex and similar low-load turndown technologies are not technically feasible at RCEC is without support and contradicted by the public record that demonstrates the performance of OpFlex on a combined cycle plant nearly identical to RCEC. Clearly, this analysis must be revisited.

In the Statement of Basis's effort to justify its failure to apply BACT, page 43, the District asserts that the EPA Region 9 as a permitting agency "has considered whether it should be required as BACT, but concluded that it should not." Cited in support in footnote 41 is the "Region 9's May 2008 Ambient Air Quality Impact Report, Colusa Generating Station," Clean Air Act PSD Permit No. SAC 06-01. The footnote, however, contradicts the assertion in the text: "The record from that permitting action shows that EPA Region 9 considered OpFlex and the Palomar facility in response to a comment on the startup BACT issue. That comment was subsequently withdrawn and *so EPA never responded to it formally on the record.*" (Italics added.) We submit that simply because the permit at issue in Colusa did not require it does not mean that it is "evident" that Region 9 does not require it – *particularly under these circumstances where the applicant proposes to build a large facility in a populated metropolitan area that is not in attainment for PM 2.5 and ozone 8 with old equipment, the County Public Health Officer has sought a suspension of any such construction and there are ample energy reserves.* (See below for discussion on energy forecast and status.)

In its evaluation of "most effective controls and document results," the Statement asserts at page 44 that "the only type of once-through boiler technology that is technically feasible at this time is a single-pressure system, the Siemens Flex Plant 10." Additionally, the Statement contends that "The Air District has concluded that the adverse impacts of requiring a single-pressure steam turbine design (FP 10) outweigh the additional startup benefits that can be achieved. The Air District will continue to monitor the development of once-through boiler technologies, in particular the Siemens Flex Plant 30 design using a triple-pressure steam boiler. Such future developments could change the analysis regarding the tradeoffs between overall energy efficiency and startup performance."

The District's rationale for not requiring fast start Siemens combined cycle technology at RCEC is based on the incorrect assumption that only lower efficiency FP 10 fast start combined cycle technology is currently available from Siemens. According to the Statement, that is what Siemens told the District. (See SOB, pp. 40-41 & fn. 32.) This information came from the same Siemens representative who also told the District's permitting engineer, according to those handwritten notes, that the existing (RCEC) turbines cannot be retrofitted and *that any changes* to the RCEC project as proposed would "kill the project" because of the additional cost. (This is quoted directly from an examination of the handwritten teleconference notes of Weyman Lee dated November 6, 2008, with Siemens Northwest Regional Vice President and Siemens Pacific Northwest Sales Manager Benjamin Beaver.) It was in this same telephone conversation that Siemens stated that the RCEC turbines would need to be "updated" prior to installation. Absent from these notes or the Statement of Basis is "what updates" would be required or

whether that “update” will impact the quantity of startup/shutdown emissions projected for RCEC. This needs to be thoroughly examined.

Based on our review, this erroneous assumption apparently is the sole reason the District limits its fast start turbine analysis to the lower efficiency FP 10. We refer you to the following projects which should be examined:

The Lake Side Power Plant in Utah - a 2x1 combined cycle project utilizes FP 30 technology and has been in operation since December 2007; and

The Caithness Energy Long Island Power 1x1 combined cycle plant currently under construction also is permitted to use FP 30 technology.

Siemens stated to the District that the efficiency of the FP 30 is 57 percent. The FP 30 efficiency is higher than the 55.8 percent efficiency stated for the RCEC. (*Compare* Nov. 6, 2008 handwritten notes with SOB p. 43.)¹⁸ Siemens FP 30 combined cycle technology is a commercially proven, higher efficiency alternative to the proposed RCEC with much lower startup and shutdown NOx and CO emissions, reductions which are crucial for our community’s health and safety and to address global warming.

F. Calpine’s Claim That Emissions From Auxiliary Boiler Associated With FP 10 And FP 30 Fast Start Technology Could Offset Emissions Benefits Of Fast Start Capability Is Incorrect – The Fast Start FP 30 Combined Cycle Plan Is More Efficient Than The Old Turbines Proposed By RCEC With Far Lower Startup/Shutdown Emissions.

According to RCEC’s “confidential memo” provided to the District dated September 10, 2008, entitled “Evaluation of the use of Siemens ‘Fast Start’ Technology at Calpine’s Russell City Energy Center (RCEC),” Siemens states that, *depending on the frequency of use* (which here is “at will”), the auxiliary boiler associated with the FP 10 or FP 30 fast start combined cycle plants could potentially offset any emissions benefits from the use of fast start technology. This is an incorrect statement. The UDEQ permit for the Lakeside Power Plant FP 30 includes a potential to emit estimate for the auxiliary boiler. The air emissions from an auxiliary boiler would be *de minimus* relative to the startup emission reduction benefits realized by requiring fast start Siemens FP 30 combined cycle technology. (*See* discussion above setting forth the dramatic comparison.)

Calpine also states that there is no room for an auxiliary boiler at RCEC. Given no supporting information or basis is provided by Calpine for this claim, it likewise must be disregarded.

¹⁸ The Nov. 6, 2008 Notes state “Flex 30-57 percent efficiency, Flex 10 – 49 percent (47-48 percent).”

The applicant and District compare the performance of the RCEC to a Siemens FP 10 fast start combined cycle configuration. This is an error. Siemens specifically identifies the FP 10 as the appropriate configuration for a plant that will operating in a “*peaking duty to intermediate duty*” range of operation. However, RCEC states that “The Siemens 501FD technology selected for RCED is designed for an intermediate to baseload type of operation.” (Barbara McBride of Calpine’s November 13, 2008 email to Weyman Lee entitled “RCEC vs. FP 10 emissions.”)

The FP 10 is not utilized for this type of application. The FP 10 uses a very fast start once-through heat recovery steam generator design. This once-through HRSG design is less efficient than the HRSG used in baseload combined cycle plant designs. At least two plants in California, Carlsbad Energy Center and Mirant Moss Landing, have filed applications to build FP 10 power plants.

Siemens markets the FP 30 combined cycle plant configuration for intermediate to baseload operation applications. The FP 30 uses the same 2x1 configuration that RCEC is proposing to utilize. The FP 30 also uses fast start technology. However, the FP 30 uses a more complex HRSG than the FP 10 that allows the FP 30 to achieve the same efficiency as a conventional baseload combined cycle plant like the RCEC, while also achieving much faster startups and *much lower startup emissions*, than that presently proposed for RCEC.

Both the applicant and the District state that the lower efficiency of the FP 10 negates the fast start emissions benefits of the FP 10 plant design, and therefore there is no basis to identify the FP 10 as BACT for startup/shutdown emissions in this case. However, missing from this Statement is any examination of applying the FP30 technology also available from Siemens that negates such an argument.

G. Unsupported Assertions That Changes to RCEC Turbines Will “Kill the Project” May Not Eliminate The Necessary Statutory BACT Analysis.

Apparently, Calpine has insisted that the District define BACT for startup/shutdown solely based on the operating capabilities of older Westinghouse 501FD2 turbines because Calpine purchased them many years ago under completely different market conditions. According to the November 2008 Notes, the District was told that any substantive changes to the proposed project necessitated by District to comply with the Clean Air Act would kill the project. Likewise, Calpine has asserted that its tentative PPA with PG&E will be invalidated if any changes to the RCEC project are necessary. (See p. 2 of Sept. 10, 2008 letter from Calpine to the District entitled “Applicability to Russell City,” although identified “confidential,” disclosed in response to a public record request.)

Calpine implies that the existence of a preliminary PPA with PG&E signifies that the RCEC project is critical to meeting PG&E customer power needs. This is incorrect. Not only have California investor-owned utilities signed many preliminary PPAs that are never consummated for a variety of reasons, but our research establishes that PG&E’s

territory has a very high reserve margin for grid reliability purposes. There is no imminent shortage of electric power supplies in PG&E service territory that might provide some coherent “force majeure” rationale for fast-tracking RCEC at the expense of the public’s health and safety by employing unlimited startup/shutdowns emissions for this project. In effect, we object to allowing RCEC to emit 100s of tons of additional air pollutants annually to compensate for a questionable equipment investment made many years ago. Obviously, to do so results in clearly disparate treatment on our community in violation of environmental justice and the Clean Air Act.

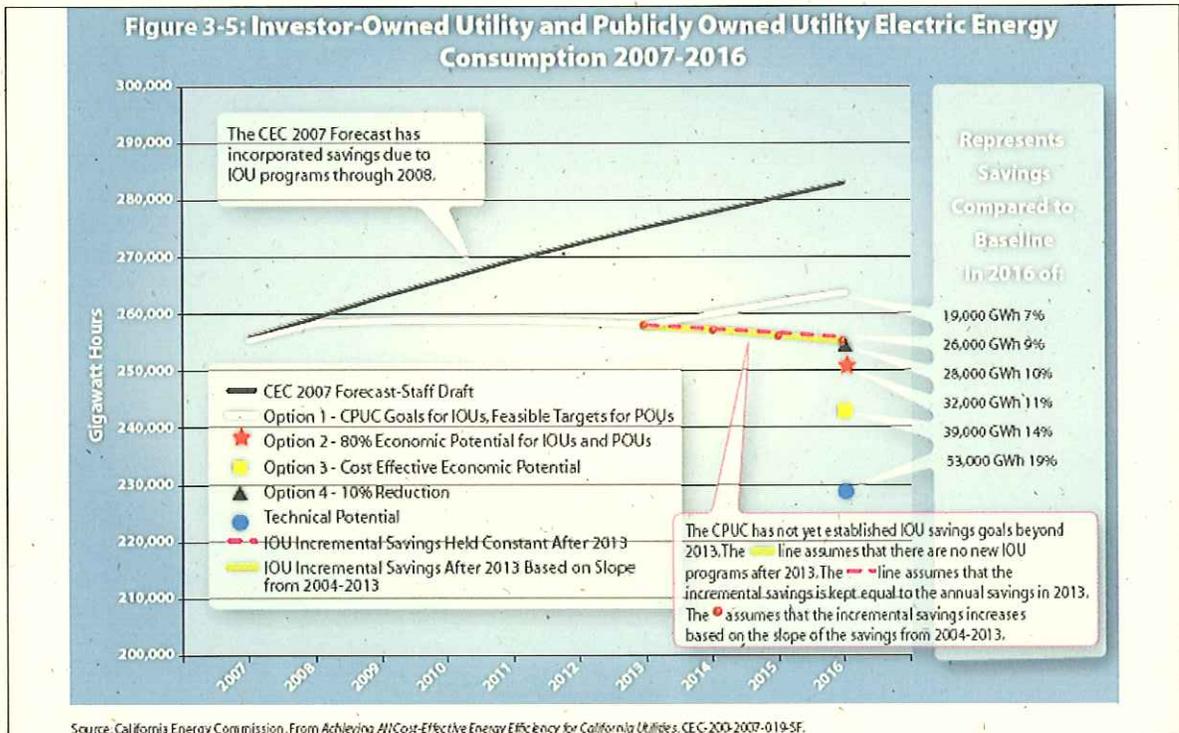
In this regard, we refer you to the CEC’s April 2008 electricity demand forecast and April 2008 electricity demand forecast by CAISO indicating high reserve margins, especially in PG&E territory. Calpine’s at-risk purchase of major hardware for the RCEC project many years ago does not exempt it from complying with BACT to control startup/shutdown emissions in an application analyzed in 2009 to comply with the Clean Air Act at a time when there is no imminent power shortage and ample power supplies.

This is to also bring to your attention the California Public Utilities Commission’s decision D.07-10-032 issued on October 18, 2007. This now requires that investor-owned utilities such as PG&E achieve *100 percent* of cost-effective energy efficiency measures by 2020.¹⁹ This CPUC decision requires much more aggressive energy efficiency measures by California’s investor-owned utilities, likely rendering earlier demand growth forecasts obsolete.

The CEC’s 2007 Integrated Energy Policy Report (IEPR) includes graphs showing the significance on electricity consumption and peak demand of the October 18, 2007 CPUC energy efficiency decision. Copied from the IEPR are Figures 1 and 2 below. Statewide annual energy consumption declines from approximately 260,000 gigawatt-hours per year in 2008 to approximately 240,000 gigawatt-hours per year in 2016 (Figure 1). Significantly applicable to this analysis is that peak statewide energy demand remains unchanged from 2008 to 2016 at about 62,000 MW (Figure 2).

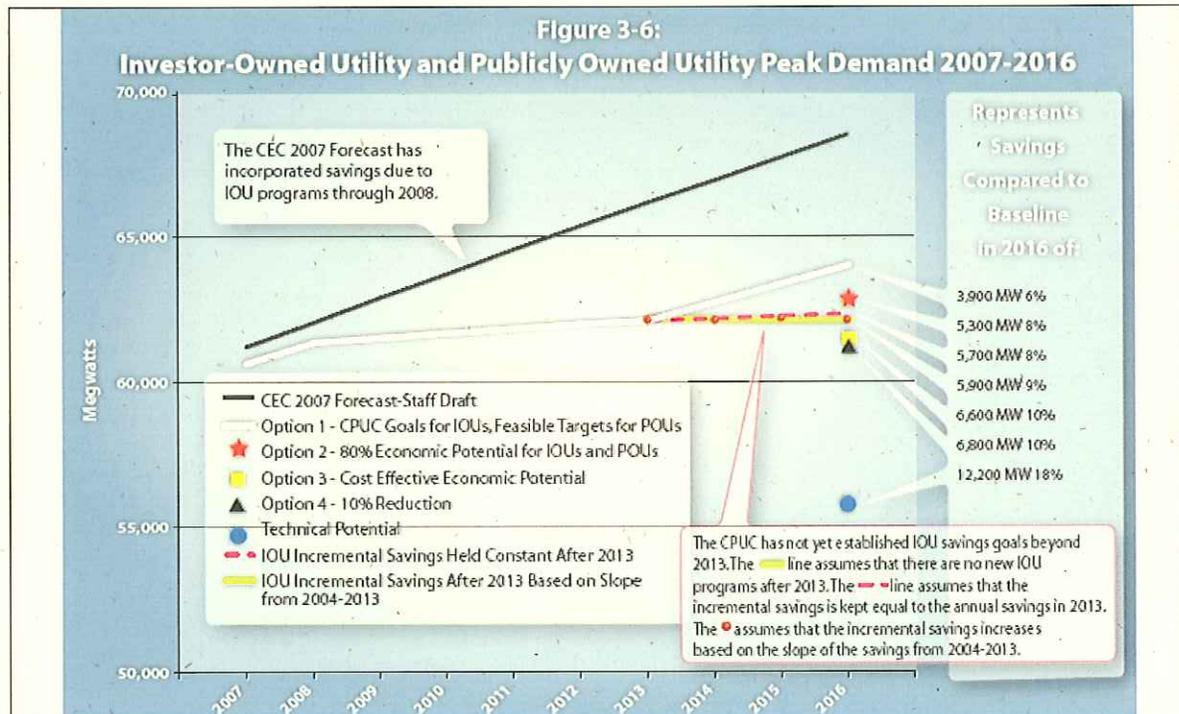
Figure 1. CEC projection in 2007 IEPR of impact of varying levels of energy efficiency (EE) on electric energy consumption by California utilities – yellow square represents achievement of 100% of cost-effective EE measures

¹⁹ CPUC Decision 07-10-032, October 18, 2007.



Source: This is Figure 3-5 in the CEC’s 2007 Integrated Energy Policy Report, December 2007, p. 84.

Figure 2. CEC projection in 2007 IEPR of impact of varying levels of EE on peak demand by California utilities – yellow square represents achievement of 100% of cost-effective EE measures



Source: This is Figure 3-6 in the CEC’s 2007 Integrated Energy Policy Report, December 2007, p. 85.

F. The Selection Of "Best Work Practices" As BACT For Startup/Shutdown Based On Operational Plants Using Decade-Old Version of Westinghouse 501D Turbine Technology and Work Practices for Compliance While Dismissing Superior Technically Feasible Alternatives Is Not BACT.

1. Alternative Turbines Identified By CEC Staff And The 2002 CEC License.

In reviewing this application, we would alert the District that it should not view the earlier proposed PSD permit which Calpine asserts it had as binding or limiting the District in any way. Not only do we agree with other commentaries that there was no earlier PSD permit issued, but the project approved by the CEC in 2002 was proposed with a fundamentally different operating objective and baseload operation than the current cycling duty project. In effect, the applicant threw any earlier PSD permit and this District has an obligation to treat this as a new application, which it is.

2. The Selection Of "Best Work Practices" As BACT Is Fundamentally Flawed.

The detailed startup/shutdown analysis conducted by the District is framed by the presumption that startup/shutdown BACT is good work practices and the only refinement necessary is analyzing operational startup/shutdown data from operational similar plants to assure that proposed startup/shutdown limits for individual events are not too lax. Evaluated are the startup/shutdown emissions data for other similar facilities designed/constructed in the Year 2000 timeframe (Metcalf, Sutter, Delta, Los Medanos). Proposed is simply tightening the warm/hot startup BACT limit and the shutdown BACT limit based on this analysis. No change to the cold startup limits are proposed as a result of analysis of cold startup emissions at operating plants using older model 501FD turbines. In light of the other technically feasible alternatives readily available on the commercial market, we find this wholly inadequate and unfair to our community.

In this regard, we refer you to the CEC staff's 2000 final staff analysis for Metcalf, p. 620, which recognizes that another option for this facility is the General Electric Frame 7FA, another F-class gas turbine with a 2x1 configuration. The Frame 7FA also is utilized by Palomar and which the CEC staff recognizes works well with the OpFlex system which will substantially reduce start up and shut down emissions.

The District concludes that it “is proposing the most stringent emission limits for startups, shutdowns, and tuning event that can reasonably be achieved by the proposed Russell City Energy Center, based on a review of actual operating data and experiences from similar facilities.” This conclusion, however, is self-limited by examining only Calpine’s already purchased older-model Westinghouse 501FD2 turbine, and by ignoring early injection of ammonia to the SCR and available turn-down software enhancements to improve startup and shutdown emissions performance.

In effect, the District attempts to “back-in” to the RCEC startup/shutdown BACT limits based on the demonstrated performance of the 501FD2 turbine at operating plants. This is a startup/shutdown BACT determination that has been tailored to the limitations the older turbine technology Calpine proposes to deploy at RCEC. Instead of RCEC conforming to achievable *present day* startup/shutdown levels for combined cycle gas turbine power plants, this startup/shutdown BACT analysis is made to conform with the “out-of-the-box” older gas turbines” RCEC happened to purchase years ago and that sat apparently in storage for an otherwise abandoned project. As the District is aware, this is not a permit sought for an existing facility, this is a permit sought for a *new* facility.

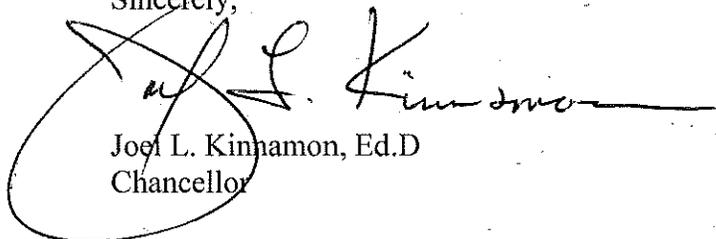
The EAB has remanded state agency decisions for similarly failing to examine and apply BACT to startup/shutdown emissions. In *Tallmadge Generating Station* (Michigan), PSD Appeal No. 02-12, slip opn., p. 26, relying on *In re RocGen Energy Center*, 8 E.A.D. 536 (EAB 1999) the EAB remanded the PSD permit approved by the local district which, “like RockGen’s, exempts the permittee from complying with BACT and other emission limits during startup and shutdown events, as long as the permittee has prepared a plan, approved by the permit issuer, to minimize emissions during those events.” A basis for remand is “an administrative record . . . lacking in evidence that . . . sufficiently considered design or other possible changes to the proposed facility to eliminate excess emissions.” (*Tallmadge, supra*, slip opn. pp. 25-26.)

CONCLUSION

Based on this present administrative record, legitimate startup/shutdown BACT alternatives have been eliminated for improper or unjustifiable reasons. In light of incorrect information having been provided to the District, such as the high efficiency Siemens FP 30 fast start unit not being commercially available or developed to apply to these older turbines, clearly the District must re-examine its analysis. Additionally, the District’s analysis concerning early ammonia injection and OpFlex successfully used at Palomar Energy likewise must be re-examined given the mistaken assumption that the system was in operation “for a few months,” when in fact OpFlex has been in operation for over two years since the Statement of Basis was published in December 2008.

Given the failure of the proposed permit's failure to satisfy the Clean Air Act and requirement that new source review be performed since the elapse of eighteen months since the prior NSR approval, this proposed permit and NSR must be revisited to properly comply with the Clean Air Act's requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Joel L. Kinnamon", is written over a circular stamp. The stamp is partially obscured by the signature and contains the text "Joel L. Kinnamon, Ed.D" and "Chancellor".

Joel L. Kinnamon, Ed.D
Chancellor

Cc: Deputy County Counsel,
Lindsey Stern
Dr. Anthony Iton,
Public Health Director of Alameda County

State of California

DOCKET	
06-AFC-6	
DATE	FEB 04 2008
RECD.	FEB 04 2008

The Resources Agency of California

Memorandum

To: **Hearing Officer Susan Geffer**

From: **Bill Pfanner** *Bill Pfanner*
California Energy Commission
 1516 Ninth Street
 Sacramento CA 95814-5512

Telephone: (916) 654-4206

Subject: **Comments on Eastshore Energy Center (06-AFC-6) Final Distances Table**

Hearing Officer Geffer:

Energy Commission staff has reviewed the draft measurements, prepared by the applicant and the City of Hayward, that identify the distance from the proposed Eastshore site to various locations in and around the Hayward area. Many of the applicant's measurements provide a relatively accurate approximation of the site's proximity to the identified locations. However, due to the size of the Eastshore site, as well as facilities such as Chabot College, Eden Gardens, and Ochoa Middle School campuses; Hayward Executive Airport, Alameda County Redevelopment planning areas, and Russell City Energy Center, measurements taken from the center of the Eastshore site to the center of these facilities may present an inaccurate impression of the project's proximity and potentially understate the project impacts. In other instances, use of site boundaries are more appropriate to accurately reflect areas of concern, such as those reflected in the FAA's recommendations to avoid overflight of the "site". These measurements also more accurately reflect the methods and results used by Energy Commission staff during the environmental analysis and preparation of the Preliminary and Final Staff Assessment and Evidentiary Hearing testimony.

Therefore, Energy Commission staff, as well as the County of Alameda, Group Petitioners, and Chabot-Las Positas Community College District, prepared responses to the draft. These delineated areas of agreement and identified measurements (or measurement methods) that were not acceptable to the various parties. For the most part, Energy Commission staff measurements agree with or were accepted by all parties except the applicant. Adjustments proposed by Alameda County, the Group Petitioners, and Chabot College are also acceptable to CEC Staff. However, none of these alternate measurements were incorporated in the applicant's final table (submitted by email to all parties on February 1, 2008).

Energy Commission staff have revised the original CEC Staff draft, incorporating input from all parties, including the applicant and City of Hayward, in the attached Table. Graphics supporting the measurements, or other sources, have been attached or referenced. The method of and justification for the calculations are discussed under 'Description'. Measurements where the applicant and CEC staff agree are marked with an *.

We concur with the applicant's assessment that agreement on the aviation distance measurements or calculation methods is unlikely, but there are other locations, such as the schools, residences, and planning areas listed above, where we also do not agree.

Finally, the applicant's discussion indicates that the area outside the six safety zone sectors is not considered to be a safety compatibility area. This description of the Safety Compatibility Zones is inappropriate, inaccurately represents the intent of the Zones,

PROOF OF SERVICE (REVISED 1/16/08) FILED WITH ORIGINAL MAILED FROM SACRAMENTO ON 2/4/08

completely ignores the intent of the ALUPP General Referral Area designation and City of Hayward Municipal Code §10-6, and does not appropriately address the question posed by the Committee. Only the Traffic Pattern Zone was referenced in evidence and testimony, as it related to the City of Hayward's contention that the Traffic Pattern Zone and AAZP are synonymous. For clarity, it should be noted that Safety Compatibility Zones, as depicted in EEC FSA Land Use Figure 5, primarily address risks which aircraft accidents pose for people and property on the ground and the general design is loosely based on a nationwide accident distribution grid. A separate set of safety compatibility concerns involve land use characteristics which can cause an aircraft accident or contribute to its consequences for people on board the aircraft and are reflected in airport land use plans or policies, zoning codes, and federal regulations and advisories.

Bill Pfanner/Shaelyn Strattan

February 4, 2008

EASTSHORE ENERGY CENTER – DISTANCES IN QUESTION

Prepared by CEC Staff as of February 4, 2008

* Indicates measurements provided by the Applicant and acceptable to CEC Staff as a generally accurate representation of site proximity.

Distances in Question per the request of Hearing Officer Gelter	Feet (rounded to the nearest foot)	Description
Distance of Eastshore to the Hayward Executive Airport	5,606 feet	Distance measured from Eastshore site boundary to closest point of the Hayward Executive Airport property boundary.
Distance of Eastshore to the Oakland International Airport	41,920*	Distance measured from center of Eastshore site to Oakland International Airport using reference points from City of Hayward, R. Baumann.
Distance of Eastshore from Hayward Airport airspace	0	The Eastshore site is within the boundaries of the Hayward Airport airspace (EEC FSA, Exn. 200, Land Use Figures 4 & 6). Hayward's Class D/E airspace extends from the surface to 1,500 feet msl.
Hayward Airport takeoff and landing flight patterns	0	There is no quantifiable boundary to a traffic pattern for any airport. The traffic pattern, as defined in the FAA Pilot/Controller Glossary (http://www.faa.gov/airports/airtraffic/air_traffic/publications/ATpubs/PCG/T/HTM), is the traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach. Aircraft generally enter and depart the traffic flow for the Hayward airport approximately 1-2 miles from the airport, at altitudes below 1,000 feet msl. Most aircraft enter the traffic pattern in this general vicinity, which includes locations immediately over the EEC site (Exhibits 417 & 418).
Hayward Airport Traffic Pattern Zone	279	Distance measured from Eastshore site boundary to closest point of the Traffic Pattern Zone (EEC FSA, Exn. 200, Land Use Figure 5). The Traffic Pattern Zone depicts an approximate one-mile radius from the primary runway (Runway 10R/28L). The EEC site boundary was used because proposed FAA flight restrictions for flights over power plants apply to the site, not just the stacks.
Hayward Airport Zoning Plan (AAZP) area and Alameda County ALUPP General Referral/Hazard Prevention Zone	0	The Eastshore site is within the boundaries of the Hayward AAZP area (EEC FSA Traffic & Transportation Figure 6) and the ALUPP General Referral/Hazard Prevention Zone (aka Airport Influence Area) (EEC FSA Land Use Figure 3)
Distance of Eastshore from Oakland International Airport airspace	0	The Eastshore site is within the boundaries of the Oakland Airport airspace (EEC FSA, Exn. 200, Land Use Figure 4). Oakland's Class C airspace overlies the Hayward airspace and extends from 1,500 feet msl to 3,000 feet msl.

Distances in Question per the request of Hearing Officer Gelter	Feet (rounded to the nearest foot)	Description
Hospitals	3,192	Distance measured from Eastshore site boundary closest to Anthony w. Ochoa School boundary (per measurement provided by Group Petitioners/Google Earth).
	5,624*	Distance measured from center of Eastshore site to center of Leat's Montessori located at 26236 Adrian Avenue.
	7,977*	Distance measured from center of Eastshore site to center of Kaiser Hospital.
	7,559*	Distance measured from center of Eastshore site to center of Kaiser Medical Center.
	9,636*	Distance measured from center of Eastshore site to center of St. Rose Hospital.
	3,218*	Distance measured from center of Eastshore site to center of Eden West Convalescent Hospital.
Office buildings	0	Fremont Bank Operations Center is located on adjoining property, immediately adjacent to the Eastshore site's southern boundary.
Commercial entities	0	Service Station (gas card facility) located on adjoining property, immediately adjacent to the Eastshore site's northwest boundary.
Industrial entities	0	Warehouse and light industrial facilities located on adjoining property, immediately adjacent to the Eastshore site's north and west boundaries. (see FSA, Exhibit 200, Land Use section, p. 4.5-25 re "Sensitive Receptors"; see Applicant's Distance Table for additional commercial & industrial locations)
Height of existing industrial stacks within the AAZP area	180*	Rohm & Haas (single stack)
	228*	KFFAX radio broadcast antennae
Current zoning height limitations		The AAZP (EEC FSA, Exh. 200, Traffic and Transportation Figure 6)

Distances in Question per the request of Hearing Officer Gelfer	Feet (rounded to the nearest foot)	Description																
<p>Number of Conditional Use Permits (CUPs) granted to allow the height variances in the AAZP area.</p> <p>0</p>	<p>0</p>	<p>encompasses nine zoning district designations (EEC FSA, Exh. 200, Land Use Figure 2). The EEC site is within the Industrial zoning district and there are no height restrictions within the City of Hayward Zoning Code for that area. Height limitations for the remaining zoning districts are as follows:</p> <table border="1" data-bbox="548 1031 1305 1906"> <thead> <tr> <th>Zoning Designation</th> <th>Height Limitation</th> </tr> </thead> <tbody> <tr> <td>Single Family Residential (HMC §10-1.235)</td> <td>Maximum Bldg. Height: 30 feet Max. Accessory Bldg. Height: 14 feet/1 story</td> </tr> <tr> <td>Medium Density Residential. (HMC §10-1.235)</td> <td>Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 14 feet/1 story</td> </tr> <tr> <td>High Density Residential (HMC §10-1.535)</td> <td>Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 14 feet/1 story</td> </tr> <tr> <td>Planned Development (HMC §10-1.535)</td> <td>Standards of the zoning district and other applicable plans, guidelines, and the General Plan governing uses most similar in nature and function to the uses proposed in the PD District.</td> </tr> <tr> <td>Mobile Home Park (HMC §10-1.735)</td> <td>Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 14 feet/1 story</td> </tr> <tr> <td>Flood Plan (HMC §10-1.2135)</td> <td>Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 26 feet</td> </tr> <tr> <td>Other (HMC §10-1.2135)</td> <td>Alameda County jurisdiction; subject to Alameda County standards for the zoning district and other applicable plans, guidelines, and the General Plan; as well as compatibility with surrounding City of Hayward properties.</td> </tr> </tbody> </table> <p>The EEC site is within the boundaries of the Hayward airport conical zone (EEC FSA Land Use Figure 6). Restrictions imposed by the FAA (14 CFR 77) limit the height of obstructions within this zone, but only apply to physical structures, such as the stacks of the Eastshore facility.</p> <p>Since there is no City of Hayward zoning code height restriction for the Industrial Zoning District, CUPs or variances based on proposed structural heights would not be required. The number of CUPs or variances applied for or</p>	Zoning Designation	Height Limitation	Single Family Residential (HMC §10-1.235)	Maximum Bldg. Height: 30 feet Max. Accessory Bldg. Height: 14 feet/1 story	Medium Density Residential. (HMC §10-1.235)	Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 14 feet/1 story	High Density Residential (HMC §10-1.535)	Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 14 feet/1 story	Planned Development (HMC §10-1.535)	Standards of the zoning district and other applicable plans, guidelines, and the General Plan governing uses most similar in nature and function to the uses proposed in the PD District.	Mobile Home Park (HMC §10-1.735)	Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 14 feet/1 story	Flood Plan (HMC §10-1.2135)	Maximum Bldg. Height: 40 feet Max. Accessory Bldg. Height: 26 feet	Other (HMC §10-1.2135)	Alameda County jurisdiction; subject to Alameda County standards for the zoning district and other applicable plans, guidelines, and the General Plan; as well as compatibility with surrounding City of Hayward properties.
		Zoning Designation	Height Limitation															
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Distances in Question per the request of Hearing Officer Gelter	Feet <small>(rounded to the nearest foot)</small>	Description
Oakland Airport's takeoff and landing flight patterns		As noted above, there is no quantifiable boundary to a traffic pattern for any airport. However, flights arriving/departing high intensity Runway 11/29 fly directly over the Hayward Airport at altitudes at or above 1,500 feet msl.
Distance of Eastshore from Russell City Energy Center (RCEC) site	2,942	Distance measured from the Eastshore western site boundary to the RCEC eastern site boundary.
Distance of Eastshore from Chabot College campus (include size of the campus)	2,826	Distance measured from the Eastshore site boundary to the closest point of the Chabot College campus boundary. Due to the size of Chabot College (approximately 90+ acres), measurements taken from the center of the EEC site to the campus center would minimize the proximity of the college and potentially understate the project's impacts.
Distance of RCEC from Chabot College campus	6,762	Distance measured from the RCEC site boundary to the closest point of the Chabot College campus boundary.
Location of Chabot College campus center relative to RCEC and Eastshore	N/A	Generally northeast of both RCEC and Eastshore. The Eastshore facility would sit approximately midway between the RCEC and Chabot College.
Distance of Eastshore from Alameda County's Redevelopment Agency's nearest projects	1,115	Distance measured from the eastern Eastshore site boundary to closest Alameda County Redevelopment County project area boundary (per Mt. Eden Redevelopment Sub-Area Distances map, provided by the County of Alameda; Jan. 31, 2008).
Distance of Eastshore from nearest: Residences	1,120	Distance measured from closest Eastshore site boundary to closest residential lot boundary at 2765 Depot Road (distance is approximate/Google Earth).
Schools	2,171	Distance measured from Eastshore eastern site boundary to western boundary of Waterford Apartment complex (per measurement provided by Group Petitioners/Google Earth).
	919*	Distance measured from center of Eastshore site to center of Life Chiropractic College.
	4,769*	Distance measured from center of Eastshore site to center of ITT Technical Institute.
	3,664	Distance measured from Eastshore site boundary closest to Eden Gardens School boundary (per measurement provided by Group Petitioners/Google Earth).

Distances in Question per the request of Hearing Officer Getter	Feet (rounded to the nearest foot)	Description
Height and number of RCEC exhaust stacks and distance of RCEC from Hayward Executive Airport	2 @ 145 ft	<p>There are two 145-foot tall exhaust stacks associated with the RCEC project. The distance from the center of the RCEC site to the Hayward Executive Airport is 9569 feet (measured based upon the runway end coordinates provided by R. Baumann, City of Hayward).</p> <p>granted for other zoning districts was not applicable to the proposed project site and was not addressed.</p>

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

PROOF OF SERVICE
(Revised 1/18/2008)

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

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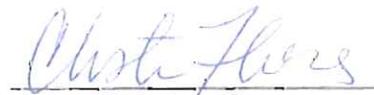
DECLARATION OF SERVICE

I, Christina Flores, declare that on February 4, 2008, I deposited copies of the attached Comments on Eastshore Energy Center (06-AFC-6) Final Distances Table in the United States mail at Sacramento, CA, 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.



Christina Flores

Attachment: Projected RCEC PTE NOx, VOC, and CO Emissions including Startup/Shutdown

IA. RCEC - normal operation:

assumptions: 7,116 hours/year of normal steady-state operation and lb/hr emission estimates from July 2007 CEC Final Staff Assessment for RCEC, p. 4.1-68.

Parameter	ppm	lb/hr normal each turbine	hr/yr each turbine	ton/yr normal both turbines
NOx	2.0	16.2	7,116	115.1
VOC	1.0	2.8	7,116	20.1
CO	4.0	19.7	7,116	140.1

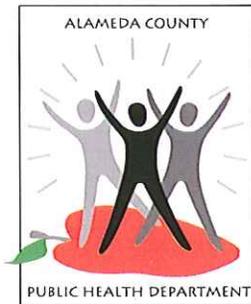
IB. RCEC - startup/shutdown:

assumption each turbine: 52 cold starts, 260 hot starts, 312 shutdowns = 1,248 hr/yr.
 source startups/shutdown emissions: BAAQMD Statement of Basis, Tables 2 and 3.
 source, # startups/shutdowns: July 2007 CEC Final Staff Assessment for RCEC, p. 4.1-67.

Parameter	units	cold start per turbine	warm start per turbine	hot start per turbine	shutdown per turbine	ton/yr SSD both turbines
NOx	pounds	480	125	125	40	69.9
VOC	pounds	83	79	35.3	16	18.5
CO	pounds	5,028	2,514	2,514	902	1,196.5
# of events each turbine	na	52	0	260	312	
	hr per event	6	3	3	0.5	
duration	total hr/yr each turbine	312	0	780	156	

2. RCEC total emissions - normal + startup/shutdown:

Parameter	normal emissions, ton/yr	startup/shutdown emissions, ton/yr	total RCEC emissions, ton/year
NOx	115.1	69.9	185.0
VOC	20.1	18.5	38.6
CO	140.1	1,196.5	1,336.6



**ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
PUBLIC HEALTH DEPARTMENT**

David J. Kears, Director

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510-267-8000

Anthony Iton, MD, JD, MPH
Director and Health Officer

July 18, 2008

Commissioner Jeffrey Byron
Commission Docket Unit
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: Eastshore Energy Center (06-AFC-6)

Dear Commissioner Byron,

The Alameda County Public Health Department recommends that the California Energy Commission consider the findings of a new California Air Resources Board study released in draft form May 22, 2008. CARB scientists concluded that fine particle emissions carry a much greater risk of premature death than they had previously estimated. Therefore, the Alameda County Public Health Department requests that the Energy Commission postpone approval of any new power plant proposals until the findings of this report receive full review and consideration by the community, the environmental science and public health community, and other interested parties.

This study, entitled *Methodology for Estimating Premature Deaths Associated with Long-term Exposures to Fine Airborne Particulate Matter in California*, is more far-reaching in its conclusions than the West Oakland Health Risk Assessment in that 1) it estimates pollution-related mortality regionally in California, and 2) it estimates the effect of fine particle pollution, not limited to diesel particulate matter, and 3) it estimates the ultimate health outcome, death. We understand from speaking with CARB staff that their focus in this report on mortality impact of PM2.5 will be expanded to include PM2.5 impact on morbidity (including cancer incidence and other non-cancer health effects such as respiratory and cardiovascular disease hospitalizations).

The new CARB study employed a panel of experts reviewing many epidemiological cohort studies conducted worldwide in recent years. The CARB report issued two important findings. The first was that PM2.5 exposure increases the risk of death in the population by 10% for every 10 microgram per cubic meter increase in concentration. The previous estimate was 6%. Therefore the estimated effect was increased by 66.7%, which translated to a doubling or tripling of the number of deaths due to PM2.5 exposures depending on the level of certainty

employed. CARB estimated that 8,200 premature deaths occurred annually in California because of PM2.5 in 1999-2000. Based on current pollution levels, which are much improved since then, and the new effect estimate, the number of deaths due to PM2.5 exposure is estimated to be between 14,000 and 24,000 per year (a 70% to 292% increase).

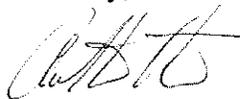
The second important finding in the new report was that there is no evidence in the literature for a threshold below which exposure is safe. While the science to date has not documented effects below 7 micrograms per cubic meter, the consensus of the scientific panel was that there is no reason to assume safe levels exist above the background level of 2.5 micrograms per cubic meter. Thus the new threshold recommended is a range between 2.5 and 7 micrograms per cubic meter of fine particle concentration. In contrast, the prior standard employed by CARB was the established state standard of 12 micrograms per cubic meter. This new threshold represents a huge reduction in what exposure is considered safe, a reduction of 40% to 80%.

The California Energy Commission should keep in mind prior Environmental Justice testimony by Dr. Sandra Witt of the Alameda County Public Health Department. In this testimony she concluded that citing the Eastshore Power Plant in Hayward would disproportionately impact an area not only home to a comparatively large non-white population, but also one already burdened by existing poor health outcomes. We clearly address this phenomenon in our recently released executive summary, *Life and Death from Unnatural Causes: Health and Social Inequity in Alameda County* (full report in press):

Access to proven health protective resources like clean air, healthy food, and recreational space, as well as opportunities for high quality education, living wage employment, and decent housing, is highly dependent on the neighborhood in which one lives. These inequities cluster and accumulate over people's lives and over time successfully conspire to diminish the ultimate quality and length of life in these neighborhoods. (p. 1)

Surely, if we have new evidence showing that vulnerable populations are more adversely affected by air pollution than previously thought, then the California Energy Commission should be conservative in its approach to this issue. The conclusions of this new CARB study may have major significance for how health risk assessments are conducted in the future. It is therefore critical that the implications of this study be given full consideration by scientists and community members alike.

Sincerely,



Anthony Iton, M.D., J.D., MPH
Director and Health Officer

cc: Eastshore POS

Enclosures