

Weyman Lee, P.E., Senior Air Quality Engineer  
Bay Area Air Quality Management District  
939 Ellis Street, San Francisco, CA, 94109  
(415) 749-4796 [weyman@baaqmd.gov](mailto:weyman@baaqmd.gov).

Comments of Robert Sarvey on the Draft PSD permit for the Russell City Energy  
Center Application Number 15487

Dear Mr. Lee,

Thank you for the opportunity to comment on the Draft PSD permit for the Russell City Energy Center Application Number 15487. The Statement of Basis is very confusing since the amended FDOC was issued on June 19, 2007 and contradicts many of the values that are presented in Amended PSD permit which was circulated on December 8, 2008 almost 18 months later. The District should reopen the FDOC to reflect the changes that are presented in the Amended PSD Permit. These permits are extremely technical and difficult for the public to understand and when different values are presented for the same impacts members of the public lose confidence in the District and the EPA process. Furthermore since the amended FDOC was issued several air pollution laws including the California NO<sub>2</sub> standard have changed. Compliance with these new laws may be demonstrated in the Amended PSD permit but not reflected in the Amended FDOC.

California NO<sub>2</sub> Standard

Page 159 of the air quality impact analysis demonstrates that the project violates the California 1 hour Ambient Air Quality Standard for NO<sub>2</sub>. The California Ambient Air Quality standard for NO<sub>2</sub> is 338 ug/m<sup>3</sup>, while the projects impact combined with background is 370 ug/m<sup>3</sup> (as shown in table 6 on page 159). The California Air Resource Board has promulgated new standards and established that deleterious health effects occur when NO<sub>2</sub> concentrations exceed 338 ug/m<sup>3</sup>. (<http://www.arb.ca.gov/research/aaqs/no2-rs/no2-doc.htm>) Page 92 states that the project does not violate the state 1 hour NO<sub>2</sub> standard because the projects maximum impacts are 130 ug/m<sup>3</sup> and background is 130 ug/m<sup>3</sup>. The statement is unsupported by any analysis in the statement of basis. The statement of basis should provide an analysis demonstrating compliance with the NO<sub>2</sub> standard since the air quality impact analysis contradicts the values presented on page 92. The new NO<sub>2</sub> analysis and amended FDOC should be recirculated to the public for comment.

Ammonia Transportation

Page 26 of the permit states, "A second potential environmental impact that may result from the use of SCR involves ammonia transportation and storage. The proposed facility will utilize aqueous ammonia in a 29.4% (by weight) solution for SCR ammonia injection, which will be transported to the facility and stored onsite in tanks. The transportation and storage of ammonia presents a risk of an ammonia release in the event of a major accident. This risk will be addressed in a number of ways under safety regulations and sound industry safety codes and standards, including the implementation of a Risk Management Program to prevent and respond to accidental releases."

The project, if allowed to use SCR, can eliminate the impact from transportation accidents by utilizing a technology called NOxOUT ULTRA®. There are dozens of systems in service, one in Southern California at UC Irvine. Most of the UC campuses have decided not to risk bringing ammonia tankers through campus or having to offload or store ammonia. NOxOUT ULTRA is being specified for new units at UCSD, University of Texas and Harvard. The NOxOUT ULTRA system requires a tank for the urea. The urea is usually in a 50 to 32 % solution. Urea has no vapor pressure and no smell. If it spills, the evaporated water will leave behind a pile of crystal salts. There are no hazards to labeling or training required for the operator and absolutely no risk to adjacent facilities or neighbors. Like aqueous ammonia, NOxOUT ULTRA needs controls to manage the input from the power plant indicating how much reagent the SCR requires. Like aqueous ammonia, the system requires an air blower and heater to heat the air. The heated air goes to a decomposition chamber instead of a vaporizer. In the decomposition chamber, the urea solution is added. The water in the urea solution is vaporized and the additional heat required will then decompose the urea to ammonia. The gas/carrier air is then swept to the AIG and to the SCR. If the urea pump is stopped and air is left in service, the chamber is swept clear of ammonia in less than seven seconds. So in an emergency, there is very little, if any, ammonia exposure. Other than the seven seconds between the chamber and the AIG, the only exposure is the harmless urea. Since the ammonia will be transported through an environmental Justice community, all precautions should be taken since the community already has a high number of toxic and hazardous materials stored and transported through it. Attachment 1 contains a brochure on the NOxOUT ULTRA system.

### Secondary Particulate Formation

Page 26 of the permits BACT analysis states, "The Air District also evaluated the potential for ammonia slip emissions to form secondary particulate matter such as ammonium nitrate. Because of the complex nature of the chemical reactions and dynamics involved in the formation of secondary particulates, it is difficult to estimate the amount of secondary particulate matter that will be formed from the emission of a given amount of ammonia. Moreover, the Air District has found that the formation of ammonium nitrate in the Bay Area air basin appears to be constrained by the amount of nitric acid in the atmosphere and not driven by the amount of ammonia in the atmosphere, a condition known as being "nitric

limited". Where an area is nitric acid limited, emissions of additional ammonia will not contribute to secondary particulate matter formation because there is not enough nitric acid for it to react with. Therefore, ammonia emissions from the SCR system are not expected to contribute significantly to the formation of secondary particulate matter. Any potential for secondary particulate matter formation is at most speculative, and would not provide a reason to eliminate SCR as a control alternative."

The District has based its conclusion that the project area is nitric limited on a BAAQMD Office Memorandum from David Fairly to Tom Perardi and Rob DeMandel (footnote 21) , "A First Look at NOx/Ammonium Nitrate Tradeoffs, dated September 8, 1997." The District memorandum outlines two objectives. One, whether the Bay Area is ammonia limited, and two, to what extent reducing NOx emissions would reduce ammonium nitrate. Among the findings presented in this memorandum, the District staff believes that " San Jose and Livermore are not ammonia limited' during wintertime high particulate matter conditions; rather, these two areas are nitric acid limited. Other findings stated in the memorandum include recognition that the District analyses do not provide solid "footing to do planning or to provide guidelines to industry for such tradeoffs [between NOx and ammonium nitrate]." Thus, the District memorandum is very specific to say that San Jose and Livermore, not the entire Bay Area air basin or the project location, are nitric acid limited, and that no guidelines have been formed to address the ammonia induced PM10/PM2.5 problem. This project is located in the Hayward area of Alameda County, which is outside of the area where the District has made the determination; therefore, the District's contention that the increase in ammonia emissions from this facility would not cause any increase in PM10/PM2.5 emission impacts is not supported by the District memorandum. The District needs a site specific study to make such broad conclusions and an analysis needs to be conducted not only to evaluate the use of SCR, but also to assess environmental impacts of secondary particulate and its effect on the deterioration of air quality in the BAAQMD. The project's PM 2.5 impacts may be much larger than modeled and subject to additional analysis.

The District needs to conduct a BACT analysis on the ammonia emission slip limit. Several Projects including the ANP Blackstone Project have 2ppm ammonia slip limits, which are designed to prevent additional particulate matter formation and limit the transportation of ammonia through the surrounding communities.

## CO BACT

The statement of basis concludes that a CO limit of 4ppm over 3 hours is BACT. (Page 32) This conclusion was determined by analyzing emissions data from the Metcalf Energy Center. The Metcalf Energy Center does not utilize an oxidation catalyst for CO emissions, so to base the permit decision on a project

that contains no CO abatement device when the proposed Russell City Project will have an oxidation catalyst is an inappropriate comparison. The USEPA, in a June 18<sup>th</sup> 2001 letter to the San Luis Obispo County Air Pollution Control District has commented that the BACT limit for gas turbines should be set at 2 ppm for NOx on an hourly basis while the NH3 slip maintained at 5 ppm. In addition, the EPA stated that BACT for CO should be set at 2 ppm on a 3-hour rolling average.

Several Projects have achieved a lower CO emissions rates in conjunction with a 2ppm NOx limit. One is the Salt River Project in Arizona, which meets a 2ppm NOx limit and a 2ppm CO limit that has been verified by source testing. (<http://cfpub1.epa.gov/rblc/cfm/ProcDetl.cfm?facnum=25662&procnum=102130>) The Las Vegas Cogeneration facility has a 2ppm NOx limit and a 2ppm CO limit. (<http://cfpub1.epa.gov/rblc/cfm/ProcDetl.cfm?facnum=26002&Procnum=103714>) Based on available information, the district should choose a 2ppm CO limit for this project to comply with BACT.

### Start up and Shutdown Emission Limits

The district reports on page 41 of the permit that the Palomar Project has reduced NOx start up emissions by introducing ammonia earlier in the start up cycle and using the OP-Flex system. "By taking these steps, the facility was able to optimize its operating procedures and bring down its startup emissions. The facility has reported encouraging results from the first few months of operating with these new techniques."

The district then eliminates the technology because only one quarterly report from the quarterly variance reports to the SDPCD is available on the success of the new technology. "It is not possible, however, to determine based on this limited data what reductions, if any, are attributable to OpFlex and what reductions are attributable to the operational changes the facility was able to make for its specific turbines. Moreover, the facility has operated only for a relatively limited period of time with these enhancements, and so it is difficult to determine from the limited data available so far what improvements can reliably be achieved throughout the life of the facility."

Included as attachment 2 to these comments are three more Hearing Board Variance 4073; Quarterly Reports that were acquired through a public records request. By utilizing earlier ammonia injection and utilizing the OP flex system, the Russell City Power Projects start up emissions can be reduced drastically. It must be required as BACT since it has been proved in operation for over a year, and it will reduce the project's potential to violate the new California NO2 standard and eliminate the deficient daily emission reduction credits needed for the facility, as explained below.

### Emissions Reduction Credit shortfall

Table B-12 on page 147 of the statement of basis lists the maximum daily NO<sub>2</sub> emissions of 1,553 pounds per day. The permit proposes to only offset 134.6 tons of NO<sub>2</sub> per year or 737.54 pounds per day. The ERC's will not provide adequate mitigation for the potential 1533 pounds per day of NO<sub>2</sub> emitted by the project. The surrendered ERC's only mitigate 49% of the projects daily NO<sub>2</sub> emissions due to the excessive start up and shut down emissions. This could leave as much as 49% of the projects daily NO<sub>2</sub> emissions unmitigated. On days when violations of the ozone standards occur, the project's emissions would contribute to violations of the standard.

### Previously Used ERC's

The ERC's listed for the Russell City Energy Center have already been pledged to another Calpine Project in the BAAQMD. Certificate Number 687 for 43.8 tons of POC has already been pledged to offset emission increases for the East Altamont Energy Center. Certificate Number 602 for 41 tons of POC was also allocated to the East Altamont Energy Center. Due to the fact that the EAEC was sited on the border of the BAAQMD and the SJVUAPCD these ERC's were subject to extensive scrutiny by the CEC, the SJVUAPCD, and the public, during the siting of the EAEC. The transfer of ERC's should be subject to public notice and comment.

### Greenhouse Gas Emissions

The BAAQMD now requires a fee for greenhouse gas emissions. (<http://www.baaqmd.gov/pln/climatechange.htm#GHGFee>) The license should acknowledge the green house gas fees to be paid to the BAAQMD. Greenhouse gas emissions are evaluated based on the natural gas consumption of the project. The ammonia slip will also contribute to greenhouse gas emissions from the project and should be included in the evaluation. The District should do a true BACT analysis on greenhouse gases and not just adopt the California Public Utilities Commission (CPUC) adopted Emissions Performance Standard for the state's Investor Owned Utilities of 1,100 pounds (or 0.5 metric tons) CO<sub>2</sub> per megawatt-hour (MW-hr).

### Environmental Justice

The District states on page 65 of the statement of basis, "Another important consideration that the Air District evaluated is environmental justice. The Air District is committed to implementing its permit programs in a manner that is fair and equitable to all Bay Area residents regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location in order to protect against the health effects of air pollution. The Air District has worked to fulfill this commitment in the current permitting action."

Other than issue the public notice in Spanish on its website for comments on this permit, the district has done nothing different from any other permitting action to evaluate the specific environmental justice impacts of this project on the minority community. The District believes by conducting a health risk assessment, which it does for every project or modeling criteria pollutant impacts, it has met its environmental justice obligations in the permitting process. The District's reasoning is that since the modeling they performed meets their requirements for the general population, the minority community can't possibly be harmed by the projects emissions. The very purpose of the environmental justice evaluation is to identify the minority population's health vulnerabilities and existing pollution and hazardous materials sources and identify how the project affects the minority community, not the general population. The District evaluation falls short of even the basic environmental justice analysis.

Poor health and premature death are by no means randomly distributed in Alameda County. Low-income communities and communities of color suffer from substantially worse health outcomes and die earlier. Many studies note that these differences are not adequately explained by genetics, access to health care or risk behaviors, but instead are to a large extent, the result of adverse environmental conditions. The RCEC is sited in a geographic area already disproportionately burdened by illness and death. The presence of a disproportionate concentration of persons with asthma, chronic lung disease, congestive heart failure, and other chronic conditions that are exacerbated by air pollution must factor into the decision of where to site this power plant; especially because these populations affected by the power plant are predominately low-income communities of color. The minorities are not distributed throughout the population randomly, but instead are concentrated disproportionately in proximity to the proposed Hayward site.

In the two zip codes near the site 94544 and 94545 residents have a high mortality rate and on average they live five years less than the county-wide expectancy rate. Death rates from air pollution-associated diseases such as coronary heart disease, chronic lower respiratory disease, are substantially and statistically significantly higher than those for the County, representing an ongoing, excess burden of mortality. The rate of death from chronic lower respiratory diseases was 43 percent higher and the rate from coronary heart disease was 16 percent higher than the County average. Hospitalizations due to air pollution-associated diseases are substantially higher in the two zip codes close to the proposed site. From 2003 to 2005 the hospitalization rates for coronary heart disease, chronic obstructive pulmonary disease, congestive heart failure and asthma in the two zip codes nearest the proposed site, 94544 and 94545, was statistically significantly higher than Alameda County rates which means they do not occur by chance. Specifically, hospitalization rates due to coronary heart disease was 60 percent higher; chronic obstructive pulmonary disease, 20 percent higher; congestive heart failure, 35 percent higher; and asthma hospitalization rates 14 percent higher than the County rate. The fact that rates of these illnesses are significantly higher in the proposed plant area

than in the rest of the county suggests a level of vulnerability in this population that is higher than the rest of the county.

A proper Environmental Justice process begins with the demographic screening analysis which the CEC staff has performed and concluded that the majority of the community surrounding the RCEC is indeed minority. At that point in the analysis the public participation process should have been used to define and evaluate environmental justice concerns. Community leaders and community stakeholders should have been consulted to identify their concerns. The District should have consulted with the county health agencies to identify existing health concerns. Then the District should have examined the synergistic effects of existing pollution that already exists in the community. In this community there are multiple environmental stresses. There is a railroad which passes through the area, there are truck terminals and other heavy industries and a sewage treatment plant in the affected community. The District has not identified and examined the existing local sources of criteria pollutants and toxic emissions and evaluated their impacts in conjunction with the emissions from the RCEC.

Environmental Justice Guidelines emphasize the importance of reaching out to the community and involving them in the development of the mitigation measures and alternatives. A good example of how this process is done is the community outreach that was performed by the CCSF in the SFERP proceeding. In that proceeding over 20 community meetings were held and the community was engaged in deciding appropriate mitigation measures and alternatives. Public advocacy groups were consulted and included in the decision making. Air Quality Monitoring stations were set up in the community to examine existing air quality in the affected community.

([http://www.energy.ca.gov/sitin~cases/sanfrancisco/documents/applicant/data response 1A12004-07-08 DATA RESPONSE-PDF](http://www.energy.ca.gov/sitin~cases/sanfrancisco/documents/applicant/data%20response%201A12004-07-08%20DATA%20RESPONSE-PDF))

The environmental justice argument against the RCEC is made even stronger by the fact that the risk assessment model may underestimate the health risk of substances that interact synergistically, as pointed out in the risk assessment guidelines. The potential for multiple and varied air and non-airborne pollutants to act synergistically, rather than additively as assumed by the risk assessment model, requires an analysis of the overall toxic burden associated with this Hayward location. Low-income, minority populations have historically been exposed to a much higher burden of environmental toxicity. The District's Environmental Justice Analysis does not accept the existing ordnance disease nor does it adequately measure the health risks associated with potential, synergistic interactions among the substances, profoundly important aspects of environmental justice. Siting the Russell City Power plant in Hayward will disproportionately impact the geographic area, home to a comparatively high, non-white population that is already burdened by existing morbidity and mortality from diseases associated with air pollution or other existing environmental factors. It is that burden that must be analyzed to truly determine if the minority population near the proposed power plant will be affected. The district is required to address environmental justice issues in the PSD process.

**Pack, Heidi K.**

---

**From:** Hunt, Kelly [KHunt@Semprautilities.com]  
**Sent:** Thursday, April 12, 2007 3:06 PM  
**To:** Kellogg, Kellie; Pack, Heidi K.; Moore, Steve ; Miller, Taylor; Baerman, Daniel; Waller, Fred A.; Hardman, Charles; Blackburn, Suzanne; Annicchiarico, John; Haury, Evariste  
**Subject:** Updated: Palomar Energy Center Variance Report - 4073 1st Quarter 2007  
**Attachments:** Hearing Board Quarterly Report for 1st Quarter 2007.pdf

Ms. Kellogg,

Please find attached an updated copy of the 1st quarter report to the Hearing Board for 2007. This report ~~supersedes the submission made on 4/11/07~~ and is intended for the Hearing Board meeting to be held on April 26, 2007. I apologize for any inconvenience this may have caused you. This report covers the items required by Condition F.3. of the Board's April 27, 2006 order for Variance 4073. In addition, this report covers Enforcement Condition 1 concerning compliance with required increment of progress.

If you have any questions, please feel free to call me at 760-432-2504.

**Kelly Hunt**

Generation Compliance Manager  
San Diego Gas & Electric  
2300 Harveson Place, SD1473  
Escondido, CA 92029  
760-432-2504 (Office)  
760-432-2510 (Fax)  
[khunt@semprautilities.com](mailto:khunt@semprautilities.com)

4/25/2007



Weyman Lee, P.E., Senior Air Quality Engineer  
Bay Area Air Quality Management District  
939 Ellis Street, San Francisco, CA, 94109  
(415) 749-4796 [weyman@baaqmd.gov](mailto:weyman@baaqmd.gov).

Comments of Robert Sarvey on the Draft PSD permit for the Russell City Energy  
Center Application Number 15487

Dear Mr. Lee,

Thank you for the opportunity to comment on the Draft PSD permit for the Russell City Energy Center Application Number 15487. The Statement of Basis is very confusing since the amended FDOC was issued on June 19, 2007 and contradicts many of the values that are presented in Amended PSD permit which was circulated on December 8, 2008 almost 18 months later. The District should reopen the FDOC to reflect the changes that are presented in the Amended PSD Permit. These permits are extremely technical and difficult for the public to understand and when different values are presented for the same impacts members of the public lose confidence in the District and the EPA process. Furthermore since the amended FDOC was issued several air pollution laws including the California NO<sub>2</sub> standard have changed. Compliance with these new laws may be demonstrated in the Amended PSD permit but not reflected in the Amended FDOC.

California NO<sub>2</sub> Standard

Page 159 of the air quality impact analysis demonstrates that the project violates the California 1 hour Ambient Air Quality Standard for NO<sub>2</sub>. The California Ambient Air Quality standard for NO<sub>2</sub> is 338 ug/m<sup>3</sup>, while the projects impact combined with background is 370 ug/m<sup>3</sup> (as shown in table 6 on page 159). The California Air Resource Board has promulgated new standards and established that deleterious health effects occur when NO<sub>2</sub> concentrations exceed 338 ug/m<sup>3</sup>. (<http://www.arb.ca.gov/research/aaqs/no2-rs/no2-doc.htm>) Page 92 states that the project does not violate the state 1 hour NO<sub>2</sub> standard because the projects maximum impacts are 130 ug/m<sup>3</sup> and background is 130 ug/m<sup>3</sup>. The statement is unsupported by any analysis in the statement of basis. The statement of basis should provide an analysis demonstrating compliance with the NO<sub>2</sub> standard since the air quality impact analysis contradicts the values presented on page 92. The new NO<sub>2</sub> analysis and amended FDOC should be recirculated to the public for comment.

Ammonia Transportation

Page 26 of the permit states, "A second potential environmental impact that may result from the use of SCR involves ammonia transportation and storage. The proposed facility will utilize aqueous ammonia in a 29.4% (by weight) solution for SCR ammonia injection, which will be transported to the facility and stored onsite in tanks. The transportation and storage of ammonia presents a risk of an ammonia release in the event of a major accident. This risk will be addressed in a number of ways under safety regulations and sound industry safety codes and standards, including the implementation of a Risk Management Program to prevent and respond to accidental releases."

The project, if allowed to use SCR, can eliminate the impact from transportation accidents by utilizing a technology called NOxOUT ULTRA®. There are dozens of systems in service, one in Southern California at UC Irvine. Most of the UC campuses have decided not to risk bringing ammonia tankers through campus or having to offload or store ammonia. NOxOUT ULTRA is being specified for new units at UCSD, University of Texas and Harvard. The NOxOUT ULTRA system requires a tank for the urea. The urea is usually in a 50 to 32 % solution. Urea has no vapor pressure and no smell. If it spills, the evaporated water will leave behind a pile of crystal salts. There are no hazards to labeling or training required for the operator and absolutely no risk to adjacent facilities or neighbors. Like aqueous ammonia, NOxOUT ULTRA needs controls to manage the input from the power plant indicating how much reagent the SCR requires. Like aqueous ammonia, the system requires an air blower and heater to heat the air. The heated air goes to a decomposition chamber instead of a vaporizer. In the decomposition chamber, the urea solution is added. The water in the urea solution is vaporized and the additional heat required will then decompose the urea to ammonia. The gas/carrier air is then swept to the AIG and to the SCR. If the urea pump is stopped and air is left in service, the chamber is swept clear of ammonia in less than seven seconds. So in an emergency, there is very little, if any, ammonia exposure. Other than the seven seconds between the chamber and the AIG, the only exposure is the harmless urea. Since the ammonia will be transported through an environmental Justice community, all precautions should be taken since the community already has a high number of toxic and hazardous materials stored and transported through it. Attachment 1 contains a brochure on the NOxOUT ULTRA system.

### Secondary Particulate Formation

Page 26 of the permits BACT analysis states, "The Air District also evaluated the potential for ammonia slip emissions to form secondary particulate matter such as ammonium nitrate. Because of the complex nature of the chemical reactions and dynamics involved in the formation of secondary particulates, it is difficult to estimate the amount of secondary particulate matter that will be formed from the emission of a given amount of ammonia. Moreover, the Air District has found that the formation of ammonium nitrate in the Bay Area air basin appears to be constrained by the amount of nitric acid in the atmosphere and not driven by the amount of ammonia in the atmosphere, a condition known as being "nitric

limited". Where an area is nitric acid limited, emissions of additional ammonia will not contribute to secondary particulate matter formation because there is not enough nitric acid for it to react with. Therefore, ammonia emissions from the SCR system are not expected to contribute significantly to the formation of secondary particulate matter. Any potential for secondary particulate matter formation is at most speculative, and would not provide a reason to eliminate SCR as a control alternative."

The District has based its conclusion that the project area is nitric limited on a BAAQMD Office Memorandum from David Fairly to Tom Perardi and Rob DeMandel (footnote 21) , "A First Look at NOx/Ammonium Nitrate Tradeoffs, dated September 8, 1997." The District memorandum outlines two objectives. One, whether the Bay Area is ammonia limited, and two, to what extent reducing NOx emissions would reduce ammonium nitrate. Among the findings presented in this memorandum, the District staff believes that " San Jose and Livermore are not ammonia limited' during wintertime high particulate matter conditions; rather, these two areas are nitric acid limited. Other findings stated in the memorandum include recognition that the District analyses do not provide solid "footing to do planning or to provide guidelines to industry for such tradeoffs [between NOx and ammonium nitrate]." Thus, the District memorandum is very specific to say that San Jose and Livermore, not the entire Bay Area air basin or the project location, are nitric acid limited, and that no guidelines have been formed to address the ammonia induced PM10/PM2.5 problem. This project is located in the Hayward area of Alameda County, which is outside of the area where the District has made the determination; therefore, the District's contention that the increase in ammonia emissions from this facility would not cause any increase in PM10/PM2.5 emission impacts is not supported by the District memorandum. The District needs a site specific study to make such broad conclusions and an analysis needs to be conducted not only to evaluate the use of SCR, but also to assess environmental impacts of secondary particulate and its effect on the deterioration of air quality in the BAAQMD. The project's PM 2.5 impacts may be much larger than modeled and subject to additional analysis.

The District needs to conduct a BACT analysis on the ammonia emission slip limit. Several Projects including the ANP Blackstone Project have 2ppm ammonia slip limits, which are designed to prevent additional particulate matter formation and limit the transportation of ammonia through the surrounding communities.

## CO BACT

The statement of basis concludes that a CO limit of 4ppm over 3 hours is BACT. (Page 32) This conclusion was determined by analyzing emissions data from the Metcalf Energy Center. The Metcalf Energy Center does not utilize an oxidation catalyst for CO emissions, so to base the permit decision on a project

that contains no CO abatement device when the proposed Russell City Project will have an oxidation catalyst is an inappropriate comparison. The USEPA, in a June 18<sup>th</sup> 2001 letter to the San Luis Obispo County Air Pollution Control District has commented that the BACT limit for gas turbines should be set at 2 ppm for NOx on an hourly basis while the NH3 slip maintained at 5 ppm. In addition, the EPA stated that BACT for CO should be set at 2 ppm on a 3-hour rolling average.

Several Projects have achieved a lower CO emissions rates in conjunction with a 2ppm NOx limit. One is the Salt River Project in Arizona, which meets a 2ppm NOx limit and a 2ppm CO limit that has been verified by source testing. (<http://cfpub1.epa.gov/rblc/cfm/ProcDetl.cfm?facnum=25662&procnum=102130>) The Las Vegas Cogeneration facility has a 2ppm NOx limit and a 2ppm CO limit. (<http://cfpub1.epa.gov/rblc/cfm/ProcDetl.cfm?facnum=26002&Procnum=103714>) Based on available information, the district should choose a 2ppm CO limit for this project to comply with BACT.

### Start up and Shutdown Emission Limits

The district reports on page 41 of the permit that the Palomar Project has reduced NOx start up emissions by introducing ammonia earlier in the start up cycle and using the OP-Flex system. "By taking these steps, the facility was able to optimize its operating procedures and bring down its startup emissions. The facility has reported encouraging results from the first few months of operating with these new techniques."

The district then eliminates the technology because only one quarterly report from the quarterly variance reports to the SDPCD is available on the success of the new technology. "It is not possible, however, to determine based on this limited data what reductions, if any, are attributable to OpFlex and what reductions are attributable to the operational changes the facility was able to make for its specific turbines. Moreover, the facility has operated only for a relatively limited period of time with these enhancements, and so it is difficult to determine from the limited data available so far what improvements can reliably be achieved throughout the life of the facility."

Included as attachment 2 to these comments are three more Hearing Board Variance 4073; Quarterly Reports that were acquired through a public records request. By utilizing earlier ammonia injection and utilizing the OP flex system, the Russell City Power Projects start up emissions can be reduced drastically. It must be required as BACT since it has been proved in operation for over a year, and it will reduce the project's potential to violate the new California NO2 standard and eliminate the deficient daily emission reduction credits needed for the facility, as explained below.

### Emissions Reduction Credit shortfall

Table B-12 on page 147 of the statement of basis lists the maximum daily NO<sub>2</sub> emissions of 1,553 pounds per day. The permit proposes to only offset 134.6 tons of NO<sub>2</sub> per year or 737.54 pounds per day. The ERC's will not provide adequate mitigation for the potential 1533 pounds per day of NO<sub>2</sub> emitted by the project. The surrendered ERC's only mitigate 49% of the projects daily NO<sub>2</sub> emissions due to the excessive start up and shut down emissions. This could leave as much as 49% of the projects daily NO<sub>2</sub> emissions unmitigated. On days when violations of the ozone standards occur, the project's emissions would contribute to violations of the standard.

### Previously Used ERC's

The ERC's listed for the Russell City Energy Center have already been pledged to another Calpine Project in the BAAQMD. Certificate Number 687 for 43.8 tons of POC has already been pledged to offset emission increases for the East Altamont Energy Center. Certificate Number 602 for 41 tons of POC was also allocated to the East Altamont Energy Center. Due to the fact that the EAEC was sited on the border of the BAAQMD and the SJVUAPCD these ERC's were subject to extensive scrutiny by the CEC, the SJVUAPCD, and the public, during the siting of the EAEC. The transfer of ERC's should be subject to public notice and comment.

### Greenhouse Gas Emissions

The BAAQMD now requires a fee for greenhouse gas emissions. (<http://www.baaqmd.gov/pln/climatechange.htm#GHGFee>) The license should acknowledge the green house gas fees to be paid to the BAAQMD. Greenhouse gas emissions are evaluated based on the natural gas consumption of the project. The ammonia slip will also contribute to greenhouse gas emissions from the project and should be included in the evaluation. The District should do a true BACT analysis on greenhouse gases and not just adopt the California Public Utilities Commission (CPUC) adopted Emissions Performance Standard for the state's Investor Owned Utilities of 1,100 pounds (or 0.5 metric tons) CO<sub>2</sub> per megawatt-hour (MW-hr).

### Environmental Justice

The District states on page 65 of the statement of basis, "Another important consideration that the Air District evaluated is environmental justice. The Air District is committed to implementing its permit programs in a manner that is fair and equitable to all Bay Area residents regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location in order to protect against the health effects of air pollution. The Air District has worked to fulfill this commitment in the current permitting action."

Other than issue the public notice in Spanish on its website for comments on this permit, the district has done nothing different from any other permitting action to evaluate the specific environmental justice impacts of this project on the minority community. The District believes by conducting a health risk assessment, which it does for every project or modeling criteria pollutant impacts, it has met its environmental justice obligations in the permitting process. The District's reasoning is that since the modeling they performed meets their requirements for the general population, the minority community can't possibly be harmed by the projects emissions. The very purpose of the environmental justice evaluation is to identify the minority population's health vulnerabilities and existing pollution and hazardous materials sources and identify how the project affects the minority community, not the general population. The District evaluation falls short of even the basic environmental justice analysis.

Poor health and premature death are by no means randomly distributed in Alameda County. Low-income communities and communities of color suffer from substantially worse health outcomes and die earlier. Many studies note that these differences are not adequately explained by genetics, access to health care or risk behaviors, but instead are to a large extent, the result of adverse environmental conditions. The RCEC is sited in a geographic area already disproportionately burdened by illness and death. The presence of a disproportionate concentration of persons with asthma, chronic lung disease, congestive heart failure, and other chronic conditions that are exacerbated by air pollution must factor into the decision of where to site this power plant; especially because these populations affected by the power plant are predominately low-income communities of color. The minorities are not distributed throughout the population randomly, but instead are concentrated disproportionately in proximity to the proposed Hayward site.

In the two zip codes near the site 94544 and 94545 residents have a high mortality rate and on average they live five years less than the county-wide expectancy rate. Death rates from air pollution-associated diseases such as coronary heart disease, chronic lower respiratory disease, are substantially and statistically significantly higher than those for the County, representing an ongoing, excess burden of mortality. The rate of death from chronic lower respiratory diseases was 43 percent higher and the rate from coronary heart disease was 16 percent higher than the County average. Hospitalizations due to air pollution-associated diseases are substantially higher in the two zip codes close to the proposed site. From 2003 to 2005 the hospitalization rates for coronary heart disease, chronic obstructive pulmonary disease, congestive heart failure and asthma in the two zip codes nearest the proposed site, 94544 and 94545, was statistically significantly higher than Alameda County rates which means they do not occur by chance. Specifically, hospitalization rates due to coronary heart disease was 60 percent higher; chronic obstructive pulmonary disease, 20 percent higher; congestive heart failure, 35 percent higher; and asthma hospitalization rates 14 percent higher than the County rate. The fact that rates of these illnesses are significantly higher in the proposed plant area

than in the rest of the county suggests a level of vulnerability in this population that is higher than the rest of the county.

A proper Environmental Justice process begins with the demographic screening analysis which the CEC staff has performed and concluded that the majority of the community surrounding the RCEC is indeed minority. At that point in the analysis the public participation process should have been used to define and evaluate environmental justice concerns. Community leaders and community stakeholders should have been consulted to identify their concerns. The District should have consulted with the county health agencies to identify existing health concerns. Then the District should have examined the synergistic effects of existing pollution that already exists in the community. In this community there are multiple environmental stresses. There is a railroad which passes through the area, there are truck terminals and other heavy industries and a sewage treatment plant in the affected community. The District has not identified and examined the existing local sources of criteria pollutants and toxic emissions and evaluated their impacts in conjunction with the emissions from the RCEC.

Environmental Justice Guidelines emphasize the importance of reaching out to the community and involving them in the development of the mitigation measures and alternatives. A good example of how this process is done is the community outreach that was performed by the CCSF in the SFERP proceeding. In that proceeding over 20 community meetings were held and the community was engaged in deciding appropriate mitigation measures and alternatives. Public advocacy groups were consulted and included in the decision making. Air Quality Monitoring stations were set up in the community to examine existing air quality in the affected community.

([http://www.energy.ca.gov/sitin~cases/sanfrancisco/documents/applicant/data response 1A12004-07-08 DATA RESPONSE-PDF](http://www.energy.ca.gov/sitin~cases/sanfrancisco/documents/applicant/data%20response%201A12004-07-08%20DATA%20RESPONSE-PDF))

The environmental justice argument against the RCEC is made even stronger by the fact that the risk assessment model may underestimate the health risk of substances that interact synergistically, as pointed out in the risk assessment guidelines. The potential for multiple and varied air and non-airborne pollutants to act synergistically, rather than additively as assumed by the risk assessment model, requires an analysis of the overall toxic burden associated with this Hayward location. Low-income, minority populations have historically been exposed to a much higher burden of environmental toxicity. The District's Environmental Justice Analysis does not accept the existing disproportionate disease nor does it adequately measure the health risks associated with potential, synergistic interactions among the substances, profoundly important aspects of environmental justice. Siting the Russell City Power plant in Hayward will disproportionately impact the geographic area, home to a comparatively high, non-white population that is already burdened by existing morbidity and mortality from diseases associated with air pollution or other existing environmental factors. It is that burden that must be analyzed to truly determine if the minority population near the proposed power plant will be affected. The district is required to address environmental justice issues in the PSD process.

[http://www.epa.gov/compliance/resources/policies/ej/ej\\_permitting\\_authorities\\_memo\\_120100.pdf](http://www.epa.gov/compliance/resources/policies/ej/ej_permitting_authorities_memo_120100.pdf)

The 1998 EPA guidelines require Agencies to consider a wide range of demographic, geographic, economic, human health and risk factors. One of the three most important factors identified in the 1998 EPA guidelines is “whether communities currently suffer or have historically suffered from environmental health risks and hazards.” The 1998 EPA Guidelines require the agencies conducting an Environmental Justice Analysis to define the sensitive receptor analysis to the actual unique circumstances affecting the minority community not a generic definition of sensitive receptor that was utilized by the District and the CEC.

### **Soils and Vegetation Analysis Nitrogen Deposition**


Nitrogen deposition consists of the input of reactive nitrogen species from the atmosphere to the biosphere. Pollutants that contribute to nitrogen deposition derive mainly from nitrogen oxides and ammonia emissions, which the RCEC would emit during normal operation. Emissions of NO<sub>x</sub> and ammonia contribute to nitric acid deposition that occurs via precipitation and fog and in dry deposition as well. Acute exposures to ammonia can adversely affect plant growth and productivity, resistance to drought and frost, responses to insect pests and pathogens, mycorrhizal and other beneficial root associations, and inter-specific competition and biodiversity in sensitive plant communities. Of particular concern for the RCEC project is the effect on serpentine soil plant communities, which are known to be particularly sensitive to nitrogen deposition. Serpentine soils in the San Francisco Bay Area support native grassland plant communities that can provide habitat for rare and endemic species. Nonnative annual grasses have invaded most grassland communities in California, but highly specialized plant species that are adapted to nutrient-poor serpentinitic soils can thrive in soils that are deficient in nitrogen, potassium, phosphorus, and other nutrients due to a competitive advantage over the faster growing non-native annual species. The competitive advantage of these specialized plant species can be lost when nitrogen deposition from air pollution fertilizes serpentine plant communities and nitrogen ceases to be a limiting nutrient for plant growth. Increased nitrogen levels often allow non-native annual grasses to out-compete the native species.

The nearest serpentine plant community to the project area is Fairmont Ridge in Lake Chabot Regional Park, approximately four miles northeast of the RCEC. Fairmont Ridge is located in the East Bay Hills adjacent to Lake Chabot. The California Native Grasslands Association identifies this area as a Purple Needlegrass Grassland community, and is noted as an area of serpentine soil in the USFWS’s 1998 Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area.

The BAAQMD and the CEC have failed to analyze the projects nitrogen deposition impacts on serpentine soil plant communities in the Bay Area.





A  Semptra Energy™ company

Daniel Baerman  
Director of Electric Generation  
2300 Harveson Place  
Escondido, CA 92029  
Tel: 760-432-2501  
dbaerman@semprautilities.com

April 11, 2007

Ms. Catherine Santos  
Clerk of Hearing Board for the  
San Diego County Air Pollution Control District  
San Diego County Administration Center, Room 402  
1600 Pacific Highway  
San Diego, CA 92123

Re: Hearing Board Variance 4073; Quarterly Report

Dear Ms. Santos and Members of the Board:

Set forth below is SDG&E's 2007 first quarter report to the Hearing Board. This report will cover the items required by Condition F. 3. of the Board's April 27, 2006 order for Variance 4073. In addition, this report will cover Enforcement Condition 1 concerning compliance with required increments of progress. Information is provided first concerning the increments of progress to place the balance of the information into context.

1. Increments of Progress [Order, Enforcement Condition 1]

The increments of progress table attached to the Board's order is included with this letter as Attachment 1. The primary events are as follows:

SDG&E personnel and District staff have met several times, shared data, and continued an ongoing dialogue concerning the permit amendment application and preparation of an amendment to rule 69.3.1. SDG&E timely filed the permit application on May 31, 2006. A rule amendment concerning Rule 69.3.1 is still under consideration by District staff and SDG&E and District staff met on February 16, 2007 to discuss the matter further.

Petitioner has timely satisfied all increments of progress within Petitioner's control. The increments of progress table also includes District staff and other third-party actions concerning rule development and permit processing. These actions were included in the increments of progress solely to describe the third-party actions necessary to resolve the regulatory issues prompting the variance. SDG&E will defer to District staff to provide an update to the Board on District's processing of SDG&E's permit application submittal, rule development and a possible revised schedule.

2. Engineering or operational alternatives [Order, Condition F.3 (1)]

Information concerning engineering or operational alternatives considered by Petitioner to ensure maximum control of emissions as recommended by District staff was included in the application for amended permit conditions submitted on May 31, 2006. SDG&E included information concerning reductions related to early ammonia injection and installation of a new software program being developed by General Electric for turbines such as those operating at Palomar ("OpFlex"). SDG&E also included information concerning seven other potential alternatives as requested by District staff.

On December 20, 2006, at District staff's request, Petitioner provided additional information regarding engineering and operational alternatives, including additional evaluation of early ammonia injection and economic impacts of several potential alternatives.

In addition, OpFlex, a General Electric turbine control system software was installed in mid-October, 2006. The turning process allows combustion turbines to minimize emissions between 20 and 60% load, by optimizing the fuel flow to the four gas stages in each combustion can. This precisely controls the flame for optimum combustion to minimize emissions. There were no equipment or hardware changes.

3. NOx Emissions Data [Order, Condition F.3 (2)]

Information concerning NOx emissions from the facility during the period of the 1 year variance to present is included in attachment 2. Emissions were within applicable permit limits.

4. Turbine Start Up Activity and NOx Emissions [Order, Condition F.3 (3)]

Turbine start up activity and NOx emissions data associated with turbine start up is included in Attachment 2. Emissions were within limits established in Variance 4073. Emissions were reduced to the maximum extent feasible primarily by starting only one turbine at a time, by early injection of ammonia, by the installation and utilization of OpFlex and by completing start up as quickly as feasible. SDG&E continues to collect information on each start and adjust its system and start up procedures to minimize the duration of start up and associated emissions.

5. Other Data

A summary how the plant has reduced NOX emissions by various controls that it has established since the inception of the variance is included as attachment 3.

SDG&E appreciates the ongoing cooperation of both the District staff and the Hearing Board concerning development of variance conditions, permit conditions and rule requirements. SDG&E is committed to managing the Palomar Energy Center in a manner that complies with all applicable air quality regulatory requirements.

If you have any questions on the above subject matter, please don't hesitate to reach me at (760) 732-2501.

Sincerely yours,



Dan Baerman

Cc: Heidi Gabriel-Pack  
Steven Moore  
John Annicchiarico  
Evariste Haury  
Jason LaBlond  
Suzanne Blackburn  
File# 3.1.1.4.2.2

**SAN DIEGO AIR POLLUTION CONTROL DISTRICT HEARING BOARD**

**Palomar Energy Center**

**PROPOSED INCREMENTS OF PROGRESS**

(As of 4/11/07)

	<u>MILESTONE</u>		<u>DATE</u>	
	Description	Permit Modification	Rule Change	Variance(s)
1	Variance 4068 hearing for 90-day issued			2/9/06
2	Emergency Variance 4069 for condition 21 issued to enable early ammonia injection.			2/23/06
3	<i>Palomar submits request for Rule Change to APCD</i>		3/6/06	
4	<i>APCD requests more data for rule change</i>		3/14/06	
5	<i>Mtg. with APCD concerning Data Requests</i>		3/30/06	
6	<i>Additional mtg. with APCD (Steve Moore) concerning Data Requests</i>		4/4/06	
7	<i>SDG&amp;E submits requested data to APCD (Moore)</i>		4/7/06	
8	SDG&E submits summary of requested Permit Modification topics to APCD (covering matters of concern to staff beyond start up)	4/7/06		
9	Mtg. with APCD – QA/QC Plan Addendum (relating to some permit amendment topics)	4/11/06		
10	Request for Permit Modification Fee Estimate submitted to APCD by SDG&E	4/11/06		
11	<i>APCD (Moore) submits new data request to SDG&amp;E (replaces 3/30 &amp; 4/4 requests)</i>		4/14/06	
12	<i>Data submitted to APCD (Moore)</i>		4/25/06	
13	Variance 4073 Hearing			4/27/06
14	<i>Mtg. scheduled with APCD and CEC (in response to 4/7 letter from SDG&amp;E) to discuss permit and rule amendment issues</i>	5/3/06 (COMPLETED 5/3/06)	5/3/06 (COMPLETED 5/3/06)	
15	Proposed Permit Pre-application Mtg. with APCD and CEC –	5/19/06 (COMPLETED		

Proposed Increments of Progress

October 11, 2006

Page 1 of 3

			5/9 & 5/23/06)		
16	Proposed Permit Application Submittal		5/31/06 (COMPLETED 5/31/06)		
17	Quarterly Progress Update (April – June) to Hearing Board				July 27, 2006 (Completed)
18	APCD Permit Application Completeness Review	Respond to APCD data requests while in process	June – July 2006 (Completed)		
19	<i>APCD drafts rule change</i>			<i>April – June 2006</i>	
20	Quarterly Progress Update (July - September) to Hearing Board				October 27, 2006 (Completed)
21	<i>APCD holds public workshop on rule amendment</i>			<i>July 2006</i>	
22	<i>APCD publishes draft rule for public comment</i>	<i>30-day public notice required</i>		<i>August 2006</i>	
23	<i>APCD prepares final rule adoption documents</i>	<i>Final rule and “staff report” are prepared for County Board of Supervisors review and adoption</i>		<i>September 2006</i>	
24	<i>Air Quality Advisory Committee</i>	<i>Appointed committee reviews and advises the Board</i>		<i>October 2006</i>	
25	<i>Board adoption of rule</i>	<i>Upon adoption, SDAPCD considers rule to be the version for compliance</i>		<i>October 2006</i>	
26	Proposed Permit Modification (ATC/PDOC) published for public comment	30-day public comment period	October 2006		
27	Final ATC/FDOC revisions	Final language that incorporates public comments is developed	November 2006		
28	Final ATC/FDOC Issued		November 2006		

29	SDG&E petitions CEC for companion amendment of Conditions of Certification (CoC)		December 2006		
30	Quarterly Progress Update (October - December) to Hearing Board				Completed January 25, 2007
31	CEC issues amendment of CoC		March 2007		
32	Quarterly Progress Update (January - March) to Hearing Board				April 26, 2007

Attachment 2

CT1 YTD Summary			CT2 YTD Summary		
	Tons	#		Tons	#
2Q06	9.23	18,460	2Q06	9.28	18,560
3Q06	8.61	17,220	3Q06	8.95	17,900
4Q06	8.63	17,260	4Q06	9.70	19,400
1Q07	8.88	17,760	1Q07	8.73	17,460
Total	35.35	70,700	Total	36.66	73,320
Note: Total NOx includes startup emissions.			Note: Total NOx includes startup emissions.		
CT1 Startup YTD Summary			CT2 Startup YTD Summary		
	Tons	#		Tons	#
2Q06	3.19	6,380	2Q06	3.64	7,280
3Q06	1.38	2,760	3Q06	1.10	2,200
4Q06	0.52	1,040	4Q06	0.52	1,040
1Q07	0.38	760	1Q07	0.43	860
Total	5.47	10,180	Total	5.69	10,520

- <sup>1</sup> Data gathered from CEMS Startup/Shutdown Incident Reports
- <sup>2</sup> Data gathered from CEMS Monthly Aggregate Reports  
Opsflex installed on CTG1 on Oct 13, 2006.  
Opsflex installed on CTG2 on Oct 12, 2006

## **OPFLEX AND EARLY AMMONIA INJECTION EFFECTS ON STARTUP EMISSIONS PALOMAR ENERGY CENTER**

### **Subject:**

This Evaluation assesses the effects of two major Palomar Energy Center efforts to reduce startup emissions.

### **Discussion:**

Early Ammonia Injection is a SDG&E project to minimize NOx emissions during the startup process by reducing and optimizing the temperature at which ammonia is injected to the SCR's, thereby reducing NOx emissions during the startup process. The original control system allowed ammonia injection when the temperature at the SCR increased to 550 deg F during the plant startup process. This temperature was chosen to provide a safety margin above the required SCR operating temperature. If ammonia is injected at too low of a temperature, the SCR is not effective, there can be elevated ammonia slip, and there is potential for poisoning of the SCR catalyst.

Palomar personnel have analyzed the temperature requirements for the SCR and evaluated the risks associated with low temperature ammonia injection, along with the benefits of emissions reductions obtained by lowering the injection temperature. The evaluation indicated that a significant lowering of the temperature was possible, as long as close attention was paid to the environmental conditions at all locations surrounding the catalyst. The temperature set point for ammonia injection was lowered in two steps as a prudent sequence to confirm the benefits and minimize risk. The first setpoint was lowered during the summer 2006. The setpoint was lowered again to 485 deg F in October 2006.

OpFlex is a General Electric proprietary software improvement that manages the fuel splits and fuel temperature control to minimize NOx and CO emissions at part load, and significantly reduces NOx during the startup process. The turbines can now be operated down to approximately 45% load and remain in compliance with all operating emissions limitations. The NOx produced during the startup process is also minimized approximately 25% to 45%, although not to the point of compliance with the 2.0 ppmvd@15% O2 permit limit.

OpFlex was installed in mid-October, 2006. Subsequent to the installation, Palomar Operations has studied the emissions enhancements OpFlex provides, and has made adjustments to the startup process to take advantage of these enhancements to reduce startup emissions. There have been no extended startups since the installation of OpFlex, so the extended startup procedure has not yet been optimized.

### **Results:**

OpFlex and the final adjustment to the enhanced ammonia injection setpoint were implemented at approximately the same time in mid October, so the emissions improvements attributable to

each are somewhat difficult to assign. However, this analysis endeavors to separate the projects and summarize the success of each.

With the SCR at normal operating temperature, ammonia injection can lower startup-related NOx concentrations by approximately 10.0 ppm. At base load, this equates to approximately 45 lbs/hr reduction of NOx mass emissions. This mass emissions reduction remains relatively constant even at reduced operating loads if sufficient NOx is present in the exhaust stream from the turbine.

During a typical hot start following a nightly shutdown, the enhanced, lowered temperature setpoint for ammonia injection allows the ammonia to be injected approximately 60 to 90 minutes earlier than the original setpoint (550 deg F) would have allowed. This provides for a reduction of at least 45 lbs NOx produced during the hot startup. The early ammonia injection NOx reduction for an extended startup will be even greater, conservatively estimated to be 60 lbs NOx per extended start.

OpFlex lowers the NOx produced by the turbine during the startup process at all loads above approximately 25%. The NOx is lowered enough above 45% load that in conjunction with the SCR, the stack emissions are reduced below the permit limit of 2.0 ppmvd@15% O2.

Plant Operations personnel have optimized the startup process to take advantage of this reduction of NOx above 25%. When plant conditions allow, the turbine is immediately ramped to approximately 43%, so that the turbine exhaust emissions are high only for the first 20 – 30 minutes of operation, and the magnitude of these high emissions are greatly reduced above 25%.

Recent normal startups following a typical nightly shutdown have resulted in NOx emissions of 28 lbs NOx, and 10 lbs. CO. For NOx, these results are the combination of OpFlex and early ammonia injection. Prior to the OpFlex and early ammonia projects, a typical regular startup would have produced approximately 120 lbs of NOx and 35 lbs of CO. (Note: Startups early in the project life produced highly variable emissions results). All of the CO reduction for recent startups is attributable to the shorter startup allowed by OpFlex, while 45 lbs. of NOx reduction are attributable to early ammonia injection, and 47 lbs. attributable to OpFlex. See the Summary Table below:

### **Summary:**

Early ammonia injection and OpFlex have both been highly successful in reducing emissions during normal startups. The emissions during an extended startup will also be greatly reduced, although more testing and optimization is required before the results can be quantified. The table below is illustrative of starts after an overnight shutdown of one turbine, which has been a typical mode of operation during the past year. Somewhat higher emissions could occur for longer shutdowns.



**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.

**Pack, Heidi K.**

---

**From:** Hunt, Kelly [KHunt@Semprautilities.com]  
**Sent:** Friday, April 13, 2007 8:54 AM  
**To:** Waller, Fred A.; Pack, Heidi K.; Hartnett, Gary; LaBlond, Jason  
**Subject:** FW: Palomar Energy Exceedances Covered Under Variance 4073, March 2007 YTD  
**Importance:** High  
**Attachments:** PEC Exceedance Covered Under Variance 4073 March 2007YTD.pdf

Please see email below.

**Kelly Hunt**

Generation Compliance Manager  
San Diego Gas & Electric  
2300 Harveson Place, SD1473  
Escondido, CA 92029  
760-432-2504 (Office)  
760-432-2510 (Fax)  
[khunt@semprautilities.com](mailto:khunt@semprautilities.com)

---

**From:** Waller, Fred A.  
**Sent:** Friday, April 06, 2007 5:07 PM  
**To:** Hunt, Kelly  
**Subject:** Palomar Energy Exceedances Covered Under Variance 4073, March 2007 YTD  
**Importance:** High

Kelly,  
Please forward this Report of Violation to APCD Compliance (Mr. Jason LaBlond, Mr. Gary Hartnett and copy Ms. Heidi Gabriel-Pack).

Mr. LaBlond,  
In a previous telephone conversation we discussed the reporting requirements of APCD Rule 19.2(d)(3)-Report of Violation. You indicated that an email notification to you will suffice to meet the reporting requirements. Additionally, Ms. Heidi Gabriel-Pack, approved monthly reporting of violations which are covered under Variance 4073.

In previous months in 2006, SDG&E had provided a monthly summary report of Violations/Exceedances covered under Variance 4073 to you and copied Mr. Gary Hartnett and Ms. Heidi Gabriel-Pack. SDG&E is submitting this summary report to notify the District of one exceedance in March 2007 covered by Variance 4073 which occurred at the Palomar Energy Center, 2300 Harveson Place, Escondido, CA 92009 .

If you have any questions, please feel free to call.

*Fred Waller*  
*Environmental Specialist-Generation*  
*Office: 760 432 2507*  
*Cell: 619 778 6029*

**SDGE**  
**Palomar Energy Center**  
**APCD Application Number 976846**

Event	Date	Stack/ Unit	Clock Hour	Pollutant	Magnitude	Unit of Measure	Permit Condition/Limit	Cause/Reason	Comments	Date Reported to District
1	4/3/06	1	9:00	N/A	5 hrs 48 Min	Hrs/Min	AQ-39: 4 hour startup duration	Typical extended startup.	Covered under Variance #4068	8/10/06
2	4/3/06	1	10:00	N/A	5 hrs 48 Min	Hrs/Min	AQ-39: 4 hour startup duration	Typical extended startup.	Covered under Variance #4068	8/10/06
3	4/3/06	2	9:00	N/A	5 hrs 15 Min	Hrs/Min	AQ-39: 4 hour startup duration	Typical extended startup.	Covered under Variance #4068	8/10/06
4	4/3/06	2	10:00	N/A	5 hrs 15 Min	Hrs/Min	AQ-39: 4 hour startup duration	Typical extended startup.	Covered under Variance #4068	8/10/06
5	5/5/06	1	6:00	NOx	128.4	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/12/06
6	5/5/06	2	5:00	NOx	143.9	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/12/06
7	5/8/06	1	7:00	NOx	106.3	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/12/06
8	5/9/06	2	7:00	NOx	152.9	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/12/06
9	5/10/06	2	6:00	NOx	121.4	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/12/06
10	5/13/06	2	8:00	NOx	124.7	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/16/06
11	5/14/06	2	8:00	NOx	123.3	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/16/06
12	5/15/06	1	3:00	NOx	101.3	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/16/06
13	5/16/06	2	8:00	NOx	141.1	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	5/16/06
14	5/30/06	2	0:00	N/A	2 hrs 19 min	Hrs/Min	AQ 40: 2 hour startup duration	Typical regular startup.	Covered under Variance #4073	8/10/06
15	6/4/06	1	10:00	N/A	2 hr 26 min	Hrs/Min	AQ 40: 2 hour startup duration	Typical regular startup.	Covered under Variance #4073	7/9/06
16	6/13/06	1	19:00	NOx	117.3	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	7/9/06
17	6/13/06	1	19:00	N/A	2 hr 5 min	Hrs/Min	AQ 40: 2 hour startup duration	Typical regular startup.	Covered under Variance #4073	1/11/07

**SDGE**  
**Palomar Energy Center**  
**APCD Application Number 976846**

Event	Date	Stack/ Unit	Clock Hour	Pollutant	Magnitude	Unit of Measure	Permit Condition/Limit	Cause/Reason	Comments	Date Reported to District
18	6/15/06	1	10:00	N/A	2 hr 9 min	Hrs/Mins	AQ 40: 2 hour startup duration	Typical regular startup.	Covered under Variance #4073	7/9/06
19	6/16/06	2	6:00	N/A	2 hr 9 min	Hrs/Mins	AQ 40: 2 hour- startup duration	Typical regular- startup.	Reported in error. Was not a violation.	7/9/06
20	6/16/06	2	6:00	NOx	109.9	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	8/10/06
21	7/2/06	1	9:00	N/A	5 hrs 32 Min	Hrs/Mins	AQ-39: 4 hour startup duration	Typical extended startup.	Covered under Variance #4068	8/10/06
22	7/2/06	1	10:00	N/A	5 hrs 32 Min	Hrs/Mins	AQ-39: 4 hour startup duration	Typical extended startup.	Covered under Variance #4068	8/10/06
Aug 2006: No events to report.										
Sept 2006: No events to report.										
23	10/11/06	1	11:00	N/A	4 hr 45 min	Hrs/Mins	AQ 39: 4 hour startup duration	Extended startup.	Covered under Variance #4073	11/13/06
24	10/12/06	2	6:00	N/A	2 hr 20 min	Hrs/Mins	AQ 40: 2 hour startup duration	Typical regular startup.	Covered under Variance #4073	11/13/06
25	10/12/06	2	6:00	NOx	223.5	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	11/13/06
26	10/12/06	1	3:00	NOx	127.5	Lbs/hr	AQ 21: 100 lbs/hr	Early NH3 Injection during Startup	Covered under Variance #4073	11/13/06
27	November 2006: No events to report.									
28	December 2006: No events to report.									
29	January 2006: No events to report.									
30	February 2006: No events to report.									
31	03/21/07	1	15	N/A	2 hrs 2 min	Hrs/Mins	AQ 40: 2 hour startup duration	Regular startup with generator testing required by WECC.	Covered under Variance #4073	4/9/07

Events 1, 2, 3 and 4 (exceedance of Extended Startup duration limit) were not reported in April 2006 due to confusion over the Reporting requirement of Rule 19.2(d) and the existing Variance 4068.  
 Event 14 was not reported in the July 2006 monthly report due to oversight made during the CEMS report review process.

**SDGE**  
**Palomar Energy Center**  
**APCD Application Number 976846**

Event	Date	Stack/ Unit	Clock Hour	Pollutant	Magnitude	Unit of Measure	Permit Condition/Limit	Cause/Reason	Comments	Date Reported to District
Event 18 was not a violation of AQ 40: 2 hour Regular Startup duration limit. On 6/16/06 CTG 2 was actually started up within the 2 hour limit.										
Event 17 was not reported in the July 2006 monthly report due to oversight made during the CEMS report review process.										
Event 19 was not reported in the July 2006 monthly report due to oversight made during the CEMS report review process.										

**COUNTY OF SAN DIEGO  
AIR POLLUTION CONTROL DISTRICT HEARING BOARD  
BOARD ORDER**

**ADMINISTRATIVE ITEM:**

B. Submission of the quarterly report to the APCD Hearing Board from San Diego Gas & Electric per Condition No. F.3 and Enforcement Condition 1 concerning compliance with required increment of progress of Petition 4073.

**ACTION:**

There being no motion made, the Air Pollution Control District Hearing Board, unable to discuss the report due to a lack of a quorum, acknowledged the submission of the report and at the discretion of the Board, continued this item to a future date. Member Rodriguez would be provided a copy of the report to review and if she determined that there needs to be further discussion on this report, the Clerk of the Board will schedule a special meeting of the Hearing Board to address concerns.

THOMAS J. PASTUSZKA  
Clerk of the Hearing Board

---

Kellie C. Kellogg, Deputy Clerk



A  Sempra Energy™ company

COUNTY OF SAN DIEGO  
BOARD OF SUPERVISORS

2007 JUL 13 AM 8:44

THOMAS J PASTUSZKA  
CLERK OF THE BOARD  
OF SUPERVISORS

**Daniel Baerman**  
Director of Electric Generation  
2300 Harveson Place  
Escondido, CA 92029  
Tel: 760-432-2501  
dbaerman@semprautilities.com

July 11, 2007

Ms. Kellie Kellogg  
Clerk of Hearing Board for the  
San Diego County Air Pollution Control District  
San Diego County Administration Center, Room 402  
1600 Pacific Highway  
San Diego, CA 92123

Re: Hearing Board Variance 4073; Quarterly Report

Dear Ms. Kellogg and Members of the Board:

Set forth below is SDG&E's second quarter 2007 report to the Hearing Board. This report will cover the items required by Condition F. 2. of the Board's April 26, 2007 order for Variance 4073. In addition, this report will cover Enforcement Condition 1 concerning compliance with required increments of progress. Information is provided first concerning the increments of progress to place the balance of the information into context.

1. Increments of Progress [Order, Enforcement Condition 1]

The increments of progress table attached to the Board's order is included with this letter as Attachment 1. The primary events are as follows:

SDG&E personnel and District staff have met several times, shared data, and continued an ongoing dialogue concerning the permit amendment application and preparation of an amendment to rule 69.3.1. SDG&E responded to the District on May 4, 2007, agreeing to the language of the draft S/A issued on April 20, 2007. SDG&E was informed on July 9, 2007 that the District intends to issue the final S/A no later than July 26, 2007. A rule amendment workshop concerning Rule 69.3.1 has been scheduled for August 3, 2007 by District staff. ✓

2. Engineering or operational alternatives [Order, Condition F.2 (1)]

No additional information to report at this time.

3. NOx Emissions Data [Order, Condition F.2 (2)]

Information concerning NOx emissions from the facility during the previous quarter is included in Attachment 2. Emissions were within applicable permit limits.

4. Turbine Start Up Activity and NOx Emissions [Order, Condition F.2 (3)]

Turbine start up activity and NOx emissions data associated with turbine start up is included in Attachment 2. Emissions were within limits established in Variance 4073. Emissions were reduced to the maximum extent feasible primarily by starting only one turbine at a time, by early injection of ammonia, by the installation and utilization of OpFlex and by completing start up as quickly as feasible. SDG&E continues to collect information on each start and adjust its system and start up procedures to minimize the duration of start up and associated emissions.

5. Other Data [Order, Condition F.2 (4)]

No further data has been requested by the Board at this time.

SDG&E appreciates the ongoing cooperation of both the District staff and the Hearing Board concerning development of variance conditions, permit conditions and rule requirements. SDG&E is committed to managing the Palomar Energy Center in a manner that complies with all applicable air quality regulatory requirements.

If you have any questions on the above subject matter, please don't hesitate to reach me at (760) 732-2501.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Dan Baerman', with a long horizontal flourish extending to the right.

Dan Baerman

Cc: Heidi Gabriel-Pack  
Steven Moore  
John Annicchiarico  
Evariste Haury  
Jason LaBlond  
Suzanne Blackburn  
File# 3.1.1.4.2.2



Attachment 2

CT1 Quarterly Summary		
	Tons	#
Apr-07	2.17	4,340
May-07	2.48	4,960
Jun-07	2.74	5,480
Total	7.39	14,780

Note: Total NOx includes startup emissions.

CT1 Startup Summary		
	Tons	#
Apr-07	0.00	0.00
May-07	0.07	143.85
Jun-07	0.03	54.35
Total	0.10	198.20

CT2 Quarterly Summary		
	Tons	#
Apr-07	2.65	5,300
May-07	2.69	5,380
Jun-07	2.52	5,040
Total	7.86	15,720

Note: Total NOx includes startup emissions.

CT2 Startup Summary		
	Tons	#
Apr-07	0.03	63.13
May-07	0.15	307.98
Jun-07	0.14	271.20
Total	0.32	642.31

CT1 YTD Summary		
	Tons	#
3Q06	8.61	17,220
4Q06	8.63	17,260
1Q07	8.88	17,760
2Q07	7.39	14,780
Total	33.51	67,020

Note: Total NOx includes startup emissions.

CT1 Startup YTD Summary		
	Tons	#
3Q06	1.38	2,760
4Q06	0.52	1,040
1Q07	0.38	760
2Q07	0.10	200
Total	2.38	4,760

CT2 YTD Summary		
	Tons	#
3Q06	8.95	17,900
4Q06	9.70	19,400
1Q07	8.73	17,460
2Q07	7.86	15,720
Total	35.24	70,480

Note: Total NOx includes startup emissions.

CT2 Startup YTD Summary		
	Tons	#
3Q06	1.10	2,200
4Q06	0.52	1,040
1Q07	0.43	860
2Q07	0.32	640
Total	2.37	4,740

Data gathered from CEMS Startup/Shutdown Incident Reports  
 Data gathered from CEMS Monthly Aggregate Reports  
 Opsflex installed on CTG1 on Oct 13, 2006.  
 Opsflex installed on CTG2 on Oct 12, 2006

There have been no excess emissions as defined in Board Order 4073 on April 26, 2007

Exhibit 3

SAN DIEGO AIR POLLUTION CONTROL DISTRICT HEARING BOARD  
 COUNTY OF SAN DIEGO  
 Palomar Energy Center BOARD OF SUPERVISORS

2007 MAY 14 AM 8:35

PROPOSED INCREMENTS OF PROGRESS

(As of 4/26/07)

THOMAS J PASTUSZKA  
 CLERK OF THE BOARD  
 OF SUPERVISORS  
DATE

MILESTONE

	Description	Permit Modification	Rule Change	Variance(s)
1	Variance 4068 hearing for 90-day issued			2/9/06
2	Emergency Variance 4069 for condition 21 issued to enable early ammonia injection.			2/23/06
3	Palomar submits request for Rule Change to APCD		3/6/06	
4	APCD requests more data for rule change		3/14/06	
5	Mtg. with APCD concerning Data Requests		3/30/06	
6	Additional mtg. with APCD (Steve Moore) concerning Data Requests		4/4/06	
7	SDG&E submits requested data to APCD (Moore)		4/7/06	
8	SDG&E submits summary of requested Permit Modification topics to APCD (covering matters of concern to staff beyond start up)	4/7/06		
9	Mtg. with APCD – QA/QC Plan Addendum (relating to some permit amendment topics)	4/11/06		
10	Request for Permit Modification Fee Estimate submitted to APCD by SDG&E	4/11/06		
11	APCD (Moore) submits new data request to SDG&E (replaces 3/30 & 4/4 requests)		4/14/06	
12	Data submitted to APCD (Moore)		4/25/06	
13	Variance 4073 Hearing			4/27/06
14	Mtg. scheduled with APCD and CEC (in response to 4/7 letter from SDG&E) to discuss permit and rule amendment issues	5/3/06 (COMPLETED 5/3/06)	5/3/06 (COMPLETED 5/3/06)	
15	Proposed Permit Pre-application Mtg. with APCD and CEC –	5/19/06 (COMPLETED)		

Proposed Increments of Progress

October 11, 2006

Page 1 of 3

	Description		Permit Modification	Rule Change	Variance(s)
			5/9 & 5/23/06)		
16	Proposed Permit Application Submittal		5/31/06 (COMPLETED 5/31/06)		
17	Quarterly Progress Update (April - June) to Hearing Board				July 27, 2006 (Completed)
18	APCD Permit Application Completeness Review	Respond to APCD data requests while in process	June - July 2006 (Completed)		
19	<i>APCD drafts rule change</i>			<i>April - June 2006</i>	
20	Quarterly Progress Update (July - September) to Hearing Board				October 27, 2006 (Completed)
21	<i>APCD holds public workshop on rule amendment</i>			<i>July 2006</i>	
22	<i>APCD publishes draft rule for public comment</i>	<i>30-day public notice required</i>		<i>August 2006</i>	
23	<i>APCD prepares final rule adoption documents</i>	<i>Final rule and "staff report" are prepared for County Board of Supervisors review and adoption</i>		<i>September 2006</i>	
24	<i>Air Quality Advisory Committee</i>	<i>Appointed committee reviews and advises the Board</i>		<i>October 2006</i>	
25	<i>Board adoption of rule</i>	<i>Upon adoption, SDAPCD considers rule to be the version for compliance</i>		<i>October 2006</i>	
26	Proposed Permit Modification (ATC/PDOC) published for public comment	30-day public comment period	October 2006		
27	Final ATC/FDOC revisions	Final language that incorporates public comments is developed	November 2006		
28	Final ATC/FDOC		November		

	Description	Permit Modification	Rule Change	Variance(s)
	Issued	2006		
29	SDG&E petitions CEC for companion amendment of Conditions of Certification (CoC)	December 2006		
30	Quarterly Progress Update (October - December) to Hearing Board			Completed January 25, 2007
31	CEC issues amendment of CoC	March 2007		
32	Quarterly Progress Update (January - March) to Hearing Board			April 26, 2007; completed
33	<b>Extension of Regular Variance Granted</b>			<b>April 26, 2007</b>
34	See Tentative Rule Schedule for Rule 69.3.1, Exhibit 2 to Board Order Granted April 26, 2007.	May-December, 2007		
35	Quarterly Progress Update (April - June) to Hearing Board			July 26, 2007;
36	Quarterly Progress Update (October-December) to Hearing Board			January 17, 2008

**COUNTY OF SAN DIEGO  
AIR POLLUTION CONTROL DISTRICT HEARING BOARD  
BOARD ORDER**

**ADMINISTRATIVE ITEM:**

B. Submission of the quarterly report to the APCD Hearing Board from San Diego Gas & Electric per Condition No. F.3 and Enforcement Condition 1 concerning compliance with required increment of progress of Petition 4073

**ACTION:**


ON MOTION of Member Rodríguez, seconded by Member Reider, the Air Pollution Control District Hearing Board accepted the quarterly report and directed San Diego Gas & Electric to provide the Board with revised Increments of Progress, reflecting the testimony of County Counsel representing the APCD. The revision to the Increments of Progress Schedule (IOPS) pertained to the accurate reflection of issuance of authority to construct or permit to operate. The revised IOPS is to be submitted to the Air Pollution Control District Hearing Board for the meeting of October 25, 2007.

AYES: Rodríguez, Tonner, Reider

ABSTAIN: Rappolt

RECUSED: Gabrielson

THOMAS J. PASTUSZKA  
Clerk of the Hearing Board

By   
Kellie C. Kellogg  
Deputy Clerk

**COUNTY OF SAN DIEGO  
AIR POLLUTION CONTROL DISTRICT HEARING BOARD  
BOARD ORDER**

**ADMINISTRATIVE ITEM:**

B. Submission of the quarterly report to the APCD Hearing Board from San Diego Gas & Electric/Palomar Energy Center per Condition No. F.3, and Enforcement Condition 1 concerning compliance with required increment of progress of Petition 4073.

**ACTION:**


ON MOTION of Member Gabrielson, seconded by Member Tonner, the Air Pollution Control District Hearing Board accepted the report from San Diego Gas & Electric.

AYES: Rappolt, Gabrielson, Tonner


ABSENT: Rodriguez

THOMAS J. PASTUSZKA

Clerk of the Hearing Board

  
Kellie C. Kellogg, Deputy Clerk



A  Sempra Energy™ company

COUNTY OF SAN DIEGO  
BOARD OF SUPERVISORS

2007 OCT 11 PM 3: 17

THOMAS J PASTUSZKA  
CLERK OF THE BOARD  
OF SUPERVISORS

Daniel Baerman  
Director of Electric Generation  
2300 Harveson Place  
Escondido, CA 92029  
Tel: 760-432-2501  
dbaerman@semprautilities.com

October 11, 2007

Ms. Kellie Kellogg  
Clerk of Hearing Board for the  
San Diego County Air Pollution Control District  
San Diego County Administration Center, Room 402  
1600 Pacific Highway  
San Diego, CA 92123

Re: Hearing Board Variance 4073; Quarterly Report

Dear Ms. Kellogg and Members of the Board:

Set forth below is SDG&E's third quarter 2007 report to the Hearing Board. This report will cover the items required by Condition F. 2. of the Board's April 26, 2007 order for Variance 4073. In addition, this report will cover Enforcement Condition 1 concerning compliance with required increments of progress. Information is provided first concerning the increments of progress to place the balance of the information into context.

1. Increments of Progress [Order, Enforcement Condition 1]

Referenced below are the increments of progress table attached to the Board's order; the primary events are as follows:

SDG&E personnel and District staff have met several times, shared data, and continued an ongoing dialogue concerning the permit amendment application and preparation of an amendment to rule 69.3.1. SDG&E responded to the District on May 4, 2007, agreeing to the language of the draft S/A issued on April 20, 2007. SDG&E was updated by the District on October 8, 2007 on the progress of the issuance of the final S/A. The District intends to issue to final S/A no later than November 30, 2007. A rule amendment workshop concerning Rule 69.3.1 was held on August 3, 2007 by District staff.

2. Engineering or operational alternatives [Order, Condition F.2 (1)]

No additional information to report at this time.

3. NOx Emissions Data [Order, Condition F.2 (2)]

Information concerning NOx emissions from the facility during the previous quarter is included in Attachment 2. Emissions were within applicable permit limits.

4. Turbine Start Up Activity and NOx Emissions [Order, Condition F.2 (3)]

Turbine start up activity and NOx emissions data associated with turbine start up is included in Attachment 2. Emissions were within limits established in Variance 4073. Emissions were reduced to the maximum extent feasible primarily by starting only one turbine at a time, by early injection of ammonia, by the installation and utilization of OpFlex and by completing start up as quickly as feasible. SDG&E continues to collect information on each start and adjust its system and start up procedures to minimize the duration of start up and associated emissions.

5. Other Data [Order, Condition F.2 (4)]

SDG&E received a letter dated September 14, 2007 from the District requesting a cold start and source test. The cold start and source test is scheduled to occur during the period of October 21, 2007 and October 26, 2007. District staff will be onsite to witness the test.

SDG&E appreciates the ongoing cooperation of both the District staff and the Hearing Board concerning development of variance conditions, permit conditions and rule requirements. SDG&E is committed to managing the Palomar Energy Center in a manner that complies with all applicable air quality regulatory requirements.

If you have any questions on the above subject matter, please don't hesitate to reach me at (760) 732-2501.

Sincerely yours,



Dan Baerman

Cc: Heidi Gabriel-Pack  
Steven Moore  
John Annicchiarico  
Evariste Haury  
Jason LaBlond  
Suzanne Blackburn  
File# 3.1.1.4.2.2



**CT1 3q07 NOx Summary**

	Tons	#
Jul-07	3.01	6,011
Aug-07	3.21	6,419
Sep-07	2.97	5,932
Total	9.18	18,362

Note: Total NOx includes startup emissions.

**CT1 Startup Only Summary**

	Tons	#
Jul-07	0.33	658
Aug-07	0.17	341
Sep-07	0.19	386
Total	0.69	1,386

**CT2 3q07 NOx Summary**

	Tons	#
Jul-07	3.38	6,766
Aug-07	3.26	6,513
Sep-07	3.20	6,410
Total	9.84	19,689

Note: Total NOx includes startup emissions.

**CT2 Startup Only Summary**

	Tons	#
Jul-07	0.09	180
Aug-07	0.10	208
Sep-07	0.09	173
Total	0.28	561

**CT1 YTD NOx Summary**

	Tons	#
4Q06	8.63	17,260
1Q07	8.88	17,760
2Q07	7.39	14,780
3Q07	9.18	18,362
Total	34.08	68,162

Note: Total NOx includes startup emissions.

**CT1 YTD Startup Only**

	Tons	#
4Q06	0.52	1,040
1Q07	0.38	760
2Q07	0.10	200
3Q07	0.69	1,386
Total	1.69	3,386

**CT2 YTD NOx Summary**

	Tons	#
4Q06	9.70	19,400
1Q07	8.73	17,460
2Q07	7.86	15,720
3Q07	9.84	19,689
Total	36.13	72,269

Note: Total NOx includes startup emissions.

**CT2 YTD Startup Only**

	Tons	#
4Q06	0.52	1,040
1Q07	0.43	860
2Q07	0.32	640
3Q07	0.28	561
Total	1.55	3,101

Data gathered from CEMS Startup/Shutdown Incident Reports

Data gathered from CEMS Monthly Aggregate Reports

Opsflex installed on CTG1 on Oct 13, 2006.

Opsflex installed on CTG2 on Oct 12, 2006

There have been no excess emissions as defined in Board Order 4073 on April 26, 2007

**COUNTY OF SAN DIEGO  
AIR POLLUTION CONTROL DISTRICT HEARING BOARD  
BOARD ORDER**

**ADMINISTRATIVE ITEM:**

B. Submission of the quarterly report to the APCD Hearing Board from San Diego Gas & Electric per Condition No. F.3 and Enforcement Condition 1 concerning compliance with required increment of progress of Petition 4073.

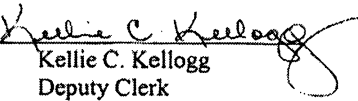
**ACTION:**

ON MOTION of Member Gabrielson, seconded by Member Rodriguez, the Air Pollution Control District Hearing Board accepted the report.

AYES: Rappolt, Rodriguez, Gabrielson, Tonner

ABSTAIN: None

THOMAS J. PASTUSZKA  
Clerk of the Hearing Board

By   
Kellie C. Kellogg  
Deputy Clerk

COUNTY OF SAN DIEGO  
BOARD OF SUPERVISORS

2008 JAN 14 AM 8:40

THOMAS J PASTUSZKA  
CLERK OF THE BOARD  
OF SUPERVISORS

Daniel Baerman  
Director of Electric Generation  
2300 Harveson Place  
Escondido, CA 92029  
Tel: 760-432-2501  
dbaerman@semprautilities.com



January 13, 2008

Ms. Kellie Kellogg  
Clerk of Hearing Board for the  
San Diego County Air Pollution Control District  
San Diego County Administration Center, Room 402  
1600 Pacific Highway  
San Diego, CA 92123

Re: Hearing Board Variance 4073; Quarterly Report

Dear Ms. Kellogg and Members of the Board:

Set forth below is SDG&E's fourth quarter 2007 report to the Hearing Board. This report will cover the items required by Condition F. 2. of the Board's April 26, 2007 order for Variance 4073. In addition, this report will cover Enforcement Condition 1 concerning compliance with required increments of progress. Information is provided first concerning the increments of progress to place the balance of the information into context.

1. Increments of Progress [Order, Enforcement Condition 1]

Referenced below are the increments of progress table attached to the Board's order; the primary events are as follows:

SDG&E personnel and District staff have met several times, shared data, and continued an ongoing dialogue concerning the permit amendment application and preparation of an amendment to rule 69.3.1. SDG&E responded to the District on May 4, 2007, agreeing to the language of the draft S/A issued on April 20, 2007. The District issued the final S/A on November 6, 2007. A rule amendment workshop concerning Rule 69.3.1 was held on August 3, 2007 by District staff.

2. Engineering or operational alternatives [Order, Condition F.2 (1)]

No additional information to report at this time.

3. NOx Emissions Data [Order, Condition F.2 (2)]

Information concerning NOx emissions from the facility during the previous quarter is included in Attachment 1. Emissions were within applicable permit limits.

4. Turbine Start Up Activity and NOx Emissions [Order, Condition F.2 (3)]

Turbine start up activity and NOx emissions data associated with turbine start up is included in Attachment 2. Emissions were within limits established in Variance 4073. Emissions were reduced to the maximum extent feasible primarily by starting only one turbine at a time, by early injection of ammonia, by the installation and utilization of OpFlex and by completing start up as quickly as feasible. SDG&E continues to collect information on each start and adjust its system and start up procedures to minimize the duration of start up and associated emissions.

5. Other Data [Order, Condition F.2 (4)]

SDG&E received a letter dated September 14, 2007 from the District requesting a cold start and source test. The cold start and source test occurred on October 22, 2007. District staff was onsite to witness the test. The District has the source test report and raw data as requested.

SDG&E appreciates the ongoing cooperation of both the District staff and the Hearing Board concerning development of variance conditions, permit conditions and rule requirements. SDG&E is committed to managing the Palomar Energy Center in a manner that complies with all applicable air quality regulatory requirements.

If you have any questions on the above subject matter, please don't hesitate to reach me at (760) 732-2501.

Sincerely yours,



Dan Baerman

Cc: Heidi Gabriel-Pack  
Steven Moore  
John Annicchiarico  
Evariste Haury  
Jason LaBlond  
Suzanne Blackburn  
File# 3.1.1.4.2.2

<b>CT1 4q07 NOx Summary</b>		
	Tons	#
Oct 07	2.59	5,179
Nov 07	2.92	5,831
Dec 07	3.52	7,038
Total	9.02	18,048

Note: Total NOx includes startup emissions.

<b>CT1 Startup Only Summary</b>		
	Tons	#
Oct 07	0.18	356
Nov 07	0.13	262
Dec 07	0.03	52
Total	0.34	670

<b>CT2 4q07 NOx Summary</b>		
	Tons	#
Oct 07	2.63	5,255
Nov 07	3.47	6,949
Dec 07	3.37	6,732
Total	9.47	18,936

Note: Total NOx includes startup emissions.

<b>CT2 Startup Only Summary</b>		
	Tons	#
Oct 07	0.00	0
Nov 07	0.29	573
Dec 07	0.09	173
Total	0.37	747

<b>CT1 12-Mo NOx Summary</b>		
	Tons	#
1Q07	8.88	17,760
2Q07	7.39	14,780
3Q07	9.18	18,362
4Q07	9.02	18,048
Total	34.48	68,950

Note: Total NOx includes startup emissions.

<b>CT1 12-Mo Startup Only</b>		
	Tons	#
1Q07	0.38	760
2Q07	0.10	200
3Q07	0.69	1,386
4Q07	0.34	670
Total	1.51	3,016

<b>CT2 12-Mo NOx Summary</b>		
	Tons	#
1Q07	8.73	17,460
2Q07	7.86	15,720
3Q07	9.84	19,689
4Q07	9.47	18,936
Total	35.90	71,805

Note: Total NOx includes startup emissions.

<b>CT2 12-Mo Startup Only</b>		
	Tons	#
1Q07	0.43	860
2Q07	0.32	640
3Q07	0.28	561
4Q07	0.37	747
Total	1.40	2,808

Data gathered from CEMS Startup/Shutdown Incident Reports

Data gathered from CEMS Monthly Aggregate Reports

Opsflex installed on CTG1 on Oct 13, 2006.

Opsflex installed on CTG2 on Oct 12, 2006

There have been no excess emissions as defined in Board Order 4073 on April 26, 2007

[http://www.epa.gov/compliance/resources/policies/ej/ej\\_permitting\\_authorities\\_memo\\_120100.pdf](http://www.epa.gov/compliance/resources/policies/ej/ej_permitting_authorities_memo_120100.pdf)

The 1998 EPA guidelines require Agencies to consider a wide range of demographic, geographic, economic, human health and risk factors. One of the three most important factors identified in the 1998 EPA guidelines is “whether communities currently suffer or have historically suffered from environmental health risks and hazards.” The 1998 EPA Guidelines require the agencies conducting an Environmental Justice Analysis to define the sensitive receptor analysis to the actual unique circumstances affecting the minority community not a generic definition of sensitive receptor that was utilized by the District and the CEC.

### **Soils and Vegetation Analysis Nitrogen Deposition**

Nitrogen deposition consists of the input of reactive nitrogen species from the atmosphere to the biosphere. Pollutants that contribute to nitrogen deposition derive mainly from nitrogen oxides and ammonia emissions, which the RCEC would emit during normal operation. Emissions of NOx and ammonia contribute to nitric acid deposition that occurs via precipitation and fog and in dry deposition as well. Acute exposures to ammonia can adversely affect plant growth and productivity, resistance to drought and frost, responses to insect pests and pathogens, mycorrhizal and other beneficial root associations, and inter-specific competition and biodiversity in sensitive plant communities. Of particular concern for the RCEC project is the effect on serpentine soil plant communities, which are known to be particularly sensitive to nitrogen deposition. Serpentine soils in the San Francisco Bay Area support native grassland plant communities that can provide habitat for rare and endemic species. Nonnative annual grasses have invaded most grassland communities in California, but highly specialized plant species that are adapted to nutrient-poor serpentinitic soils can thrive in soils that are deficient in nitrogen, potassium, phosphorus, and other nutrients due to a competitive advantage over the faster growing non-native annual species. The competitive advantage of these specialized plant species can be lost when nitrogen deposition from air pollution fertilizes serpentine plant communities and nitrogen ceases to be a limiting nutrient for plant growth. Increased nitrogen levels often allow non-native annual grasses to out-compete the native species.

The nearest serpentine plant community to the project area is Fairmont Ridge in Lake Chabot Regional Park, approximately four miles northeast of the RCEC. Fairmont Ridge is located in the East Bay Hills adjacent to Lake Chabot. The California Native Grasslands Association identifies this area as a Purple Needlegrass Grassland community, and is noted as an area of serpentine soil in the USFWS’s 1998 Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area.

The BAAQMD and the CEC have failed to analyze the projects nitrogen deposition impacts on serpentine soil plant communities in the Bay Area.