AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

RESPONSES TO PDOC COMMENTS

CARLSBAD ENERGY CENTER PROJECT

The following are the District responses to comments received during the comment period for the Preliminary Determination of Compliance (PDOC) for the Carlsbad Energy Center Project (CECP) that was submitted by the District to the California Energy Commission (CEC) on November 21, 2008. The comment period was from November 25, 2008, through January 5, 2009. District Rule 20.3(4)(i) requires that the District consider all comments received during the comment period but does not require that the District formally respond to comments. However, the District has elected to respond to the comments in this case because of the high level of public interest concerning this project and to provide information to interested parties that are participating in the ongoing CEC certification process. Although comments received outside of the formal PDOC comment period were considered by the District, only responses to comments received during the comment period are included below. As part of the CEC process, the District submitted its Final Determination of Compliance (FDOC) for this project to the CEC on August 4, 2009.

The comments and District responses are organized as follows:

For commenters that belonged to one of the organizations intervening in the CEC certification process, it was not clear to the District in some cases if a commenter was submitting comments on their own behalf or on behalf of the organization. In these cases, the comments and associated responses were included in the intervening organization's section.

All condition references below refer to the PDOC conditions unless otherwise noted. Indicated revisions to those conditions have been incorporated in the District's FDOC conditions although the condition number may be changed. The references to Units 1, 2, and 3 below refer to the three of five existing utility boilers at the Encina Power Stations that are required in the PDOC (and FDOC) to be permanently shutdown at the end of the second combustion turbine's shakedown period (Permits to Operate Nos. 791, 792 and 793). For acronyms not defined below, please see the FDOC for their definition.

November 19, 2009

CALIFORNIA ENERGY COMMISSION (CEC) COMMENTS

CEC Comment No. 1

Conditions 5, 81, 82, 83 and 84

In reviewing Conditions 5, 81, 82, 83 and 84, it appears that the applicant could build just one of the combustion turbine trains, and not build the second one and be allowed to continue operation of the existing boilers Units 1, 2 and 3. Is that the intention of the District? If so, it is inconsistent with how the CECP has been described to the reviewing parties and the public as including two turbine trains and the permanent shutdown of Permit Units 791, 792 and 793.

District Response

The District's intent in these conditions was to give the Applicant, as they have requested, the maximum flexibility under District Rules and Regulations in bringing both combined-cycle turbines to full operational status while allowing operation of Units 1, 2 and 3 to support the electrical grid during the shakedown period of the two combined-cycle systems. The application to the District proposed both the possibility of an essentially simultaneous completion of both systems and the possibility of as much as a six month gap between the completion (commercial operation) of the first and second combined-cycle systems.

The Applicant has not indicated to the District that they are considering constructing only one combined-cycle system. Nonetheless, the District has no authority to require that an applicant construct a new emission unit or modify an existing facility or emission unit, including shutting down an emission unit, unless a District Rule or Regulation is being violated. In this case, constructing only one new turbine would be compliant with all District rules and regulations with the allowed emissions from Units 1, 2, and 3 appropriately restricted. In addition, permanently shutting down existing Units 1, 2, and 3 before both new combined-cycle systems are fully available may raise issues of electrical grid reliability that are beyond the scope of District expertise. The District believes that any decision to restrict operations of Units 1, 2, and 3 beyond that in the PDOC is best addressed by the CEC through its certification process.

CEC Comment No. 2

Conditions 32, 33, and 34 – NOx Emission Concentration Limits

Staff has questions about the high NOx emission concentration limits allowed by the Conditions 32, 33 and 34, and whether these conditions would conflict with the lowest emission requirements of Condition 28 for the gas turbines. What are the explicit operating circumstances under which each of the limits in these conditions would apply and how is BACT not circumvented by these conditions? In addition, are there explicit emission limits in these conditions that govern both the emission concentration (ppm) and the emission rate (lbs/hour) allowed during low load operation?

District Response

These conditions address the requirements of District Rules 69.3 and 69.3.1 and are limits on NOx concentration in the exhaust gas from the combustion turbines. However, these limits have the effect of limiting the maximum NOx mass emission rate because of the physical limitations on the amount of exhaust gas that the turbines can produce.

As discussed in the PDOC these conditions are also determined to be best available control technology (BACT) during abnormal operating conditions when Condition No. 28 does not apply and serve to limit emissions during these periods (see Table 1 below). There is no conflict with the BACT requirements for normal operations (Condition No. 28) since the permittee must comply with all applicable NOx limits in the permit. Thus, during normal operations—the only situation in which Condition No.28 applies—the permittee must comply with Condition No. 28 and Condition Nos. 33 and 34 as well as several other applicable conditions such as Condition Nos. 39 and 42.

Table 1. NOx Limits

Condition No.	Basis	Limit[a]	Applicability[b]					
			Normal Operation	Startup	Shutdown	Low-Load Operation	Tuning	Commissioning
28	BACT[l]	2 ppmv[c]	Yes	No	No	No	No	No
32	Rule 69.3.1	12.9 ppmv[e]	Yes	No	No	Yes[d]	Yes[p]	Yes[e]
33	Rule 69.3.1	21.6 ppmv[f]	No	No	No	No	No	Yes[f]
34	Rule 69.3	42 ppmv	Yes	No	No	Yes	Yes[p]	Yes
39	BACT	15.1 lbs per hour[c]	Yes	No	No	No	No	No
42	AAQS[m]	200 lbs per hour from each turbine and 286 lbs per hour from both turbines combined	Yes	Yes	Yes	Yes	Yes	Yes
40	BACT	69.2 lbs per event	No	Yes	No	No	No	No
41	BACT	25.7 lbs per event	No	No	Yes	No	No	No
35	Subpart KKKK[n]	15–96 ppmv or 0.43–4.7 lbs per MWhr[g,h,i,j]	Yes	Yes	Yes	Yes	Yes	No
44	Emission offsets and PSD[o]	72.11 tons per year for both turbines combined	Yes	Yes	Yes	Yes	Yes	Yes
82	Emission offsets and PSD[o]	36.4 tons per year for the first turbine to initially startup[k]	Yes	Yes	Yes	Yes	Yes	Yes

[a]Unless otherwise noted, all concentration limits and mass limits expressed as pounds are based on a one-hour average.
[b]Unless otherwise noted, applicability does not change from those indicated during the 180-day shakedown period.
[c]One-hour average except for a three-hour average during transient hours.
[d]The District has proposed excluding low-load operation periods from Rule 69.3.1, which is the basis of this condition.
[e]Applicable after installation of a selective catalytic reduction (SCR) system.
[f]Applicable before installation of a SCR system.
[g]Based on a rolling 30-operating-day average.
[h]Emission limit varies depending on how many operating hours are at a load greater than 156 MW.
[i]Permittee can elect to comply with a concentration standard or pounds per megawatt-hour (MW-hr) standard in each rolling 30-day period.
[J]Limit does not apply until the Initial Emission Source Test which occurs after the commissioning period but no later than 180 days after initial startup. Thus, this limit may not apply during some or all of that portion of the shakedown period that occurs after the end of the commissioning period.
[k]Does not apply after the second turbine completes its shakedown period.
[l]Best Available Control Technology.
[m]Ambient Air Quality Standards.
[n]Federal New Source Performance Standard applicable to new combustion turbines.
[o]Limits emission increases for consistency with Emission Reduction Credits surrendered as emission offsets and prevents triggering of Prevention of Significant Deterioration (PSD) requirements.
[p]Would not apply for tuning during a startup or shutdown period as defined in the rule (120 minutes in both cases).

CEC Comment No. 3

Conditions 42 and 43 – NOx and CO Hourly Emission Limits

Conditions 42 and 43 should clarify that the hourly emission limits provided for both turbines are allowed only when one turbine is in commissioning or tuning operation and the other is in a startup and shutdown hour mode. Also, please clarify whether the mass emission limits of Condition 42 would conflict with the concentration requirements of Conditions 32 through 34.

District Response

Condition Nos. 42 and 43 are mass emission limits that are to ensure that the 1-hour state and national ambient air quality standards for NO_2 and CO are not exceeded. As such, this condition provides an important backstop at all times when other permit conditions might not apply or might not be sufficiently limiting. It is true that the limits are based on the expected worst case emissions and pollutant release parameters (stack temperature and flow velocity) for one turbine undergoing commissioning while the other turbine was in a normal startup. However, that does not limit the applicability of the limit to only that operating scenario. For example, if both turbines were in a low-load operating period simultaneously, the 286 pound per hour limit could potentially be exceeded. As another example, Condition No. 43 limits CO emissions during low-load operations and tuning when there are no concentration limits specified in the permit. In both cases Condition Nos. 42 and 43 ensure that the 1-hour ambient air quality standards for NOx and CO will not be violated. Therefore, the District does not find it necessary, or advisable, to restrict the applicability of these conditions.

With regard to any potential conflict with Condition Nos. 32–34, the permittee must comply with all the conditions of the permit. The PDOC contains several conditions that limit emissions from the combustion turbines either in terms of exhaust concentration or mass emission rate. The limits are designed to apply technically feasible limits during all operational modes of the combustion turbines as shown in Table 1. Which particular limit is the most restrictive depends on its applicability to the operating mode and external conditions. For example, Condition No. 28 sets a concentration limit for NOx of 2.0 parts per million by volume, dry (ppmvd) at 15% oxygen during normal operations. This effectively limits the NOx emission rate since the amount of exhaust gas the turbine produces is limited by operating conditions. Condition No. 39 sets a maximum emission rate for NOx based on the 2.0 ppmvd concentration limit and the turbine operating at the lowest expected ambient temperature (the amount of exhaust gas the turbine can produce increases as the temperature decreases). Condition No. 28 would typically be the most restrictive in limiting NOx emissions. But, if the turbines were to operate at an ambient temperature below the lowest expected ambient temperature, Condition No. 39 would be the most restrictive limit ensuring that NOx emissions do not exceed the maximum amount expected in the applications. The conditions do not conflict with each other since both must be complied with and instead supplement each other.

Please also see the response to CEC Comment No. 2.

CEC Comment No. 4

Condition 5 – Surrender of ERCs

This condition currently allows the surrender of ERCs on a per-turbine basis. Typically districts require, whether a project is defined as a single-turbine or multiple-turbine proposal, that all the ERCs be surrendered prior to the first permit unit commencing operation. The CECP project is a two-combustion turbine project, and thus all of the ERCs for the proposed project should be surrendered once the first of the two turbines commences operation. Condition 5 should be revised as follows:

"Prior to the initial startup date of either of the CECP combustion turbines, the applicant shall surrender to the District Class A Emission Reduction Credtis (ERCs) in an amount equivalent to 47.88 tons per year of oxides of nitrogen (NOx) to offset the net maximum allowable increase of 39.9 tons per year of NOx emissions."

District Response

Condition No. 5 as written complies with District Rule 20.1 (d)(5)(iii) which requires that "emission offsets shall be in effect and enforceable at the time of startup of the emission unit requiring the offsets." An emission unit is defined as "any article, machine, equipment, contrivance, process or process line, which emit(s) or reduce(s) or may emit or reduce the emission of any air contaminant." The combustion turbines may be part of the same project, but they are separate emission units with separate District applications. Both turbines have their own steam generator and can operate completely independently of each other. Therefore, the language in the PDOC condition is not in conflict with District rules.

Nevertheless, District rules do not preclude surrendering the ERCs to offset the NOx emission increase from the second turbine at the same time the ERCs are surrendered for the first turbine. The Applicant has agreed to a condition requiring the surrender of all the required offsets before the initial startup of the first combustion turbine. Therefore, the District has modified Condition No. 5 as requested. Please note that, since all of the ERCs for both turbine emissions are now required to be surrendered before the initial startup of the first turbine, the NOx emission limit in Condition No. 83 has been removed as no contemporaneous actual emission reduction from the existing units is now required for consistency with New Source Review (NSR) offset requirements or to prevent triggering Prevention of Significant Deterioration (PSD) requirements.

CEC Comment No. 5

Condition 13 – Tuning Definition

Staff recommends that this condition and the engineering analysis specifically describe or limit the purpose and conditions under which a tuning event would be allowed. Staff recommends that the purpose and conditions under which a tuning event is necessary is explained in the engineering evaluation. Additionally, due to the higher emissions allowed during tuning, staff

recommends that Condition 13 clearly state the conditions under which combustion or emission system adjustments defined as a tuning event would be allowed, such as only when turbine operating safety or emission limit compliance is involved.

District Response

Although higher NOx and CO emissions may occur during tuning events, the emissions are limited by applicable permit conditions to levels that prevent an exceedance of the ambient air quality standards for those pollutants. In most cases, NOx emissions are additionally limited by District prohibitory rules as reflected in Condition Nos. 32 and 34. Emissions of PM10, PM2.5, and SOx are not allowed to increase during tuning periods. Furthermore, the periods allowed for tuning events, and hence total emissions, are also limited on a daily and annual basis. Because all emissions during tuning events count against the overall annual NOx and CO mass emission limits, there is little incentive for the permittee to have tuning events without a valid reason.

There are many valid reasons for tuning besides those mentioned in the comment, not all of which may be foreseen. For example, the facility may wish to tune the selective catalytic reduction system (SCR) ammonia distribution system to reduce ammonia usage, with obvious air quality benefits, even though immediate emission limit compliance or operational safety is not in jeopardy. The facility may also wish to improve the combustor efficiency and thereby reduce greenhouse gas emissions, again without any emission limit compliance or operational safety concerns.

Since there are many potential reasons for tuning the combustors or emission control equipment, some of which may be not be foreseeable, there are potential positive air quality benefits resulting from such tuning, and the tuning periods are already subject to appropriate emission limitations and notification requirements, the District does not find it necessary to change this condition in the recommended manner.

CEC Comment No. 6

<u>Condition 16 – Commissioning period time frame</u>

This condition limits the commissioning period to no greater than 120 days. However, staff analyzed the project based on information provided by the applicant in the Project Enhancement and Refinement document (Revised Figure 1.4a). "Commissioning is estimated to last for 58 days for Unit 6 (Turbine A) and 61 days for Unit 7 (Turbine B) (PSA p. 4.1-22)." What is the basis for a doubling of the commissioning period?

As a point of reference, the South Coast Air Quality Management District performed an evaluation on a project very similar to CECP, the El Segundo Redevelopment Project. The PDOC issued (March 13, 2008) for that project includes commissioning (actual firing of each turbine) to not exceed 415 hours per turbine. Staff would suggest that a similar number of hours be considered for the commissioning period condition for CECP.

District Response

The PDOC already contains a condition (Condition No. 16) that limits combustion turbine operating time during the commissioning period to a maximum of 415 hours. In addition, the analyses of emission impacts to ambient air quality from criteria pollutants (NO_2, VOCs, CO, SO_2, PM10, and PM2.5) and toxic air contaminants do not rely on any annual emission reductions from reduced operations of existing equipment (Units 1,2, and 3). Furthermore, existing Units 1, 2, and 3 are not allowed to operate (Condition No. 81) when one or both turbines are in operation, so there is no increase in hourly or daily emissions beyond that evaluated in the PDOC by allowing more calendar days for commissioning than the Applicant anticipates.

The Applicant indicates in the Project Enhancement and Refinement document that the schedule presented in Revised Figure 1.4a is subject to change. The District also notes that, although the El Segundo Redevelopment Project (ESRP) PDOC discusses the anticipated commissioning period (about 60 days) in detail, there is no explicit limit on the number of calendar days allowed for commissioning in the ESRP PDOC permit conditions. Moreover, Condition No. A99.10 in the ESRP PDOC allows the permittee to use the NOx emission factor applicable to commissioning for up to 12 months. Thus, it appears that ESRP PDOC conditions would potentially allow up to 12 months for the commissioning activity to be completed.

Considering the above, the District finds that the limit of 120 calendar days in the PDOC is reasonable and provides for unanticipated events during commissioning. Further limiting the commissioning period only increases the potential need to revise the permit due to unforeseen events and/or for the Applicant to seek relief from the District Hearing Board with no corresponding benefit to air quality.

CEC Comment No. 7

<u>Condition 17 – Shakedown time frame</u>

The term “shakedown” has not been proposed by the applicant, nor is it included in any portion of the Staff Assessment. Staff proposes that the period defined as shakedown either be deleted (as it is not a part of the project description) or be clearly defined as to what it is. Currently, it appears to be a period of time between the end of commissioning (as defined in Condition 16) and up to 180 days after first fire. It does not appear to be defined in any engineering or operational scenario.

District Response

Condition No. 17 clearly defines the shakedown period for each combustion turbine as the sooner of 180 calendar days from the initial startup or the date the permittee notifies the District that the shakedown period has ended. The term “shakedown period” is used for convenience in the PDOC conditions to distinguish this period from the commissioning period with which it is partially coincident. Operationally, the reduction in emissions from existing Utility Boiler Units 1, 2, and 3 is triggered by the end of the shakedown period for the first combustion turbine to

begin its commissioning period and the final shutdown of those three boilers is triggered by the end of the shakedown period for the second combustion turbine to begin commissioning.

CEC Comment No. 8

Conditions 5, 44, 82 and 83 – Phased Initial Startup and Total NOx Emissions
It is unclear how the phased initial startup will be administrated and annual NOx emissions limited, considering what appears to be a conflict between Condition 44 and Conditions 5, 82 and 83. Staff suggests editing Condition 44 to clarify that the emission limit for that condition is only in effect after both turbines are in operation and existing Boilers 1 through 3 cease operation and all required NOx ERCs have been surrendered; or alternatively note that Condition 44 is not in effect while Conditions 82 and 83 apply.

Alternatively, the District should consider a more simplified permit approach that considers the project as two turbines and not try to split the project into two emission limit requirements (Conditions 44 and 82). This concern is heightened by the phased surrendering of the offsets as pointed out earlier on Condition 5.

District Response

There is no conflict between Condition Nos. 44, 82, and 83. As discussed in the PDOC, Condition No. 82 serves to limit the annual emissions from the first turbine to initially startup in a manner that satisfies new source review requirements including consistency with the NOx emission offsets required by Condition No. 5 and the implementation of contemporaneous emission reductions for the existing utility boilers Units 1, 2, and 3 by Condition No. 83. As explained in the PDOC (pages 18–24) those contemporaneous emission reductions do not have to occur until the end of the shakedown period for the combustion turbine. Condition No.44 serves to limit the annual emissions from both combustion turbines. Similarly to Condition No. 82, Condition No. 44, in conjunction with Condition No. 84, serves to continue to limit annual emissions in a manner consistent with new source review requirements after the end of the second turbine's shakedown period when Condition No. 82 is no longer applicable.

Until the end of the shakedown period for the second turbine to begin its commissioning period, the first turbine is subject to both Condition Nos. 44 and 82 and the second turbine is subject only to Condition No. 44. In this case, compliance with both conditions is required (see response to CEC Comment No. 1) for the first turbine. After the second turbine begins commissioning, the first turbine still has to comply with Condition No. 82. However, the emissions from both turbines combined are limited by Condition No. 44.

At the end of the shakedown period for the second turbine to begin commissioning, Condition No. 82 is no longer applicable, as is explicitly stated in that condition. This leaves Condition No. 44 as the sole limit on annual emissions from both the combustion turbines. At this time, the three utility boilers must also be permanently shutdown as required by Condition 84. Please see also the response to CEC Comment No. 9.

With regard to administering the annual limits, the two new combustion turbines are required (Condition Nos. 63–78) to have a continuous monitoring system (CEMS) that will measure and record NOx and CO emissions on an hourly, daily, and monthly basis, measure and record fuel use on an hourly, monthly, and twelve-month basis, and record hours of operation. This system(s) must be certified to applicable federal standards and operate in accordance with a District approved monitoring protocol(s).

Any violation of an emission standard indicated by the CEMS must be reported to the District within 96 hours (Condition No. 71).

CEC Comment No. 9

Condition 44 – Post Commissioning CO Emission Limit

Condition 44 provides the commissioning year CO emission limit (339.9 tons/year). Staff recommends that the condition also provide a post commissioning year emission limit for CO that is consistent with the BACT findings (217.3 tons/year).

District Response

The annual emission limit on CO in Condition No.44 is not a BACT limit. It is a limit the Applicant has agreed to accept to prevent triggering PSD requirements. However, the Applicant has agreed to accept a lower limit that would apply one year after the end of the commissioning period for the second turbine. The one year delay is necessary so as to not capture the extra emissions from commissioning in the12-month–rolling emission sum. Condition No. 44 has been revised accordingly.

CEC Comment No. 10

Condition 57 – Renewal Source Tests

Staff requests that the frequency or the method for determining the frequency of the renewal source tests be explicitly provided in this condition.

District Response

Condition No. 57 is the standard method that the District uses to address source test frequency in its combustion turbine permits and has not proved to be a problem for enforcing source test requirements. As stated in Condition No. 57, the source test frequency is prescribed by federal acid rain regulations at 40 CFR Part 75, Appendix B, Sections 2.3.1 and 2.3.3. This method of determining source test frequency ensures continued compliance without requiring source tests (and the associated emissions) when a combustion turbine is operating little or not at all, or requiring multiple source tests to satisfy different source test frequency requirements. In the case of the Carlsbad Energy Center, the District would anticipate annual testing would be required by

the acid rain regulations based on the annual operational scenario provided by the Applicant (about 4000 hours of operation per year).

The frequency is referred to by reference because of the complexity of the federal requirements in some situations. The District does not find it necessary to alter the condition in the requested manner. However, the District will further discuss the test frequency in FDOC.

CEC Comment No. 11

Condition 61 – Natural Gas Higher Heat Value Testing Frequency

Staff recommends that this condition, if it continues to allow non-continuous testing of the natural gas higher heat value, provide a frequency requirement (weekly, daily, etc.) for such tests.

District Response

The PDOC already requires hourly measurements of the higher heating value of the fuel in Condition No. 76. Condition No. 61 merely specifies which test methods may be used.

CEC Comment No. 12

Condition 83 - Emission Limits for the Three Utility Boilers

This condition allows for the continued operation of the existing boilers once the first turbine (Turbine A) commences operation but only when Turbine A is not in operation. The engineering analysis (particularly Table 5d), however, is unclear as to the basis of the emission levels in Condition 83. The engineering analysis should discuss the basis of these permit levels and explain how, especially for the PM2.5 and PM10 limits, these levels will be enforced.

Additionally, Condition 83 notes it includes aggregate emissions for VOC and SOx, but those limits do not appear in the emissions tabulated below the condition text. Staff recommends that VOC and SOx emission limits be added to Condition 83 as relevant to the most restrictive regulatory requirement, which could be PSD permit applicability thresholds or other District regulatory thresholds for VOC and SOx emissions.

District Response

The Applicant agreed to accept limits, as necessary, on emissions from the first combustion turbine to begin commissioning and emergency water pump combined and on emissions from Utility Boilers Units 1, 2, and 3 to limit emission increases to below the PSD modification thresholds during the period before the end of the second combustion turbine's shakedown period. In the case of NOx, the emission increases must also be limited to a level consistent with the emission offsets provided during this period.

The emission increases for each pollutant that trigger PSD requirements are listed on page 26 of the PDOC and below (lead is omitted since no lead emissions are expected from the project).

Pollutant	Threshold, tons per year
NO_2	40
CO	100
VOC	40
SO_2	40
PM10	15
PM2.5	10
PM	25

Except for NOx, the annual emission limits in Condition No. 83 are determined by: (1) subtracting the applicable PSD modification threshold from the annual emission limit for the first turbine to complete its shakedown period (as listed in Condition No. 82), (2) adding 0.1 tons to the result, and (3) subtracting resulting value from the baseline actual emissions for Units 1, 2, and 3 combined as listed in Table 5c in the PDOC. For example, for CO:

(1) 169.95 – 100 = 69.95

(2) 69.95 + 0.1 = 70.05

(3) 284.9 – 70.05 = 214.85

For VOC, SOx, and PM, no emission limitations are indicated since Condition No. 82 serves to limit the turbines emissions below the PSD modification threshold or major modification threshold, as applicable.

Please note that VOC and SOx were inadvertently listed in the language of Condition No. 83 even though no emission limitation on the existing boilers is required as indicated by the table in Condition No. 83 and Table 5d in the PDOC (page 24). Therefore, for the FDOC, the District has removed the reference to VOCs and SOx from Condition No. 83.

For NOx, a similar procedure was followed in the PDOC except that the emission level consistent with emission offsets surrendered before the start of the turbine provides the basis of limiting the boiler emissions (Condition No. 82 already limits the turbine emissions below the PSD modification threshold for NOx of 40 tons per year). However, for the FDOC, since all the emission offsets for the project are now surrendered before the start of either turbine, as requested by the CEC, no limitation on NOx from the existing boilers is now required. Pursuant to FDOC Condition No. 5, the Applicant will surrender offsets sufficient to offset a NOx emission increase of 39.9 tons per year. Condition 82 limits the turbine emissions to below this level, so no actual emission reductions are required. Therefore, no emission limit for NOx is required for the existing boilers. Condition No. 83 has been modified accordingly in the FDOC conditions. Of course, Units 1, 2, and 3 must be shutdown at the end of the shakedown period

for the second turbine in order to provide actual emission reductions at that time so that the contemporaneous emission increase from both turbines combined is consistent with the allowed annual emissions in Condition No. 44.

CEC Comment No. 13

NOx Emission Reduction Credits

Staff requests that a condition be added to the FDOC that specifies the ERCs by certificate number that will be used to offset the project's NOx emissions.

District Response

A list of ERCs that the Applicant has ownership of, or demonstrated that they have an exclusive option to purchase, is provided in Appendix D of FDOC engineering evaluation. The District does not typically identify specific ERCs used for offsets in permit conditions and will not do so in the FDOC conditions.

Comments on PDOC Engineering Evaluation

Page 8 - Table 1a – Maximum Turbine Emission Rates during Normal Operations
Staff believes that the CO and VOC concentration averaging periods in this table were inadvertently noted to be 3-hour averages. Conditions 29 and 30 note a 1-hour average for these two pollutants under normal (non-transient hour) operations.

District Response

The District agrees and has corrected the table in the FDOC.

Page 13 - Table 4a – Maximum Turbine Hourly Emissions During Commissioning

Staff believes that the maximum allowed combined turbine emissions for VOC should be 164 lbs/hour (one turbine in commissioning) plus 21 lbs/hour (one turbine in a startup and shutdown hour) for a total of 185 lbs/hour versus the 327.5 lbs/hour shown in the table.

District Response

The District agrees and has corrected the table in the FDOC.

Page 30 and 31 – Magnolia Power Plant

Please note that the Magnolia Power Plant in the City of Burbank has been built and started commercial operation during the third quarter of 2005.

District Response

The District will change the FDOC to reflect the Magnolia Power Plant operational status.

Page 38/39 – NOx Emission Reduction Credits

Staff requests that the FDOC provide a complete list of NRG's proposed NOx ERCs, which also provides the location, year, and method of the emission reduction that can be cross-referenced with the District's website NOx ERC list.

District Response

The District will include such a table in the FDOC.

Page 39 – Compliance Certification

Staff requests that NRG's compliance certification be published with the FDOC or that the District provide a copy of the NRG compliance certification separately to staff.

District Response

The District will provide the compliance certification documents to CEC staff if the Applicant has not done so.

APPLICANT COMMENTS

Applicant Comment No. 1

PDOC Condition 10

As defined by this condition, a gas turbine shutdown begins when the gas turbine generator gross output drops below 114 MW. This number is based on a gas turbine load of 60% and a maximum gross rating of 190 MW for the gas turbine generator during a hot summer day. However, during a cold winter day the maximum gross rating of the gas turbine generator is approximately 219 MW and there is a range of maximum gross ratings dependent upon ambient temperatures. For example, during a winter day at a gas turbine load of 60% the nominal shutdown starting point would be 131 MW rather then 114 MW. Therefore, because the value that would be 60% of maximum load varies over ambient conditions, we request that a single MW value not be used to define when a gas turbine shutdown begins. Rather, we request that a shutdown event be defined as the start of the first 15-minute period when NOx and CO concentrations exceed the applicable permit limits after the operator initiates a shutdown sequence as documented in the operator log.

District Response

The District believes that, for enforcement purposes, a load level specified in megawatts is preferable in defining a shutdown. The District agrees that the 60% load level will change with ambient conditions. However, the difference is not significant in the context of this condition. The normal shutdown time indicated in the application is 7 minutes, which implies that the average ramp rate for the reduction of turbine load is at least 16 MW/min during a shutdown. Thus, it would only take about one minute to reduce the load from 131 MW to 114 MW. Since 30 minutes is allowed for a shutdown, ample time is available for shutdowns under all ambient conditions. Therefore, the condition will not be revised as requested.

Applicant Comment No. 2

PDOC Condition 15

Based on information provided by Siemens (see Attachment 1), there can be elevated gas turbine NOx emission levels (as high as 13 ppmv @ 15% O_2 prior to SCR) during transient gas turbine load changes with ramp rates as low as 5 MW/min and with possibly higher NOx concentrations for ramp rates above that level. These elevated NOx levels during transient operation can occur for several minutes. While there will be some level of SCR system control during these transient episodes, just one 15-minute average elevated NOx level in the range of approximately 6 ppmv would result in an hourly average of 3.0 ppm (with the other minutes during the hour at 2.0 ppmv). For the above example, even with a three-hour average during transient operation the average NOx level would be 2.3 ppmv, which is above the permit limit of 2.0 ppm. Consequently, we are requesting two changes to this condition. First, we request that the triggering transient hour ramp rated be changed from 50 MW/min to 10 MW/min. Second, we request that NOx emissions during transient conditions be excluded from the calculation of hourly NOx concentrations subject to the 2.0 ppm BACT limit.

District Response

The District does not find the information provided to support the request compelling. Another large combined-cycle turbine located in San Diego has been able to comply with an identical condition to address transients for more than a year. Moreover, the very limited information presented does not include the effects of the selective catalytic reduction (SCR) emission control equipment such as that proposed for the CECP. Under normal operations, a significant reservoir of ammonia may be adsorbed on the catalytic surface of the SCR, which can serve to provide reactant to control rapid short-term NOx increases until the SCR control system can increase the flow of ammonia to the SCR. The Applicant should ensure that the SCR catalyst bed is sized appropriately and the SCR control system designed appropriately to comply with the permit's BACT limits during short term increases in NOx concentrations in the turbine exhaust caused by reasonably rapid load changes.

Applicant Comment No. 3

PDOC Condition 19

We request that the reference to Turbine A be changed to Turbine B (this appears to be a typographical error).

District Response

The District has corrected the typographical error as requested.

Applicant Comment No. 4

PDOC Conditions 23 and 62

These permit conditions require daily sampling of the natural gas sulfur content. Because the PDOC only includes annual SOx emission limits for the new units and because the proposed project will be exempt from the fuel sulfur monitoring requirements under the NSPS and Acid Rain regulations (due to the use of pipeline quality natural gas), we request that the daily sulfur content sampling be removed from these permit conditions. Additionally, the Encina boilers currently do not conduct daily sulfur sampling and currently comply with Part 75 requirements so it appears daily sampling is not required.

District Response

The District agrees that daily sampling is not required in this case and has revised the condition to require quarterly sampling of the natural gas. The annual SOx limits have been agreed to by the Applicant but are not required to avoid PSD since the maximum potential to emit using PUC quality gas is less than the PSD threshold. In addition, the conclusions of the air quality impact analyses would not be affected if the new units were evaluated at their maximum potential to emit. Quarterly monitoring is sufficient to support BACT, which requires PUC quality gas, since the serving gas supply utility already monitors the gas supply to ensure compliance with the PUC sulfur standards.

Applicant Comment No. 5

PDOC Conditions 28, 29, and 30

As discussed in the requested change for Condition 15, we request that the calculation of hourly average NOx concentrations for compliance with the 2.0 ppm BACT limit exclude minutes during transient operation.

District Response

Please see the response to Applicant Comment No. 2.

Applicant Comment No. 6

PDOC Conditions 32, 33, and 34

These permit conditions list the applicable requirements of the SDAPCD gas turbine prohibitory rules (Rules 69.3 and 69.3.1). These rules do not include exemptions during gas turbine commissioning activities. Consequently, during some of the commissioning tests the proposed new units will not be able to comply with the NOx emission limits in these rules. It is our understanding that for previous projects in a similar situation and because the SDAPCD has not yet modified the rules to accommodate gas turbine commissioning, we understand the SDAPCD has dealt with this issue by supporting the issuance of a variance providing compliance protection during the commissioning period. We also understand that the SDAPCD will use the same approach for the CECP. We request that this understanding be incorporated into the language of the FDOC.

District Response

The District recognizes the applicant's right to petition the District Hearing Board for relief during commissioning. However, the District Hearing Board is an independent body that makes decisions on a case-by-case basis considering the totality of evidence and arguments presented to it for each individual case including the position of the District staff. The District staff's position on any variance petition is determined at the time of the petition based on the information available at that time. The District will not include any language such as that requested in the FDOC.

Applicant Comment No. 7

PDOC Condition 54

We request that the submittal deadline for source test and RATA reports be changed from 45 days to 60 days following the completion of the test. This change is consistent with the test report submittal deadlines in other PDOC conditions and is consistent with the gas turbine NSPS (see 40 CFR 60.4375).

District Response

Condition No. 54 requires annual source test monitoring to support the emission limits in the permit and a RATA test is required as part of the federal Acid Rain Program to recertify the CEMS. For the annual CEMS certification, the Acid Rain Program (40 CFR §75.60) requires reports to be submitted within 45 days after the test or 15 days from a District request, whichever is later. In this case, the permit condition should be considered the District's request. The District has also found that 45 days is normally adequate time for submittal of source test reports. Therefore, the District will not change the required test reporting requirement from 45 days to 60 days as requested.

In situations such as source testing for toxic air contaminants and initial compliance source tests, which may be more complex, the District agrees more time may be required for submittal of the source test report in some cases. Condition No. 54 allows source test reports to be submitted later than 45 days after the test if authorized by the District. The District will evaluate any request for a later submittal on a case-by-case basis.

Applicant Comment No. 8

PDOC Condition 63

We request that this condition be changed to clarify that the applicant must comply with all applicable monitoring requirements in 40 CFR 75 rather than comply with all monitoring requirements in this regulation.

District Response

The District agrees with the request and has made the indicated change.

Applicant Comment No. 9

PDOC Condition 66

We request that the definition for commercial operation be changed from when power is first sold to the grid to when a gas turbine successfully completes all performance/ emission compliance tests. The reason for this change is that power will be sold to the grid as soon as power is generated by a gas turbine. This can occur during the first few days of the gas turbine commissioning period. If left unchanged, this permit condition would require the RATAs to be performed prior to completing the gas turbine commissioning period. Under the Acid Rain regulations (40 CFR 75.4.b.2), the CEM certification test must be performed within 90 unit operating days. Under the NSPS regulations (40 CFR 60.13.c and 60.8.a), the performance tests must be performed within 60 days of achieving maximum production, but not later than 180 days from initial startup. Both of the above requirements place the RATA beyond the gas turbine commissioning period. In addition, we request that the deadline for submitting test reports be changed from 45 to 60 days to make the permit condition consist with other PDOC conditions.

District Response

The definition of "commercial operation" in the Condition No. 54 is consistent with the definition of "commence commercial operation" in the Acid Rain Program at 40 CFR §72.2. However, the District agrees that requiring the test 60 calendar days after end of the commissioning period, which could be after as many as 180 days of operation, could be inconsistent with Acid Rain Program requirements at 40 CFR §75.4(d). Therefore, the District is revising the condition to be consistent with Acid Rain Program requirements by requiring the

Relative Accuracy Test Audit (RATA) test to be performed the sooner of 90 unit operating days, as defined at 40 CFR §72.2, or 180 calendar days from the initial startup of the turbine.

Other initial source tests to determine compliance with the permitted emission limits and to verify toxic air contaminant emissions need not be conducted at the same time as the RATA test (Condition Nos. 56 and 59). However, the District recommends that they be conducted at the same time as the RATA test.

The District will not change the required RATA test reporting requirement from 45 days to 60 days as requested. For the initial CEMS certification, the Acid Rain Program (40 CFR §75.63) requires reports to be submitted within 45 days after the test or 15 days from a District request, whichever is later. In this case, the permit condition should be considered the District's request.

Applicant Comment No. 10

PDOC Condition 83

We request that the reference to VOC and SOx emission limits be removed from the condition because the condition does not include such emission limits.

District Response

The District agrees and has removed the reference to VOC and SOx limits from this condition.

Applicant Comment No. 11

NOx Excursions (Impacts PDOC Conditions 28 and 39)

The applicant is requesting a change to PDOC Conditions 28 and 39 to address short-term NOx emissions excursions above the 2.0 ppmc permit limit. The proposed language is shown below:

Compliance with the hourly NOx emission limitations specified in Conditions 28 and 39 shall not be required during short-term excursions limited to a cumulative total of 15 hours per rolling 12-month period above 2.0 ppmvd at 15% O_2, for each gas turbine provided that it meets all of the following requirements:

A. This equipment operates under any of the qualified conditions described below:

- *Rapid gas turbine load changes initiated by the California ISO or a successor entity when the plant is operating under Automatic Generation Control;*
- *Rapid gas turbine load changes due to activation of a plant automatic safety or equipment protection system which rapidly decreases turbine load;*
- *The first two 1-hour reporting periods following the initiation/shutdown of the gas turbine inlet air cooler;*
- *Events as the result of technological limitation identified by the operator and approved in writing by the District.*

B. The 1-hour average NOx emissions above 2.0 ppmvd at 15% O_2 did not occur as a result of operator neglect, improper operation or maintenance, or qualified breakdown under District rules.

C. The 1-hour average NOx concentration for periods that result from a qualified operating condition does not exceed 12 ppmvd at 15% O_2.

All NOx emissions during these events shall be included in all calculations of daily and annual emission rates as required by this permit.

The above NOx excursion language has been accepted by other California air districts. In addition, we reviewed continuous emissions monitoring (CEM) data for four California plants equipped with Siemens 501FD combustion turbines similar to those proposed for use at CECP, and eight California plants equipped with General Electric 7FA combustion turbines. Together, these 12 plants are all of the F-class turbine plants operating in California at this time. The CEM data were obtained from the plants' submissions to USEPA under the federal acid rain program, and are all publicly available documents. A summary of the key information for each plant is shown in Table 1 (provided in Attachment 2).

The analysis reviewed the CEMS data reported to EPA for these facilities to determine the frequency with which they exceeded their applicable NOx permit limits, excluding allowable exceedances during startups and shutdowns. These data are summarized in Table 2 (see Attachment 2).

The data in Table 2 reflect all exceedances, not just those that might qualify for treatment under an exclusion or that might be associated with transient operations. The data demonstrate that there is a clear "learning curve" with respect to maintaining low NOx emissions with these units, but that by the second or third year of operation, NOx exceedances are generally only a few per year for all causes. The data demonstrate, however, that excursions do continue to occur, even after several years of operational experience. In addition, the data indicate that not all of the excursions are due solely to abrupt gas turbine load changes. Consequently, there needs to be a permit condition to cover the excursions that are not addressed by the transient load permit exemption in the PDOC (Condition Number 15).

Tables 3 and 4 (see Attachment 2) show the exceedances above 5 ppmc and 10 ppmc, respectively. From these data it is clear that a 30 ppmc excursion limit would accommodate virtually all of the excursions observed in the data we examined. However, because an excursion of this magnitude would result in noncompliance with the 12.9 ppmc NOx limit (9 ppmc corrected for gas turbine efficiency) one-hour average in SDAQMD Rule 69.3.1, we request that the excursion limit be included in the CECP permit at 12 ppmc. A 12 ppmc excursion limit would eliminate more than half of the observed exceedances of the 2.0 ppmc limit that are shown in Table 2.

District Response

Acid rain data is hourly average data, which makes it impossible to determine the cause of any apparent exceedance of an emission limit attributed to short transients. The District has included allowances in the permit for situations that it is aware of that could cause an exceedance of the 2.0 ppmvd BACT limit—three-hour averaging for very rapid load swings, low-load operations, and tuning. The District will not incorporate the requested language in the FDOC conditions Please see also the response to Applicant Comment No. 2.

INTERVENOR COMMENTS

CITY OF CARLSBAD COMMENTS

City of Carlsbad Comment No. 1

Page 1 – Project Description
Locations of sensitive receptors used in the air emission analysis and ground level impacts were not clearly identified in the PDOC. The City is concerned that the air quality analysis did not take into consideration the Coastal Rail Trail as a receptor. It is anticipated that this trail, which will be constructed within the next several years along the western boundary of the proposed CECP, will have high volume of foot and bike traffic. The City requests that the APCD clarify that this facility was considered as part of the ground level air quality analysis. If it wasn't, the City requests that the APCD please include the Coastal Rail Trail as a receptor.

District Response

The Applicant's supplemental health risk assessment (HRA) included receptors that were located at least every 25 meters on the facilities property line and in nearby areas. Although not required by District Rule 1200, the District has examined the acute health impacts of the project on the facility's property in addition to the health risk assessment submitted by the Applicant that assessed health impacts beyond the facilities property line. The District found that the estimated maximum acute health impact was less than the maximum impact outside the facility's boundary, which is in compliance with District Rule 1200. Since people on foot or bicycles would only be subject to short term exposures on such a trail, 8-houir or annual impacts are not relevant. Based on this analysis, there would not be significant acute health impacts on any trail passing through the facility's property.

City of Carlsbad Comment No. 2

Page 3 – Project Description
The PDOC identifies that the CECP proposes to use F class turbines. However, there are now newer, more efficient G and H class generators which are available. Recognizing that this project is still more than 18 months away from the mobilization phase of construction (if approved), what are the APCD's requirements regarding use of best available technology? As referenced on Page 31 of the PDOC, the Sithe Mystic Development realizes substantially less VOC (15% less) due to the use of state-of-the-art technology.

District Response

Recently the Applicant proposed a control level of 1.5 ppmvd on a 1-hour average for VOCs as BACT, which is less than the Sithe Mystic Development level of 1.7 ppmvd. Based on this proposal and after reviewing additional information regarding F class turbines, the District has determined the Applicant proposed limit to be BACT at this time (see FDOC).

Under the District's NSR Rules, the District can consider lower emitting alternative processes or equipment as BACT for new units. Although, slightly more efficient than the F class turbines, the G and H class turbines are also larger. For example, in simple cycle mode, Siemens's G

class turbine is rated at 265 megawatts (MW) compared to 198 MW for the F class turbine. Siemens is not expected to offer an H class turbine for a 60 Hz grid frequency until 2010 or 2011. Geometric scaling of the 340 MW simple cycle rating for Siemens's 50 Hz H class turbine, predicts that a Siemens's 60 Hz H class turbine would be rated at about 236 MW, also larger than the Siemens's F-class turbine. It is also not clear if G and H class turbines will meet the fast start and flexibility objectives of the CECP.

Besides the issues of the ability of G and H class turbines to achieve the project goals, substitution of two G or H class turbines for the two F class turbines would result in considerably more emissions for most pollutants than the F class turbines because the efficiency increase does not offset the increase in the turbine size (substituting a single G or H class turbine for both F class turbines would not meet the total power output objectives of the project). For example, based on information on emission guarantees provided by Siemens for operation at greater than 70% loads for currently available G class turbines equipped with the same types of emission controls as those proposed for the CECP F class turbines, the District estimates that annual NOx, CO, and PM10/PM2.5 emissions would increase by about 14.1, 2.2, and 10 tons per year, respectively. Emissions might decrease only for VOCs by about 2.4 tons per year. G and H class turbine emissions at lower loads would also be expected to be higher than the F class turbine for all pollutants. Hence, G and H class turbines can not be considered lower emitting than the F class turbine in general.

The substitution of G or H class turbine to reduce VOC emissions would also likely raise cost-effectiveness issues. Even if the VOC emission reductions were as much as 10 tons per year, the annualized cost differential between the G or H class turbines and the proposed F class turbines would have to be less than $102,000 per year to be in accordance with the District's BACT cost-effectiveness threshold.

With these considerations, the District finds that substitution of G or H class turbines for the proposed F class turbines is not BACT for the CECP.

City of Carlsbad Comment No. 3

Page 4 – Stack Height
The PDOC identifies the stack height of the proposed CECP to be 139 feet. The City requests that the APCD confirm this stack height with the manufacturer (Seimans).

District Response

In response to a District inquiry, Siemens, the manufacturer of the turbines proposed for the CECP, indicated that stack heights in the range of 135–185 feet would not impact the emission concentration guarantees. Therefore, the proposed 139 foot stack height is an appropriate stack height on which to base the application evaluation.

City of Carlsbad Comment No. 4

Page 5 – Phasing of Turbines
The Applicant's July 2008 amendment to their Application for Certification to the California Energy Commission (CEC) reflects a single-phase construction schedule. The City believes that the FDOC should reflect this change. Additionally, based on the PDOC, the City has concerns that a scenario exists where the Applicant would be allowed to construct Unit #6, hold off constructing Unit #7 and continue to run Units #1-3 indefinitely. If approved, the City requests that the APCD require the immediate and permanent shutdown of Units #1-3 once Unit #6 is commissioned.

District Response

As discussed in the District's response CEC Comment No. 1, District Rules and Regulations give the District no authority to require Units 1, 2, and 3 to permanently shut down before the time specified in the PDOC (i. e., 180 days after the second combined-cycle turbine system begins commissioning). The District has asked the Applicant if they would be willing to accept an earlier shut down of Units 1, 2 and 3, either before the second combustion turbine combined-cycle system began its commissioning or at a fixed date after the first combined-cycle system was fully operational. The Applicant has not agreed to such an earlier shutdown. Please see also the District's responses to CEC Comment Nos. 4, 6, 7, and 8.

City of Carlsbad Comment No. 5

Page 9 - Emission Impacts
Table 1c and 1d identifies the maximum allowable daily and annual emissions from the CECP. The City has concerns regarding these emissions and the impacts to the surrounding community. The City requests that the APCD provide a detailed map(s) of emission influence areas.

District Response

The District will prepare such maps and provide them to the public either before or at the CEC's planned workshop on the Final Staff Assessment (FSA).

City of Carlsbad Comment No. 6

Page 15 – Commissioning Emissions
The City wants to ensure that the applicant will comply with emission limits during the commissioning phase of the CECP. The City believes that excessive air pollutants present a very real impact to the local community and requests that the APCD require the Applicant to comply with any and all emission limits as established by the CEC. This limitation includes the inability of the Applicant to request at some future date a waiver or variance from the APCD regarding allowable emission levels.

District Response

The Applicant must comply with all conditions on the permit unless a variance to that condition has been obtained in a public process before the District Hearing Board. Only the Hearing

Board, which is independent of the District, can grant a variance to a District rule or permit condition. Because the authority for the issuance of variances is established by state law, the District cannot prevent the Applicant from seeking such a variance. However, the District participates in the Hearing Board process by presenting its position on any variance petition. The District's position on any petition is determined on a case-by-case basis at the time the variance is sought. The District would not support any variance that would cause or contribute to an exceedance of the state or federal ambient air quality standards or present a significant health risk to the public. The public may also participate in the Hearing Board process by appearing at the hearing, providing written or oral comments on the proposed variance, and challenging the Hearing Board decision.

City of Carlsbad Comment No. 7

Page 19 – Contemporaneous Emissions
The PDOC does not identify the approved Poseidon Desalination Plant (scheduled to be constructed before 2012) nor the applicant's proposed desalination plant (as outlined in their June 2008 filing with the CEC) as a potential source of contemporaneous emissions. The City requests that the APCD review both proposals to confirm that they will not materially change the contemporaneous emission analysis related to the CECP.

District Response

The Applicant's proposed desalination plant will reportedly use reverse osmosis to desalinate water with power provided by electrically driven pumps. The District is unaware of any direct air emissions from this type of operation. There are also no impacts on contemporaneous emission increases from the use of a portion of the electrical generation from the new equipment at the power plant for the desalination process because the annual emissions are limited by the PDOC conditions.

Even though located on contiguous property, the Poseidon Desalination Plant is not under common control or ownership by the Applicant nor does the Poseidon Desalination Plant as proposed depend solely on the CECP as a customer for its water. As such, under District NSR rules, its emissions are not counted as part of the contemporaneous emission increase for the Encina Power Plant.

City of Carlsbad Comment No. 8

Page 20 – Emission Calculations for Units #1, 2, and 3
The PDOC identifies Rule 20.1(d)(2)(i)(B) as requiring the actual emissions to be averaged over the previous 5 years if a two year representative sample cannot be identified. The City asserts that in July 2008, the Applicant substantially altered their application to the CEC. This amendment should have triggered a supplemental filing with the APCD, which should have then considered the 2007 air emissions from Units #1-3. The City requests that the APCD verify the 2007 emissions from Units #1-3 and adjust the years considered for pre-project emissions to include 2007. If 2007 emissions are consistent with those from 2006, the City requests that the APCD use those two years as the representative sample (instead of the 5 year average methodology) to calculate emission thresholds and offsets.

District Response

The District has based its representative period for determining the actual emissions on the 5-year period before the application was received in accordance with Rule 20.1 (d)(2)(i). Since the application was received in 2007, this 5-year period is calendar years 2002 through 2006. The main substantive change to the project in July of 2008 was to increase the stack height to 139 feet, which had no affect on the emission guarantees for the new equipment and reduces air quality impacts. This does not constitute a sufficient modification of the project to require a new application. Please see also the response to Simpson Comment No. 5.

City of Carlsbad Comment No. 9

Page 39 – Emission Offsets
The Applicant has only demonstrated ownership of 37.6 tons of emission reduction credits (ERC's) for NOx. The City requests that the APCD require the applicant to acquire the remaining 10.3 tons of NOx ERC's before the FDOC is issued. The City would also request that the APCD reevaluate the amount of ERC's required due to any change in preproject emission calculations.

District Response

The Applicant has provided documentation to show that they either own, or have entered into an exclusive option contract to purchase, sufficient ERCs to provide the entire 47.9 tons of required NOx offsets. These ERCs are identified and listed in Appendix D of the FDOC.

City of Carlsbad Comment No. 10

Page 40 – Rule 51 and Green House Gas
The PDOC highlights Rule 51, known as the Nuisance Rule. Although the APCD, unlike other air boards throughout the state, has yet to actively engage in the Green House Gas (GHG) issue, clearly under AB 32 and related legislation, the State of California is moving towards reducing GHG emissions. The City believes that climate change is a pressing issue which requires the involvement of agencies at all levels. Furthermore, the City believes that the substantial GHG emissions from the proposed CECP (nearly 1 million metric tons per year) continue to contribute to climate change and as such represent a nuisance to the community and the region as a whole. In order to minimize the long-term economic and ecological impacts from GHG emissions, the City requests that the APCD consider restricting large-scale GHG emitters, such as the CECP, until such time as statewide rules and regulations can be clarified and implemented.

District Response

The CEC, as part of the environmental review for the project, will consider whether the greenhouse gas (GHG) emissions from the facility have the potential to pose a significant impact to the environment. If it identifies a significant environmental impact due to GHG emissions, it may decide to impose additional restrictions on the facility.

APCD agrees that global climate change is a pressing issue. However, in order to make finding of a nuisance, the District must be able to prove a cause-and-effect relationship between the

emissions at issue and the nuisance. With regard to GHG emissions, although the scientific consensus is that human activities have likely impacted global climate and caused an increase in the average annual global temperature, this is the cumulative effect of all anthropogenic emissions worldwide over approximately the last 100 years. Based on the Intergovernmental Panel on Climate Change (IGCC) "Climate Change 2007 Synthesis Report," the estimated average global temperature rise since 1906 is about 1.3 F. Consistent with the rise in temperature, ocean levels have risen about one half foot over the same time period. Future impacts from global warming will also be the result of the cumulative GHG emissions in the past and in the future.

The IGCC estimates annual global carbon dioxide emissions from fuel use to be about 27,000,000,000 metric tons as of 2004. The forecast Carlsbad Energy Center Project carbon dioxide emissions are about 0.004% of that annual worldwide total. Thus, the District would not be able to prove the emissions of this facility would cause the public harm from global climate change, and thus could not place additional restrictions on the facility based upon a finding of public nuisance.

Moreover, the CECP is more energy efficient than other local electrical generation resources using fossil fuels that can be dispatched within a few minutes (the CECP has less than half the GHG emissions per unit of electrical energy as some peaking turbines in San Diego County). To the extent the CECP displaces the use of these less efficient electrical generating units, overall GHG emissions would be reduced. The CECP's ability to be dispatched rapidly may also provide necessary support to the electrical grid when solar and wind energy sources, which are not dispatchable in nature, are not available. The presence of this support may allow such alternative sources to be developed and relied upon to provide more of the electrical energy needs of the county. This would also reduce GHG emissions.

Additionally, there is considerable effort underway at the state level to address the GHG emissions from power generation. Notably, the ARB Scoping Plan which was developed and adopted pursuant to AB32 did not impose restrictions on new power generation; rather, it focused on energy efficiency, increased renewable generation, and a cap and trade system designed to reduce major source GHG emissions gradually over time.

Finally, the District does not have authority under the Health and Safety Code to deny or add further restrictions to a facility solely on the basis of additional GHG emissions. The District is not the lead agency for purposes of CEQA, and the statutes under which it issues permits do not currently give discretion to the District to refuse to permit an otherwise compliant project due to GHG emissions. While the District can deny a permit if it finds it would cause a nuisance, as noted above, no nuisance can be demonstrated here.

City of Carlsbad Comment No. 11

Page 45 – Title V Permit
The Applicant has requested that the existing Encina Power Station Title V permit be amended to include the CECP. The City believes that the CECP is being permitted as a standalone facility and should therefore be required to receive its own Title V permit by the Federal Government. The City requests that the APCD please clarify if the CECP is required to submit for its own Title V permit, and if so, what timing or other impacts that may have on the APCD's issuance of the Final Determination of Compliance.

District Response

The CECP is not being permitted as a stand alone facility but as two new separate emission units as part of the existing stationary source that is the Encina Power Station. As such, it is a modification of the existing Title V permit for the Encina Power Station. Even if the CECP was considered distinct from the Encina Power Station, it would be contiguous with Encina Power Station property and both the Encina Power Station and the CECP would be under common control and ownership. Under both District NSR and Title V regulations, the CECP and the Encina Power Station would still be considered a single stationary source. Because the CECP is part of a single stationary source, there is no requirement in the District Title V regulation for a separate Title V permit.

As a significant Title V permit modification of the existing Title V permit for the Encina Power Station, District Rule 1410 (k)(1) requires that the District complete its NSR process first. In the case of a power plant project subject to CEC certification, the FDOC conditions serve as the District's Authority to Construct, but only after the CEC issues its final approval of the project. Thus, the District will not publicly notice Title V permit modification until after the CEC completes its process and issues a final decision approving the project. However, the District will endeavor to provide public notice and begin EPA review of the of the Title V permit modification as soon as possible after a CEC approval occurs. Of course, if the CEC fails to approve the project then the significant permit modification will be moot.

City of Carlsbad Comment No. 12

As you may be aware, the CEC has identified a significant visual impact due to the construction of the CECP in conjunction with the widening of Interstate 5. The City believes that in an effort to address the visual impact, different types of screening, including the building of structures such as walls, may be incorporated into the CECP. The City wants to ensure that these structures don't inadvertently impact air quality (such as down washing) and requests that the APCD review any such structure proposed.

District Response

The District review of the air quality impacts from the project included all known existing structures and reasonably known future structures, including the berm between the proposed power plant and Interstate 5. Without a proposed project including screening such as that described, the District finds that it is too speculative to be included the evaluation of the current application. However, if such a project were to be proposed, the inadvertent air quality impacts

from such a project could be evaluated in any California Environmental Quality Act (CEQA) analysis for that project.

POWER OF VISION COMMENTS

Ms. Julie Baker and Dr. Arnold Roe, Ph.D., are both members of Power of Vision. Their comments submitted as individuals and comments submitted by Power of Vision are addressed below. All comments are labeled Power of Vision comments irrespective of their source.

Power of Vision Comment No. 1

The San Diego County Air pollution Control District needs to reconsider their preliminary decision to approve a source of air pollution from the Carlsbad Energy Center Project. Although this project may meet the requirements for a pollution source, it is imperative to consider that this application is in a residential neighborhood and should therefore be held to a higher standard.

Over the years the City of Carlsbad has grown up around the existing Encina Power station. There are people that live less than ½ mile from the project site. It is imperative that special consideration be given to residents that already suffer from pollution generated by the existing plant as well as from I-5 and highway 78. NRG should be required to meet a higher standard when given credit or the ability to purchase carbon offsets.

District Response

The District rules contain no provisions for treating one area different from another when considering the impact of air pollutants. District rules ensure that air quality is protected and residents are not exposed to unsafe levels air contaminants regardless of their proximity to the source. The District's evaluation considered the impacts on air quality on residences in the vicinity of the CECP. This evaluation included an assessment of toxic air contaminant impacts and impacts of criteria pollutants: NO_2, CO, SO_2, PM10, and PM2.5. Unlike occupational workers, the District evaluation considered the possibility that residents may spend their entire lives continuously present near the facility at all times of the day. These analyses showed that the toxic air contaminant impacts were below levels that are used throughout California to determine whether a project poses a significant risk to all citizens that are exposed, including permanent residents. In addition, the analysis of criteria pollutant impacts showed no new exceedances of either the federal or state ambient air quality standards and, in the case of the state annual particulate matter ambient air quality standards, the impact was below the level that is considered to contribute to an exceedance of those standards. Please see also the response to Simpson Comment Nos. 14, 15, and 16; Terramar Association Comment No.1; General Public Comments Nos. 1, 2, 3, 4, 5, and 6.

With respect to carbon offsets, the District does not regulate GHG emissions. Any comments about potential carbon offsets should be directed to the CEC. Please see also the response to Terramar Association Comment No.1, Simpson Comment No. 9 and City of Carlsbad Comment No. 4.

Power of Vision Comment No. 2

Secondly, where will the enforcement of CCEP exist for the pollution caps and operating days? Since CCEP will be able to sell their electricity on the open market what is the benefit of this plant to the residents of Carlsbad and North County? Why must we suffer from increases in air pollution to the benefit of Orange County and Los Angeles? If the air pollution control districts of our northern neighbors can say no to new power plants, then so too can SDAPCD. The siting of CCEP in Carlsbad puts an undue burden on the residents. Please reconsider your preliminary finding of compliance.

District Response

The PDOC conditions require that compliance with emission limits be verified both by initial and periodic source testing. Additionally, NOx, CO, and VOC (using CO as a surrogate) emissions are required to be continuously monitored by a CEMS on a minute-by-minute basis. The CEMS system also monitors operating hours and fuel flow to the combustion turbines.

District Compliance Division policy is to inspect large power plants like the CECP at twice a year (more often if there are compliance problems). The inspection includes a review of the CEMS records and other information related to compliance. The Compliance Division is also immediately made aware of any failures to comply with permit limits as determined by source testing.

District Rules and Regulations do not make distinctions between facilities making products for export (including electricity) and facilities providing only local services. The District notes that San Diego has historically imported a large fraction of its electrical energy during times of high electrical demand, much of it through the large power lines passing near the Encina Power Station. In this situation, electrical power generated by the CECP would physically remain in San Diego regardless of where it was sold.

Please see also the response to Power of Vision Comment No. 6.

Power of Vision Comment No. 3

I request the San Diego County Air Pollution Control District hold a public hearing on the NOTICE OF PRELIMINARY DECISION TO APPROVE A SOURCE OF AIR POLLUTION to enable the citizens of our city to hear first hand the air pollution issues facing our community if the Carlsbad Energy Center is built and operated as proposed. As our city, state, nation and global communities become more concerned about the effect of green house gasses on the atmosphere, it is vital we take the time to inform the citizens of the pollution hazards from the proposed plant.

The proposal to emit a combined 484 tons per year of particulate matter into the air must be seriously questioned by the public. Although this is partially offset by the retirement of three existing utility boilers at Encina, it is an unacceptable increase of air pollution that will affect the health of the community. It is imperative the citizens of Carlsbad and surrounding communities have an opportunity to hear the report and comment. Holding a public hearing in Carlsbad is the right thing for the SDCAPCD to do.

District Response

The District will not hold a public hearing on the PDOC or the FDOC. For a more detailed discussion of the reasons and a discussion of public hearings that will, or may be, held, please see the District response to Simpson Comment No.1.

As a clarification, the CECP maximum permitted level of annual PM10 emissions in the PDOC (and FDOC) is 39 tons per year. This also serves to limit total particulate emissions because all particulate emissions from combustion turbines are considered to be less than 10 microns in diameter.

Power of Vision Comment No. 4

The District's Preliminary Decision to Approve the Carlsbad Energy Center Project as stated in your November 25th publication is seriously flawed because it uses the AVERAGE of years 2002 through 2006 emissions from Encina Units 1, 2, & 3 to calculate offsets for the new units pollution credits (see pg. 21), while it is readily evident that use of units 1, 2, & 3 has been steadily declining and if a trend line is used to forecast future creditable emissions from these units, emission reductions shown in Tables 5b & 5c on pgs, 22 & 23 would be greatly reduced, and Emission Increases in tons/yr would exceed the limits shown on pg. 26. Also, before the District's Final Report is submitted, the district will have available emission date from units 1, 2, & 3 for the years 2007 & 2008 and, at the very least, these two years results should be used in any calculation of pollution offsets.

The need for the Carlsbad Energy Center Project is predicated on peak energy demand forecasts made by using a least squares best fit of previous demand to forecast demand in the year 2012 when the Project will become operable. It would seem logical to use the same forecasting technique to determine the offsetting pollution credits available to Carlsbad Energy Center Project in the year 2012 from retirements of Encina units 1, 2, & 3 at that time. Such forecasting will show many less credits available for this project, particularly if the available data from years 2007 & 2008 are used in the forecast.

District Response

The District NSR rules base the determination of the baseline emissions from existing emission units on historical emissions not projected future emissions. This is consistent with their use to determine actual emission reductions (rather than projected emission reductions).

The time period allowed by the District NSR rules to determine baseline emissions is the five-year period prior to the receipt of a complete application. This five-year period is the calendar years 2002–2006 since the application was received and determined complete in 2007. The District also notes that the same forecasts of peak electrical demand used to demonstrate the need for the new power plant might also forecast an increase in the use of the existing boilers if the new power plant is not built.

Please see also the responses to Simpson Comment Nos. 3 and 5.

Power of Vision Comment No. 5

I believe that the District should also have the applicant identify the 37.6 tons/yr of NOx emission offsets the applicant (NRG) claims to own (see pg 39), and the additional 10.3 tons/yr that available for purchase. Are these credits coming from within San Diego County, or is NRG purchasing credits from outside the County to use to increase the pollutants in San Diego?

District Response

The Emission Reduction Credits (ERCs) that the Applicant has ownership of, or demonstrated that they have an exclusive option to purchase, to provide NOx emission offsets are listed in Appendix D of the FDOC. None of these ERCs were generated outside of San Diego County.

Power of Vision Comment No. 6

On Pg. 40, the District states that all of San Diego County is currently classified as non-attainment for ozone. Isn't this sufficient to preclude any additional ozone pollution from new sources, such as the proposed power plant expansion? Hasn't the Los Angeles Air Quality Board, another non-attainment for ozone area, recently placed a moratorium on all new plants?

District Response

The District disagrees. Being in nonattainment of federal or California ambient air quality standards for ozone does not prevent the construction of new sources of VOCs or NOx (ozone precursors). However, it does require more stringent requirements be met before certain larger projects can receive approval. For example, because the emission increase of NOx for the CECP is greater than the major modification threshold under nonattainment NSR, the CECP is required to apply emission controls meeting the Lowest Achievable Emission Rate requirements (LAER) and provide emission offsets for the increase at a ratio of 1.2 to one.

The "moratorium" on construction of new power plants in the Los Angeles area is due to the relative unavailability of privately owned ERCs to provide emission offsets in that air basin and litigation blocking, at least temporarily, the use of ERCs owned by the local regulatory agency to offset power plant emissions as the local agency was prepared to allow.

Please see also the response to General Public Comment No. 5.

Power of Vision Comment No. 7

On page 49, the District indicates that the EPA has stayed the applicability of limitations for hazardous air pollutants from gas-fired combustion turbines. Prior to the District's final report, will the District verify whether or not the new Federal administration has reinstated the applicability of limitations?

District Response

The District has conferred with EPA and the there is not an expectation that the stay of the National Emission Standards for Hazardous Air Pollutants for combustion turbines (40 CFR Part 63 Subpart YYYY) will be lifted in the near future. Since the CECP is part of a Title V facility (the Encina Power Station), conditions reflecting the requirements of Subpart YYYY would be incorporated in the Title V permit after the stay is lifted.

Power of Vision Comment No. 8

Appendix C lists Proposed Permit Conditions to be imposed on the applicant, but nowhere indicates the penalties to be imposed for non-compliance. The citizens of San Diego County should be informed of such penalties so that they may evaluate its effectiveness.

District Response

Violations of District permit conditions can potentially result in either criminal or civil penalties. The District may only impose civil penalties. However, violations may also be sought by the District Attorney, the state Air Resources Board, the Attorney General, the U.S. Attorney, or the U.S. Environmental Protection Agency, in addition to the District. If a violation is pursued as a criminal violation, the potential monetary penalties are similar to those in civil cases described below. However, in addition, the violator is potentially subject to six months to a year in jail depending on the nature of the violation. Whether civil or criminal penalty is sought for a violation depends on the facts of the case.

For a basic violation, any person who violates air pollution laws is strictly liable for a civil penalty up to $10,000, per day of violation unless the person (except at a Title V source) establishes by affirmative defense that the violation was not the result of intentional or negligent conduct in which case the maximum penalty is $1,000 per day. However, larger maximum penalties can be assessed for more negligent, knowing, or intentional violations up to $25,000 per day of violation for negligent emissions, up to $40,000 per day of violation for knowing emissions, up to $75,000 per day for willful and intentional emission violations. Additionally, if the emissions actually cause a public nuisance and great bodily injury the potential fines are increased. In the case of willful and intentional emissions maximum fines are $250,000 per day of violation for an individual and up to $1,000,000 per day for a corporation if great bodily injury actually occurs.

The actual civil penalty assessed in each case depends on a consideration of the specific circumstances surrounding the violation including the extent of harm caused by the violation, the nature and persistence of the violation, the length of time over which the violation occurs, the frequency of past violations, the record of maintenance, the unproven or innovative nature of the control equipment, any action taken by the defendant, including the nature, extent, and time of response of the cleanup and construction undertaken, to mitigate the violation, and the financial burden to the defendant.

Power of Vision Comment No. 9

Further to my letter dated December 5, 2008, I would appreciate your sending me copies of Rule 20.1©(16)(i), Rule 20.1(d)(4)(ii)(A), and Rule 20.1(d)(2)(i)(B) mentioned on page 20 of the SDAPCD's Preliminary Determination of Compliance for the Carlsbad Energy Center Project.

District Response

The District provided a copy of Rule 20.1 to the requestor on December 19, 2008.

Power of Vision Comment No. 10

Finally, I would like to point out that the District's Preliminary Determination of Compliance of the Carlsbad Energy Center Project is a complex 114 page document, difficult for the average citizen to comprehend, and therefore should be explained to the citizens of Carlsbad at a public meeting, to be held in the immediate future. Also, copies of all documents relating to the District's Preliminary Determination of Compliance of the Carlsbad Energy Center Project be made available at the Carlsbad City libraries for review by interested citizens.

District Response

Consistent with District Rules and Regulations, the complete file for CECP is available for review at the District. In addition, many documents related to the application, including the PDOC, are posted on the CEC website at:

(http://www.energy.ca.gov/sitingcases/carlsbad/index.html).

The District understands that the average citizen may need some guidance to comprehend such an unfamiliar area as the evaluation of air pollution regulations in the PDOC. Accordingly, District staff has been available to respond to—and has responded to—many questions asked during the CECP PDOC/FDOC process and will continue to be available to answer future questions. In response to their request, the District also met with a number of concerned citizens to discuss the CECP and the evaluation process on May 5, 2009.

TERRAMAR ASSOCIATION COMMENTS

The comments below were submitted by Ms. Kerry Siekmann,

Terramar Comment No. 1

As a member of the Terramar community, once again I need the help of the APCD. Please reconsider your "Preliminary Decision to Approve a Source of Air Pollution by the San Diego Air Pollution Control District". Our neighborhood has endured fifty some years of pollution from the Encina Power Station and now you are preliminarily approving an additional power station.

In not so many years the I-5 corridor will be expanded with additional lanes going in both directions. Our neighborhood, directly south of the existing power station, will endure pollution from:

1) the Encina Power Station (units 4 & 5continuing for another possible 15 years)
2) the trains (directly east of the neighborhood)
3) the proposed power station (without the 400ft. stack)
4) the I-5 corridor (to be expanded in the near future)

Not only will we endure all that pollution but the new power station will not have a stack as high as the old one. The stack, as you know, was built because our neighborhood had to repaint every year or so because of the pollution eating away on our homes and our cars. Imagine what it did to the human health of the neighborhood.

District Response

The District understands the concerns with the multiple pollution sources that potentially impact the area surrounding the proposed CECP. The assessment of the impacts from multiple nearby pollution sources in addition to the impacts from a proposed project itself, in this case the CECP, is known as a cumulative impact assessment. Although there is no regulatory requirement for the District to perform such a cumulative air quality impact analysis (AQIA) or health risk assessment (HRA) for toxic air contaminants for the proposed CECP, cumulative impacts from the sources you list are indirectly addressed in the AQIA, directly—for the Encina Power Station—addressed by the CEC in their application evaluation, or addressed through the HRA significance thresholds established in District rules. It should be noted that, if an explicit cumulative impact analysis were to be performed, the District Rules and Regulations would not authorize the use of such an analysis as a basis for any decisions regarding the proposed CECP.

For the proposed CECP itself, the District evaluated the potential health impacts of criteria pollutants, NO_2, CO, SO_2, PM10, and PM2.5, with respect to applicable ambient air quality standards and toxic air contaminant emissions with respect to the standards of District Rule 1200. In all cases, the impacts were found to be less than the standards used to determine whether the impacts pose a significant impact on human health. This evaluation accounted for the 139 foot height of the two combustion turbine exhaust stacks.

In the District's Air Quality Impact Analysis (AQIA), the emissions from vehicles or widely distributed stationary sources are indirectly accounted for because they are included as part of the background concentrations utilized in the AQIA. The background concentration is added to the modeled impacts from the stationary source to determine the overall impact on air quality from the source. This is not done for evaluating toxic air contaminant impacts since District Rule 1200 explicitly restricts the evaluation to the impacts of emission increases associated with the new equipment or modifications. Cumulative impacts are not considered for air toxic contaminants because the allowed impact from stationary sources is small compared to overall air pollution impacts. For example, the generic lifetime cancer risk from other sources (primarily mobile sources) of air pollution is about 600 in a million compared to the maximum allowed risk in Rule 1200 of ten in a million with toxic best available control technology installed (the HRA for the CECP resulted in an estimated risk of less than one in a million). Moreover, the overall lifetime cancer risk from all causes is about 400,000 in a million.

The potential cumulative impact for all pollutants from combined emissions from the two new combustion turbines and emergency fire pump that comprise the CECP and the two large utility boilers and small peaking turbine that will remain at the Encina Power Station after the CECP is completed has been evaluated by the CEC, which has broader discretion in their certification process than the District with respect to cumulative analyses. The CEC evaluation also includes consideration of background concentrations in the AQIA and significance levels for toxic air contaminant impacts.

With regard to the problems with paint that you describe, prior to the mid-1990s, the Encina Power Station burned large quantities of residual fuel oil, which generated large amounts of soot and pollutants—including SOx, which can result in acidic particulate matter emissions. In particular, large amounts of soot were emitted when the plant engaged in periodic "soot blowing" to clear the exhaust system of soot. The CECP is only permitted to use natural gas as a fuel, which has minimal SOx emissions and no soot formation with proper combustion. The existing Encina Power Station is now only permitted to burn liquid fuel during emergency curtailments of the natural gas supply or for testing purposes. As a result SOx emissions have dropped from about 1000 tons per year in 1990 to about 10 tons per year in 2004. It is unlikely that either the CECP or the existing power plant will have significant emissions of soot or acidic particulate matter in the future.

Please see also the responses to General Public Comments No. 1, 2, 4, 5, and 6; Simpson Comments 15, 16, and 17; and Power of Vision Comments 1 and 6.

Terramar Comment No. 2

> **The original plant was built next to the ocean because it was necessary for the plant to use the ocean water. That is not necessary any more. So even though your agency is mainly concerned with air pollution I would think that as part of the State of California you could also realize that the beaches are a precious resource to be preserved for the use of the residents of the state.**

District Response

Although the District understands your concern for the beaches, the District must base its permit decisions on District Rules and Regulations which contain no provisions for making general land-use decisions. Please see also the response to General Public Comment No.3.

Terramar Comment No. 3

With the slow down of the economy decreasing the need for power, now is a great time for the APCD to say, "We can make a difference in the world and decrease 'green house' emissions by not approving this requested source of air pollution." Isn't this what the governor is so adamant about, reducing 'green house' emissions?

District Response

The District does not have authority under the District, state, or federal rules and regulations to deny a permit or add further restrictions to a facility on the basis of additional GHG emissions. The CEC will address GHG emissions in its certification process. Please see also the response to City of Carlsbad Comment No. 10 and Simpson Comment No. 9.

SIMPSON COMMENTS

The comments of Mr. Rob Simpson are addressed below. Please note that substantially similar comments from two submittals have been combined. In addition, material enclosed by quotes in the comments is taken from the PDOC.

Simpson Comment No. 1

I am hereby requesting a public Hearing regarding Carlsbad Energy Center.

District Response

District Rule 20.5 requires that a PDOC be noticed and public comments be received in the same manner as a proposed District Authority to Construct under District NSR rules. There are no provisions in District Rules and Regulations that require the District to hold a public hearing for a final Authority to Construct under the NSR rules.

Although the District is aware of the high level of public interest in the CECP, the District will not grant this request to hold a public hearing on the PDOC or FDOC since it would be duplicative of the CEC certification process. The CEC certification process has already included several public hearings held by the CEC including a workshop on the CEC's preliminary staff assessment (PSA), in which the PDOC was discussed. The CEC has also committed to hold a public workshop on its Final Staff Assessment (FSA) for this project, which will provide an opportunity for the public to discuss the District's FDOC. Finally, opportunity for formal public comment is provided at several times during the CEC's process subsequent to their issuance of their final staff assessment (FSA). The District notes that the CEC, not the District, has final approval authority for the CECP.

However, the District may hold a public hearing pursuant to Regulation XIV that implements the federal Title V permit program since the CECP constitutes a significant permit modification of the Encina Power Station's Title V permit. Pursuant to Rule 1410(k), the District will publicly notice a proposed significant permit modification for this project. In accordance with Rule 1415(b), if a petition from the public is received by the District as a result of this notice, the District would hold a public hearing if reasonable cause exists.

Please see also City of Carlsbad Comment No. 11.

Simpson Comment No. 2

I object to the District closing its public comment days before the CEC Air Quality workshop. I hereby request an extension of the Public comment period. It is inappropriate for a responsible agency to close its record prior to the lead agency. The air district would be deprived the opportunity to benefit from the Air Quality information derived from the CEC and the public would be precluded from informed participation in the air district's process.

District Response

The District provided the mandated 30-day public comment period on the PDOC, and extended the comment period an additional twelve days in response to public requests. Rule 20.5 does not require that the comment period on the PDOC and the PSA overlap, nor is there such a requirement in the regulations governing the CEC certification process. However, the District is not precluded from considering comments made during the CEC workshop on January 7, 2009, and has considered all comments.

Furthermore, the District's Determination of Compliance is completed for the CEC certification process, which itself provides several opportunities for public hearing and comment on all facets of the project, including the PDOC. The CEC is the agency that will make the final decision approving or disapproving the CECP, not the District. Subsequent to the CEC workshop on January 7, 2009, in which the CEC staff's Preliminary Staff Assessment (PSA) was discussed, the CEC provided opportunity for public comments on the PSA. The PSA discusses the District PDOC findings and includes the PDOC's proposed permit conditions. Therefore, the public was able to use any information garnered during the PSA workshop to provide comment on the PDOC findings through the CEC process. Further opportunity for public comment will be afforded during the CEC certification process.

Therefore, the District will not further extend the public comment period on the PDOC. Please also the response to Simpson Comment No.1.

Simpson Comment No. 3

The Warren Alquist Act, CAA and your rules set time limits for your determinations. Because this proceeding is not following those time limits public participation is being undermined. As we discussed, you informed me that the application was deemed complete on Sept. 17 2007. The FDOC was due in 180 days from that date. The FDOC was apparently published 435 days later. I contend that the application has expired and must be resubmitted or rejected. The extended time period creates a number of problems. Are we trying to comply with rules of 2007, 2008 or 2009. The following excerpt from the PDOC demonstrates an example of the problem.

"Preproject actual emissions are based on actual emissions occurring over the 5-year period preceding the receipt of the application. Rule 20.1(d)(2)(i)(B) requires the actual emissions to be averaged over the total operational time period within the five-year period if a representative two-year operating time period does not exist. Since the Application for Certification (AFC) for this CECP was submitted to the CEC in 2007, the preceding five years in consideration for actual emission reduction estimates are 2002, 2003, 2004, 2005, and 2006. "

According to table 5a 2002 CO emissions were 494.5 tons/py 2006 CO emission were 110 tons/py. That is 450% higher in 2002. If 2007 and 2008 were used for comparison a completely different conclusion could be reached. 2002 emissions are not contemporaneous. Because these calculations were used for PSD analysis and the tolerances are so close claiming PSD permit exemption (within 1/10th of a ton in several cases) it is inappropriate to use outdated information. Please provide 2007 and 2008 "actual emission" figures for the facility.

District Response

The District disagrees. The District determined the application complete on October 17, 2007, and the PDOC was submitted to the CEC on November 21, 2008, and publicly noticed on November 25, 2008. Although Rule 20.5 does require the District to take action with respect to the PDOC within 180 days of application completeness, there are no requirements that the application be cancelled if that timeline is not met. The added time was necessary to fully evaluate the air quality impacts of the facility and its compliance with District Rules and Regulations. There was also no attempt on the Applicant's part to delay the process. The District determines compliance with District Rules and Regulations as they exist and are implemented on the date the PDOC or FDOC is submitted to CEC not on date that the application was accepted. This may require additional analyses to comply with new or changing regulations.

The Warren Alquist Act does include timelines for the processing of applications. However, it also includes provisions allowing for the extension of those timelines as mutually agreed upon by the commission and the applicant.

Please see also the response to City of Carlsbad Comment No. 8.

Simpson Comment No. 4

Please provide 2007 and 2008 "actual emission" figures for the facility.

District Response

The District has not yet completed its emission inventory for the Encina Power Station for 2007 and 2008 and does not yet have a reliable estimate of actual emissions for the Encina Power Station. However, the Applicant has recently provided preliminary 2007 and 2008 NOx emissions and natural gas fuel usage, to which emissions of pollutants are directly related, to the CEC and the District. This information has been posted on the CEC website.

Simpson Comment No. 5

"Since the District determined that there was not a representative two-year operating time period for Units 1, 2, and 3 of the Encina Power Station during these five years, the 5-year average of emissions from boilers Units 1, 2, and 3 determines pre-project actual emissions for those units."

How did the District make this determination? Because this also greatly skews the figures. If the District had used 2005 and 2006 as "representative" the credit would be a fraction of that given.

District Response

The goal in selecting a time period for baseline emissions is not to find the lowest or highest value of actual emissions but to find a representative value. Units 1, 2, and 3 at the Encina Power Station have been used in recent years more as peaking units than base-load units. Peaking units are typically only called on to operate by the California Independent System Operator (ISO) when high electrical demand requires additional power beyond that provided by

more efficient base-load units. This additional power is necessary to provide electrical grid stability. As such, the units' operation may vary greatly from year to year depending on the weather, which largely determines electrical demand, and availability of electrical generating assets not only in California but throughout the Western United States. Therefore, the District concluded that, because of the variable nature of the operations, no consecutive two-year period was representative of actual emissions from the three units and based the calculation of actual emissions on a five-year average. The District notes that, if 2004 and 2005 had been chosen as the basis of actual emissions, the baseline emissions would have been significantly greater.

Simpson Comment No. 6

"In the case of NOx, the emissions are based on CEMS data. For the other pollutants, emissions are based on the annual District emission inventory, except that PM10, PM 2.5, and total particulate (PM) emissions were adjusted from the inventory values based on EPA's AP-42 emission factors,"

Can you explain why NOx emissions are based on CEMS data and other pollutant are not? Can you provide CEMS data for all pollutants?

District Response

Other than a NOx CEMS on each unit, there are no certified CEMSs that measure emissions of the other pollutants from Units 1, 2, and 3. However, as part of the NOx CEMS system for each unit, the natural gas fuel and liquid fuel use for each unit is measured by a flowmeter that is subject to federal Acid Rain quality assurance and quality control requirements and recorded hourly by the individual unit CEMS data acquisition and handling system (DAHS).

Since they were judged the most reliable at that time, the District based the PDOC baseline emissions for the other pollutants on District emission inventory reports, which use fuel use information derived from the individual CEMS and emission factors from standard sources and/or annual source tests to calculate emissions. In response to apparent inconsistencies in the reported natural gas fuel use from reports and public comments received both during and after the official PDOC comment period, the District requested that the Applicant submit information to resolve and/or explain any inconsistencies. Based on a review of this information, the District has recalculated estimated emissions in the FDOC for CO, SOx, PM10, PM2.5 and PM based on the directly reported individual CEMS natural gas fuel use. This resulted in small adjustments to the five-year average baseline emissions for CO, VOC, and SOx. The NOx baseline emissions remain unchanged since they were already based on the individual unit CEMS data but were slightly adjusted for other reasons. The recalculation of the baseline emissions is discussed in the FDOC on pages 19–24.

Simpson Comment No. 7

It would appear that the Phasing of bringing the units online would attempt to serve to preclude PSD significance ignoring the cumulative impact. Table 5e – Phase I Contemporaneous Emission Increases Demonstrates CO to increase 99.9 ton/py one tenth of a ton less then the

threshold Table 5c – Contemporaneous Emission Increases Also demonstrates NO2 at 39.9tons/py one tenth of a ton below the threshold. The document further justifies this with a definition of a district rule **20.1(c)(33)** .

The District should consider the following guidance documents from the EPA and consolidate the permits into one for complete review. Answers to Frequently Asked Questions Regarding NSR and PSD

Q 13. What is a "Sham" permit?

A Sham permit is when a source pursues a permit limit on the potential to emit (PTE) for a proposed project in order to limit the source to minor source levels as a means of circumventing the requirements of NSR….Another circumstance which may occur is when a major project is broken up into several smaller minor projects in order to avoid NSR requirements….Sham is defined as counterfeit, untrue, or fake.

http://www.epa.state.il.us/air/new-source-review/new-source-review-part-1.html

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Office of Air Quality Planning and Standards Research Triangle Park, North Carolina 27711 September 18, 1989 MEMORANDUM SUBJECT: Request for Clarification of Policy Regarding the "Net Emissions Increase"

"…of course, attempts by applicants to avoid PSD review by splitting a modification into two or more minor modifications constitutes circumvention of the PSD requirements. Two or more related minor changes over a short period of time should be studied for possible circumvention."

http://www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/request.pdf

District Response

The District disagrees. It is, in general, not a "sham" permit to take practically enforceable emission limits to avoid applicable requirements that are triggered by a certain level of emissions. This concept is well recognized and is included in District Rule 20.1(d) regarding emission calculation procedures. It would be a sham permit if a facility accepts limits to avoid NSR before construction, with the intent on raising the limits after construction is complete or nearly completed. There is no indication that this is the case with respect to the CECP. If this were to occur, the facility would be subject to District Rule 60—Circumvention.

A sham permit can also occur if a project that does not trigger a major source requirement is issued a minor source permit to construct that is immediately followed by an application for another project with emission increases such that the emission increases from the two projects combined would have triggered one or more additional major source requirements if the projects had been considered together. This is not the case for the CECP since the District's evaluation included an evaluation of the combined emission increases from both phases of the project (Phase I is the installation of the first combustion turbine system and Phase II the installation of the second). For example, emission offsets for NOx are required for Phase I even though Phase I

by itself would not have exceeded the major modification threshold with the appropriate actual emission reductions from reducing the operations of Units 1, 2, and 3.

As discussed in the PDOC (page 27) and FDOC (page 30), the contemporaneous emission increases from all new emission units for NOx, CO, SOx, PM10, PM2.5 and PM are below the trigger levels for a PSD modification considering the potential to emit increase for Phases I and II combined, actual emission reductions from Units 1, 2, and 3, and applicable annual emission limits. If there was no phasing of the project, the CECP would still not trigger any additional major source requirements.

Simpson Comment No. 8

The PDOC states

"**Rule 20.1(c)(33) – Major Modification**

Major modification is defined as a physical or operational change which results in a contemporaneous emissions increase for a pollutant or its precursors for which the District does not attain the federal ambient air quality standards at an existing major stationary source for that Pollutant."

But the district rule states:

(33) "**Major Modification**" means a physical or operational change which results, ***or may result***, in a contemporaneous emissions increase at an existing major stationary source which source is major for the pollutant for which there is a contemporaneous emissions increase, equal to or greater than any of the emission rates listed in Table 20.1 - 5." (Emphasis added)

It appears that "may result" is the operative statement. Within 1/10 of one ton particularly when using outdated data as a basis certainly may result in an exceeding the threshold. The document is unclear as to if it is a major modification or considered a new source also any existing PSD or Title V are not disclosed or analyzed.

District Response

The District disagrees. The term "may result" is used because, under District NSR rules, emission increases for new or modified units are calculated based on their potential to emit rather than actual or projected actual emissions. The future estimated emissions from the CECP are, therefore, calculated based on the maximum capacity of each unit to emit considering applicable permit limits. The term does not refer to the margin of compliance in annual emission limits.

The PDOC (page 25) in discussing Rule 20.1(c)(33) – Major Modification – clearly states that the CECP is a major modification for NOx and not a major modification for VOCs. As a modification to an existing stationary source, the CECP is by definition not a new source. Please see also the response to City of Carlsbad Comment No.11.

The PDOC (page 18) in discussing Rule 20.1(c)(58) – Prevention of Significant Deterioration (PSD) Stationary Source and 40 CFR §52.21 clearly states that the Encina Power Station is a PSD stationary source. The potential implications of this are analyzed on pages 22–27 and pages 37 and 38 of the PDOC.

On page 45, the PDOC identifies the Encina Power Station as a Title V facility and notes that its Title V permit must be modified to include the CECP. This is a separate action under District Rules and Regulations and will occur after the CEC fully approves the project.

Simpson Comment No. 9

The document ignores the effects of CO2. California has clearly identified CO2/greenhouse gas as a pollutant in CEQA, AB32, SB368 and California Attorney Generals arguments with the EPA also Massachusetts v. Environmental Protection Agency,127 S.Ct.1438 (2007) Environmental Appeals Board of the United States Environmental Protection agency **IN RE DESERET POWER ELECTRIC COOPERATIVE** PSD Appeal No. 07-03. and others and the District should also recognize it as such and require BACT and mitigation.

District Response

The District disagrees. The CEC is considering the potential effects from CO_2 and other GHG emissions as part of their proceeding regarding this project. District Rules and Regulations do not give the District any authority to require BACT or mitigation for CO_2 nor does the California Clean Air Act. Although EPA will propose regulating CO_2 under PSD, it is not clear when a final rule will be promulgated and what standards would apply. In any event, existing District PSD rule provisions would still not allow CO_2 to be regulated since the District is not delegated to implement the federal PSD regulations with respect to the CECP. However, the District would be required to incorporate any conditions of a federal PSD permit issued by EPA into the Title V permit.

Please see also the response to City of Carlsbad Comment No. 10.

Simpson Comment No. 10

"Pursuant to District Rule 20.5 the FDOC review is functionally equivalent to an Authority to Construct review 20.5 (f) Within 180 days of accepting an AFC as complete, the Air Pollution Control Officer shall make a preliminary decision on: (1) whether the proposed power plant meets the requirements of all applicable District regulations"

The time period for approval has expired it should require a new application based upon current emission, meteorological and regulatory review.

District Response

See the response to Simpson Comment Nos. 3, 14, and 15.

Simpson Comment No. 11

"Emissions during startups and shutdown are significantly higher than during steady state operation. Page 5 of 56 The worst case is based on the 1460 startups since the number of startups per turbine is limited to 1460 by proposed permit conditions."
Appendix B, page16 of 19

"The applicant agreed to accept emission limits, as necessary, on the single combustion turbine and emergency water pump combined and Units 1, 2, and 3 to limit emissions below the PSD modification thresholds and, in the case of NOx, limit emissions to a level consistent with the emission offsets provided (see below). Consistent with the necessary shakedown period for the CTG/STG system (not to exceed 180 days), the actual emission reductions need not occur until the end of shakedown period for the first turbine to reach full commercial operation (i.e., before that time emissions from the three existing utility boilers are not limited). Therefore, the emission limits for Units 1, 2, and 3 do not apply until the end of the 180-day shakedown period for Phase I."
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"at low loads the fuel may not be premixed with air (diffusion flame mode) to maintain combustion stability. In both these situations, the NOx, CO, VOCs can be much higher than in the lean premix combustion mode. It is, therefore, not technologically feasible, to achieve the BACT emission levels applicable to normal operations in such situations. Startups and shutdowns are abnormal operating conditions that are discussed above."
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Allowing increased emissions during startup and shutdown is inconsistent with the following recent decision which is incorporated into these comments. Sierra Club v. Environmental Protection Agency, No. 02-1135 (D.C. Cir. 12/19/2008) (D.C. Cir., 2008)

District Response

The District disagrees. The cited court case only addresses EPA exemption of startup, shutdown, and malfunction emissions from standards for federal hazardous air pollutants promulgated under 40 CFR Part 63. This decision is not applicable to BACT or LAER determinations made under NSR rules for criteria pollutants such as NOx, CO, and VOCs.

Simpson Comment No. 12

Rule 20.1(c)(16), 40 CFR §52.21, and 40 CFR Appendix S to Part 51– Contemporaneous Emission Increase

"Contemporaneous emission increase is defined in Rule 20.1 (c)(16) as the sum of emission increases from new or modified emission units occurring at a stationary source within the calendar year in which the subject emission units is expected to "commence operation" and the preceding four calendar years"
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"Rule 20.1(c)(16) does not address when the actual emission reductions must occur relative to the initial startup of new or modified equipment. However, for replacement units, up to 180 days from the initial startup of new equipment is allowed before the actual emission reduction must be effective in federal implementations of PSD regulations [40 CFR §52.21(b)(3)(ii) and (viii)] and nonattainment NSR regulations [40 CFR Appendix S to Part 51 II.a.6.ii. and vi.] to allow a reasonable shakedown period for the new equipment."
19

The following district rule would seem to require offsets before startup not 180 days after. The PDOC is incomplete because it does not identify all of the offsets therefore the public is precluded from commenting on the applicability of the offsets. Emission offsets shall be in effect and enforceable at the time of startup of the emission unit requiring the offsets. Emission offsets must be federally enforceable if the source is major for the pollutant for which offsets are being provided. If interpollutant offsets are being provided, the offsets must be federally enforceable if the pollutant they are offsetting is major. 20.1(D)(5)(iii)

District Response

The District disagrees. The emission offsets to be provided are identified in Appendix D of the FDOC. All the emission offsets are emission reduction credits (ERC) that were banked under District Rule 26 and are federally enforceable through either permit conditions or conditions on the ERC certificate. The public will have the opportunity to comment on the emission offsets as part of the CEC certification process. Please see also the response to Simpson Comment No. 1.

The proposed PDOC and FDOC permit conditions required the emission offsets be provided before the initial startup of each unit in accordance with District Rule 20.1(d)(5)(iii). However, in contrast to emission offsets, actual emissions reductions at a facility used in contemporaneous emission increase calculations are not necessarily required to be provided before the initial startup. In this case, the District has concluded that requiring the actual emission reductions 180 days after initial startup is reasonable (FDOC, page 19) Please see also the response to CEC Comment No. 4.

Simpson Comment No. 13

"The District has preliminarily concluded that BACT for the emergency fire pump engine is purchase of an engine certified to the most stringent federal emission standard for fire pump engines (i.e., a 2009 or later model year engine)."
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This appears to be a unique BACT determination without a basis.

District Response

The District disagrees. Standard District BACT for all new emergency diesel engines is compliance with the most current federal standards applicable to the new engine unless it is feasible to use natural gas instead of diesel fuel. For an emergency fire pump, natural gas fuel is not feasible because the engine must obviously be able to operate during a fire without relying on a natural gas supply that could be interrupted.

Simpson Comment No. 14

"Meteorological data used for EPA's AERMOD Prime model consisted of the following data for the 2003 through 2005 time period. The data was processed by the District using EPA's AERMET meteorological data processor (Version 06341) to produce AERMOD ready Files." **APPENDIX A 2**

This data is outdated and should be revised.

District Response

The District disagrees. The District's standard modeling procedure is to utilize three consecutive years of meteorological data to estimate potential project impacts. This ensures that most possible boundary layer conditions that will occur in future years are represented in the modeling. Additionally, this three-year data set incorporates wind profiler data that includes wind direction, speed, and temperature at various heights above ground level. The 2003-2005 period is our most complete data period for the profiler data, which is a more reliable tool for predicting plume direction and impact from relatively tall stacks than simple 10-meter tower wind direction and speed. Please see also the response to Simpson Comment No. 15.

Simpson Comment No. 15

"Worst case background concentrations were determined from the review of 3 years (2004-2006) of monitoring data taken from the District's Camp Pendleton, Escondido or San Diego monitoring stations, whichever was available for a specific criteria pollutant and deemed to be most representative of air quality in the facility area. Table 4-1 summarizes the worst case background concentrations." **APPENDIX A 3**

This data is outdated and should be revised and the basis for using a variety of distant monitoring sites instead of 1 year of local monitoring is unclear.

District Response

The District disagrees. Although there are year-to-year variations, monitored background concentrations of all pollutants addressed in District Rules and Regulations show a general downward trend. Since background concentrations are generally declining, using 2004-2006 background concentration likely overstates the actual impact on air quality from operation of the

CECP. Based on an examination of 2007 and 2008 background pollutant concentrations, the District's conclusions with respect to the AQIA would not be changed even if 2006–2008 had been used to provide background concentrations.

The District bases its decision on the appropriate monitoring station to use for background pollutant concentrations in an AQIA on several factors including, proximity to the source being evaluated, proximity to other large sources of emissions, availability of measured ambient concentrations for the time period modeled, and meteorology. In the case of the proposed CECP, the nearest operating monitoring station (about 6 miles North) is the District's Camp Pendleton station, which is near the I-5 freeway and coastal railway, as is much of the area surrounding the proposed CECP. Since it is likely most of the background pollution in the area is a result of the traffic on the I-5 and the coastal railway, this would generally be the most representative station and was used for NO_2 background concentrations. For the other criteria pollutants of concern, no background concentrations are measured at the Camp Pendleton station (PM2.5 began to be measured in mid-2008). Therefore, the most representative background concentrations available from other monitoring stations were chosen for the other criteria pollutants in the judgment of the District meteorological staff. The Escondido monitoring station, which is located near two major freeways, was chosen for background levels of CO, PM10, and PM2.5.

The use of three years of monitoring data rather than one year is preferable since it allows more certainty that the worst-case background concentrations have been identified. One year of onsite monitoring data can only be required for a new PSD source or a PSD modification [Rule 20.3 (d)(3)(vii)(C)], which the CECP is not. Moreover, this requirement can be waived if representative monitoring data is otherwise available.

Simpson Comment No. 16

"TABLE 4-4, MODELED MAXIMUM PROPOSED PROJECT IMPACTS

"For PM10, background concentrations already exceed the annual and 24 hour California standard. Since the background is already in exceedance of the annual standard no additional violations can be due to facility operations. Additionally the 0.1 µg/m3 predicted annual impact is well below PSD significant impact levels shown in Table 4-5. Predicted impacts less than SILs are normally considered to not significantly affect compliance with Federal Ambient Air Quality Standards regardless of the background level. Specifically in nonattainment areas, project impacts less than the SILs are deemed to not significantly cause or contribute to violations of the Federal Ambient Air Quality Standard. This can be considered the case for California Ambient Air Quality Standards as well."

"Since the initial modeling estimated maximum 24 Hour PM10 impacts of approximately 1.2 µg/m3, additional AERMOD modeling could be performed for all days in the 2004-2006 period that 24 Hour PM10 background concentrations were between 49 µ/m3 and 50 µg/m3 (California Standard) to determine whether additional violations would result from facility operations. There were no monitoring days that concentrations were measured within this range (highest monitored value less than the California Standard was 44 µg/m3. Therefore it can be concluded that facility operations would not cause or contribute to additional violations of the California 24 Hour Ambient Air Quality Standard for PM10."

This logic is inconsistent with the CEC Preliminary Staff Analysis(PSA). The PSA and comments by the CEC to The District are hereby incorporated into these comments by reference.

District Response

The District disagrees. In evaluating applications for new or modified emission units, the District bases compliance determinations, including required levels of emission control or other mitigation (e.g., emission offsets), on its Rules and Regulations and District interpretations of those Rules and Regulations. The CEC certification process is functionally equivalent, and takes the place of, the California Environmental Quality Act (CEQA) process. The CEC is in the role of lead agency for this process and may reach different conclusions than the District regarding the significance of impacts, and the need for mitigation of those impacts, because its decisions are based on CEQA standards. In particular, CEQA case law considers any impact no matter how small to be significant if there is already a violation of an environmental standard. This does not apply to District decisions regarding air quality impact assessments (AQIAs). The District criteria for approving the AQIA with respect to PM10 and PM2.5 are discussed in Appendix A of the PDOC and further discussed below.

Because the District does not attain the 24-hour PM10 and annual PM10 and PM2.5 ambient air quality standards for California, a demonstration that emissions from the project, when added to monitored background concentrations of PM10 and PM2.5, will not cause any <u>additional</u> violations of the California standards for PM10 and PM2.5 is required to satisfy District AQIA requirements (without providing additional mitigation beyond BACT).

In the case of the CECP, the Escondido monitoring station was chosen as the nearest monitoring station able to provide background levels of PM2.5 and PM10 that are likely as least as high as the area surrounding the CECP. For the California 24-hour PM10 standard, which was exceeded twice at the Escondido monitoring period during the three year period under consideration, days on which ambient monitoring indicates that there is not already a violation of the California standard were examined to determine if the additional emissions from the stationary source project would be predicted to cause a new violation. As discussed in the PDOC, Appendix A, no new violations were indicated.

Because of the way compliance with annual standards is determined, there can only be a single violation of the standard in any three-year period. Consequently, no additional violations can occur if the District is in nonattainment of an annual standard as is the case for the California annual PM10 and PM2.5 standards. In this situation, the District examines the potential for the additional emissions to significantly contribute to an exceedance and, thus, prevent or hinder the District's attainment of the annual standard.

For a federal standard, this is done by comparing the maximum modeled annual impact for the project with the Significant Impact Level (SIL) that EPA has established for that pollutant. EPA considers the SIL for a pollutant to be a de minimis impact level. Projects with maximum modeled annual impacts that do not exceed the SIL are deemed by EPA to not cause or contribute to an exceedance of the applicable standard without any further analyses being required. For the California annual standards, the District again uses the federal SIL for guidance since the state has not established SILs.

The annual SIL for PM10 is 1 ug/m3. EPA has not yet established any SILs for PM2.5. EPA guidance in effect at the time the PDOC was submitted to the CEC was to use the PM10 SIL as a surrogate for the PM2.5 SIL. This guidance has since been administratively stayed until at least June 22, 2010 (74 FR 48153, September 22, 2009). However, in 2007 (72 FR 54112, September 21, 2007), EPA proposed three different SIL levels for the annual PM2.5 standard: 0.3, 0.8, or 1 ug/m3 for consideration. This provides the only currently available information for PM2.5 SILs to inform District determinations.

The maximum modeled annual impact for the Carlsbad Energy Center for both PM10 and PM2.5 is 0.1 ug/m3, which is well under the federal SIL for PM10. It is also well under all the proposed SILs for PM2.5. Therefore, the District's determination in the PDOC that the project will not prevent or hinder the District's attainment of annual California PM10 or PM2.5 standard remains unchanged as does the District determination that the project is in compliance with the AQIA requirements of District Rule 20.3.

Simpson Comment No. 17

20.3 (iii) **Air Quality Impact Analysis (AQIA)**

"Notwithstanding the emission threshold requirements of Subsection (d)(2), the applicant shall perform an AQIA as prescribed in Subsection (d)(2) for those pollutants for which, pursuant to Subsection (d)(3)(i), Subsection (d)(3) applies. In conducting the AQIA, projected growth calculated pursuant to (d)(3)(v)(A) shall be taken into account. The Air Pollution Control Officer shall comply with the public comment and notice provisions of Subsection (d)(4) and with the following:"

20.3 (v) **Additional Impacts Analyses**

"The analyses required by Subsections (d)(3)(v)(A) through (C) shall include the impacts of total emissions which exceed a non-criteria emissions significance level.

(A) Growth Analysis The applicant shall prepare a growth analysis containing all of the following:

(1) an assessment of the availability of residential, commercial, and industrial services in the area surrounding the stationary source,

(2) a projection of the growth in residential, industrial and commercial sources, construction related activities, and permanent and temporary mobile sources which will result from the construction of the new major stationary source or major modification, including any secondary emissions associated with the construction,

(3) an estimate of the emission of all pollutants from the projected growth, and

(4) a determination of the air quality impacts occurring due to the combined emissions from the projected growth and the stationary source's emissions increase."

Compliance with the above rule was not sufficiently demonstrated

District Response

The District disagrees. These provisions of the District NSR rules only apply to a new PSD stationary source or a PSD modification at an existing PSD stationary source. As discussed in the PDOC (page 37) the CECP is not a PSD modification nor is it a new PSD stationary source. Therefore, the provisions are not applicable.

Simpson Comment No. 18

"The District is unaware of any demonstrations that alternative technologies for control of NOx such as the XONON™ catalytic combustors or EMx™ (SCONOX) catalyst system can achieve NOx emission levels lower than the combination of dry ultra low- NOx combustors and SCR on large (greater than 50 MW) natural-gas-fired combustion turbines."
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SCONOx would be superior because it does not utilize ammonia that is a storage hazard and detriment to humans and endangered species when emitted

District Response

The District disagrees. Whatever the relative merits of ammonia emissions from the EMx™ (SCONOX) system relative to conventional SCR, the EMx™ system, which requires a large number of louvers that open and close in a synchronized manner, has not been demonstrated or achieved in practice for large turbines and is therefore not BACT or LAER for control of NOx for the CECP.

The CECP SCR system is proposed using a 29% aqueous ammonia solution as the SCR ammonia source. The potential for a catastrophic accidental release and the potential consequences from such systems are far lower than from systems using pure ammonia. The CEC PSA addresses the potential hazards of ammonia use.

Simpson Comment No. 19

"40CFR Part 72- Subpart C – Acid Rain Permit Applications

This subpart requires any source with an affected unit to submit a complete Acid Rain permit application by the applicable deadline. Requirement for submittal of Acid Rain Program application will be included in the proposed Authority to Construct for the combustion turbines of this project"
Page 53 of 56

The public can not effectively comment on the acid rain implications without the an application.

District Response

The District disagrees. The Applicant submitted an Acid Rain Program permit application to the District in accordance with 40 CFR Part 72 Subpart C on September 4, 2008. The application is available for public review and was available during the PDOC comment period. Therefore, the public had opportunity to comment.

Simpson Comment No. 20

"PARTICULATE EMISSION RELATING TO THE USE OF RECLAIMED WATER FOR EVAPORATIVE COOLING

The proposed Siemens turbines have inlet air filters located upstream of the evaporative coolers. The evaporative cooler is turned on only during normal operation when ambient temperature is higher than 60°F. The particulate emission factor of 9.5 lbs/hr provided by the turbine vendor includes anticipated particulate matter from the evaporative cooler parameters. Therefore, no further particulate emissions from the evaporative cooler are included in the emission calculation."

There is no demonstration that the turbine manufacturer considered the use of reclaimed water. The energy use or reduced efficiency to reclaim the water should be considered in the analysis.

District Response

The District disagrees. Although the CECP was originally proposed using reclaimed water for the evaporative cooler, the project, as currently proposed, uses desalinated water. The turbine manufacturer has recommended standards for water used in the evaporative cooling system. All water used in the inlet air cooling system should meet manufacturer standards for solids content for proper operation of the equipment. The manufacturer is aware that the project is proposed with an evaporative cooler and so has considered this in the emission guarantee. Please see also the response to City of Carlsbad Comment No. 7.

Simpson Comment No. 21

"Because turbine loads and release parameters change during the startup hour the applicant submitted an analysis of startup and shutdown impacts based on a 4-phase startup/shutdown hour. The startup phases are: Phase 1. The first 12 minutes of the startup, which includes accelerating the turbine to full speed with no load and then subsequently ramping the turbine generator electrical output to the final load, which the applicant assumed was 100% of maximum load. Phase 2. The period from the end of the power ramp until the turbine achieves its BACT limits, which is proposed to take 10 minutes in a typical startup. Phase 3. Operation at the final load until the end of the hour or shutdown (31 minutes or 38 minutes with no shutdown). The final load was assumed to be 100% by the applicant. Phase 4. The shutdown time period, which is proposed to be 7 minutes, typically, by the applicant. The applicant assumed that Phases 1 and

4 could be represented by the steady state operating conditions for 50% load. For the commissioning mode, the turbine was also assumed to be operating at 50% load"
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The health risk analysis is based upon a series of assumptions by the applicant that do not necessarily represent actual operating conditions or the permitted full hour of startup.

Modeling Procedures

For startup and shutdown emissions the major refinement was to look at the potential impact of low stack exhaust temperatures during the first few minutes of a cold start, which could increase the emission impacts. The District was unable to directly obtain any information on the stack exhaust temperature during a startup of the proposed turbine. Based on the fact that the turbine is proposed, under normal circumstances, to achieve its BACT limits within 22 minutes of ignition. The stack exhaust temperature was assumed to rise linearly from ambient (68 °F) to its normal operating temperature in 22 minutes. For shutdowns, the minimum stack exhaust temperature was assumed to be the exhaust temperature at 50% load.
APPENDIX B 10 of 19

The stack rise assumption is without basis.

District Response

The District disagrees. As discussed in the Appendix B of the PDOC, the applicant's risk assessment was supplemented by a refined risk assessment performed by the District. In particular, the assumption that operations during the initial 22 minutes of startup could be represented by operations at 50% load was replaced by a more realistic model of startup operations based on load and temperature variations during startup. This simulated the reduced dispersion of pollutants during the first 22 minutes startup resulting from lower exhaust flow rates and exhaust temperatures. The turbine load was also assumed to reach only 50% load for the entire startup hour as would be allowed by the permit. The 50% load level is the likely worst case for toxic air contaminant impacts. Please see also the response to Simpson Comment No. 22.

The stack exhaust temperature during the initial constant load phase of the cold startup of the Palomar Energy Center exhibits an approximately linear rise in stack exhaust temperature followed by a continuously decreasing rate of temperature increase as the system approaches a steady state operating condition. Applied to this type of temperature profile, the linear rise assumption in Appendix B of the PDOC results in a lower stack temperature during large portions of the startup and likely underestimates the average stack exhaust temperature through much of the latter portion of the 22-minute startup period when most of the toxic air contaminant emissions occur. This in turn conservatively overestimates pollutant impacts during startup since a higher stack exhaust temperature aids in pollutant dispersion. The actual startup of the CECP is complicated by changing loads during the startup. Nevertheless, the District finds the linear rise assumption is sufficiently accurate to conservatively assess air pollutant impacts during the startup.

Simpson Comment No. 22

"The turbine load was assumed to be 0% for first 5 minutes and then to rise at a rate of 30 MW per minute until the final operating load for the remainder of the startup hour was reached. This startup scenario was based on a presentation given by the turbine manufacturer1."
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Even though the turbine is projected to achieve its BACT limits in 22 minutes, the applicant has requested a 60 minute startup period. Therefore, in all cases, the final load was assumed to be 50% of the maximum load for the remainder of the hour (or until shutdown) as a worst case analysis. A load of 50% was considered to be the worst case because: (1) this is the point of maximum fuel heat inputs at loads low enough for the much higher startup emission factors to be representative and (2) it is the point of minimum stack exhaust temperature at steady state conditions, based on manufacturer supplied data.
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The arbitrary use of a 50% load as opposed to 40% or some lower figure makes the results unreliable.

District Response

The District disagrees. As pointed out in the PDOC, the choice of 50% load is not arbitrary but based on the following considerations: (1) this is the point of maximum fuel heat inputs at loads low enough for the much higher startup toxic air contaminant emission factors to be representative and (2) it is the point of minimum stack exhaust temperature at steady state conditions, based on manufacturer supplied data. Lower loads not only have lower toxic air contaminant emission rates because of the lower fuel input but also higher stack temperatures which aids in dispersing the pollutants. Therefore, these assumptions are sufficiently accurate to conservatively assess health risks during startup.

Simpson Comment No. 23

"As indicated many of these emission factors were derived from a source test. The source test was performed during the first hour of a cold start of a natural gas-fired GE 7FA gas turbine at the Palomar Energy Center. This is a combined-cycle turbine with ultra-low-NOx combustors. The turbine was equipped with a CO oxidation catalyst. During the first hour of the startup, the turbine tested was operating at very low loads (0–10%). Although the oxidation catalyst control efficiency was not quantified during the test it is assumed the catalyst was operating at reduced efficiency during a large portion of the hour because of the low temperatures in the heat recovery steam generator where the catalyst is located. The District only considers these emission factors to be potentially applicable at loads below the point where the ultra-low-NOx combustors are no longer operating in the low-NOx mode (typically 40-60% of maximum load)."
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Palomar has been operating long enough to obtain more complete analysis.

District Response

The District disagrees. Although Palomar has been operating for over three years, cold starts which are the expected worse case for air toxic emissions, are infrequent (about one or two per year) and logistically difficult to schedule for source testing since the exact startup time is not known in advance. As far as the District is aware, this was the first source test for toxic emissions during the startup of a large combined-cycle combustion turbine that has been conducted anywhere and is the best information available. Because the source test was conducted at 0–10% load, it very likely overestimates toxic air contaminant emissions during most of the CECP startup, which is estimated in the PDOC analysis to have five minutes at 0% load followed by an about four minute transition period and 51 minutes at 50% load. Please see also the response to Simpson Comment No. 25.

Simpson Comment No. 24

NSR REFORM RULES REGARDING NET EMISSION INCREASE CHANGES, PALS, CLEAN UNITS PROVISIONS AND PCP EXCLUSIONS FINALIZED are incorporated into these comments by reference.

http://www.air-comp.com/Articles/NSR%20Reform%20Rules%20Regarding%20Net%20Emission%20Increase%20Changes,%20PALS.html

District Response

District NSR rules do not incorporate federal NSR reform.

Simpson Comment No. 25

Commissioning Emission Factors

"Commissioning operations involve a wide-range of loads and add-on emission control effectiveness. During the early part of commissioning the oxidation catalyst is not typically installed and the turbine is operated at loads of 50% or less. In the absence of any other information, the District considers the startup and shutdown emission factors applicable to commissioning operations at loads of 50% or less."
7 of 19

If the District is "absent" information it should obtain the needed information

District Response

The assumptions used in the analysis are based on all available data and sound engineering judgment. Toxic air contaminants from combustion turbines consist of certain VOCs that are the

products of incomplete combustion. The startup toxic air contaminant emission factors are based on a source test on a turbine operating at loads of 0-10% during the first hour of a startup (the turbine was at 0% load for 33 minutes and at about 10 % load for the remainder of the source test).

Carbon monoxide is another product of incomplete combustion that can serve as a surrogate for toxic air contaminant emissions. Based on the combustion turbine manufacturer's information the VOC emission factor is estimated to be about 0.368, 0.126, and 0.0068 pounds per million British thermal unit of heat input at 0%,10% and 50% load, respectively. Toxic air contaminant emissions are expected to follow the same general trend (i. e., lower emission factors at higher load levels) and, therefore, be overestimated by using the startup emission factor.

Although the turbine tested was equipped with an oxidation catalyst, an examination of the CO emission data indicates that about 90% of the CO emissions likely occurred before the catalyst activity was significant. It is likely an even a higher fraction of toxic contaminant emissions occurred before significant catalyst activity since oxidation of toxic air contaminants typically begins at higher temperatures than CO. Hence, the source test is representative of toxic air contaminant emissions during operations without an oxidation catalyst.

For these reasons, the District finds that using the startup emission factors to estimate toxic air contaminant emissions during commissioning is a reasonably conservative approach. If additional information relevant to toxic air contaminant emissions during commissioning becomes available prior to the CEC certification of the project, the District will evaluate that information for its significance and applicability to the CECP.

Simpson Comment No. 26

TABLE 4-2, NORMAL OPERATION AIR QUALITY MODELING RESULTS FOR NEW EQUIPMENT

[The District] Claims that Particulate matter increases are:

"Not applicable, because emissions are not elevated above normal operation levels during startups/shutdowns"

This is inconsistent with operations of other plants that have higher PM emissions during startup.

District Response

There are no exemptions to the emission rate limit in the PDOC. Information provided by the turbine manufacturer in the permit application did not indicate any increase in the maximum PM10 emission rate at any load level, including the load levels typical of startup (0% – 50% load). In addition, the District source test of the Palomar Energy Center during the first hour startup did not show PM emission rates higher than those permitted for that facility or higher than emissions measured during source tests at full load. Thus, the District concluded that there

was no expected emission increase of particulate matter during startup. The District is unaware of any PM10 source tests during startups for large combined-cycle turbines other than the test at the Palomar facility.

Simpson Comment No. 27

The public notice provided did not serve to inform the public of the effects on air quality.

District Response

The District disagrees. The public notice was performed in accordance with applicable rules, properly notified the public of the potential emission increases from the proposed project, and provided sufficient information for the public to obtain further information on the impact of those emission increases.

GENERAL PUBLIC COMMENTS

The District received a large number of comments from the general public. Many of these comments were similar or identical in nature. Rather than respond to each comment individually, the comments are summarized below with the District responses.

General Public Comment No. 1

The pollution from the plant will harm people—especially children—for example, by increasing lung disease, and will harm wildlife.

District Response

Although no project is absolutely safe and the District understands the public concerns regarding pollution impacts from the new facility, the District has analyzed the air pollution impacts of the emissions from the CECP and determined that there will be no significant impact on public health. The District analyzed the health impacts of the new plant's air pollutant emissions impacts with respect to the national and California ambient air quality standards for NO_2, SO_2, PM10, PM2.5, and CO and the impact of toxic air contaminants (see Appendices A and B of the FDOC). The analysis indicates that the CECP will not cause an exceedance or significant impact on the ambient air quality standards and are below the District thresholds for significance with regard to toxic air contaminant impacts in all areas in the vicinity of the project. The ambient air quality standards and standards for evaluating the impact of toxic air contaminants are designed to provide an adequate margin of safety for sensitive groups of people, including children. Furthermore, the District based its decision on the peak impacts. In most of the area analyzed the impacts are much less. In addition, the net increase in NOx emissions will be fully offset on an annual basis to mitigate any impact on the ozone levels.

The federal government has also established secondary national air quality standards for the protection of the environment in general. The new plant's emissions also do not cause an exceedance of these secondary standards. Thus, there will be no significant impact of plant's air pollutant emissions on wildlife.

Please see also the response to Terramar Association Comment No. 1 and General Public Comment No. 6.

General Public Comment No. 2

The new plant will cause soot deposits everyday like the old plant. The District should investigate soot deposits that occur in the vicinity of the existing power plant.

District Response

The District does not agree that the CECP will cause significant problems from the emission of soot. Soot is typically produced by the combustion of liquid fuels and not gaseous fuels. The new combined-cycle turbines proposed as part of the CECP are permitted to burn only pipeline

quality natural gas, which generates small amounts of particulate matter and produces soot only under very unusual combustion conditions (very fuel rich). These combustion conditions are unlikely to occur in gas combustion turbines since they normally run with a large excess of combustion air (fuel lean) by design. Fuel rich combustion is also generally avoided by power plant operators since it wastes fuel and can result in fouling of important heat transfer surfaces.

The existing utility boilers at the Encina Power Station are only allowed to burn liquid fuels during curtailments of the natural gas supply that are beyond their control or for limited operational testing. The District has investigated the recent report of soot in the neighborhood near the Encina Power Station and as been unable to connect the soot with the existing power plant. There are many plausible sources of soot in the vicinity of the Encina Power Station including diesel truck traffic on the I-5 and the nearby coastal rail line. In the past, the Encina Power Station did burn large quantities of liquid fuel (residual fuel oil), which can generate large amounts of soot. This resulted in documented problems in the neighborhood from soot emissions. However, it has been more than 10 years since the Encina Power Station used significant amounts of residual fuel oil.

Please see also the response to Terramar Association Comment No. 1 and General Public Comment No. 17.

General Public Comment No. 3

The power plant and its harmful emissions are not appropriate near a beach. Can't it be located somewhere else.

District Response

With the exception of Class I Areas, which are federal wilderness areas or national parks, District rules do not provide any distinction between physical locations when evaluating the air quality impacts of an application. In addition, as proposed, the District has concluded that the CECP does not pose a significant risk to public health from air pollution as discussed in the FDOC (and Appendices A and B of the FDOC). This includes the beach area. In general, impacts on the beach from air pollutant emissions from the CECP are less than the estimated peak levels, which as mentioned do not pose a significant risk to the public.

The District evaluates projects at their proposed location and has no authority to require that the proposed project be moved elsewhere. Please see also the responses to Terramar Association Comments 1 and 2 and General Public Comments 1, 2, 4, and 6.

General Public Comment No. 4

Can you guarantee no harm from the CECP emissions. Do we really know the long term affects of pollutants?

District Response

No one can guarantee there is absolutely no possibility of harm from any project. The District has evaluated the impacts from the air pollutants emitted from the project using the standard regulatory methods used in California and finds that the probability of harm is within the bounds used to permit projects (see FDOC pages 43 and 51 and 52, FDOC Appendices A and B) and response to General Public Comment No. 6 below. The toxic factors used to evaluate acute and chronic (long-term) noncancer impacts often include safety factors of 10-1000, in part to account for the less than complete knowledge of potential toxic impacts. The toxic factors used to evaluate cancer risk are established at a level that makes it far more probable that the risk has been overestimated rather than underestimated.

General Public Comment No. 5

The emissions from the new plant will lead to ruinous ozone (smog) generation.

District Response

The District disagrees. Although any increase in ozone precursors in unwelcome since the District does not yet attain state and federal ozone standards, the CECP increases are allowed by District rules since the facility has mitigated the increases to the extent feasible by controlling VOC emissions with the Best Available Control Technology (BACT), NOx emissions with the Lowest Achievable Emission Rate (LAER), and providing offsets at a 1.2 to 1.0 ratio on an annual basis for the net increase in NOx.

Ozone is created by a complex set of chemical reactions in the atmosphere. Because of the time necessary for the chemical reactions to take place, the impact of precursor emissions often occur far from their source. Although ozone would generally be expected to increase if ozone precursor emissions increase, current models can not resolve the effect of a single source the size of the CECP. Therefore, the production of ozone is considered a basin-wide problem in San Diego (i. e., ozone levels at any location are more the result of meteorology and ozone precursor emissions throughout the county than emissions in the location's immediate vicinity). The emissions of ozone precursors (NOx and VOCs) from the CECP are only a small fraction of the total ozone precursors released in San Diego. On an average summer day (the prime period of ozone concern), the estimated VOC and NOx emissions for San Diego county in 2010 are about 320,000 and 364,000 pounds per day, respectively. The expected maximum VOC and NOx emissions for the CECP are about 380 and 1755 and pounds per day, respectively, during normal operations, including startups and shutdowns. Thus, the maximum expected contribution of daily ozone precursor emissions from the CECP normal operations is about 0.3 % of the total ozone precursor emissions, a relatively small contribution.

Furthermore, the ozone precursor emissions have been significantly mitigated by the requirement of BACT for VOCs, LAER for NOx, the reduction of ozone precursor emissions by the retirement of existing Units 1, 2, and 3, and providing offsets for the net NOx increase. There may also be reductions in emissions from existing, higher emitting units that are displaced by the use of the more efficient CECP. Because of its unique design, the CECP can start very rapidly

while still being able to employ the more efficient combined-cycle mode of operation. This allows the CECP to be employed in a role typically filled by simple-cycle turbines, some of which, including one located at the Encina Power Station, have NOx emissions more than 20 times higher than the CECP per megawatt-hour generated.

In considering the potential impact of the relatively small increase in ozone precursors, it should be noted that ozone pollution has declined dramatically in Southern California in general and San Diego County is no exception. In 1989, the latest federal 8-hour ozone ambient air quality standard would have been exceeded on 163 days in San Diego county. In 2008, it was exceeded 35 times. Similarly, over the same period, days with exceedances of the state 8-hour and 1-hour ozone standards have fallen from 189 to 65 and 159 to 18, respectively. Not reflected in these reductions in exceedances is the even faster reduction of the overall population exposure to ozone levels over the standards. For example, total population exposure to ozone over the 1-hour state standard has decreased by 99% over the same period. It should also be noted that exceedances are not uniformly distributed over the county. For example, while the state 8-hour standard was exceeded on a total 65 days in the county in 2008, it was exceeded on only 3 days at the District's Camp Pendleton monitoring station, the closest monitoring station to the CECP.

General Public Comment No. 6

The District must explain in clear language what the emissions from the new facility mean in terms of public health and the environment.

District Response

The District's analysis of the potential health impacts of NO_2, CO, SO_2, PM10, and PM2.5 emissions and toxic air contaminant emissions from the CECP are detailed in Appendix A and B of the FDOC. These impacts are further explained and placed in context below.

NO_2, CO, SO_2, PM10 and PM2.5. For these pollutants, the measure of potential health impacts is their impact relative to the applicable National Ambient Air Quality Standards (NAAQSs) and Californian Ambient Air Quality Standards (CAAQSs). These standards are based on the best scientific evidence available, are periodically reviewed, and are revised or expanded, if warranted, to be health protective. They are established to be health protective with an adequate margin of safety both for the general population and groups of sensitive individuals (for example, asthmatics). Federal secondary NAAQSs are used to assess impacts on the environment.

To analyze the potential impacts, the peak ground level concentration resulting from the emissions are calculated using the latest approved air dispersion model and then added to representative background emissions. If no new exceedances of NAAQSs or CAAQSs are indicated, the impact on public health is deemed not significant. For the CECP emissions, this is the case for all ambient standards with less than an annual averaging time (see Table 4-4 in Appendix A of the FDOC).

Because of the way compliance with annual standards is determined, there can only be a single violation of the standard in any three-year period (the period typically used to model the source impacts). Consequently, no additional violations can occur if the District is in nonattainment of an annual standard as it is for PM10 and PM2.5. In this situation, the District examines weather the potential for the additional emissions are a significant contributor to the existing exeedance.

For the federal standard, this is done by comparing the maximum modeled annual impact for the project with the Significant Impact Level (SIL) that EPA has established for that pollutant. Projects with maximum modeled annual impacts less than the SIL are presumed to not cause or contribute to exceedances of the standard and thus not significantly impact public health. For the state annual standards the District again uses the federal SIL for guidance since the state has not established SILs. The emissions of PM10 and PM2.5 from the CECP cause impacts that are less than the applicable SIL and, hence, are not a significant contributor the annual exceedance (see Table 4-5 in Appendix A of the FDOC).

In summary, the emissions of NO_2, CO, SO_2, PM10 and PM2.5 do not cause a significant impact on public health or the environment.

Toxic Air Contaminants. For toxic air contaminants, the District analyzed potential incremental acute (1-hour), 8-hour, and chronic (one year or longer exposure) noncancer health impacts. Additionally, the potential incremental cancer risk was assessed based on a life-time (70-year) exposure for residents and shorter exposure times for occupational workers. All health impacts of all toxic air contaminants known to be emitted in significant amounts from the source and for which estimated health impacts can be quantified were included in the assessment. The potential exposure of the toxic air contaminants by pathways other than inhalation (e.g., dermal contact or ingestion through food) were also considered in a conservative manner.

The primary criteria for assessing noncancer impacts is the ratio of the ground level concentration of each air toxic contaminant to the applicable relative exposure level (REL). The RELs are established through a public process by the state Office of Environmental Health Hazard Assessment (OEHHA) at a level at which the available scientific evidence indicates there is no significant probability of harm from the pollutant. A safety factor of 10-1000 is often included in the REL to account for uncertainties in the scientific evidence. The cumulative impact of all toxic air contaminants assessed is known as the total Health Hazard Index (HHI). A total HHI of less than 1.0 is considered not significant.

For toxic air contaminants that have the potential to cause cancer, OEHHA assumes there is no level of exposure that is absolutely safe. Rather a cancer risk is based on the ground level concentration for each pollutant and a unit risk factor (URF) established by OEHHA. OEHHA establishes URFs at levels that the available scientific evidence indicates are much more likely to overestimate the risk than underestimate the risk. The District considers total cancer risk from all pollutants of less than 1.0 in a million not significant and cancer risk less than 10.0 in a million not significant if the project employs toxic best available control technology (TBACT). By comparison the total lifetime probability of contracting cancer is about 400,000 in a million.

As shown in the table on page 2 of Appendix B of the FDOC, the HHIs for acute, 8-hour or chronic noncancer impacts are all well less than 1.0 and the estimated cancer risk is less than one in a million at the point of the maximum exposed resident. Therefore, the impact of the toxic air contaminant emissions from the CECP is deemed to not cause a significant health impact.

For more information on health risk assessments see:

http://oehha.ca.gov/pdf/HRSguide2001.pdf

Please see also the responses to General Public Comments Nos. 1, 4 and 5, Terramar Association Comment No. 1, and Simpson Comment No. 16.

General Public Comment No. 7

The District needs to reassure the public that they are not subject to influence of lobbyists or vested interests.

District Response

The District considers comments from all sources equally. The District also has a strict policy prohibiting the acceptance of any gratuity from outside sources.

General Public Comment No. 8

The District needs to assure the public that the air quality standards used to evaluate the permit have been updated to represent the latest scientific evidence.

District Response

The table below indicates when ambient air quality standards and health risk procedures used in the District analysis were either revised or reviewed by the federal or state government, as applicable. Even though the District has submitted the FDOC to the CEC, the District will continue to evaluate any changes to standards that occur during the CEC certification process to determine if the change might have a significant impact on the District's conclusions regarding the project.

Air Quality Standard Date of Revision or Decision to Retain After Review

Pollutant	Standard	Federal	State
Ozone	1-hour	N/A	2006
	8-hour	2008	2006
PM10	24-hour	2006	2003
	Annual	N/A	2003

PM2.5	24-hour	2006	2003
	Annual	2006	2003
CO	1-hour	1994	1989
	8-hour	1994	1989
NO_2	1-hour	N/A	2008
	Annual	1996	2008
SO_2	1-Hour	N/A	1995
	3-Hour	1996	N/A
	24-Hour	1996	1991
	Annual	1996	N/A
Toxics	OEHHA[a] Health Risk Factors	N/A	2008[a]

[a]The state Office of Environmental Health Hazard Assessment (OEHHA) is continuously reviewing risk factors for toxic air contaminants. In 2008, the acute and chronic standards for , acetaldehyde, acrolein, arsenic, manganese, and mercury were revised. In addition, new 8-hour standards were promulgated for these toxic air contaminants.

General Public Comment No. 9

There is no guarantee that the emissions from the current plant will be reduced nor is there any guarantee that additional power plants won't be located at the Encina Power Station.

District Response

Existing Units 1, 2, and 3 represent approximately 30% of the plant's potential output and potential emissions. The emissions from Units 1, 2, and 3 are limited by the FDOC conditions during the transition period until the new combustion turbines are fully operational. After both turbines are fully operational, the FDOC conditions require that Units 1, 2, and 3 be shutdown and their permits to operate surrendered. Although actual daily or hourly emissions from the two remaining utility boilers (Units 4 and 5) could increase over the actual emissions in recent years, the utility boiler maximum emissions would still be less than the emissions from the facility when Units 1, 2, and 3 emissions and/or operations were limited only by their physical capacity and existing permit limits on hourly emission rates or pollutant exhaust concentration. It should also be noted that potential emissions from the Encina Power Station have already been greatly reduced pursuant to the requirements of District Rule 69. Please see also the responses to Terramar Association Comment No.1, CEC Comment No. 1, and City of Carlsbad Comment No. 4.

The District cannot prevent new power plants from being located at the Encina Power Station if they comply with all District Rules and Regulations.

General Public Comment No. 10

A public hearing in Carlsbad is requested to fully explain the impacts on air quality from the emission increases associated with the CECP.

District Response

The District will not hold a public meeting on the FDOC although it will participate in future CEC meetings on the CECP. Please see also the response to Simpson Comment No. 1.

General Public Comment No. 11

The noise from the new power plant will be a nuisance and reduce property values.

District Response

The District has no authority to consider noise in its evaluations of air quality impacts. This issue can be addressed in the broader CEC certification process.

General Public Comment No. 12

The power plant will run on hazardous jet fuel (JP-5).

District Response

The FDOC conditions only allow the combustion turbines to use pipeline natural gas. Small amounts of diesel fuel, identical to the fuel used by highway vehicles, will be used by the emergency water pump engine.

General Public Comment No. 13

Rooftop photovoltaic systems using solar power should be used instead the proposed project.

District Response

The District can consider alternative processes in determining BACT for a project. However, they have to be technically feasible and cost-effective (achieve annual emission reductions at an annualized cost less than the amount specified by District NSR rules). The District estimates that at the location of the proposed CECP, a photovoltaic system would require approximately two acres of surface area to generate one megawatt of electricity (peak) and approximately four acres to generate 3500 megawatt-hours of electricity per year. To generate a peak power of 550 megawatts, as proposed for the CECP, approximately 1000 acres of surface area would be

required. The CECP is expected to run about 3500 hours per year at 550 megawatts. To provide this amount of electrical energy annually about 2000 acres would be required. The total amount of land owned by the applicant at the location of the proposed CECP is only about 95 acres. Therefore, solar power is not a technically feasible option for generating the proposed amount of electrical power on the project site and cannot be considered BACT for the project. It would also likely not be cost-effective based on existing District cost-effectiveness criteria.

Rooftop solar photovoltaic systems—which would have to be installed on property not owned or controlled by the applicant—as an alternative to the proposed CECP could be considered in a broader energy policy context. However, such considerations are beyond the scope of the District's review.

General Public Comment No. 14

The proposed power plant will spoil my view of the ocean and should be located elsewhere. In addition, the existing Encina Power Station should be torn down.

District Response

The District has no authority to consider the visual impact of a project in its evaluations of air quality impacts. This issue can be addressed in the broader CEC certification process. The District also has no authority to close a facility that is operating in compliance with all applicable District requirements.

General Public Comment No. 15

The District based its netting calculations on a 5-year average for calendar years 2002–2006 preceding the receipt of the application. Why were the 2-years immediately preceding the receipt of the application not deemed representative? Why was there no representative 2-year period within the 2002-2006 year time frame? What are the criteria for determining representativeness of annual operations of a unit?

District Response

Units Nos. 1, 2, and 3, which were the existing units used in the netting analysis, were not base-loaded during the 5-year period. Instead they were used primarily to meet peaks in electrical demand. The need for this type of operation fluctuates yearly depending on the weather and the availability of other electrical resources both in the county and in the Western United States. Thus, the District's decision to use a 5-year average was based on the year-to-year volatility in electric demand for such units. The drop in emissions in 2006 is possibly partially attributable to a large new base-loaded combined-cycle turbine power plant beginning operations in San Diego. However, usage may increase in the future with the long-term trend in increasing electric demand. Please see also the response to Power of Vision comment No.4 and Simpson Comment No. 5.

General Public Comment No. 16

What are the emission factors and annual operating hours used to determine annual emissions from Units 1, 2, and 3 for the years 2002 through 2006? How were these emission factors derived, e.g., based on source tests at each unit, manufacturer guarantees, AP-42, or other?

District Response

With respect to the PDOC emission calculations, the District responded to this question during the PDOC comment period. A summary of the emission calculation methodology used in the FDOC to calculate annual preproject emissions for existing Units 1, 2, and 3 is provided on pages 19–23 of the FDOC. The NOx emissions were calculated based on CEMS data as described in the FDOC. Emissions from the other pollutants are based on emission factors in pounds per million standard cubic feet of natural gas (lb/MMscf) or pounds per thousand gallons of residual fuel oil combusted (lb/1000 gal). The CO and PM10 emission factors for natural gas combustion are provided in the tables below:

CO Emission Factors for Natural Gas Combustion, lb/MMscf

Boiler	2002[a]	2003[b,c]	2004[b]	2005[b]	2006[b]
Unit 1	169.0	69.1	24.0	18.7	55.4
Unit 2	169.0	112.3	40.4	89.1	91.4
Unit 3	169.0	171.5	102.6	44.9	45.7

[a]Based on a 1994 test of all five boilers at the facility combined when none of the units had low-NOx burners.
[b]Based on individual unit source tests.
[c]Low-NOx burners were installed on Units 1, 2, and 3 in 2003.

PM10 Emission Factors for Natural Gas Combustion, lb/MMscf

Boiler	2002[a]	2003[b,c]	2004[b]	2005[b]	2006[b]
Unit 1	11.70	10.27	9.96	12.45	10.14
Unit 2	11.70	9.45	14.39	11.46	11.56
Unit 3	11.70	10.14	9.77	11.94	10.33

[a]Based on the average of a 1996 test of all five boilers at the facility combined and a 1992 test of Units 4 and 5 when none of the units had low-NOx burners or SCR.
[b]Based on the AP-42 value of 7.6 lb/MMscf adjusted for ammonia (as NH_3OH) measured in individual unit source tests.
[c]Low-NOx burners and SCR were installed on Units 1, 2, and 3 in 2003.

All the remaining emission factors (EFs) were based on AP-42 and are provided in the table below:

AP-42 Emission Factors

Pollutant	Natural Gas EF, lb/MMscf	[a]Residual Oil EF, lb/1000 gallon
CO	N/A	5.0
VOC	5.5	0.93
SOx	0.6	71
PM	N/A	9.32
PM10	N/A	6.99
PM2.5	N/A	5.5

[a]The residual fuel oil emission factors are based on a sulfur content of 0.5% by weight.

Fuel use rather than operating hours are used to calculate emissions. However, the annual operating hours ranged from about 3500-3900 hours per unit in 2005 and about 1500-2500 hours per unit in 2006.

Please see also General Public Comments 17 and 18.

General Public Comment No. 17

How many hours were the boilers each operated on fuel oil each year?

District Response

The operating hours on oil for existing Units 1, 2, and 3 are given below:

Year	Unit 1	Unit 2	Unit 3
2002	0	43	0
2003	24.25	17.5	21.5
2004	0	0	0
2005	5.5	5.5	7
2006	0	5.75	7

General Public Comment No. 18

What are the adjustment factors used to adjust annual PM emissions from each boiler as a result of residual fuel oil combustion?

District Response

All PM from natural gas combustion is assumed to be PM2.5, which is a subset of PM10 and PM. Therefore, the emissions of PM, PM10, and PM2.5 are identical for natural gas combustion. PM2.5 emissions were calculated by adding the PM2.5 emissions from natural gas and residual oil combustion. PM10 emissions were calculated by adding the PM2.5 emissions from natural gas combustion to the PM10 emissions from residual oil combustion. The total PM emissions were calculated by adding the PM2.5 from natural gas combustion and the PM emissions from oil firing.