

**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.**

|                                  |   |                |
|----------------------------------|---|----------------|
| In re Russell City Energy Center | ) | PSD Appeal No. |
|                                  | ) |                |
| Russell City Energy Company, LLC | ) |                |
| PSD Permit Application No. 15487 | ) |                |
| _____                            | ) |                |

**PETITION FOR REVIEW  
OF PREVENTION OF SIGNIFICANT DETERIORATION PERMIT**

HELEN H. KANG  
KELLI SHIELDS (PTLS No. 24469)\*  
PATRICK SULLIVAN (PTLS No. 24468)\*  
LUCAS WILLIAMS  
Environmental Law and Justice Clinic  
Golden Gate University School of Law  
536 Mission Street  
San Francisco, CA 94105  
Tel: (415) 442-6647  
Fax: (415) 896-2450  
Email: hkang@ggu.edu  
Email: lwilliams@ggu.edu

Attorneys for Citizens Against Pollution

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\* Students certified to practice under the rules governing Practical Training of Law Students of the State Bar of California

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## **INTRODUCTION**

Citizens Against Pollution (CAP), a grassroots group of residents in and around the City of Hayward, California, petitions for review of the Prevention of Significant Deterioration (PSD) Permit issued from the Bay Area Air Quality Management District (District) to Russell City Energy Center, LLC (RCEC). The District is authorized to administer the Prevention of Significant Deterioration permit program under the Clean Air Act pursuant to a delegation of authority by the United States Environmental Protection Agency. The permit authorizes construction of a new 612-megawatt natural gas-fired power plant in the City of Hayward. The District committed numerous procedural and substantive violations of the Clean Air Act in issuing the permit and set less than the most stringent emissions limit. The Board should remand the permit and require the District to correct these violations.

CAP requests oral argument in this matter to assist the Board in its deliberations on the issues. The issues are a source of significant public interest as reflected in the numerous public comments and overwhelming public opposition to the plant, and oral argument would materially assist in their resolution.

## **AVAILABILITY OF DOCUMENTS, REQUEST FOR OFFICIAL NOTICE, AND ABBREVIATIONS**

The proposed permit, the statements of basis, public comments, and responses to comments are available on the District's website, [www.baaqmd.gov](http://www.baaqmd.gov), in two places:

- <http://www.baaqmd.gov/Divisions/Engineering/Public-Notices-on-Permits/2009/080309-15487/Russell-City-Energy-Center.aspx>
- [http://www.baaqmd.gov/Home/Divisions/Engineering/Public-Notices on Permits/2010/020410-15487/Russell City Energy Center.aspx](http://www.baaqmd.gov/Home/Divisions/Engineering/Public-Notices-on-Permits/2010/020410-15487/Russell-City-Energy-Center.aspx)

CAP has not attached documents that are available on the web, with a few exceptions. CAP also respectfully requests that the Board take official notice of the non-

record government documents cited in this Petition. *See, e.g., In re Matter of City of Denison*, 4 E.A.D. 414, 419 n. 8 (EAB 1992) (taking official notice of administrative order not part of proceeding before Board); *In re Hawaiian Commercial & Sugar Co.*, 4 E.A.D. 95, 102 n.13 (EAB 1992) (taking official notice of EPA guidance document).

CAP uses the following abbreviations for the documents that are referenced here:

- “CAP 2/09 Comments” refers to CAP’s comments dated February 5, 2009 on the SOB and the draft permit issued with it. The comments and attachments are available at the District’s website. The comments, without exhibits, are attached hereto as Exh. 3.
- “CAP 9/09 Comments” refers to CAP’s comments dated September 16, 2009 on the ASOB and the draft permit issued with it. The comments and attachments are available at the District’s website. The comments, without exhibits, are attached hereto as Exh. 7.
- “SOB” refers to the *Statement of Basis for Draft Amended Federal “Prevention of Significant Deterioration” Permit* for the RCEC, which the District issued on December 8, 2008.
- “ASOB” refers to the *Additional Statement of Basis, Draft Federal “Prevention of Significant Deterioration” Permit* for the RCEC, which the District issued on August 3, 2009.
- “Responses to Comments” refers to the *Responses to Public Comments, Federal “Prevention of Significant Deterioration” Permit* for the RCEC, which the District issued on February 3, 2010 at the time it issued the final PSD permit.

### **THRESHOLD PROCEDURAL REQUIREMENTS**

Petitioner CAP satisfies the threshold requirements for filing this Petition for Review of the proposed PSD permit under 40 C.F.R. § 124. CAP has standing because it participated in the public comment period on the draft permit. *See* 40 C.F.R. § 124.19(a); CAP 2/09 Comments; CAP 9/09 Comments; *see also* Earthjustice Comments on SOB (Jan. 22, 2009) and ASOB (Sep. 16, 2009) submitted on behalf of CAP. The issues set forth in this petition were raised during the public comment period.

CAP’s petition is timely. The District issued its notice of the final PSD permit on February 4, 2010. There, the District set the permit’s effective date as March 22, 2010

and, as 40 C.F.R. § 124.15(b) allows, stated that appeals to the Board would be due then, later than the 30 days normally provided. This Petition for Review is being filed on March 22, 2010, and is therefore timely under 40 C.F.R. §§ 124.15(b) and 124.19(a).

### **ISSUES PRESENTED FOR REVIEW**

1. The District clearly erred in failing to ascertain a credible operating scenario of the number and kind of startup and shutdown events that are expected to occur at RCEC, and thus the District failed to respond to public comments asking for information on the issue.
2. The District did not meet its burden in setting Best Available Control Technology (BACT) at less than the most stringent emissions limit when it rejected the use of an auxiliary boiler as for CO and NO<sub>x</sub> reductions during startup and shutdown events; such technology is achieved in practice and thus should have been employed.
3. The District did not meet its burden to justify the cost ineffectiveness of an auxiliary boiler because the emissions reduction estimate is without basis, even if cost effectiveness were relevant, which it is not pursuant to the District State Implementation Rules applicable pursuant to the Delegation Agreement.
4. The District did not meet its burden to justify setting BACT for startup and shutdown emissions at the most stringent level that have already been achieved at facilities with similar equipment.

### **FACTUAL BACKGROUND**

RCEC is a 612-megawatt natural gas fired combined-cycle power plant proposed to be built in Hayward, Alameda County, California, by Russell City Energy Company, LLC. General Electric Corporation and a subsidiary of Calpine Corporation each own 35% and 65% of RCEC. SOB at 9. The City of Hayward is home to a significantly larger non-white population than Alameda County as a whole, with over one third of Hayward residents being Latino, 19% Asian, and 11 % African American. Exhibit 6 to CAP 2/09 Comments (attached hereto as Exh. 4). The facility proposes to emit annually 2 million metric tons of CO<sub>2</sub> equivalents, 72 tons of PM, 330 tons of CO, 127 tons of NO<sub>x</sub>, and toxic air contaminants or hazardous air pollutants such as ammonia, formaldehyde and benzene. ASOB 105.



The facility is located in an area that has been designated as attainment or is unclassifiable for NO<sub>2</sub>, CO, and PM<sub>10</sub> and nonattainment for the other criteria pollutants, including PM<sub>2.5</sub>. *See* 40 C.F.R. § 81.305. The rates of hospitalization for coronary heart disease in the area of the proposed plant (94544 and 94545 zip codes) were 60% higher than the county rate, at 810 per 100,000 people. Exh. 4 at 3 (Exhibit 6 to CAP 2/09 Comments at 3). The rates of congestive heart failure and chronic obstructive pulmonary disease hospitalization were 35% and 20% higher, respectively, than the County rate. Asthma hospitalization rate, which is high in the County, was 14% higher in the same area. *Id.* at 4.

The facility first went through a PSD permitting process in 2001, but did not receive a PSD permit. *See* ASOB 5. Nevertheless, in 2002, without a PSD permit, RCEC purchased two Westinghouse 501FD2 combustion turbines for base load operations and associated equipment. *See* SOB at 40 n.31; Response to Comments at 28; Chabot-Las Positas Community College District Comments on SOB (February 6, 2009) at 4 (“this facility is designed for conventional baseload operations”). RCEC then put the project on hold. Years later, in June 2007, RCEC received permission from the California Energy Commission (CEC or “state agency responsible for power plant siting”) to change the project design from a base load facility to a load following one.<sup>1</sup>

Shortly afterward, in November 2007, the District issued a final PSD permit. SOB 6. A lone citizen who discovered that this permit was issued without the required public notice, Rob Simpson, petitioned this Board. He argued that the District had failed to follow the notice provisions of the PSD regulations and that, as a result, despite the many individual citizens and environmental groups who objected to the project, not any of them was able to comment on the draft permit. This Board agreed. On July 29, 2008,

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<sup>1</sup> California Energy Commission, Staff Assessment – Part 1 and Part 2 Combined, Russell City Energy Center, Amendment No. 1 (June 29, 2007) at 3-2 (“The proposed project will be designed to operate in a load following mode whereas the project as licensed was designed to operate as a base load facility”), available at <http://www.energy.ca.gov/2007publications/CEC-700-2007-005/CEC-700-2007-005-FSA.PDF>.

the Board issued a remand order for the District's failure to comply with the notice requirements. *See In re Russell City Energy Center*, PSD Appeal No. 08-01, slip op., (EAB 2008). The Board noted that the District's outreach efforts "fell significantly short of [federal PSD] section 124.10's requirements in numerous important respects." *Id.* at 38.

To correct the deficiency, the EAB required the District to "scrupulously adhere to all relevant requirements in section 124.10 concerning the initial notice of draft PSD permits (including development of mailing lists), as well as the proper content of such notice." *Id.* at 38, 39. The EAB emphasized that the notice deficiencies were not "harmless error" as the District had contended, noting "the pivotal importance to Congress of providing adequate initial notice within EPA's public participation regime." *Id.* at 38.

After the remand, on December 8, 2008, the District notified the public of a draft PSD permit (mislabeling a proposed "amended" Federal PSD permit, even though there had not been a prior valid PSD permit). *See* SOB at 3; ASOB at 5 ("in 2002, the District did not issue a final Federal PSD Permit"). The District received numerous public comments in response to this new notice (136 comments in opposition to the permit and 7 comments in support). Nearly fifty citizens spoke at the public hearing held on January 21, 2009, expressing overwhelming opposition to the power plant. *See* comments submitted by Audrey LePell, the President of CAP (February 5, 2009) at 1. Petitioner CAP was among those commenters. *See* CAP 2/09 Comments. CAP principally objected to high emissions limits that accommodated the purchased equipment rather than setting BACT based on currently available turbines and pollution control technology. CAP thus stated that the District was building BACT around the purchased equipment rather than setting the most stringent emissions limit. CAP 2/09 Comments at 4. Many groups made similar comments, including the Chabot-Las Positas College

District (Chabot) and Sierra Club. *See* Chabot's comments on SOB (February 6, 2009) (attached hereto as Exh. 5); Sierra Club's comments on SOB (January 22, 2009).

These comments resulted in substantive changes to the draft permit, including BACT emissions limits for CO (reduced from 4.0 ppmvd, corrected to 15% oxygen, averaged over a rolling 3-hour period, to 2.0 ppmvd, corrected to 15% oxygen, averaged over a 1-hour period); PM (reduced from 9 lbs per hour to 7 lbs per hour); NOx hot startup (from 125 lbs to 95 lbs); CO hot startup (from 2514 lbs to 891 lbs); and CO cold startup (from 5028 lbs to 2514 lbs). *See* Responses to Comments at 1-2. The comments also resulted in RCEC's agreement to be subject to PSD analysis for greenhouse gases. *Id.* at 2. On August 3, 2009, the District issued an Additional Statement of Basis with an updated draft permit, including these changes. This draft permit was also subject to numerous public comments, again from CAP and Chabot, among others. There were 52 comments in opposition to the permit and two in support.

Again, these comments in opposition pointed out that the District allowed RCEC to retain equipment from 2002, albeit with upgrades, without a considered BACT analysis. *See* CAP 9/09 Comments; Chabot Las-Positas College District's comments on ASOB (September 16, 2009).

On February 4, 2010, the District finalized the permit in substance identical to the one proposed with the ASOB and issued Responses to Comments. CAP appeals because this project contravenes the BACT requirements of the Clean Air Act. The project is also unnecessary as the San Francisco Bay Area does not need new fossil-fuel capacity to meet local energy reliability demands;<sup>2</sup> fossil-fuel projects, especially based on old technology, contribute significantly to greenhouse gas emissions and adverse health

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<sup>2</sup> *See* California Energy Commission, *Impact of Assembly Bill 32 Scoping Plan Electricity Resource Goals on New Natural Gas-Fired Generation* (June 2009) at 25, 29 (no new natural gas capacity needed in San Francisco Bay Area after aging once-through cooling units are replaced with more efficient units), available at <http://www.energy.ca.gov/2009publications/CEC-200-2009-011/CEC-200-2009-011.PDF>; *see also* Chabot 2/6/09 Comments at 14-15.

impacts; and building new fossil-fuel projects has the potential to crowd out new renewable projects.<sup>3</sup>

### STANDARD OF REVIEW

The final PSD permit for RCEC may be set aside if it is based on a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review. *See* 40 C.F.R. § 124.19.

“Incomplete BACT analyses are grounds for remand.” *In re Knauf Fiber Glass, GMBH*, 8 E.A.D. 121, 142 (EAB 1999) (citing cases). The burden is on the permit applicant (and not on petitioners to a Board appeal) to establish that the most stringent technology does not apply because, among other things, of economic factors or costs. *In re Pennsauken County, New Jersey Recovery Facility*, 2 E.A.D. 667, 672 (Adm’r 1988). The permitting agency must justify its decision to eliminate potential control options as a matter of technical infeasibility or due to collateral impacts. *Knauf*, 8 E.A.D. at 131.

### ARGUMENT

#### **I. INTRODUCTION: THE BOARD SHOULD REMAND THE PERMIT BECAUSE THE BACT FOR STARTUP AND SHUTDOWN EMISSIONS DOES NOT REPRESENT THE MOST STRINGENT EMISSIONS LIMIT.**

Emissions from power plants are greater during startup and shutdown (SU/SD) because the turbines are the most efficient when they are at full load, and they are not operating at full load during SU/SD periods. SOB 38. Moreover, there are different kinds of startups that determine the level of emissions: hot startups contribute less pollution than warm and cold startups, with cold startups causing the most amount of pollution. For facilities contemplating an operation different from a base load operation, there are different turbines as well as software packages and equipment that decrease the duration of SU periods and, consequently, decrease emissions. Thus, it is critical to ascertain with as much certainty as possible the number and kind of SU/SD events so that

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<sup>3</sup> *See* California Public Utilities Commission, Decision 07-12-052 (Dec. 20, 2007) at 96-97

permitting agencies can determine BACT that represents the most stringent emissions limit for those periods.

Despite the volumes of paper the District generated in response to public comments opposing the project, the District failed in its most fundamental job of ascertaining the impact of RCEC's operating scenario on SU/SD emissions. In setting BACT for SU/SD events, the District chose best work practices over technology, ignoring information from RCEC itself and the analysis of the state agency responsible for power plant siting, which demonstrated that RCEC will "frequently" start up and shut down. *See* discussion in I.A.1-A.5 below. The District even failed to analyze its own assertion that the facility will operate 6 days a week for 16 hours a day, and what that operating scenario entails for SU/SD. Had the District analyzed its own information, it would have had to agree that the facility operations involve frequent SU/SD events.

The District instead based its BACT determination on RCEC's purchased equipment, which, even with upgrades, is for base load operations. Such an approach gets PSD review backward. A BACT determination should be made without regard to equipment purchased in violation of the Clean Air Act. *See* CAP 2/09 Comments at 8 (PSD regulations prevent power plant operators from making irretrievable commitments such as purchasing equipment before receiving a PSD permit). Accordingly, the Board should remand the permit for an adequate response to comments and a proper determination of BACT for the reasons discussed below.

**II. THE DISTRICT VIOLATED THE REQUIREMENTS OF 40 C.F.R. § 124.17 BY FAILING TO RESPOND TO SIGNIFICANT COMMENTS SEEKING ACCURATE AND CONSISTENT INFORMATION ON STARTUP AND SHUTDOWN OPERATING SCENARIOS, WHERE SUCH INFORMATION IS CRITICAL TO DETERMINING THE CORRECT LEVEL OF BACT.**

The Board should remand the permit for an adequate response to comments (and a brief description of all of the comments on the issue) and order the District to clarify unclear and inconsistent information in the record about the number and kind of SU/SD events, so that information essential to setting proper BACT can be made available to decision makers and the public.

**A. Background Facts: the District's Improper Choice of Work Practices over the Most Stringent Limitations.**

1. The District's Analysis of BACT for SU/SD in December 2008 SOB.

The District acknowledged that emissions are greater during SU/SD because the turbines are the most efficient when they are at full load, and they are not operating at full load during SU/SD periods. SOB 38. Moreover, exhaust temperatures are lower than during steady state operations; and post-combustion emissions control systems such as the SCR catalyst and oxidation catalyst do not function optimally at lower temperatures, with reduced or no abatement for NO<sub>x</sub> and CO during SU/SD. SOB 38. Cold startups result in the highest emissions, with the equipment taking up to six hours to achieve steady state emissions rates. *Id* at 39.

The District then concluded that there were three control technologies to consider for BACT for SU/SD:

- (1) Work practices to minimize emissions, which would consist of following the plant equipment manufacturer's recommendations to minimize SU/SD duration and to use unspecified "operational experience" to optimize SU/SD emissions;

- (2) Once-through steam boiler technology that uses external steam separators to reduce startup duration, which would then reduce startup emissions; and
- (3) Low-load turn-down technology, which enables the turbines to operate at low capacity, in standby mode, which uses advanced method of controlling fuel distribution to reduce NO<sub>x</sub> and CO emissions and facilitates a quick ramp up to reach steady state.

SOB 39-40.

The District chose work practices as BACT and set limits on the duration of the SU/SD periods as well as CO and NO<sub>x</sub> emissions limits. But “to provide maximum operational flexibility, no limitations [were] imposed on the type, or quantity of gas turbine startups or shutdowns.” SOB at 121. Instead, the District stated that the facility would be limited only by daily and annual emission limits, *id.*, which were set so high that any number of combination of SU/SD scenarios are possible. *See* Chabot 2/6/09 Comments at 3 (“[t]he very high daily emissions limits . . . effectively represent *no* daily limit[;] there is no credible mix of cold startup, hot startup, shutdown, and steady-state operating scenarios”).

The District recognized that these startup times could be shortened with Fast Start (also known as once-through steam boiler) technology, which would achieve “emissions compliance in 12 minutes and stack compliance in 20 minutes,” SOB 42, as compared to hours of startup time that RCEC’s turbines require. The District thus ranked Fast Start as the top technology for controlling SU/SD emissions. SOB at 42 (once through boiler technology is “ranked No. 1 in control effectiveness”). The District, however, rejected this technology as inefficient, making the assumption that the design was not appropriate for “baseload plants such as the proposed Russell City facility.” SOB 40.

But the District failed to explain how this facility qualifies as a base load facility. Elsewhere, in fact, the District contradicted itself, stating that the facility operation would be “dictated by market circumstances and demand,” with the following modes expected to occur: base load, load following, partial shutdown, and full shutdown. SOB at 11.

The District further stated that the facility may shut down one or more turbines “during period[s] of low overall demand such as late evening and early morning hours,” as well as reducing output to less than base load. *Id.*

The District also rejected a software package called OpFlex being employed at a California power plant, Palomar Energy Center, which its manufacturer GE (and also one of RCEC’s owners) said could reduce startup time up to as much as 30 minutes for cold starts, 15 minutes for warm, and 5 minutes for hot. SOB at 41. The District justified the rejection of OpFlex based on technical infeasibility, citing the lack of manufacturer guarantees and lack of operating data from Palomar. SOB 41-42.

In rejecting newer existing advances for reducing startup emissions through reducing startup duration, the District considered the equipment that RCEC had purchased years before receiving a PSD permit and worried about the cost of disposing of the equipment:

[T]he applicant purchased its equipment [in 2002] . . . . 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 the company supplies a fully integrated power plant with Fast Start technology (i.e., Flex Plant 10). . . . It therefore appears that the facility would have to dispose of the equipment it has already purchased for the project and buy an entirely new integrated system.

SOB at 40 n.31 (emphasis added); *see also* notes of the conversation referred to in n.31 (“existing turbine cannot be retrofitted[;] will kill project because of cost”) (emphasis added) (attached hereto as Exh. 2). The CEC record similarly shows that the primary reason for rejecting available technology was the cost of disposing of the already acquired equipment. Even though the CEC staff was recommending the Fast Start technology<sup>4</sup> the applicant cited cost as a reason for not implementing it:

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<sup>4</sup> *See* letter from Paul C. Richins, Jr., Environmental Protection Office Manager, CEC, to Jack P. Broadbent, APCO, dated May 29, 2007, at 2 (attached hereto as Exh. 1), *available at*



Staff proposed technological solutions (Siemens-Westinghouse Fast-Start and General Electric OpFlex) which it believes would significantly reduce emissions from start-up events, but they were rejected by the Applicant for economic reasons.

See CAP 2/09 Comments at 5.<sup>5</sup>

2. Public Comments in Response to the December 2008 Draft Permit.

CAP responded to the draft permit by commenting that the District and the public needed to know the operating scenario of the proposed facility to determine whether the District had done a proper BACT analysis. CAP 2/09 Comments at 1-3, 8-9; *see also* Chabot 2/6/09 Comments at 3-15. Specifically, CAP pointed out that CEC staff analyzed the project assuming 52 cold startups and 260 hot startups per each turbine (and thus 104 cold starts and 520 hot starts) per year, and asked the District for an explanation of how these figures affect the District's BACT analysis for SU/SD. *Id.* at 2 & 2 n.1.<sup>6</sup> CAP also stated that, according to CEC staff, "[t]he project owner has asserted that the more typical, normal operating day of the facility could include a hot startup, about 16 hours of normal operation followed by a shutdown."<sup>7</sup> CAP therefore requested that BAAQMD provide more information on the number of SU/SD events per day.

CAP pointed out that the District's assumptions about the number of SU/SD events were driving the District's conclusion that Fast Start technology was inefficient – *i.e.*, the District concluded that Fast Start was inefficient, assuming base load operations,

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[http://www.energy.ca.gov/sitingcases/russellcity\\_amendment/documents/2007-05-31\\_LTR\\_BROADBENT.PDF](http://www.energy.ca.gov/sitingcases/russellcity_amendment/documents/2007-05-31_LTR_BROADBENT.PDF) (cited in CAP 2/09 Comments at 5).

<sup>5</sup> Citing CEC, Final Commission Decision, Russell City Energy Center, Amendment No. 1 (01-AFC-7C) (Oct. 2007) at 77, *available at* <http://www.energy.ca.gov/2007publications/CEC-800-2007-003/CEC-800-2007-003-CMF.PDF>.

<sup>6</sup> Citing CEC, Final Staff Assessment, Russell City Energy Project (June 10, 2002) at 4.1-12, *available at* [http://www.energy.ca.gov/sitingcases/russellcity/documents/2002-06-10\\_FSA.PDF](http://www.energy.ca.gov/sitingcases/russellcity/documents/2002-06-10_FSA.PDF).

<sup>7</sup> Citing to CEC, Staff Comments, Air Quality, Testimony of Tuan Ngo, P.E. (June 2007) at 4.1-8, *available at* [http://yosemite.epa.gov/OA/EAB\\_WEB\\_Docket.nsf/Filings%20By%20Appeal%20Number/0CB7FC708E4DB9DC852573EF005A0063/\\$File/Exhibit%2014...16.60000.pdf](http://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/0CB7FC708E4DB9DC852573EF005A0063/$File/Exhibit%2014...16.60000.pdf).

while failing to explain conflicting information about the number of SU/SD events. CAP 2/09 Comments at 8-9.

3. The District's August 2009 ASOB and Public Comments in Response.

Despite numerous public comments, the District rejected setting BACT based on technology, instead affirming its initial choice of work practices as BACT for SU/SD. ASOB at 58-74. CAP again asked for a credible determination of the likely scenario of SU/SD events because, without such information, it was impossible to determine BACT. CAP 9/09 Comments at 6.

In response to the District's response that daily and annual emissions limits provided a check on the number of SU/SD events, CAP specifically stated that the most restrictive of those limits – the daily CO limit divided by the maximum CO emissions from SU/SD yielded 2.8 SU/SD per day. Rounding that number down to two per day, CAP stated that the scenario could mean as many as 700 warm starts. *Id.*

4. The District's February 2010 Responses to Public Comments and Final Permit.

The Responses to Comments did not clarify the operating scenario. In fact, they add to the confusion about the nature of the facility. There is no consistent information as to whether the facility is a base load facility or some other kind of facility, and whether there will be few or frequent SU/SDs.

As to the kind of facility RCEC is supposed to be, the District stated that RCEC would be an intermediate-to-base load facility. Responses to Comments at 123. The District stated that RCEC would be providing NOx offsets for operating at least 16 hours per day, 6 days a week (referred to as a "6 x 16" operating scenario), which the District claimed is a typical dispatch for an intermediate-to-base load facility. *Id.*<sup>8</sup> (The District

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<sup>8</sup> Citing Second Amended and Restated Power Purchase and Sale Agreement between Pacific Gas & Electric Co. and Russell City Energy Co., LLC, Appendix II.

claimed that it would be unlikely that Calpine would provide NO<sub>x</sub> offsets to accommodate this level of operation if the facility were intended to be a peaker and have fewer operational hours per year. *Id.* at 123-24.) But the document to which the District cited as support for the 6 x 16 scenario refers to RCEC as a base load facility.<sup>9</sup>

As to the number of SU/SD events, although the District failed to explain the impact of the 6 x 16 operating scenario on the number of SU/SD events, 6 x 16 could mean 500 hot starts, 100 warm starts, 6 cold starts, and 606 shutdowns per year for both turbines, according to RCEC.<sup>10</sup> The District also mentioned that the facility would engage in 6 cold starts and 100 warm starts per year. Responses to Comments at 114. RCEC's submission to the District on that point (Exh. 6), however, does not lead to the conclusion that 6 x 16 means only that combination of startups. *See* Exh. 6.

**B. The District Failed to Respond to Comments Asking for a Determination of the Number and Kind of SU/SD Events; and the Failure Was Clear Error Because a Credible SU/SD Scenario Is Necessary for Determining BACT.**

At the time any final permit decision is issued, the permitting agency must issue a response to comments. 40 C.F.R. § 124.17(a). In addition, the agency's response must briefly describe all significant comments on the draft permit or the permit application that were raised during the public comment period or during any hearing. *Id.* The District's response to comments violates the Act because it does not respond to the public's significant comments asking for a credible scenario of likely SU/SD events as required by § 124.17. *See In re Northern Michigan University Ripley Heating Plant* ("Northern

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<sup>9</sup> California Public Utilities Commission, Decision 09-04-010 *Application of Pacific Gas and Electric Company for Expedited Approval of the Amended Power Purchase Agreement for the Russell City Energy* (April 20, 2009) at 24 (cited in Responses to Comments at 123 n.249), available at [http://docs.cpuc.ca.gov/word\\_pdf/FINAL\\_DECISION/100001.pdf](http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/100001.pdf).

<sup>10</sup> See "SU-SD analysis final 4-1-09.pdf," appended to e-mail from Kevin Poloncarz (Calpine's counsel) to Alexander Crockett (BAAQMD counsel), dated April 2, 2009 (AR 5-57) (attached hereto as Exh. 6). This document is not contained in the District's record. CAP obtained this document in March 2010 from the District.

*Michigan*”), slip op. at 2, 14 E.A.B. \_\_\_ (EAB 2006) (remanding for failure to meaningfully respond to significant comments because it constitutes clear error).

A credible determination of a SU/SD scenario is material because the number of SU/SD events will determine whether certain pollution control equipment or technique is most appropriate. If most emissions will be from base load operations, for example, then it is appropriate to have the most efficient turbines that can control emissions from that operating scenario. If there will be frequent SU/SD, then pollution control equipment or techniques like Fast Start or OpFlex – the kind that the CEC staff recommended for this facility – may be more appropriate. *See* Sierra Club comments on SOB (January 22, 2009) at 3-4 (the District did not conduct a full BACT analysis of efficient generating technologies; “[t]here are many different turbines that could be used in the same combine-cycle configurations and more efficient ways to generate peaking power”).

The District, however, made no effort at clarity, certainty, or consistency as to the number and kind of SU/SD events. The inconsistency in the District’s information about the number and nature of SU/SD events underscores the very problem CAP attempted to have the District address: how will this facility operate? The sources on which the District relied show that the District set SU/SD BACT based on a base load operating scenario, where as the applicant itself and CEC stated that RCEC’s operation will be in a load following mode.

Even though the District stated that the facility will operate like a base load facility in the Responses to Comments, the District earlier stated that the operation would be “dictated by market circumstances and demand,” with several different modes of operation: base load, load following, partial shutdown, and full shutdown, SOB at 11. The District further stated that the facility may shut down one or more turbines “during period of low overall demand such as late evening and early morning hours,” as well as reducing output to less than base load. *Id.* That scenario could mean two shutdowns and starts per turbine per day, which could mean 600 warm or hot starts per year. *See also*

Letter from Paul C. Richins, Jr., Environmental Protection Office Manager, CEC, to Jack P. Broadbent, APCO (dated May 29, 2007) at 1& 2 (the “planned operating profile of the project [is] frequent start-up and shutdown cycles”; noting “potentially high daily NO<sub>x</sub> emissions from multiple start-up and shutdown cycles”) (attached hereto as Exh. 1).

Yet in another place, however, the District stated that cold starts are expected to be infrequent, occurring as little as once per year. SOB 39. The District also mentions six cold starts and 100 warm starts per year, Responses to Comments at 114, whereas RCEC’s document refers to six cold starts, 100 warm starts, and 500 hot starts, Exh. 6

As for RCEC, it described the facility as a load following unit.<sup>11</sup> Especially notable in this regard is that the party to the power purchase agreement (which characterized RCEC as a base load unit with a “6 x 16” operating scenario, whatever that may mean for SU/SD), describes load following facilities quite differently from the way the District does: load following means capable of “300 annual starts including approximately 25 cold starts.”<sup>12</sup>

Further, as to the District’s statement that the assumption of six cold startups and 100 warm startups was “a conservative estimate because actual startups will likely be lower,” Responses to Comments at 114, the District provided absolutely no basis or rationale for reaching this conclusion. The Responses to Comments did nothing more than provide a conclusion that RCEC would have six cold startups and 100 warm startups or fewer per year, with no supportive reasoning behind the assertion. *See* Exh. 6 (no explanation). Contrary to the District’s bald assertion that 6 x 16 means six cold startups and 100 warm startups, it could also mean as many as 300 warm startups per year per turbine, or 600 warm startups for both turbines, or any combination of warm and cold startups, depending on whether the 6 x 16 represents an average. (For example, under a 6

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<sup>11</sup> CEC, Staff Assessment – Part 1 and Part 2 Combined, Russell City Energy Center, Amendment No. 1, (June 29, 2009) at 3-2 (“The proposed project will be designed to operate in a load following mode whereas the project as licensed was designed to operate as a base load facility”).

<sup>12</sup> *See* PG&E, Long-Term Request for Offers Protocol (April 1, 2008) at 8, *available at* <http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/allsourcerfo/>.

x 16 operating scenario, if the RCEC facility operated for 16 hours per day, 6 days per week, that could mean six warm startups per week, which would be 300 warm starts for one turbine for 50 weeks.) Further, contrary to the District's bald assumption about six cold starts and 100 warm starts, depending on the source, there will be anywhere from one cold start to 52 cold starts or 600 to 700 warm starts.

A document containing conclusions without supportive reasoning cannot be considered an adequate response. *In re John W. McGowan*, 2 E.A.D. 604, 606-07 (Adm'r 1988). Thus, the Responses to Comments cannot be considered an adequate response to legitimate public comments raising questions about the mix of SU/SD events.

Finally, the District purported to explain away the different scenarios by stating that they were used to determine daily maximum limits. *See Responses to Comments* at 123 n.251. The District also stated that daily and annual limits provide a check on the number of startups. *Id.* at 124 & 124 n.253. But CAP's comments were not that RCEC might not meet the daily or annual emission limits. On the contrary, CAP's comments were that, even if the number of SU/SD events meet the daily and annual emissions limitations, the number and kind of SU/SD events are still significant. That is, if RCEC is going to start up and shut down frequently, as its planned operation shows, then the facility will need different technologies to meet BACT. Application of BACT then may result in reduced annual and daily limits.

In sum, the District's permitting documents, RCEC's statements in the state power plant certification process, and CEC staff assessment in that process point to multiple SU/SD events. The power procurer's statement about what load following means also point to multiple SU/SD events. Despite this evidence, the District failed to adequately respond to public comments (and failed to describe some of them) that there are multiple scenarios that yield significant SU/SD emissions as a proportion of total daily and annual emissions.

Thus, the District did not comply with 40 C.F.R. section 124.17's requirement to respond to comments in a "clear," "meaningful," and "thorough" fashion. *See Northern Michigan* at 47, 53 (remanding for "spareness of [the agency's] response to . . . detailed comments . . . and the [agency's] shifting explanations" of the basis for its permitting decision). Because the District did not provide a "straightforward" response to CAP's "serious and substantial concerns" about permitting conditions, the Board should remand the permit and the response for reissuance. *See id.*

**III. THE DISTRICT FAILED TO MEET ITS BURDEN THAT AN AUXILIARY BOILER – TECHNOLOGY THAT IS ACHIEVED IN PRACTICE – IS NOT BACT.**

An applicant for a PSD permit must employ BACT to minimize emissions of pollutants that may be produced by the new source in amounts greater than applicable significance levels that the PSD regulations establish. CAA § 169(3), 42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(j)(2). "The BACT analysis is one of the most critical elements of the PSD permitting process." *Knauf*, 8 E.A.D. at 131. CO and NO<sub>x</sub> are both pollutants that RCEC proposes to emit above the applicable significance levels and therefore must be minimized through application of BACT. SOB at 19.

The District improperly rejected the use of commonly used technology, an auxiliary boiler, as BACT for SU/SD emissions by improperly considering cost-effectiveness, in contravention of the BACT definition under the District rules, which are applicable pursuant to the Delegation Agreement with EPA that governs PSD permitting here. Moreover, even if cost effectiveness were relevant, the District improperly calculated SU/SD emissions, without a credible basis.

The Board should therefore remand the permit and order the District to perform a proper BACT analysis consistent with the Act to require the most stringent emissions limits.

**A. An Auxiliary Boiler Is BACT Because Its Use Has Been Achieved Under BACT Rules Applicable Here Pursuant to the Delegation Agreement.**

In performing the BACT analysis, the District must apply the PSD requirements of State Implementation Regulation 2-2 and 40 C.F.R. § 52.21, under the Delegation Agreement which provides the District with PSD permitting authority under 40 C.F.R. § 52.21(u). *See* U.S. EPA – Bay Area Air Quality Management District Agreement for Delegation of Authority to Issue and Modify Prevention of Significant Deterioration Permits Subject to 40 CFR 52.21 (dated Feb. 4, 2008), at 3 (the District to apply Regulation 2-2 and 40 C.F.R. § 52.21, with exceptions not applicable here).<sup>13</sup> Regulation 2-2-206, which applies here, plainly indicates that BACT is “the most effective emission control” or “the most stringent emission limitation,” by defining BACT as “the more stringent of”:

- 206.1 The most effective emission control device or technique which has been successfully utilized for the type of equipment comprising such a source; or
- 206.2 The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or
- 206.3 Any emission control device or technique determined to be technologically feasible and cost-effective by the APCO; or
- 206.4 The most effective emission control limitation for the type of equipment comprising such a source which the EPA states, prior to or during the public comment period, is contained in an approved implementation plan of any state, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable. Under no circumstances shall the emission control required be less stringent than the emission control required by any applicable provision of federal, state or District laws, rules or regulations.

Regulation 2-2 (SIP-approved, 64 Fed. Reg. 3,850 (Jan. 26, 1999)).<sup>14</sup>

<sup>13</sup> Available at <http://www.epa.gov/region09/air/permit/pdf/baaqmd-delegation-agreement.pdf>

<sup>14</sup> Available at

[http://yosemite.epa.gov/R9/r9sips.nsf/AgencyProvision/411642DA93F3D7A4882569900057D386/\\$file/BA+rg2-2sip.PDF?OpenElement](http://yosemite.epa.gov/R9/r9sips.nsf/AgencyProvision/411642DA93F3D7A4882569900057D386/$file/BA+rg2-2sip.PDF?OpenElement) (emphasis added).



Under this regulation, once the most effective emission control device or technique or limitation that has been achieved is identified, that technology or limit is BACT. (Notably, in the District, BACT is set at the same level as the lowest achievable emissions rate. *See generally* SIP Regulation 2-2, where BACT applies to nonattainment new source review and PSD.) Accordingly, the District should not have rejected an auxiliary boiler as BACT.

The District concedes that an auxiliary boiler is existing technology, which has been successfully employed in at least three power plants to reduce NO<sub>x</sub> and CO emissions during SU/SD but rejected the technology as cost ineffective. Responses to Comments at 114, *see also* mention to Mankato Energy Center, ASOB at 69. An auxiliary boiler keeps the heat recovery steam generators and steam boilers warm while they are down, allowing for reduced startup duration and therefore reduced emissions on start up. Responses to Comments at 114. An auxiliary boiler reduces fuel use “by approximately 18% for warm startups and approximately 31% for cold startups.” *Id.* Auxiliary boilers are used in at least two power plants that public comments identified – Lake Side Power Plant in Vineyard, UT and Caithness Long Island Energy Center in Brookhaven, NY, *id.* – as well as at Mankato, and therefore are “achieved” technology. At least as to Caithness, the District found it to be comparable to RCEC, and thus an auxiliary boiler is “available” and “applicable” technology for RCEC. *See* ASOB at 64 (the District looked to Caithness SU/SD emissions limits without the use of auxiliary boiler to set limits for RCEC).

Because Regulation 2-2-206 leaves no room for interpretation that technology that is achieved in practice is BACT, without the need for a cost effectiveness analysis, the District’s cost effectiveness analysis was improper, as CAP pointed out during public comments. CAP 2/09 Comments at 5-8.

For these reasons, the Board should remand to have the permit properly evaluate an auxiliary boiler as BACT.

**B. Even if Cost Effectiveness Were Relevant, the District Has Not Met Its Burden of Establishing Cost Ineffectiveness of an Auxiliary Boiler Because the SU/SD Emissions Calculation Is Without Basis.**

Because SIP Regulation 2-2 is applicable here under the Delegation Agreement, cost effectiveness is irrelevant to technology, which is achieved in practice. Even if it were relevant, however, the District erroneously determined that an auxiliary boiler is cost ineffective. For cost effectiveness to be justified, both the tonnage of emissions reductions and the cost of the technology must have an evidentiary basis. *Knauf*, 8 E.A.D. at 131. (And, on this issue, the applicant (not petitioners to a Board petition) bears the burden.) The tonnage of emissions reductions that the District used, however, had no basis.

As discussed in Argument I.A above, the District did not use a credible SU/SD scenario. Permitted emissions limits for steady state operations and SU/SD show that NOx emissions are highest during cold startups; and CO emissions are highest both during warm and cold starts. *See* Permit, ¶ 19(a) and (c) (NOx and CO limits during steady state operations); ¶ 20 (SU/SD limits). For example, assuming 5050 hours of steady operations for each turbine, and applying the CO limit of 10 lbs per hour in the permit, steady state operations produce 101,000 lbs of CO emissions, compared to approximately 650,000 lbs of CO emissions during SU/SD, even employing the most favorable scenario for RCEC, the 6 x 16 scenario.<sup>15</sup> Thus, CO emissions during SU/SD comprise 86% of the permitted maximum CO emissions.

Since CO emissions are highest during both warm and cold startups and lower during hot startups (and similarly, NOx emissions are highest during cold startups), cost effectiveness depends on a credible number and type of startups that yield the maximum

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<sup>15</sup> *See* Exh. 6, which shows that RCEC assumes 5050 hours for steady state operations for each turbine. (The emissions in pounds for CO and NOx are not correct in the chart.) Using the correct permit limits for CO of 891, 2514, and 2514, and 100 lbs., respectively for hot, warm, and cold startups, and shutdowns, the amount of CO adds up to 646,884 lbs., compared to 101,000 lbs. of CO generated during steady state operations. The CO emissions during SU/SD is thus 86% of all CO permitted emissions (*i.e.*, 646,884 over 747,884, which is a sum of 101,000 and 646,884).

potential emissions. As discussed, the District erred by failing to determine a credible, consistent operating scenario. Without such a determination, the District cannot credibly calculate a per ton reduction cost to determine cost effectiveness.

The Board should therefore remand the permit for a cost effectiveness calculation that has a basis in the tons that an auxiliary boiler can reduce.

**C. Even if Cost Effectiveness Were Relevant, the District Provides No Ascertainable Basis for the SU/SD Emissions Reductions to Reject an Auxiliary Boiler.**

In rejecting an auxiliary boiler as BACT, the District used emissions reductions numbers of 0.9 tons of NO<sub>x</sub> and 12.4 tons of CO that Calpine supplied in an Excel spreadsheet. *See* Responses to Comments at 114 & n.235; the document referred to in n. 235 is attached as Exh. 8. The District simply used the bottom line emissions numbers that Calpine supplied from its facility in Minnesota, ASOB at 69, without any independent analysis. The document labeled, “Mankato Energy Center Start profiles for winter months,” contains no apparent explanation of how the numbers from this facility can reasonably be used for setting BACT for RCEC, how reliable the numbers are, and what the numbers represent. *See* Exh. 8. There is also no explanation of some of the mysterious notes contained in the spreadsheet, such as “‘assume starts’ is based on a plant dispatch of 3 times a week;” and “[w]arm start emissions savings are based on the difference in warm and hot starts on the SU/SD spreadsheet.” Exh. 8 at 1-3.

Because there is no support for the District’s calculation that the reductions are 0.9 tons of NO<sub>x</sub> and 12.4 tons of CO, the cost effectiveness calculation lacks an ascertainable basis. The Board should therefore remand the permit.

**IV. THE DISTRICT CLEARLY ERRED BECAUSE THE SU/SD LIMITS ARE BACKWARD LOOKING AND DO NOT REFLECT THE MOST STRINGENT LIMITATION AND THEREFORE DO NOT COMPLY WITH BACT REQUIREMENTS.**

The permitted emissions limits are not technology forcing and therefore do not comply with the Act's BACT requirements. In determining BACT limits, the District erred first by improperly relying on emissions limits achieved at existing facilities that have turbines like the one RCEC purchased (before obtaining a PSD permit). Second, the District relied on maximum achieved limits to set BACT. Third, the District added a large "compliance margin" of unexplained origin on top of those maximum achieved emissions limits. In so doing, BAAQMD rejected even realistically achievable limits for a power plant with old turbines. It is hard to imagine how technological improvements required by the PSD provisions would ever be incorporated into new sources, if permitting authorities rely on solely maximum achieved emissions for a pre-determined piece of equipment (even with upgrades), with a wide compliance margin, to set BACT.

**A. The District Erroneously Limited Its BACT Review to Emissions Limits that Could Be Achieved with Upgrades to Already Purchased Equipment.**

BACT is determined as of the date of the PSD permit's issuance. By limiting its review to upgrades to RCEC's already purchased Westinghouse 501FD2 turbines, the District failed to set the most stringent limit required under the Act. *See* Chabot 2/6/09 Comments at 3-4 ("[t]he high startup/shutdown NOx and CO emissions are a result of attempting to adapt a combined cycle plant designed for base load duty to cycling duty without any modifications or upgrades to minimize startup/shutdown emissions"); at 17 (the District analyzed only SU/SD data from operationally similar plants).

This fundamental error is the backdrop to the District's unlawful reliance on maximum achieved limits and addition of a cushion: because the 501FD2 upgrades

cannot achieve the most stringent limit that should be set as BACT, the District committed other errors described further below.

**B. The District Failed to Meet Its Burden of Showing Why Already Achieved SU/SD Limits Are Not BACT.**

1. The District failed in its burden because cold startup limits are higher than the already achieved limits.

The facility will undergo startup where the control efficiency of the equipment is not optimum and higher emissions are often released. A cold startup occurs “when the turbine has been offline for more than 48 hours” and warm startups occur “when the turbine has been offline for between 8 and 48 hours.” *See* Responses to Comments at 95. During cold startups, a facility’s equipment is running at its lowest efficiency. In determining the NO<sub>x</sub> startup limits (as NO<sub>2</sub>), the District dismissed limits that have been achieved in fact and are lower than the proposed limit of 480 lbs per startup event. Even facilities whose construction commenced as long ago as 2000 have demonstrated that they can emit as low as 86 pounds. *See* SOB at 45. Indeed, the average emissions per startup event are in the range of 183 to 193 lbs. *See* ASOB at 61. The permitted limit of 480 lbs is, in fact, the third highest emissions demonstrated at Calpine’s Sutter facility, which commenced construction in 1999. SOB at 45. The data that the District gathered for cold startup emissions (lbs per startup) from existing power plants, mostly old, show the following:

| <b>Power Plant</b>                                  | <b>Average Emissions</b>                       | <b>Maximum Emissions</b>             |
|---|--|--------------------------------------|
| Palomar   | 182.8 (low as 26, Responses to Comments at 95) | 375 or 437, depending on calculation |
| Metcalf   | 185 (low of 86)                                | 281                                  |
| Delta   | 193 (low of 86)                                | 335                                  |
| Sutter (271-499, with 480 being the second highest) |  |                                      |

SOB 45; ASOB 61; Responses to Comments 95-96; CAP 9/09 Comments at 5 n.1. The District itself recognized that the 480 lbs limit is 9% to 22% above the “maximum startup emissions event of 375 or 432 pounds (depending on which calculation is used)” from Palomar. Responses to Comments at 96.

Despite many comments protesting the lax NO<sub>x</sub> cold startup limits, the District finalized the limit without changing it. Responses to Comments at 95-96. In explaining its rejection of lower emissions performance levels in the range to set BACT, the District stated that a compliance margin is reasonable to because the Palomar data “includes only five available data points for cold starts, which does not generate a great deal of statistical confidence that the maximum seen in this data set is representative of the maximum that can be expected over the entire life of the facility.” *Id.* at 96 (emphasis added). In other words, the District chose as BACT for the performance the equipment the District speculates might achieve after years of unspecified degradation.

The District’s response, however, wholly ignores data from other facilities covering two to four years, SOB at 45-46, which show average emissions far below the permitted limit. Moreover, the District did not even respond to public comments pointing to cold startup emissions at other facilities, such as Lake Side, which showed that it had achieved 102 lbs of NO<sub>x</sub> (compared to the 480 lbs permitted here). *See* Chabot 6/15/09 Comments.

The District also ignored public comments asking for a staggered limit as opposed to setting a high limit if indeed there was basis for assuming that the equipment could not reasonably be maintained over time. *See* CAP 2/09 Comments at 16; CAP 9/09 Comments at 5. The District also failed to justify why a limit could not be set for both an average and maximum emissions, rather than a limit that is effectively a maximum limit that is generally higher than all of the maximum emissions from existing facilities with similar equipment. CAP 9/09 Comments at 5.

The District further justified the wide compliance margin, stating that “the wide variability in the data that is available highlights the variability in individual startups, underscoring the need to provide sufficient compliance margin to allow the facility to be able to comply during all reasonably foreseeable startup scenarios.” Responses to Comments at 96; ASOB at 61. But the District failed to identify the foreseeable scenarios that might contribute to such high variability and whether such scenarios represent good air pollution control practices. Indeed, there is no evidence in the record that the District attempted to determine why startup emissions can be high or low. In other words, there is no analysis of why there is variability, such as practices that might have contributed to the range, other than to say that “startups are by their nature highly variable,” Responses to Comments at 97. *See* CAP 9/06 Comments.

The District’s analysis failed to meet BACT requirements because the approach provides no incentive for the facility to maintain peak efficiency over time. The District’s analysis failed to demonstrate that there are “source-specific factors or other relevant information that provide a technical, economic, energy or environmental justification” to increase the limit from the emissions levels in the lower range of those that are achieved in fact by other power plants. New Source Review Workshop Manual (Draft Oct, 1990) at B.24 (“Control Techniques with a Wide Range of Emissions Performance Levels”). There is nothing in the SOB, ASOB, or the Responses to Comments that attempts a source-specific explanation.

There is no precedent for allowing the permitting agency a license to set arbitrary compliance margins that defeat the purpose of BACT. While this Board has recognized on occasion that such a margin (or a “safety factor”) may accommodate “uncertainty regarding the maximum degree of emissions reduction that is achievable,” *In re Prairie State Generating Co.*, slip. op. at 73, PSD Appeal No. 05-05, 13 E.A.D. \_\_\_ (EAB 2006), *aff’d*, *Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007), *reh’g denied* and *reh’g en banc denied*, 2007 U.S. App. LEXIS 24419 (7th Cir. 2007), such a margin must be “fact-

specific and unique to the particular circumstances of the selected technology, the context in which it will be applied, and available data regarding achievable emissions,” *Prairie State*. slip op. at 73. Safety factors are allowed, for example, to account for “test method variability, location specific technology variability, and other practical difficulties in operating a particular technology.” *See id* at 71. (citations omitted).

The District failed to examine RCEC’s startup emissions in the context of any of the factors mentioned in *Prairie*. Nor did the District review whether the other facilities’ failure to achieve a shorter startup emissions was due to those factors. The District, for example, provides no discussion of whether the highest emissions that exceed 484 lbs set here are from periods when the facilities were employing BACT. That is not the kind of analysis that *Prairie* contemplates because BACT could then easily turn into Reasonably Available Control Technology.

In addition, there is no precedent for allowing such a large margin. In *Prairie State Generating Co.*, slip op. at 71, 13 E.A.D. \_\_\_ (EAB 2006), the Board upheld only a small margin, amounting to about 2-3%. The Illinois Environmental Protection Agency (IEPA) issued a PSD permit to the *Prairie State* facility setting a 98% control efficiency limit. The petitioner pointed out that an efficiency of 98.4% was achievable, while the IEPA noted that efficiency levels at comparable plants, including the one on which the petitioner relied, was about 97-98%. The Board thus found the IEPA to be justified in employing a safety factor by setting a 98% control efficiency rate. Similarly, in *Masonite Corp.*, 5 E.A.D. 551, 561 (EAB 1994), to which *Prairie* cites, the dispute was over whether a control efficiency of 95% was appropriate, or whether one of 97 to 99% was appropriate. These cases are thus readily distinguishable from RCEC. While these cases involved disputes over a 0.4-1.4% or 2-4% discrepancy, the District gave RCEC a 9 to 22% compliance margin. It is one thing to employ a small safety factors justified evidence, such as the one in *Prairie*, but it is entirely another when that safety factor is so large as to make the most stringent limit unrecognizable.



2. The District failed in its burden because hot startup limits are higher than the already achieved limits.

As with cold startup limits, the District ignored average emissions from even the 2000-vintage plants like Delta (25 to 29.8 lbs) to set the proposed limit at 95 lbs. ASOB at 62-63; CAP 9/09 Comments at 5. The District instead relied on maximum emissions and then provided an unexplained margin to set BACT. The proposed limit is thus three times the average NOx emissions at those facilities. And yet there is no justification provided for this large margin. For all of the reasons that the District failed to comply with BACT requirements as to cold startup limits, the District has failed to comply with BACT requirements as to hot startup limits.

For these reasons, the Board should remand for a proper determination of BACT.

### **CONCLUSION**

The Board should remand the RCEC PSD permit because the District clearly erred by building its BACT analysis around the retrofits possible for the equipment, which RCEC had purchased in 2002. The District justified its bottom-up, instead of top-down, BACT approach by failing to ascertain a credible operating scenario involving frequent startup and shutdown events and by insisting on a base load scenario when all the credible evidence points to a load following scenario. By failing in this fundamental task, the District allowed higher emissions that could be lowered through application of existing technology, such as an auxiliary boiler. Instead, the District looked to the highest of the already achieved limits to set BACT. The Board should remand for an

analysis that befits the Clean Air Act.

/s/ Helen Kang

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HELEN H. KANG

HELEN H. KANG  
KELLI SHIELDS (PTLS No. 24469)\*  
PATRICK SULLIVAN (PTLS No. 24468)\*  
LUCAS WILLIAMS  
Environmental Law and Justice Clinic  
Golden Gate University School of Law  
536 Mission Street  
San Francisco, CA 94105  
Tel: (415) 442-6647  
Fax: (415) 896-2450  
Email: hkang@ggu.edu  
Email: lwilliams@ggu.edu

Attorneys for Citizens Against Pollution

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\* Students certified to practice under the rules governing Practical Training of Law Students of the State Bar of California

**CERTIFICATE OF SERVICE**

I, Lucas Williams, certify that copies of the foregoing PETITION FOR REVIEW were e-filed with the Board's CDX system and served by United States First Class Mail on the following persons, this 22th day of March, 2010:

Kevin Poloncarz  
Bingham McCutchen LLP  
Three Embarcadero Center  
San Francisco, CA 94111-4067

Jack Broadbent  
Alexander Crockett  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109

Executed on March 22, 2010, at San Francisco, California.

/s/ Lucas Williams  
Lucas Williams  
Environmental Law & Justice Clinic  
536 Mission Street  
San Francisco, CA 94105  
Telephone: (415) 442-6647  
Fax: (415) 896-2450  
Email: lwilliams@ggu.edu

