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November 12, 2013

Ms. Patricia Kelly
Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Redondo Beach Energy Project (12-AFC-03)
Data Response Set 1A – Responses to CEC Staff Data Requests 17, 11–12, 14–19, 24–25, 29–47

Dear Ms. Kelly:

Attached please find the Redondo Beach Energy Project's Data Response Set 1A, including responses to Data Requests 1–7, 11–12, 14–19, 24–25, and 29–47. This Data Response Set was prepared in response to California Energy Commission Staff Data Requests 1 through 47 for the Application for Certification for the Redondo Beach Energy Project (12-AFC-03) dated October 15, 2013.

The Applicant has requested additional time to prepare responses to Data Requests 8–10, 13, and 20–23. Responses to Data Request 8–10 and 20–23 will be submitted on or before December 6, 2013 (TN 201108). Data Request 13 requires the Staff to approve the air quality sources (provided as Data Response 12) in order for the sources to be included in the cumulative impact assessment. As such, the Applicant will submit a response to Data Request 13 within 6 weeks of receipt of Staff's approval.

In addition, a notice of objection to Data Requests 26 through 28 was filed on November 4, 2013, therefore reponses for those data requests are not included.

Also provided is five electronic copies of Attachment DR2-1 on CD-ROM. Additional electronic copies are available upon request.If you have any questions about this matter, please contact me at (916) 286-0249 or Mr. Jerry Salamy at (916) 286-0207.

Sincerely,

CH2M HILL

Sarah Madams
AFC Project Manager

Attachment
cc: S. O'Kane, AES
G. Wheatland, ESH
J. Salamy, CH2M HILL

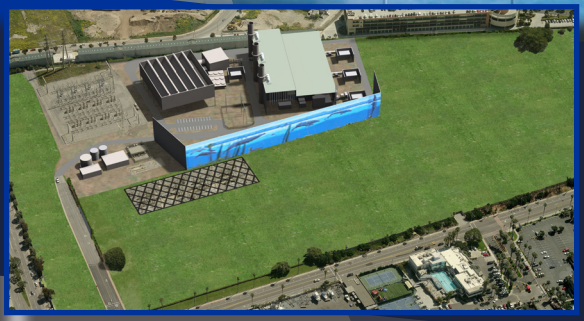
Data Response Set 1A – Responses to CEC Staff Data Requests 1-7, 11-12, 14-19, 24-25, 29-47

Application for Certification

Redondo Beach Energy Project

12-AFC-03

November 2013



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Redondo Beach Energy Project

(12-AFC-03)

Data Responses, Set 1A

(Responses to Data Requests 1–7, 11–12, 14–19, 24–25, and 29–47)

Submitted to

California Energy Commission

Prepared by

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November 11, 2013

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Introduction

Attached are AES Southland Development, LLC's (AES-SLD or the Applicant) responses to the California Energy Commission (CEC) Data Request, Set 1A (numbers 1–7, 11–12, 14–19, 24–25, 29–47) regarding the Redondo Beach Energy Project (RBEP) (12-AFC-03) Application for Certification (AFC).

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as the CEC presented them and are keyed to the Data Request numbers (1 through 47).

New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 36 would be numbered Table DR36-1. The first figure used in response to Data Request 42 would be Figure DR42-1, and so on. Figures or tables from the RBEP AFC that have been revised have "R" following the original number, indicating revision.

Additional tables, figures, or documents submitted in response to a data request (for example, supporting data, standalone documents such as plans, folding graphics, etc.) are found at the end of each discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

Air Quality (1–15)

Project Permits: Background

The proposed project will require a Preliminary Determination of Compliance (PDOC) and a Final Determination of Compliance (FDOC) from the South Coast Air Quality Management District (SCAQMD or "District"). These documents will be integrated into the staff analysis. Therefore, staff will need copies of relevant correspondence between the applicant and the District in a timely manner in order to stay up to date on any permit issues that may arise during preparation of the Preliminary or Final Staff Assessments.

DATA REQUEST

1. Please provide copies of all substantive District correspondence regarding the Redondo Beach Energy Project (RBEP) PDOC and FDOC preparation, including e-mails, within one week of submittal or receipt. This request is in effect until the final Energy Commission Decision has been adopted.

Response: Attachment DR1-1 presents all substantive correspondence with the SCAQMD regarding the RBEP. All future substantive correspondence will be provided within one week of submittal or receipt.

Emission Estimates: Background

Appendix 5.1A (Construction Emission Calculations), and 5.1 B (Operational and Commissioning Emission Calculations) of the AFC are used to document emission calculations. Staff needs the original spreadsheet files of these estimates with live, embedded calculations to complete their review.

DATA REQUEST

2. Please provide the spreadsheet versions of Appendix 5.1A and 5.2B worksheets with the embedded calculations live and intact.

Response: Accompanying this submittal is Attachment DR2-1, which is a compact disc containing the construction and operational emissions spreadsheets for Appendix 5.1AR and 5.1B with the embedded calculations live and intact.

In addition, the construction emissions spreadsheets contained in Appendix 5.1AR have been revised from the original AFC submission to incorporate the latest version of CalEEMod and available fugitive dust mitigation measures.

Emergency Equipment: Background

The Application for Certification (AFC), Section 5.1.2, proposes the use of two electric fire pumps, connected to two independent power feeds from the Southern California Edison distribution system, to provide onsite fire protection. It is unclear if the electric fire pumps would be able to provide fire protection during times of electric grid blackouts. Staff is concerned that if these engines are not able to provide fire protection during electric grid black outs, alternative fire pump engines (e.g. natural gas or diesel) would be needed and the potential emissions from these engines should be included in the AFC. Additionally, the AFC does not propose the use of an emergency generator for backup power support necessary to bring equipment offline to avoid equipment damages and for other auxiliary equipment support.

DATA REQUEST

3. Please explain how the fire pump engines could be operational during times when electricity is not available from the independent power feeds. Are these two independent power feeds sufficient to ensure that electric power would always be available for fire protection?

Response: Two fire pumps were installed in the early 1970s to provide fire protection for the existing Redondo Beach Generating Station. The electric motors that power the fire water pumps maintain two separate electrical feeds into the fire water pump system. These electrical feeds come from Southern California Edison's onsite switchyard, and an in-plant interconnection to the facility's generators. If one of the electrical feeds to the fire water pump is disabled, the second electrical feed can provide power to the pump's motor. The existing fire water pump system is fully capable of providing the requisite fire protection service necessary for RBEP's safe operation. An alternative emergency generator using either natural gas or diesel is not proposed for RBEP due to the redundant electrical service provided by Southern California Edison's switchyard.

DATA REQUEST

4. If the fire pump engines are unable to provide fire protection during times electricity is unavailable from the independent power feeds, how would AES Southland Development, LLC (AES or applicant) provide fire protection? Would AES consider using either natural gas or diesel fire pump engines? If so, please quantify the emissions from these engines for readiness testing and maintenance purposes, and include emissions from these fire pump engines in the air quality modeling assessment.

Response: The current fire protection system, including the existing, electrically-driven fire water pumps, installed at the Redondo Beach Generating Station complies with applicable fire protection laws, ordinances, regulations, and standards. Those portions of the existing fire water protection system proposed for use for the RBEP are expected to be fully functional during electrical grid outages as it is unlikely that the two separate electrical supplies to the fire pump motor will both be disabled at the same time. As a result, the Applicant is not considering the use of an onsite natural gas or diesel-fueled generator engine for backup power support for the fire pump engines.

DATA REQUEST

5. If the applicant is considering the use of an onsite natural gas or diesel-fueled generator engine for backup power support, please quantify emissions from the engine for readiness testing and maintenance purposes, and include emissions from the generator engine in the air quality modeling assessment.

Response: The Applicant is not considering the use of an onsite natural gas or diesel-fueled generator engine for backup power support.

Demolition and Operation Overlap Impacts: Background

AFC Section 5.1.1 explains that the first activities to occur onsite would be the dismantling and partial removal of existing units 1-4 starting January 2016, while the existing units 5-8 and auxiliary boiler number 17 would remain in service until the second quarter of 2018. The construction and demolition emission estimates in AFC Appendix 5.1A do not appear to include simultaneous operation of the existing power plant or the proposed RBEP. Staff needs to evaluate the impacts associated with the overlap in emissions from demolition of units 1-4 and potential worst-case permitted operation of units 5-8 and auxiliary boiler

number 17. Similarly, staff needs to evaluate the impacts associated with the overlap in emissions from operation of the proposed RBEP during demolition of units 5-8 and auxiliary boiler number 17.

DATA REQUEST

6. Please provide operating permits and emission limits for existing units 5-8 and auxiliary boiler number 17.

Response: Attachment DR6-1 includes a copy of the Redondo Beach Generating Station's Title V permit. Please see AFC Appendix 5.1B, Table 5.1B.9b for the emission limits.

DATA REQUEST

7. Please provide emission estimates associated with the worst-case potential operation of units 5-8 and auxiliary boiler 17, and demolition of units 1-4.

Response: Table DR7-1 presents the emission estimates associated with the worst-case potential operation of the existing Redondo Beach Generating Station Units 5-8 and auxiliary boiler 17.

TABLE DR7-1
Worst-Case Potential Emission Estimates – Operation of Units 5–8 and Auxiliary Boiler 17 [a]

	Criteria Pollutant Emissions **Maximum Annualized Rolling 24-Month Emissions (tpy)** [b]						GHG Emissions **Maximum Annualized Rolling 24-Month Emissions (metric tons/year)** [b]		
	VOC	**CO**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**
Unit 5	1.57	18.6	5.26	0.17	1.49	0.64	61,829	1.04	0.12
Unit 6	0.96	34.8	2.57	0.10	1.01	0.39	37,562	0.63	0.070
Unit 7	11.2	125	13.9	1.22	2.23	2.30	223,204	3.76	0.42
Unit 8	4.88	311	3.98	0.53	0.96	1.01	97,679	1.65	0.18
Boiler 17	0.14	2.19	3.64	0.016	0.20	0.030	2,871	0.048	0.005
Facility [c]	**14.9**	**487**	**26.4**	**1.62**	**4.60**	**3.38**	**328,281**	**5.53**	**0.61**

[a] Emissions are estimated from the 2007 through 2012 past actual data for the Redondo Beach Generating Station.

[b] The maximum annualized rolling 24-month emissions are calculated for each individual unit.

[c] The maximum facility totals include the emissions from all five units (5, 6, 7, 8, and 17) for the same annualized 24-month total. Because the maximum for each unit may not occur on the same month, the values in the facility row may not be additive.

tpy = tons per year
GHG = greenhouse gas
VOC = volatile organic compound
CO = carbon monoxide
NO_x = nitrogen oxides
SO_2 = sulfur dioxide
PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less
CO_2 = carbon dioxide
CH_4 = methane
N_2O = nitrous oxide

Table DR7-2 presents the maximum emission estimates associated with demolition of existing Redondo Beach Generating Station Units 1–4.

TABLE DR7-2
Maximum Emission Estimates – Demolition of Units 1–4*

	Maximum Criteria Pollutant Emissions (tpy)						Maximum GHG Emissions (metric tons/year)		
	VOC	**CO**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**
Units 1-4 Demolition	1.03	6.27	11.7	0.017	3.08	0.86	2,145	0.040	0.093

*Maximum emissions include emissions from onsite and offsite construction activities, which are detailed in AFC Appendix 5.1AR, Tables 5.1A.1R through 5.1A.4R, which have been revised and submitted in response to Data Request 2 above.

Table DR7-3 presents the total, maximum emission estimates associated with the worst-case potential operation of existing Redondo Beach Generating Station Units 5–8 and auxiliary boiler 17 with demolition of existing Redondo Beach Generating Station Units 1–4.

TABLE DR7-3
Total Maximum Emission Estimates – Operation of Units 5-8 and Auxiliary Boiler 17 with Demolition of Units 1–4

	Maximum Criteria Pollutant Emissions (tpy)						Maximum GHG Emissions (metric tons/year)		
	VOC	**CO**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**CH_4**	**N_2O**
Operation	14.9	487	26.4	1.62	4.60	3.38	328,281	5.53	0.61
Demolition	1.03	6.27	11.7	0.017	3.08	0.86	2,145	0.040	0.093
Total Worst-Case Potential Emissions	**15.9**	**493**	**38.1**	**1.64**	**7.68**	**4.24**	**330,426**	**5.57**	**0.71**

DATA REQUEST

8. Please model the impacts from emissions associated with the demolition of units 1–4 and simultaneous operation of units 5–8 and auxiliary boiler 17, as quantified in the prior data request.

Response: Modeling impacts for emissions associated with the demolition of Units 1–4, and simultaneous operations of Units 5–8 and auxiliary boiler 17 will be provided by December 6, 2013.

DATA REQUEST

9. Please model the impacts from emissions associated with the demolition of units 5–8 and auxiliary boiler 17 and simultaneous operation of the proposed RBEP.

Response: Modeling impacts for emissions associated with the demolition of Units 5–8 and auxiliary boiler 17 and simultaneous operation of the proposed RBEP will be provided by December 6, 2013.

Commissioning Impacts: Background

Section 5.1.6.1.2 and Section 5.1.6.3 (Table 5.1-28) of the AFC say that the annual-average impacts for the commissioning period were not evaluated because commissioning is expected to be completed within 180 days and the combined commissioning and operation emissions for a rolling 12-month period are not expected to exceed the maximum permitted annual emissions evaluated in Section 5.1.6.1. However, Section 5.1.8.2.2 estimates SCAQMD nitrogen oxides (NOx) RECLAIM requirements to be higher for the first

year of operation than that of subsequent years due to commissioning and worst case routine annual operations occurring in the same (first) year. Staff needs to evaluate the annual impacts for the commissioning period plus routine operation for the remainder of that year to determine compliance with the corresponding ambient air quality standards.

DATA REQUEST

10. Please provide air quality modeling for the annual impacts during the commissioning phase and subsequent operations to determine compliance with the annual-average ambient air quality standards.

Response: Air quality modeling for the annual impacts during the commissioning phase and subsequent operations will be provided by December 6, 2013.

Cumulative Impacts: Background

Section 5.1.7 and Appendix 5.1 F, Section 8, of the AFC, describe the methodology for the cumulative effects analysis, but the AFC does not include the analysis because a project list had not been provided by the District at the time the AFC was prepared. The cumulative analysis should include all reasonably foreseeable projects within a six mile radius, i.e. projects that have received construction permits but are not yet operational, and those that are in the permitting process or can be reasonably expected to be in permitting in the near future. A complete impacts analysis should identify all existing and planned stationary sources that affect the baseline conditions and consider them in the modeling effort.

DATA REQUEST

11. Please provide a copy of the applicant's correspondence to and from the District regarding existing and planned cumulative sources located within six miles of the project site.

Response: Attachment DR 11 includes a copy of the Applicant’s correspondence with the SCAQMD regarding existing and planned cumulative sources located within six miles of the project. The Applicant submitted its first request to the SCAQMD in August 2012. A second request was submitted in April 2013 to confirm whether any new planned cumulative sources should be added to the original list provided by the SCAQMD.

DATA REQUEST

12. Please provide a list of all sources to be considered in the cumulative air quality impact analysis for staff review and approval.

Response: Attachment DR 12 presents a list of sources considered for inclusion in the cumulative air quality impact analysis. This list is a refinement of the sources identified in the response to DR- 11. A complete list of sources considered for inclusion in the cumulative modeling and the criteria used to refine the list are included with this submission on compact disc.

DATA REQUEST

13. Upon approval of the list of sources to be included in the cumulative air quality impact analysis, please provide the cumulative modeling and impact analysis.

Response: Once the list of sources is approved by Commission Staff, the Applicant will provide the cumulative modeling and impact analysis within 6 weeks of receipt of approval.

Mitigation for Non-Attainment Emissions and Precursor Emissions: Background

Section 5.1.8.2.2 of the AFC indicates that although RBEP would otherwise be required to provide emission offsets for particulate matter (PM10/PM2.5), sulfur oxides (SOx), and volatile organic compounds (VOCs) under SCAQMD Rule 1303(b)(2), the RBEP would be exempt from this requirement under SCAQMD Rule 1304(a)(2), which transfers the responsibility to the SCAQMD to provide offsets consistent with Rule 1303. Using Rule 1304(a)(2) would make the project subject to the new Rule 1304.1 regarding fees, adopted September 6, 2013, although the AFC does not address this rule because the project was proposed before the rule was established. The applicant acknowledges that it would be required to provide RECLAIM trading credits (RTC) for nitrogen oxides (NOx) under SCAQMD Rule 2005.

However, staff's analysis under the California Environmental Quality Act (CEQA) must determine the significance of impacts, which is based on whether all non-attainment emissions and precursor emissions (i.e. NOx, VOCs, PM10/PM2.5, and SOx) would be mitigated. This could be demonstrated through the emissions reductions achieved by the permanent retirements of existing electric generating facilities, by securing and surrendering formal emission reduction credits (ERCs), or using non-traditional emission reduction programs to mitigate non-attainment emissions and precursor emissions. Non-traditional reductions would be from programs that reduce emissions in ways that may be ineligible for use in an air district's official ERC banking program, such as through mobile source control measures.

Information submitted by AES to Energy Commission staff does not provide sufficient detail regarding the specific CEQA mitigation plan. Section 5.1.8.2.2 describes plans for permanently retiring the existing Redondo Beach Generating Station Unit 7 (480 MW) and using 50 MW from the retirement of Redondo Beach Generating Station Units 6 and 8 and Huntington Beach Generating Station Units 1 and 2. The AFC Table 5.1-17 shows past actual emissions for the Redondo Beach Generating Station units, but the potential emissions reductions from all the retirements described are not totaled in the AFC. If ERCs would be used for the project, staff eventually needs to know the exact location, the amount, and the ratios of emissions to reductions, including inter-pollutant mitigation ratios, applicable to each ERC that AES proposes to use. If non-traditional mitigation programs would be used, staff needs to know the proposed strategies to reduce emissions in the near vicinity of the project and the effectiveness of such strategies. This information may be submitted under confidential cover to staff, but staff expects to make this information available to the public when publishing the staff assessment. Staff requires a finalized mitigation package to complete our analysis.

DATA REQUEST

14. Please provide a tabulated list showing all emission reductions expected to be used, including: retiring existing electric generation facilities (consistent with Rule 1303), offsets, and Emission Reduction Credits (ERCs). The list should indicate the proposed quantity of each reduction, including their locations, in a quantity sufficient to fully mitigate the project's emissions of non-attainment pollutants and their precursors. This list should show the emission reductions AES expects to achieve by retiring the existing Redondo Beach Generating Station Unit 7 (480 MW) and using 50 MW from the retirement of Redondo Beach Generating Station Units 6 and 8 and Huntington Beach Generating Station Units 1 and 2, as described on AFC p. 5.1-32.

Response: As presented in Section 5.1.8.2.2 of the AFC, the Applicant proposes to fully offset non-attainment pollutant (and precursor) emissions using two different strategies. The offset strategy for NO_x includes the use of RECLAIM trading credits (RTCs). As RBEP is subject to SCAQMD Rule 2005 (RECLAIM), the Applicant will secure RTCs consistent with the amounts shown in Table DR14-1.

TABLE DR14-1
SCAQMD NO_x RECLAIM Requirements

Pollutant	Offsets Required*
NO_x	267,804 lbs NO_x RTCs (first year – Commissioning Plus Operation) 242,957 lbs NO_x RTCs (second year – Operation Only)

*The first year RTC calculation includes the commissioning activities plus 624 startups and shutdowns per year, 470 hours of turbine operation at 100 percent load, 63.3 degrees Fahrenheit (°F) with duct burner firing, and 5,900 hours of turbine operation at 100 percent load, 63.3°F without duct burner firing. The second year RTC calculation includes 624 startups and shutdowns per year, 470 hours of turbine operation at 100 percent load, 63.3°F with duct burner firing, and 5,900 hours of turbine operation at 100 percent load, 63.3°F without duct burner firing.

lbs = pound(s)

The Applicant's strategy for offsetting VOC, SO_2, and PM_{10} emissions incorporates the provisions of SCAQMD Rule 1304(a)(2), which applies to the retirement of electric utility steam boilers without a net increase in basin generation capacity in megawatts (MW). All VOC, SO2 and PM10 offsets required to mitigate RBEP emissions will be surrendered by the SCAQMD under the procedures described in SCAQMD Rule 1315. To meet the requirements of Rule 1304(a)(2), the Applicant will retire the existing utility steam boilers with a generating capacity in excess of RBEP's maximum gross generating capacity of 546 MW. The Applicant proposes to surrender the air permits and render inoperable Redondo Beach Generating Station Units 5 (175 MW) and 7 (480 MW) to meet the requirements of Rule 1304(a)(2) for the RBEP. In addition Redondo Beach Generating Station Units 6 and 8 and Huntington Beach Generating Station Units 1 and 2 will be permanently retired to enable the Huntington Beach Energy Project under the provisions of Rule 1304(a)(2). Thetotal generating capacity for these units is 1,085 MW; however, the Huntington Beach Energy Project has a maximum total output of 939 MW. In total, 1,740 MW of existing electric utility steam boilers will be retired to enable 1,485 MW of new combined cycle gas turbine generation, resulting in a surplus of 255 MW of retired utility steam boiler capacity. The SCAQMD will withdraw the required emission reductions from the District's emissions offset account or bank (defined in Rule 1315) to offset the full amount of VOC, SO_2, and PM_{10} emissions for RBEP, including any applicable emission offsets ratios. Table DR14-2 presents an estimate of the average daily VOC, SO_2, and PM_{10} Emission Reduction Credits (ERCs) that the SCAQMD will surrender in accordance with Rules 1303 and 1315. The average daily SO_2 and PM_{10} emissions are based on AFC Table 5.1-17, while the VOC average daily emissions are based on the commissioning emissions presented in AFC Table 5.1-12, assuming commissioning of all three turbines occur within the same calendar month. The retired utility steam boiler generation required under the provisions of Rule 1304(a)(2) represent excess emission reductions over and above the offsets retired by the SCAQMD through their internal offset bank. No Emission Reduction Credits or emission offsets are created, transferred or accounted for, from the retired units. Emissions from the existing units at the Redondo Beach Generation Station which will be retired represent excess emission reductions, over and above the emission offsets and RECLAIM RTC's which already fully offset all non-attainment pollutants.

TABLE DR14-2
Expected Average Daily RBEP Emission Reduction Required

	VOC	SO_2	PM_{10}
Average Daily Emissions (lbs/day)	1,412.11	158.51	427.82
Average Daily Emissions (tons/day)	0.71	0.08	0.21

Based on the Walnut Creek Energy Park project (05-AFC-02), the SCAQMD does not identify which emission reductions from the District's offset account will be surrendered beyond the accounting requirements of Rule 1315. Table DR14-3 presents the SCAQMD's Rule 1315 projection of the emission offsets contained

within the Federal Offset Account for calendar year 2013. As shown in Table DR14-3, it is clear that the SCAQMD Federal Offset Account has sufficient offsets to support the Rule 1304(a)(2) exemption for the RBEP. A copy of the SCAQMD's January 2011 to December 2011 Final Determination of Compliance is presented as Attachment DR14-1.

Furthermore, the District's recently promulgated Rule 1304.1, which applies to RBEP is a specific funding mechanism for the implementation of air quality improvement projects consistent with the SCAQMD Air Quality Management Plan in the vicinity of projects that access the emission offset bank under provisions of Rule 1304(a)(2). Fees are payable before a Permit to Construct can be issued by the SCAQMD and are available to implement air quality improvement projects at the start of construction. The estimated 1304.1 fees for RBEP are in excess of $40 million dollars. Air quality improvement projects in the vicinity of RBEP funded by these fees will be managed and established by the SCAQMD.

The combination of emission offsets, RECLAIM RTCs, permanent retirement of existing utility steam boilers and payment of Rule 1304.1 fees for air quality improvement projects demonstrates that the construction and operation of RBEP will not result in any unmitigated significant air quality impacts

TABLE DR14-3
SCAQMD Prediction of Calendar Year 2013 Federal Offset Account

	VOC	NO_x	SO_x	CO	PM_{10}
2013 Projected Ending Balance (tons/day)	89.82	28.12	3.30	20.96	13.91

DATA REQUEST

15. Please identify and describe the applicability of SCAQMD Rule 1304.1, adopted September 6, 2013, and outline how AES intends to achieve compliance with this new regulation.

Response: As noted above, RBEP is subject to SCAQMD Rule 1304.1. The Applicant will select the annual payment option and estimates an annual Rule 1304.1 payment of $2,114,040, with the first payment due prior to the issuance of a Permit to Construct from the SCAQMD.

Attachment DR1-1
SCAQMD Correspondence for PDOC/FDOC Preparation

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Long Beach, CA 90803
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May 9, 2013

Mr. Mohsen Nazemi, P.E.
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Subject: Redondo Beach Energy Project Permit Application (Facility ID# 115536)

Dear Mr. Nazemi:

AES Redondo Beach, LLC (AES) is submitting this letter in response to the South Coast Air Quality Management District's (AQMD) April 12, 2013 request for additional information needed to complete the engineering evaluation of the Redondo Beach Energy Project (RBEP). The remainder of this letter presents AES's responses to the requested information.

1) Dispersion Modeling

a) Your response did not address whether a 5-year meteorological dataset was used for RBEP modeling. Please update the dispersion modeling using the most recent meteorological data files transmitted on March 26, 2013.

The AQMD planning staff's preliminary review of the dispersion modeling provided for RBEP confirms the modeling indicates the project's nitrogen dioxide (NO_2) impacts will exceed the Federal 1-Hour NO_2 significant impact level and, therefore, a cumulative impact assessment is needed. The addendum to the air dispersion modeling protocol to address the cumulative impact analysis has not been submitted to the AQMD. Please submit a protocol for the cumulative assessment and, upon approval of the protocol, the modeling analysis which is required to include facilities within a 10 kilometer radius.

Response: The RBEP air quality impact assessment contained in the air permit application used 5-years of meteorological data (compiled by AQMD specifically for use in dispersion modeling analyses) for the period of January 1, 2005 through December 31, 2009 (see page 5.1-19 of the Air Quality section of the Permit Application). These data (AERMET data files for 2005 through 2009) were downloaded directly from the AQMD website after the AQMD reviewed and commented on the RBEP dispersion modeling protocol's proposed use of these meteorological data.

Attachment 1 presents an addendum to AES's air dispersion modeling protocol. This addendum presents revised air dispersion modeling methodology, based on discussions between the AQMD and

AES's consultant (CH2M HILL), and the preliminary modeling results that show RBEP's 1-hour NO_2 significant impact area. The AQMD is expected to provide a list of sources to include in the 1-hour cumulative impact assessment; once received, AES's consultant will develop an emission inventory for these sources using the AQMD's public information request process. When the emission inventory is completed, it will be transmitted to the AQMD for review and approval. Once approved, a cumulative 1-hour NO_2 impact assessment will be completed and submitted within 10 business days.

b) Please remodel all NO_2 impacts with an appropriate ambient NO_2 ratio.

Please revise the construction dispersion modeling performed for California Environmental Quality Act (CEQA) purposes for fugitive dust emissions assuming the fugitive dust emissions are modeled as a ground-level source, with an initial vertical dimension of 1 meter.

Response: Based on the revised air dispersion modeling results presented in the RBEP Air Dispersion Modeling Protocol Addendum (see item b) above), the use of a Tier 3 analysis methodology may not be required to demonstrate compliance with the Federal 1-hour NO_2 standard. However, if a Tier 3 analysis is required, the ambient NO_2 ratio will be initially be set at 0.9 and if additional modeling is warranted, then AES will discuss the use of a site-specific ambient NO_2 ratio with the AQMD.

AQMD, as a responsible agency, is available to the lead agency and project proponent for early consultation on a project to apprise it of applicable rules and regulations, and provides guidance on applicable air quality analysis methodologies or other air quality-related issues.[1] However, the RBEP is not subject to any applicable AQMD rule that would require the modeling of construction fugitive dust emissions as part of an air permit application completeness determination.

Although modeling of construction fugitive dust emissions is not subject to AQMD jurisdiction, the construction fugitive dust area source emissions were remodeled with a release height at ground level (0 meters) and an initial vertical dimension of 1 meter, using the 5-year meteorological dataset provided by the AQMD on March 26, 2013. The results of this analysis are presented in Table AQMD-1, which shows the particulate matter (PM_{10} and $PM_{2.5}$) impacts from construction activities. A USB drive containing the air dispersion modeling files is enclosed. As with the previous fugitive dust modeling, the annual and 24-hour PM_{10} and the annual and 24-hour $PM_{2.5}$ background concentrations exceed the state and Federal ambient air quality standards (AAQS) without addition of the modeled concentrations. As a result, the predicted impacts will be greater than the AAQS. The Permit Application Table 5.1-22 presents a comparison of the maximum expected daily RBEP construction emissions to the AQMD's construction CEQA significance thresholds, showing that RBEP construction emissions do not exceed the AQMD's CEQA significance thresholds for PM_{10} or $PM_{2.5}$ (or any other criteria pollutant). Therefore, RBEP construction is not expected to result in a significant impact. Nevertheless, AES will implement the construction mitigation measures presented in the Permit Application Section 5.1.8.1, and those measures included the California Energy Commission (CEC) license to reduce the offsite construction air quality impacts.

[1] http://www.aqmd.gov/ceqa/faq.html#What is a responsible agency?

TABLE AQMD-1
Maximum Modeled Impacts from RBEP Construction and the Ambient Air Quality Standards

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)	Background Concentration* ($\mu g/m^3$)	Total Predicted Concentration ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
PM_{10}	24-hour	83.2	52	135	50	150
	Annual	20.6	25.6	46.2	20	—
$PM_{2.5}$	24-hour (98th percentile)	18.8	35.3	54.1	—	35
	Annual	4.95	15.5	20.4	12	12

$\mu g/m^3$ = micrograms per cubic meter

*Background concentrations were the highest concentrations monitored during 2008 through 2010, as identified in Permit Application Table 5.1-21.

2) Visibility Analysis – The prevention of significant deterioration (PSD) additional impacts analysis should also consider visibility impacts on Class II areas and impacts as a result of growth associated with the project (i.e., general commercial, residential, and industrial and other growth). Please provide a visibility analysis for Class II areas within 50 kilometers of the project.

Response: RBEP is subject to PSD requirements for nitrogen oxides (NOx), volatile organic compounds (VOC), and greenhouse gases (GHGs)[2]. Per the requirements of 40 Code of Federal Regulations (CFR) 51.116 and AQMD Rule 1703, Federal Major Sources subject to PSD new source review (NSR) must provide the following with respect to Federally-designated Class II areas:

(o) *Additional impact analyses.* The plan shall provide that—

(1) The owner or operator shall provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the source or modification and general commercial, residential, industrial, and other growth associated with the source or modification. The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value.

(2) The owner or operator shall provide an analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial, and other growth associated with the source or modification.

As there are no quantitative standards for assessing impairment to Class II visibility, a qualitative assessment was prepared using the Secondary National Ambient Air Quality Standards (secondary standards). The secondary standards, as defined in Clean Air Act (CAA) section 109(b)(2) (42 U.S.C. § 7409[b][2]), must "specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, based on [the] criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of [the] air pollutant in the

[2] See Permit Application Tables 5.1-17 and 5.1-19.

ambient air." Welfare effects, as defined in CAA section 302(h) (42 U.S.C. § 7602[h]), include, but are not limited to, "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being." No ambient air quality standards exist for VOC, GHG, and particulate matter. The secondary standards established by the U.S. Environmental Protection Agency (EPA) and AQMD are summarized in Table AQMD-2 below:

TABLE AQMD-2
Secondary Standards Applicable to the RBEP

Pollutant	Averaging Period	Secondary Standard
NO_2	Annual	53 ppb

ppb = parts per billion

The area around the RBEP is classified as non-attainment or maintenance for ozone, $PM_{2.5}$, and PM_{10}. AES is proposing to rely on allocated emission offsets credits (ERCs) and Regional Clean Air Incentives Market (RECLAIM) Trading Credits (RTCs) for purposes of meeting the ozone (and ozone precursors), $PM_{2.5}$, and PM_{10} offset requirements. ERCs have been previously evaluated by the AQMD and demonstrated not to result in a threat to compliance with the ozone, $PM_{2.5}$, and PM_{10} secondary standards. The AQMD has also established a method to obtain and utilize ERCs via rulemaking in regulations 1306, 1309, and 1315. In establishing the emission offsets for ozone precursors (NOx and volatile organic compounds [VOC]), direct $PM_{2.5}$ and PM_{10}, and particulate matter precursors (NOx and sulfur dioxide [SO_2]), the AQMD demonstrated that the presence of these pollutant emission offset quantities available in the South Coast Air Basin would not endanger compliance with the secondary standards. Therefore, the AQMD's ERC requirements demonstrate that emission offset credits provided for RBEP's ozone precursors, $PM_{2.5}$, and PM_{10} emissions (and precursors) would not result in impairment to visibility, soils, and vegetation.

To assess RBEP's potential impairment to visibility, soils, or vegetation resulting from increases of NOx, RBEP completed a dispersion modeling analysis and compared the results to the secondary standards. The modeling results demonstrate that the RBEP's emissions would not cause or contribute to an exceedance of the secondary standards for which the AQMD is considered either attainment or unclassified. By demonstrating compliance with these secondary standards, RBEP has shown that its emissions of NOx will not result in impairment to visibility, soils, and vegetation.

Based on the socioeconomic and environmental justice analysis prepared for the Application for Certification, RBEP will not result in general commercial, residential, industrial, or other growth; therefore, this type of ancillary growth is not expected to result in material impacts to air quality or impairment to visibility, soils, and vegetation. The City of Redondo Beach and the general project area is already heavily developed and is adjacent to the Los Angeles metropolitan area. Because of the existing stock of housing and industrial and commercial services and the fact that RBEP will replace existing electrical generation within the western Los Angeles basin, RBEP is not expected to require or

cause any material offsite growth that could impact air quality or impair visibility, soils, or vegetation. During RBEP construction, it is not anticipated that the work force will cause any increase to preexisting housing and services. The limited work force and outside services required for the RBEP's operation once construction is complete also will not materially affect the area. Lastly, by siting RBEP on an existing brownfield power plant site and due to the urban nature of the project area, impacts to visibility, soils, or vegetation are not expected, nor is the project expected to induce growth.

3) GHG BACT Emission Rate Calculations

a) In our meeting on February 21, 2013 to discuss the questions in our letter dated February 8, 2013, you explained that the expected operating profile assumed to derive the emission rate of 1,082 pounds carbon dioxide per megawatt-hour (lbs CO_2/MWh) of gross energy output would result in an estimate of the maximum emission rate. Since this emission rate is based on gross heat rates, please use net heat rates to convert the 1,082 lbs CO_2/MWh gross to lbs CO_2/MWh net.

Response: In our March 15, 2013 letter, we provided revised CO_2 calculations that presented heat rates on a gross basis (Table AQMD-3R). Converting the gross heat rates to net heat rates results in a CO_2 emission rate of 1,125 lbs CO_2/MWh based on an expected annual capacity factor of 20 percent.[3]

b) If the resulting net thermal efficiency exceeds the 1,100 lbs CO_2/MWh net Greenhouse Gases Emissions Performance Standard, how do you propose to meet the standard?

Response: The Greenhouse Gases Emissions Performance Standard[4] (EPS) is applicable to baseload generation. Section 2901b of the EPS regulation defines baseload generation as "electricity generation from a power plant that is designed and intended to provide electricity at an annualized plant capacity factor of at least 60 percent."

In preparing the GHG BACT analysis, AES considered the practical operating range of RBEP, consistent with the Environmental Protection Agency's guidance.[5] AES determined RBEP's expected capacity factor of 20 percent based on an analysis of the power requirements of the western Los Angeles electrical system. Assuming RBPE operates at a 60 percent capacity factor, the resulting CO_2 emission rate is 1,052 lb of CO2/MWh (see Table AQMD-3 below). The reason for the lower CO_2 emission rate at an assumed 60 percent capacity factor is that in order to achieve a 60 percent capacity factor[6], RBEP would need to operate more hours at higher electrical production levels and at higher electrical production levels, RBEP's efficiency increases. Therefore, if RBEP will comply with the GHG Emission

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[3] Heat rates were converted from a gross basis to a net basis by applying an assumed 3 percent parasitic electrical load. The RBEP Permit Application project description section (page 2-40) noted that the project was expected to have an annual capacity factor of between 15 and 25 percent.

[4] Title 20 of the California Code of Regulations, Division 2, Chapter 11, Article 1, Sections 2900 to 2913

[5] See EPA's January 25, 2013 comment letter on the Los Angeles Department of Water and Power's Scattergood Generating Station Unit 3 Repowering Project

[6] Capacity factor is a function of the actual annual electrical production divided by theoretically possible electrical production

Performance Standard of 1,100 lbs CO_2/MWh in the event it's needed to operate at a 60 percent or greater capacity factor.

TABLE AQMD-2
RBEP GHG Performance at a 60 Percent Capacity Factor

Event	Hours	Heat Rate (Btu- LHV/kWh Net)	Electrical Production (kW - Net)	Annual Electrical Production (kWh – Net)
Start Up (125)	18.8	19,397	2.52	47
Shutdown (125)	19.8	17,542	0.49	10
3x1 at 100% Load	5,000	7,440	492,265	2,461,325,000
2x1 at 100% Load	250	7,413	329,459	82,364,750
2x1 at 100% Load with DB	150	7,683	367,913	55,186,950
Total	**5,439**	**NA**	**NA**	**2,599,587,581**
Capacity Factor		60		
Weighted Annual Average Heat Rate with SU/SD				7,523
Annual Average Heat Rate with SU/SD and 8 Percent Degradation				8,178
Lb of CO2/MWh – Net				1,052
California's EPS - Lb CO2/MWh – Net				1,100

Notes
3x1 = 3 combustion turbines and 1 steam turbine
2x1 = 2 combustion turbines and 1 steam turbine
2x1 at 100% Load with DB = 2 combustion turbines and 1 steam turbine with the duct burners firing at 100 percent
Capacity factor = 2,599,587,581 kWh-net/(492,265 kW-net * 8760 hours)
Table AQMD-2 is based on Table AQMD-3R from AES's March 15, 2013 response letter. The gross heat rates were converted to net heat rates by incorporating an assumed station load of 3 percent.

4) **Application for Oil/Water Separator – In response to Item 8, you submitted Form 400-A and a check for $5,229.18 for an applicat6ion for an oil/water separator. The $5,229.18 apparently included $1,789.12 for a second RECLAIM/Title V facility amendment application. Since Application No. 545065 will serve as the RECLAIM/Title V facility amendment application for the entire project, $1,789.12 will be refunded. To complete the application, please provide a completed Form 400-E-18 – Storage Tanks and emission calculations.**

Response: The RBEP oil/water separator will treat precipitation that falls on lubricant-containing equipment. The proposed oil/water separator is a single-wall aboveground 3,000-gallon horizontal carbon steel tank, measuring 18 feet long with a width and height of 5 feet, rated at 300 gallons per minute. The separator includes a 10-inch inlet and outlet port, six removable covers, one, 3-inch clean-out port, a 2-inch vent port, four, 2-inch drain ports, and a 2-inch inlet and outlet port. The tank will operate at ambient temperatures and pressure. The removable covers and ports will include gaskets to reduce fugitive emissions. The expected annual average precipitation in the project area is

12.02 inches.[7] Based on the areas at RBEP which drain to the oil/water separator, the annual expected oil/water separator throughput is approximately 82,000 gallons. Using a controlled emission factor of 0.2 pounds of VOC per 1,000 gallons of water processed[8], the annual expected VOC emissions would be 16.4 pounds per year. Assuming 25 percent of the annual rainfall occurs within a single month, the maximum monthly throughput of the oil/water separator would be 20,500 gallons and the monthly VOC emissions would be 4.1 pounds or 0.1 pounds per day. Attachment 2 contains the requested Form 400-E-18 for the oil/water separator and a Figure 1 showing a typical 3,000-gallon oil/water separator.

If you require further information, please don't hesitate contacting me at 562-493-7840.

Sincerely,

Stephen O'Kane
Manager
AES Redondo Beach, LLC
Attachments

cc: Sarah Madams/CH2M HILL
Jennifer Didlo/AES
Gregg Wheatland/ESH
Jerry Salamy/CH2M HILL
Patricia Kelly/CEC

ES050913033622SAC/469784/RBEP_SCAQMD_4-12-13_Completeness_Response.docx

[7] Western Regional Climate Center. 2012. Los Angeles WSO Airport General Climate Survey. http://www.wrcc.dri.edu/summary/Climsmsca.html

[8] Environmental Protection Agency AP-42, Table 5.1-2 (1/95)

Attachment 1
Redondo Beach Energy Project Air Dispersion Modeling Protocol Addendum

Modeling Protocol Addendum

Dispersion Modeling Protocol for the Redondo Beach Energy Project

Prepared for

AES Redondo Beach, LLC

690 N. Studebaker Road
Long Beach, CA 90803

May 9, 2013

Submitted to

South Coast Air Quality Management District and the California Energy Commission

Prepared by

CH2MHILL

2485 Natomas Park Drive, Suite 600
Sacramento, CA 95833

SECTION 1

Introduction

AES Redondo Beach, LLC, (AES) proposes to construct the Redondo Beach Energy Project (RBEP) at the existing AES Redondo Beach Generating Station (RBGS) site at 1100 North Harbor Drive, Redondo Beach, CA 90277. The RBEP will consist of one three-on-one combined-cycle power block with a net capacity of 496 megawatts. The power block will consist of three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbines, one steam turbine, and an air cooled condenser. Each combustion turbine will be equipped with a heat recovery steam generator (HRSG) and will employ supplemental natural gas firing (duct firing). The turbines will use advanced combustion controls, dry low oxides of nitrogen (NO_x) burners, and selective catalytic reduction to limit NO_x emissions to 2 parts per million by volume (ppmv). Emissions of carbon monoxide (CO) and volatile organic carbon (VOC) will be limited to 2 ppmv and 1 ppmv, respectively, through the use of the advanced combustion controls, combined with the use of an oxidation catalyst. Good combustion practices and burning pipeline-quality natural gas will minimize emissions of the remaining pollutants.

The prevention of significant deterioration (PSD) permit application was submitted to the South Coast Air Quality Management District (SCAQMD) on November 20, 2012. As part of the PSD application process annual emission from the project were compared to the applicable Significant Emission Rates (SERs) for all attainment pollutants. For pollutants that are non-attainment, the project emissions were compared to the SERs in the PSD application. Preliminary dispersion modeling was conducted for those attainment pollutants for which the net annual emissions increase exceeded the SER, and the results compared to the PSD Class II Significant Impact Levels (SILs). Table 1 summarizes the net annual emissions increase from the project compared to the SERs, and preliminary dispersion modeling results compared to the PSD Class II Significant Impact Levels (SILs).

TABLE 1
Ambient NO_2 Background Concentrations in μg/m^3

Pollutant	Averaging Time	Net Annual Emissions Increase (tpy)	SER (tpy)	Maximum Modeled Concentration (μg/m³)	SIL (μg/m³)
NO_2	1-hr	102.3	40	32.06	7.5
NO_2	Annual			0.32	1.00
CO	1-hr	-348.3	100	NA	NA
CO	8-hr			NA	NA
SO2	1-hr	4.8	40	NA	NA
SO2	3-hr			NA	NA
SO2	24-hr			NA	NA

Preliminary dispersion modeling indicated that the proposed project would exceed the SIL for 1-hr NO_2. The permit application did not include a complete 1-hour nitrogen dioxide (NO_2) modeling demonstration for comparison to the National Ambient Air Quality Standards (NAAQS) and RBEP is required to demonstrate compliance with the 1-hour NO_2 NAAQS before the final PSD permit can be granted. The 1-hour NO_2 standard is 100 parts per billion (ppb), or 188 micrograms per cubic meter (μg/m^3), based on the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour concentrations. The final rule for the 1-hour NAAQS was published in the Federal Register on February 9, 2010, and became effective on April 12, 2010.

1.1 Purpose of the Protocol Addendum

This addendum discusses the modeling methodology to be used in evaluating the 1-hour NO_2 ambient air quality standard. The 1-hour NO_2 modeling approach for this Project is based on the EPA *Notice Regarding Modeling for New Hourly NO_2 NAAQS* (EPA, February 2010), *Additional Clarification Regarding Applicability of Appendix W Modeling Guidance for the 1-Hour NO_2 NAAQS* (EPA, March 2011), *EPA's Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the Prevention of Significant Deterioration Program* (EPA, June 29, 2010), and the *Applicability of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard* (EPA, June 28, 2010). These documents are available on EPA's website (www.epa.gov/ttn/scram).

As required by the above guidance, this protocol is submitted to present the methodology to be used in the 1-hour NO_2 modeling analysis, and the justifications for using the following model settings and options:

- NAAQS cumulative modeling including domain and competing sources
- EPA Tier 2 default Ambient Ratio Method (ARM) NO_2 to NO_x ratio of 0.8
- The potential use of plume volume molar ratio method (PVMRM) modeling tool for better characterizing the conversion of NO_x to NO_2
- The in-stack and equilibrium ambient ratio of NO_2/NO_x used in PVMRM
- The approach of pairing hourly NO_2 modeling data and background monitoring data
- Selection of background hourly NO_2 and ozone (O_3) data

Even though the PVMRM procedures are well recognized and a generally accepted method for characterizing the conversion of NO_x to NO_2, the use of non-default AERMOD options makes the PVMRM no longer a "preferred model", and requires justification and approval by EPA's Regional Office or SCAQMD on a case by case basis. Appendix A presents the justification for use of PVMRM for RBEP.

1.2 PSD Significant Impact Level

In June 2010, EPA issued a memorandum *Guidance Concerning the Implementation of the 1-Hour NO_2 NAAQS for the Prevention of Significant Deterioration Program* (EPA, June 29, 2010). In this guidance memorandum, EPA sets forth a recommended interim 1-hour NO_2 significant impact level (SIL) of 4 ppb (7.6 $\mu g/m^3$) for the PSD air quality analysis for NO_2 until EPA promulgates a 1-hour NO_2 SIL via rulemaking.

EPA requires the interim SIL to be compared to the 5-year average of the maximum modeled 1-hour NO_2 concentration predicted each year at each receptor, based on 5-years of National Weather Service data, or 1 to 5 years of site-specific data. If the modeled concentration is greater than the SIL, cumulative modeling to include competing sources within the impact area is required.

RBEP's estimated NO_x emission increase would be greater than 40 tons per year and, based on a preliminary screening modeling of 1-hour NO_2, the incremental 1-hour NO_2 modeled concentration increase is expected to exceed the interim SIL proposed by EPA. Therefore, cumulative 1-hour NO_2 modeling will be conducted to determine compliance with the NAAQS. A full description of the full 1-hour NAAQS analysis is described below.

SECTION 2

Dispersion Modeling Methodology

The EPA approved AERMOD modeling system (Version 12345) will be used for the 1-hour NO_2 modeling demonstration. The following supporting pre-processing programs for AERMOD will also be used:

- BPIP-Prime (Version 04274)
- AERMAP (Version 11103)

The combustion turbines will be modeled as point sources within AERMOD. Emission rates and other source parameters were determined from the manufacturer's data, which were submitted with the original permit application on November 20, 2012.

AERMOD is a steady-state plume model that simulates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. This model is recommended for short-range (< 50 kilometers [km]) dispersion from the source. The model incorporates the Plume Rise Model Enhancement (PRIME) algorithm for modeling building downwash. AERMOD is designed to accept input data prepared by two specific pre-processor programs, AERMET and AERMAP. AERMOD will be run with the following options:

- Direction-specific building downwash
- Actual receptor elevations and hill height scales obtained from AERMAP
- PVMRM (described further below)

2.1 Source Characterization

All proposed sources will be modeled as point sources. Source locations, stack parameters, and emissions rates will be consistent with the original permit application submitted on November 20, 2012.

2.2 Building Downwash

Building influences on stacks are calculated by incorporating the updated EPA Building Profile Input Program for use with the plume-rise model-enhancement algorithm (BPIP-PRIME). The stack heights used in the dispersion modeling will be the actual stack height or Good Engineering Practice (GEP) stack height, whichever is less.

2.3 Meteorological Data

AERMOD will be modeled with 5 years of data collected at the Los Angeles International Airport (LAX) meteorological monitoring station, owned and operated by the SCAQMD. This station was selected because it is very near the project site (10 km north of the project site) and the winds are considered representative of the area. Five complete years of meteorological data collected from 2005 to 2009 were processed by SCAQMD (issued on March 26, 2013) with the AERMET meteorological data preprocessor. Figure 1 below shows the 5-year wind rose for the LAX station.

2.4 Receptors

The ambient air boundary will be defined by the fence line surrounding the project site. The selection of receptors in AERMOD will be as follows:

- The first SIL run will use a nested Cartesian grid as follows:
- 30-meter (m) spacing along the fence line
- 50-m spacing from the fence line to 500 m from the origin

- 100-m spacing from beyond 500 m to 3 km from the origin
- 500-m spacing from beyond 3 km to 10 km from the origin
- 1,000-m spacing from beyond 10 km to 25 km from the origin
- 5,000-m spacing from beyond 25 km to 50 km from the origin
- A competing source run for comparison to the 1-hour NO_2 NAAQS will only include receptors identified in the first run as above the SIL.
- Receptor elevations will be calculated by AERMAP as described below.

AERMAP (Version 11103) will be used to process terrain elevation data for all sources and receptors using National Elevation Dataset (NED) files prepared by the U.S. Geological Survey (USGS). AERMAP first determines the base elevation at each source and receptor. For complex terrain situations, AERMOD captures the physics of dispersion and creates elevation data for the surrounding terrain identified by a parameter called hill height scale. AERMAP creates hill height scale by searching for the terrain height and location that has the greatest influence on dispersion for each individual source and receptor. Both the base elevation and hill-height scale data are produced for each receptor by AERMAP as a file or files that can be directly accessed by AERMOD.

All receptors and source locations will be expressed in the Universal Transverse Mercator North American Datum 1983 (NAD83), Zone 10 coordinate system.

2.5 Monitored Background NO_2 Concentrations

Three complete years of available ambient NO_2 background concentration data from the SCAQMD LAX monitoring station will be used for this analysis. This site was chosen because it is downwind of the RBEP site for the most prevalent meteorological conditions and is in close proximity to the meteorological monitoring tower.

Table 2 shows the monitored concentrations at the LAX monitoring station for NO_2.

TABLE 2
Ambient NO_2 Background Concentrations in $\mu g/m^3$

Pollutant	Value Description	2009	2010	2011
NO_2	1-hour*	131.7	114.6	121.8
	Annual	29.9	22.8	25.2

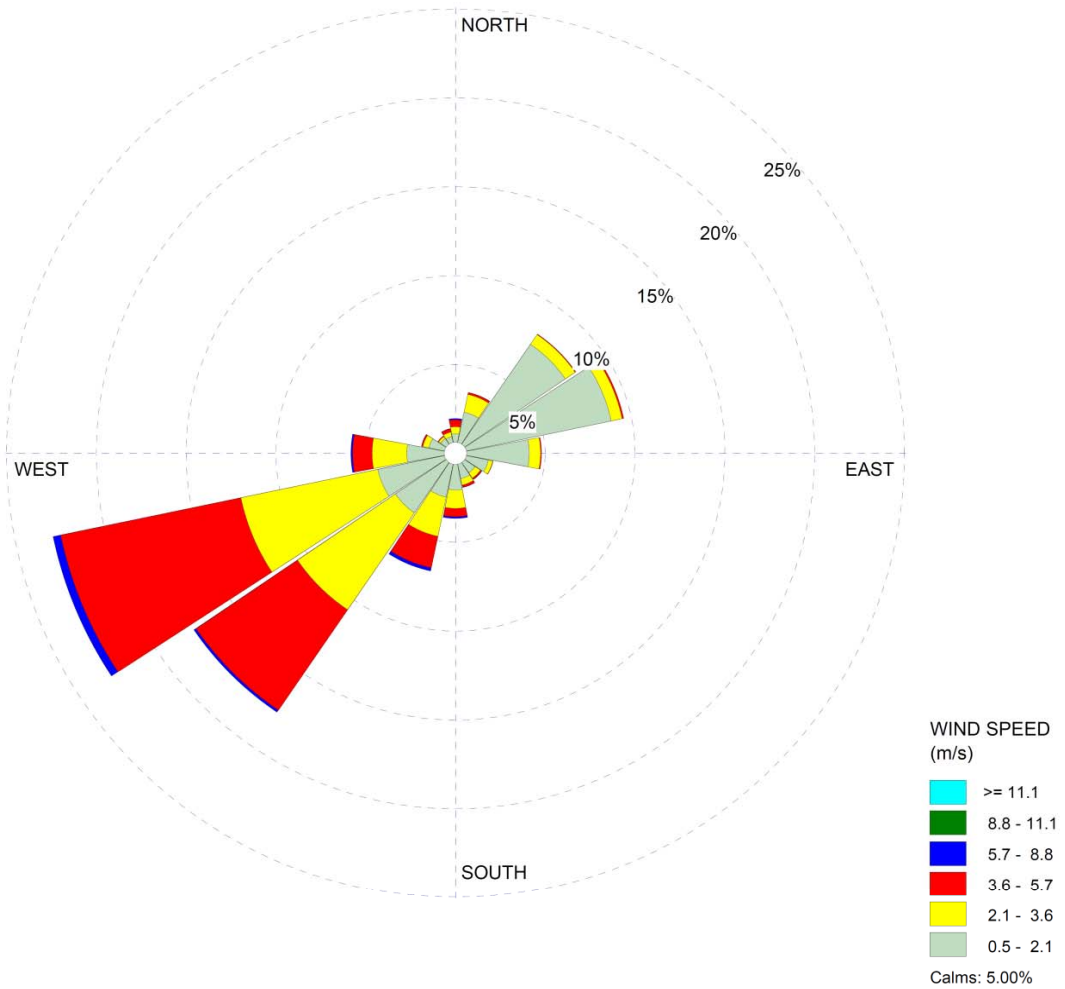
*98th percentile value

Season hour-of-day background NO_2 concentrations will be determined by following the most recent EPA NO_2 modeling guidance (EPA, March 2011). This includes using the 3rd highest concentration for each hour of day, by season, at the NO_2 monitor. AERMOD will automatically combine the modeled NO_2 concentration to the appropriate background concentration for each hour to determine the model design concentration for comparison to the NAAQS. The values used for the 1-hour background NO_2 concentrations by hour-of-day are summarized in Table 3.

FIGURE 1
LAX 5-year Wind Rose

WIND ROSE PLOT:
Los Angeles International Airport Meteorological Data
Annual Wind Rose (2005-2009)

DISPLAY:
Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
SCAQMD Processed AERMET	**Start Date: 1/1/2005 - 00:00** **End Date: 12/31/2009 - 23:00**	MODELER:	
	CALM WINDS: **5.00%**	TOTAL COUNT: **43435 hrs.**	
	AVG. WIND SPEED: **2.22 m/s**	DATE: **3/29/2013**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

TABLE 3
Ambient 98th Percentile Season Hour-of-Day NO_2 Concentrations (ppb)

Hour of Day	Winter	Spring	Summer	Autumn
1	52.33	34	38	49
2	50.33	32	36.67	47.67
3	48.67	30.67	36.33	48.33
4	49.67	34	33	44.67
5	47.83	34.17	34.67	43
6	46	34.33	36.33	41.33
7	46.33	37.33	38	43.67
8	48.67	34.67	42.33	43.67
9	53	30	38.67	51.33
10	58.33	20.67	33	55.33
11	57	17	30.33	48.33
12	53.33	13	25	45.67
13	44.33	8.333	16.67	45
14	36.33	5.667	12.33	41.33
15	34	5	7	36.33
16	31.33	4	6	39
17	33	4.333	6	43
18	39	5.333	5.333	40
19	43.67	9.667	7.333	40.33
20	46.33	10	10.33	42.67
21	50.33	12.67	24.33	44.67
22	51.33	21	33.67	48.33
23	52	27.67	34.33	51.67
24	53.67	35	39	48.33

Note:

ppb = parts per billion

1-Hour NAAQS Modeling Steps

3.1 Turbine Load Analysis

Turbine emissions and stack parameters, such as flow rate and exit temperature, will exhibit some variation with ambient temperature and operating load. Therefore, the combustion turbines will undergo a load analysis at 70 percent, 80 percent, 90 percent, and 100 percent load for three different temperatures of 33 degrees Fahrenheit (°F), 63.3°F, and 106°F. These loads and temperatures were selected based on anticipated demand on the combustion turbines and the range of temperatures expected at the project site. Additionally, startup and shutdown emissions will also be included in the load analysis.

The above loads and temperature will be evaluated for firing on natural gas with or without duct burning, as applicable. The load and ambient condition that results in the highest predicted 1-hour NO_2 concentration will be used for the project analysis. This analysis will also be used to demonstrate NAAQS compliance for the attainment pollutants (NO_2 annual averaging period, CO, and sulfur dioxide [SO_2]) using the 5-year meteorological data set provided by the SCAQMD. Procedures outlined in the Protocol submitted to SCAQMD on July 10, 2012 will be used to complete the analysis for other pollutants and averaging times and will not be further addressed in this protocol.

3.2 Preliminary SIL Analysis

Using the worst-case load identified in the load analysis for the combustion turbines, the preliminary analysis of the 1-hour NO_2 impacts will be conducted as follows:

- If the predicted impacts are not significant (that is, less than the SIL), the modeling is complete and it is assumed that the proposed Project would not cause or significantly contribute to a modeled exceedance of the 1-hour NO_2 NAAQS.
- If impacts are above the SIL, a more refined analysis will be conducted as described below.

3.3 Refined Analysis

Comparison to the NAAQS will involve the following:

- For pollutants with concentrations greater than the respective SIL, the significant impact area (that is, the significant impact radius) will be defined. Preliminary modeling indicated that the Project may be significant for 1-hour NO_2 with a significant impact radius of 0.9 km from the project site.
- Only receptors identified as above the SIL in the preliminary analysis section, described above, will be included in the refined analysis.
- The maximum modeled design concentration will be determined and compared to the NAAQS. For the NAAQS analysis, this maximum modeled design concentration will include contributions from the facility, competing nearby sources, and background concentrations by season and hour-of-day, described above.
- SCAQMD will be contacted to identify competing nearby and increment consuming sources, and exhaust characteristics, if available, for inclusion in the refined analysis. The section below summarizes the approach to develop the competing source inventory.
- Background concentrations described above will be included in the refined NAAQS analysis.

3.3.1 Competing Source Inventory

As mentioned above, preliminary modeling indicates that the SIL may be exceeded and the significant impact radius extends approximately 0.9 km from the project site. AES understands that SCAQMD will assist in developing a preliminary competing source inventory for conducting the 1-hour NO_2 competing source analysis.

After the preliminary competing source inventory is prepared, AES proposes to discuss inventory refinements with the SCAQMD before the competing source NAAQS is performed. For example, AES proposes to identify sources that are inappropriate for inclusion in the refined 1-hour NO_2 NAAQS analysis and modify the inventory initially provided by the SCAQMD. Following this discussion, SCAQMD will approve a final competing source inventory for AES's use. AES will apply the final, approved inventory of competing sources to complete the refined NAAQS analysis. For the refined NAAQS analysis, allowable emissions from the sources identified on the final inventory will be modeled.

As mentioned above, preliminary SIL modeling indicates that the significant impact radius only extends 0.9 km from the project site. Figure 2 shows the anticipated significant impact radius and the Project proximity to the background monitor location. Based on this significant impact radius and representative location of the ambient monitor, SCAQMD has recommended including competing sources with a distance of 10 km of the project location for the analysis. It would be assumed that the ambient monitor would conservatively include impacts from regional and major sources beyond that distance. Regional sources assumed to be included in the background monitor concentrations would be impacts from LAX, road sources, and minor sources. Major sources beyond 10 km would also be assumed to be included in the monitored background concentrations because pollutant concentrations from major sources beyond 1 km north of the facility would be captured by the monitor. Also, because RBEP is located on the coastline, it is assumed there are not any major sources to the west of the facility. Therefore, AES is requesting a competing source list from SCAQMD for NO_x emitting sources within 10 km of RBEP.

3.3.2 Refined 1-hour NO_2 Analysis

Emergency equipment will not be included in the 1-hour NO_2 NAAQS modeling analysis. Consistent with recent EPA guidance addressing intermittent emissions for the 1-hour NO_2 analysis (EPA, March 2011), exclusion of emergency equipment is appropriate. Startup emissions from the RBEP turbines will be included for the 1-hour NAAQS modeling since startups of the units are expected to frequently occur.

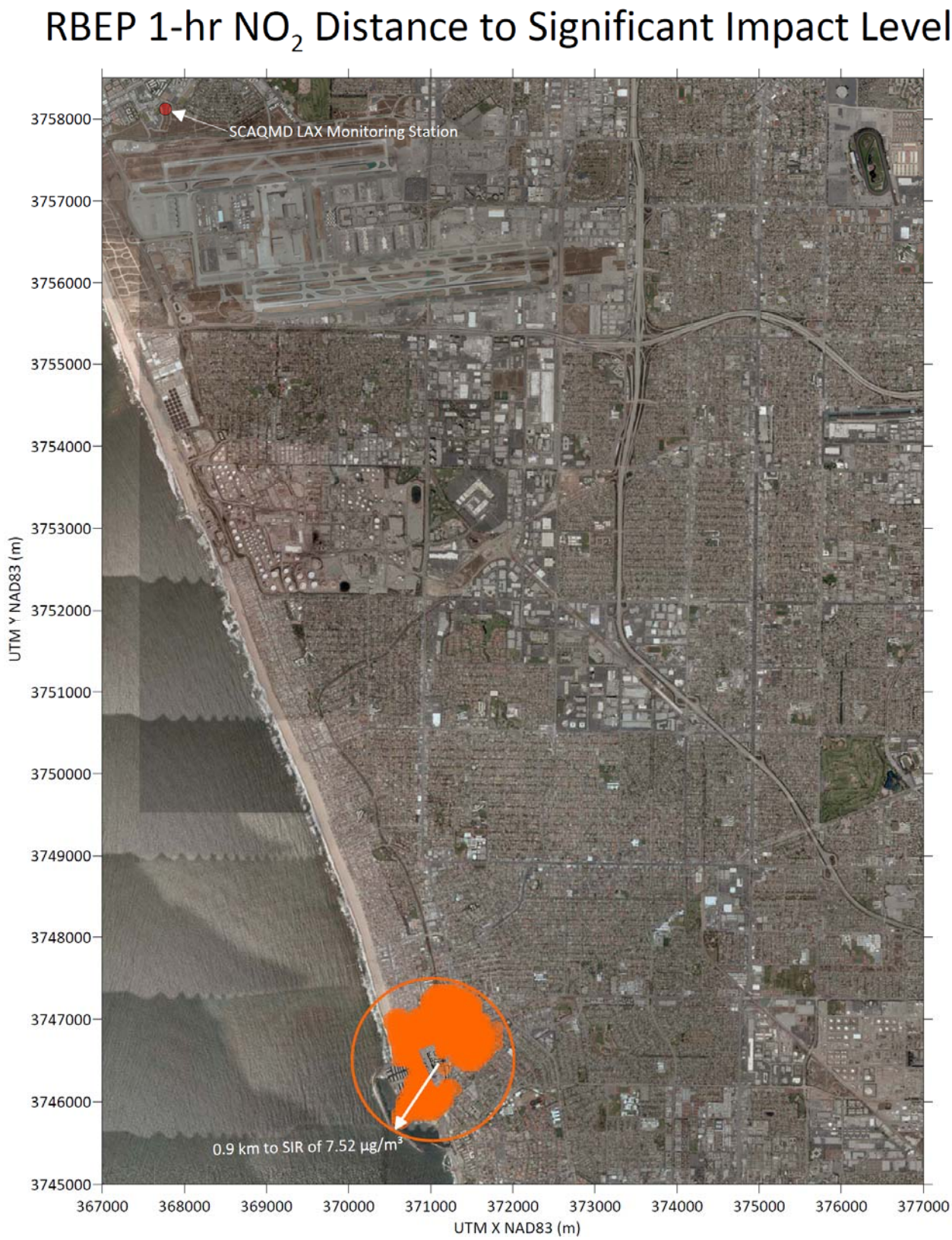
Further refinements of the 1-hour NO_2 modeling include the incorporation of seasonal hour-of-day NO_2 background concentrations and the use of an ambient NO_2 equilibrium ratio and PVMRM in AERMOD, if necessary. The Ambient Ratio Method (ARM) uses 0.80 as a default ambient ratio for the 1-hour NO_2 standard. PVMRM options will initially conservatively assume an in-stack NO_2/NO_x ratio of 0.5 and an ambient NO_2 ratio of 0.9 (EPA, March 2011). If additional analysis is required, AES will consult with SCAQMD to define alternative appropriate in-stack and ambient NO_2 ratios consistent with EPA guidance. Corresponding hourly ozone data for PVMRM will be obtained from the LAX ozone monitoring station. SCAQMD has provided the background hourly ozone data to use with the PVMRM analysis.

To complete the refined 1-hour NO_2 NAAQS modeling analysis, hourly emissions from the competing sources identified on SCAQMD's final inventory will be modeled by apportioning each source's tons per year permitted emissions evenly throughout the year, unless otherwise noted.

The model design concentration of the 5-year average of the 98th percentile hourly impact at each receptor will be compared to the NAAQS of 188 $\mu g/m^3$.

If the model design concentration at any receptor exceeds the NAAQS, the Project impacts during the NAAQS exceedances would be evaluated and compared to the SIL. If the Project's impacts are below the SIL during all modeled exceedances of the NAAQS, then the Project would be assumed to not significantly contribute to the modeled exceedances.

FIGURE 2
RBEP 1-Hour NO_2 SIL Analysis Results



3.4 Output - Presentation of Results

The results of the 1-hour NO_2 air dispersion modeling analysis will be presented as follows:

- A description of modeling methodologies and input data
- A summary of the results in tabular and, where appropriate, graphical and narrative form
- Modeling files used for AERMOD will be provided with the application on a CD-ROM
- Any significant deviations from the methodology proposed in this protocol will be presented

References

EPA. February 2010. *Notice Regarding Modeling for New Hourly NO_2 NAAQS.*

EPA. June 28, 2010. *Applicability of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard*.

EPA. June 29, 2010. *EPA's Guidance Concerning the Implementation of the 1-hour NO_2 NAAQS for the Prevention of Significant Deterioration Program.*

EPA. March 2011. *Additional Clarification Regarding Applicability of Appendix W Modeling Guidance for the 1-Hour NO_2 NAAQS*.

Attachment 2
Redondo Beach Energy Project Oil/Water Separator Form 400-E-18 and Typical Tank Drawing

South Coast Air Quality Management District

Form 400-E-18
Storage Tank

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944
Tel: (909) 396-3385
www.aqmd.gov

Section A - Operator Information

Facility Name (Business Name of Operator That Appears On Permit): AES Redondo Beach LLC

Valid AQMD Facility ID (Available On Permit Or Invoice Issued By AQMD): 115536

Address where the equipment will be operated (for equipment which will be moved to various locations in AQMD's jurisdiction, please list the initial location site): 1100 North Harbor Drive, Redondo Beach, CA 90277

(●) Fixed Location ( ) Various Locations

Tank Type (Select ONE)
( ) External Floating Roof Tank (EFRT) ( ) Internal Floating Roof Tank (IFRT) (●) Horizontal Tank (HT)
( ) Vertical Fixed Roof Tank (VFRT) ( ) Domed External Roof Tank (DEFRT)

Identification
Tank Identification Number: OWS01
Tank Contents/Product (include MSDS): Water and petroleum residue

Section B - Tank Information

Tank Characteristics

Shell Diameter (ft.): 5
Shell Length (ft.): 18
Shell Height (ft.): 5
Turnovers Per Year: 27

Is Tank Heated? ( ) Yes (●) No
Is Tank Underground? ( ) Yes (●) No
Net Throughput (gal/year): 82000
Self Support Roof: (●) Yes ( ) No

Number of Columns? _____
Effective Column Diameter: ( ) 9" by 7" Built Up Column - 1.1 ( ) 8" Diameter Pipe - 0.7 ( ) Unknown - 1

External Shell Condition: (●) Good ( ) Poor
Internal Shell Color: ( ) Light Rust ( ) Dense Rust ( ) Gunite Lining
External Shell Color: (●) White/White ( ) Aluminum/Specular ( ) Aluminum/Diffuse ( ) Gray/Light ( ) Gray/Medium ( ) Red/Primer

Average Liquid Height (ft.) (Vertical Only): _____
Maximum Liquid Height (ft.) (Vertical Only): _____
Working Volume (gal.) (Vertical Only): _____
Actual Volume (gal.) (Vertical Only): _____

Paint Condition: (●) Good ( ) Poor
Paint Color/Shade: (●) White/White ( ) Aluminum/Diffuse ( ) Gray/Light ( ) Aluminum/Specular ( ) Gray/Medium ( ) Red/Primer

Roof Characteristics (Floating Roof Tank)

Roof Type: ( ) Pontoon ( ) Double Deck ( ) Dome Roof (Height_____ ft.) ( ) Cone Roof (Height_____ ft.)
Roof Fitting Category: ( ) Typical ( ) Detail
Roof Height (ft.): _____

Roof Paint Condition: ( ) Good ( ) Poor
Roof Color/Shade: ( ) White/White ( ) Aluminum/Diffuse ( ) Gray/Light ( ) Aluminum/Specular ( ) Gray/Medium ( ) Red/Primer

Deck Characteristics (Floating Roof Tank)

Deck Type: ( ) Welded ( ) Bolted
Deck Fitting Characteristics: ( ) Typical ( ) Detailed (Complete Deck Seam)

Construction:	Deck Seam Length (ft.):	Deck Seam:
( ) Sheet	_____	( ) 5 ft. wide ( ) 6 ft. wide ( ) 7 ft. wide
( ) Panel	_____	( ) 5 x 7.5 ft. ( ) 5 x 12 ft.

Tank Construction and Rim -Seal System (Floating Roof Tank)

Tank Construction: ( ) Welded ( ) Riveted
Primary Seal: ( ) Mechanical Shoe ( ) Vapor Mounted ( ) Liquid Mounted
Secondary Seal: ( ) Rim Mounted ( ) Shoe Mounted ( ) None

Breather Vent Setting

Vacuum Setting (psig): _____
Pressure Setting (psig): _____

* Section D of the application MUST be completed.

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South Coast Air Quality Management District

Form 400-E-18
Storage Tank

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Mail To:
SCAQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Tel: (909) 396-3385
www.aqmd.gov

Section B - Tank Information (cont.)

Site Selection

Nearest Major City: Redondo Beach

Daily Average Ambient Temperature (°F): 63.3 Annual Average Minimum Temperature (°F): 33

Annual Average Maximum Temperature (°F): 106 Average Wind Speed (mph): _____

Annual Average Solar Insulation Factor (Btu / (ft^3 * ft * day)): _____

Tank Contents

Chemical Category: (•) Organic Liquids ( ) Crude Oil ( ) Petroleum Distillates

Liquid: (•) Single ( ) Multiple

If Multiple, Select Speciation Option: ( ) Full Speciation ( ) Partial Speciation ( ) Various Weight Speciation ( ) None

Section C - Operation Information

Vapor Control

Vapor Control During Loading or Unloading: ☐ Sparger ☐ Vapor Balance System ☐ Vapor Return Line ☐ Vented to Air Pollution Control Equipment [1]

[1] A separate permit is required. If APC equipment is already permitted, provide Permit or Device Number: _____

Vent Valve Data

Indicate Type of Setting and Vapor Disposal

	Number	Pressure Setting	Vaccum Setting	Discharging to (Check Appropriate Box)		
				Atmosphere	Vapor Control	Flare
Combination				☐	☐	☐
Pressure				☐	☐	☐
Vaccum				☐	☐	☐
Open	1			☒	☐	☐

Materials

Name all liquids, vapors, gases, or mixtures of such material to be stored in this tank:
Oil/water separator will contain primarily precipitation oils/lubricants.

If material is stored in a solution, supply the following information:

Name of Solvent: Water Name of Materials Dissolved: petroleum products

Concentration of Materials Dissolved: _____ % by Weight OR 0.00 % by Volume OR _____ lbs/gal

Section D - Roof/Deck Fitting

Section D is required for the following tanks: External Floating Roof Tank, Internal Floating Roof Tanks, or Domed External Floating Roof Tanks.

Select the number of fittings for each applicable question. Examples: 3 Unbolted Cover, Ungasketed
_____ Unbolted Cover, Gasketed

Roof/Deck Fitting Details

1. Access Hatch (24" diameter well)
   - _____ Bolted Cover, Gasketed
   - _____ Unbolted Cover, UnGasketed
   - _____ Unbolted Cover, Gasketed
2. Automatic Gauge Float Well (20" diameter well)
   - _____ Bolted Cover, Gasketed
   - _____ Unbolted Cover, Ungasketed
   - _____ Unbolted Cover, Gasketed
3. Column Well (24" diameter well)
   - _____ Built-Up Col - Sliding Cover, Gasketed
   - _____ Built-Up Col - Sliding Cover, Ungasketed
   - _____ Pipe Col - Flex, Fabric Sleeve Seal
   - _____ Pipe Col - Sliding Cover, Gasketed
   - _____ Pipe Col - Sliding Cover, Ungasketed

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South Coast Air Quality Management District

Form 400-E-18
Storage Tank

This form must be accompanied by a completed Application for a Permit to Construct/Operate - Forms 400-A, Form 400-CEQA, and Form 400-PS.

Section D - Roof/Deck Fitting (cont.)

Roof/Deck Fitting Details (cont.)

4. Gauge Hatch/Sample Well (8" diameter well)
- _____ Weighted Mechanical Actuation, Gasketed
- _____ Weighted Mechanical Actuation, Ungasketed

5. Ladder Well (36" diameter)
- _____ Sliding Cover, Gasketed
- _____ Sliding Cover, Ungasketed

6. Rim Vent (6" diameter)
- _____ Weighted Mechanical Actuation, Gasketed
- _____ Weighted Mechanical Actuation, Ungasketed

7. Roof Drain (3" diameter)
- _____ Open
- _____ 90% Close

8. Roof Leg (3" diameter leg)
- _____ Adjustable, Pontoon Area, Ungasketed
- _____ Adjustable, Center Area, Ungasketed
- _____ Adjustable, Double-Deck Roofs
- _____ Fixed
- _____ Adjustable, Pontoon Area, Gasketed
- _____ Adjustable, Pontoon Area, Sock
- _____ Adjustable, Center Area, Gasketed
- _____ Adjustable, Center Area, Sock

9. Roof Leg or Hang Well
- _____ Adjustable
- _____ Fixed

10. Sample Pipe (24" diameter)
- _____ Slotted Pipe – Sliding Cover, Gasketed
- _____ Slotted Pipe – Sliding Cover, Ungasketed
- _____ Slit Fabric Seal, 10% Open

11. Guided Pole/Sample Well
- _____ Ungasketed, Sliding Cover, Without Float
- _____ Ungasketed Sliding Cover, With Float
- _____ Gasketed Sliding Cover, Without Float
- _____ Gasketed Sliding Cover, With Float
- _____ Gasketed Sliding Cover, With Pole Sleeve
- _____ Gasketed Sliding Cover, With Pole Wiper
- _____ Gasketed Sliding Cover, With Float, Wiper
- _____ Gasketed Sliding Cover, With Float, Sleeve, Wiper
- _____ Gasketed Sliding Cover, With Pole Sleeve, Wiper

12. _____ Stub Drain (1" diameter)

13. Unslotted Guide – Pole Well
- _____ Ungasketed, Sliding Cover
- _____ Gasketed Sliding Cover
- _____ Ungasketed Sliding Cover with Sleeve
- _____ Gasketed Sliding Cover with Sleeve
- _____ Gasketed Sliding Cover with Wiper

14. Vacuum Breaker (10" diameter well)
- _____ Weighted Mechanical Actuation, Gasketed
- _____ Weighted Mechanical Actuation, Ungasketed

Section D - Authorization/Signature

I hereby certify that all information contained herein and information submitted with this application is true and correct.

Preparer Info	Signature: Jerry Salamy Date: 5/9/13 Title: Program Manager Company Name: CH2M HILL	Name: Jerry Salamy Phone #: (916) 286-0207 Fax #: (916) 614-3407 Email: jerry.salamy@ch2m.com
Contact Info	Name: Stephen O'Kane Title: Manager Company Name: AES Southland LLC	Phone #: (562) 493-7840 Fax #: (562) 493-7737 Email: stephen.okane@AES.com

THIS IS A PUBLIC DOCUMENT

Pursuant to the California Public Records Act, your permit application and any supplemental documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District.

Check here if you claim that this form or its attachments contain confidential trade secret information. ☐

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GENERAL SPECIFICATIONS

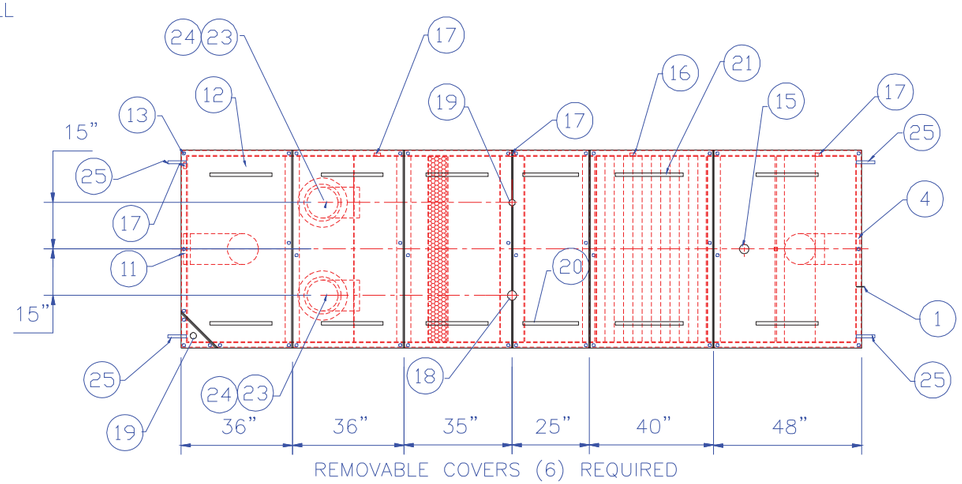
NO. REQ'D: (1)
CAPACITY: 3000 GALLONS
SPILL CAPACITY: 900 GALLONS
TYPE: RECTANGULAR, HTC, ABOVEGROUND, SINGLE WALL
MATERIAL: MILD CARBON STEEL
APPROX. WEIGHT: 7000 LBS.
FLOW RATE: 300 GPM
GAUGE:
7 GA THROUGHOUT

SURFACE PREP:
SSPC NO.10 BLAST ALL INTERIOR SURFACES
SSPC NO.6 BLAST ALL EXTERIOR SURFACES

COATING:	MATERIAL	THICKNESS
EXTERIOR–	FINISH PAINT WHITE	(3 MILS)
INTERIOR–	POLYURETHANE	(15 MILS)

CONSTRUCTION:
BUTT FIT AND WELD ALL CORNERS IN & OUT

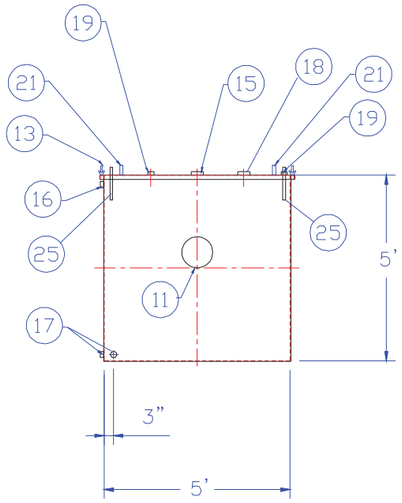
NOTE:
1. ALL INTERNAL MATERIAL IS 10 GA.
2. ALL FITTINGS MUST SHIP W/ STEEL PLUGS INSTALLED
3. LIFTING LUGS HAVE REINFORCING PLATES



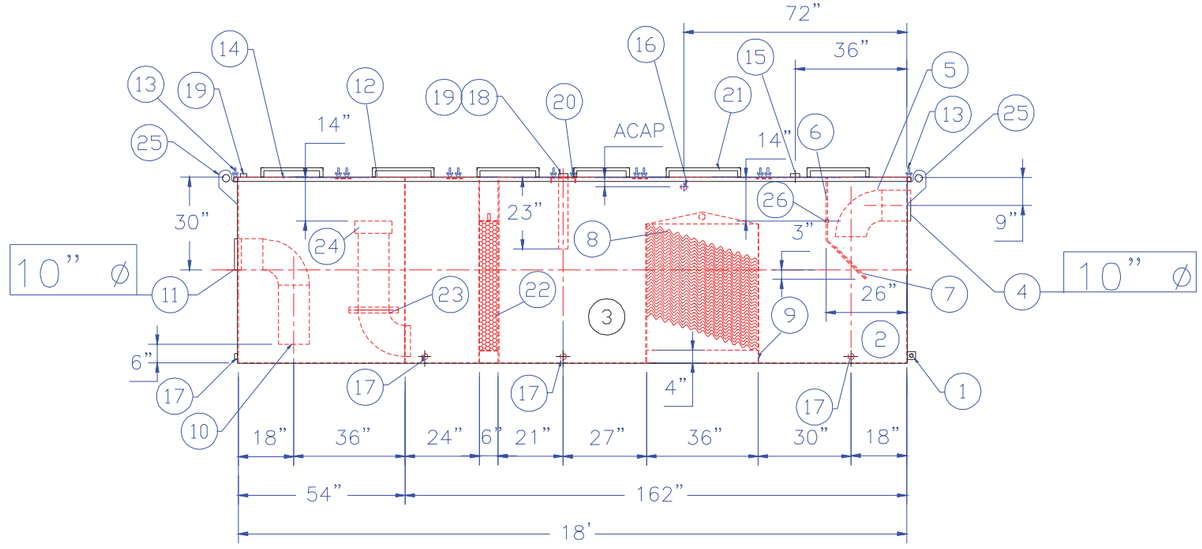
PLAN VIEW

PROVIDED EQUIPMENT

1. 3"X3"X1/4" FLAT W/ 1/2"ø HOLE DRILLED IN CENTER (GROUNDING LUG)
2. SEDIMENT CHAMBER
3. OIL WATER SEPARATOR CHAMBER
4. THREADED INLET
5. PVC INLET ELBOW PIPING
6. VELOCITY HEAD DIFFUSION BAFFLE 10GA
7. WEAR PLATE (1/4" MATERIAL)
8. REMOVABLE PARALLEL CORRUGATED PLATE COALESCER (GALVANIZED) 1" PLATE SPACING
9. SLUDGE BAFFLE – 10GA
10. PVC OUTLET DOWNCOMER
11. THREADED OUTLET
12. REMOVABLE COVERS 6–REQUIRED (7 GA.)
13. NUTS & BOLTS W/ LARGE WING (CORROSION RESISTANT)
14. GASKET MATERIAL (FOR EACH REMOVABLE COVER)
15. 3"ø NPT (CLEAN–OUT)
16. 2"ø NPT (VENT)
17. 2"ø NPT (DRAIN)
18. 3"ø FULL COUPLING W/ 3" INTERNAL PVC PIPE
19. 2"ø NPT (FOR LEVEL SENSOR)
20. 7GA. CROSSMEMBER FOR OIL PUMP–OUT & LEVEL SENSOR FTG.
21. HANDLES PER H.T. STANDARD
22. 6" THICK COALESCER MATERIAL
23. 10"ø STEEL ELBOW W/ FLANGE WELDED TO TOP FOR PVC RISER PIPES
24. 10"ø ADJUSTABLE FERNCO COUPLING
25. LIFTING LUGS
26. 1"ø COUPLING W/ PLUG



END VIEW



ELEVATION

FIGURE 1
Typical Aboveground 3000 Gallon Oil Water Separator
AES Redondo Beach Energy Project
Redondo Beach, California

Source: Highland Tank, 5/20/2005.

CH2MHILL.

From: Salamy, Jerry/SAC
To: "Vicky Lee"
Cc: Stephen O"Kane; Madams, Sarah/SAC; Engel, Elyse/SJC
Bcc: "Greggory L. Wheatland"; "Jeffery Harris"; Samantha Pottenger
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions
Date: Monday, August 05, 2013 2:16:00 PM

Vicky,

Below are AES's responses to Items 1 and 2. The remainder of the responses should be submitted this week.

1. Modeling
The Operation Impacts Analysis on pg. 5.1-23 of the Application for South Coast Air Quality Management District (SCAQMD) Permit to Construct and Modification to the Title V Permit to Operate ("Application") did not provide a discussion of the following. Please provide the following so that the modeling review request memo is correct.

a. For the 1-hour averaging time:
   i. Was the dispersion modeling for oxides of sulfur (SOx) based on one turbine operating or all three turbines operating?

   Response: The Redondo Beach Energy Project (RBEP) operational SOx impacts presented in the Application are based on all three turbines operating.

   ii. If for one turbine, why is the 1-hour for oxides of nitrogen (NOx) and carbon monoxide (CO) based on three turbines?

   Response: The RBEP operational NOx and CO impacts presented in the Application are based on all three turbines operating, with the exception of Rule 2005 NOx impacts shown in Table 5.1-30 as Rule 2005 limits are on a per permit unit basis.

b. For the 3-hour averaging time:
   i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   Response: The RBEP 3-hour averaging time operational SOx impacts presented in the Application are based on all three turbines operating.

c. For the 24-hour averaging time:
   i. Was the dispersion modeling for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) and particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) based on one turbine operating or all three turbines operating?

   Response: The RBEP 24-hour operational PM_{10} and $PM_{2.5}$ impacts presented in the Application are based on all three turbines operating.

   ii. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   Response: The RBEP 24-hour averaging time operational SOx impacts presented in the Application are based on all three turbines operating.

d. For the annual averaging time:
   i. Was the dispersion modeling for NOx based on one turbine operating or all three turbines operating?

Response: The RBEP annual operational NOx impacts presented in the Application are based on all three turbines operating, with the exception of Rule 2005 NOx modeling impacts shown in Table 5.1-30 as Rule 2005 limits are on a per permit unit basis.

ii. Was the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?

Response: The RBEP annual operational PM_{10} and $PM_{2.5}$ impacts presented in the Application are based on all three turbines operating.

2. Health Risk Assessment

In your letter dated 3/15/13 in response to our letter dated 2/8/13, item 7.b. provided (1) Table 5.1B.5bR (BASIS: AP-42 EMISSION FACTORS PER SCAQMD), Summary of Turbine Operation Emissions – Air Toxics; (2) Table AQMD-2R—RBEP Health Risk Assessment Summary: Individual Units (BASIS: AP-42 Emission Factors); and (3) compact disk containing the associated revised HARP input and output files, dated March 2013. These tables and HARP input/output files reflected the change from CATEF emission factors and 120 ppb formaldehyde (basis for AFC), to AP-42 emission factors and 3.60E-04 lb/MMBTU formaldehyde emission factor requested by the SCAQMD.

Please provide the following so I may include in my modeling review request memo, and health risk assessment evaluation.

a. Table AQMD-2R is an abbreviated table that provides only the revised MICR at the PMI, Chronic Hazard Index at the PMI, and Acute Hazard Index at the PMI.

Please provide an update to the following information in the AFC: (1) Table 5.9-3 —"Health Risk Assessment Summary: Individual Units"; (2) Table 5.9-4—Health Risk Assessment Summary: Facility"; and (3) Section 5.9.3.1.4—" Summary of Air Toxic Exposure Assessment Results as appropriate to assist Jillian Baker with her modeling review.

Response: Below is the updated Application Section 5.9.3.1.4, which includes updated Tables 5.9-3 and 5.9-4.

Updated Application Section 5.9.3.1.4:

A summary of the MICR, chronic health index, and acute health index at the point of maximum impact (PMI) locations, as well as the maximum predicted public health impacts for worker, residential, and sensitive receptors, has been included in Table 5.9-3 and Table 5.9-4. In accordance with SCAQMD Rule 1401, the results in Table 5.9-3 represent the predicted risk for each individual emission unit, while the results in Table 5.9-4 represent a comparison of the total predicted RBEP impact to the SCAQMD California Environmental Quality Act (CEQA) significance thresholds. The receptor grid used to evaluate the predicted impacts is included in Appendix 5.1C.

As presented in Table 5.9-3, the predicted MICR at the PMI for an individual turbine is approximately 0.73 in 1 million.[1] The maximum impact is located approximately 260 meters east-northeast of the project boundary. The predicted MICR for the maximum exposed individual resident (MEIR), which is approximately 330 meters east-northeast of the project boundary, is predicted to be 0.70 in 1 million (Derived Adjusted) for an individual turbine; and the predicted MICR for the maximum exposed individual worker (MEIW), which is located approximately 260 meters east-northeast of the project boundary, is predicted to be 0.13 in 1 million for an individual turbine. The predicted MICR at the maximum exposed sensitive receptor is predicted to be 0.46 in 1 million (Derived Adjusted) for an individual turbine. Overall, the predicted MICR for the MEIR, MEIW, and the

sensitive receptors is below the individual source significance threshold of 1 in 1 million. Therefore, based on SCAQMD Rule 1401, the predicted incremental increase in cancer risk from each individual turbine will be less than significant, and Best Available Control Technology for Toxics (T-BACT) would not be required. However, while not required, the emission control technologies included in this project are considered to be T-BACT.

The maximum chronic hazard index for an individual turbine at the PMI is predicted to be 0.0022, which is located approximately 260 meters east-northeast of the project boundary. The maximum acute hazard index for an individual turbine at the PMI is predicted to be 0.022, which is located on the east side of the facility fence line. The predicted chronic and acute indices are well below the SCAQMD individual source significance threshold of 1.0. Therefore, the predicted impact from each individual turbine will be less than significant, and T-BACT will not be required. However, as previously noted, the emission control technologies included in this project are considered to be T-BACT.

TABLE 5.9-3
Health Risk Assessment Summary: Individual Units[a]

Risk[b]	Turbine 1	Turbine 2	Turbine 3
Derived Cancer Risk at the PMI[c] (per million)	0.73	0.67	0.66
Derived Adjusted Cancer Risk at the PMI[d] (per million)	0.71	0.65	0.65
Derived Adjusted Cancer Risk at the MEIR[d] (per million)	0.70	0.65	0.65
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor [d] (per million)	0.46	0.42	0.41
Derived Cancer Risk at the MEIW[c] (per million)	0.13	0.12	0.12
Chronic Hazard Index at the PMI	0.0022	0.0020	0.0020
Resident Chronic Hazard Index	0.0022	0.0020	0.0020
Worker Chronic Hazard Index	0.0022	0.0020	0.0020
Chronic Hazard Index at Sensitive Receptor	0.0014	0.0013	0.0013
Acute Hazard Index at the PMI	0.022	0.015	0.011
Resident Acute Hazard Index	0.010	0.010	0.0094
Worker Acute Hazard Index	0.022	0.015	0.011
Acute Hazard Index at Sensitive Receptor	0.011	0.012	0.0093

[a] The results in Table 5.9-3 represent the predicted excess risk for each individual emission unit in accordance with SCAQMD Rule 1401.
[b] A source with an excess MICR less than 1 in 1 million individuals is considered to be less than significant. A chronic or acute hazard index less than 1.0 for each source is considered to be a less-than-significant health risk.
[c] Cancer risk values are based on the OEHHA Derived Methodology.
[d] Risk values are based on the Derived Adjusted Methodology.

A risk analysis was also performed to evaluate the potential facility-wide impacts. The potential health impacts at the PMI, the MEIR, the MEIW, and sensitive receptors resulting from RBEP operation are summarized in Table 5.9-4.

It should be noted that the maximum impacts reported in Table 5.9-4 represent the maximum predicted impacts at one receptor from all sources combined. In contrast, the maximum impacts reported for each individual source in Table 5.9-3 may occur at different receptors. Therefore, the RBEP totals in Table 5.9-3 are not directly additive and should not be directly compared to the results presented in Table 5.9-4.

TABLE 5.9-4
Health Risk Assessment Summary: Facility[a]

Risk[b]	Receptor Number	Value

Derived Cancer Risk at the PMI[c]	767	2.1 per million
Derived Adjusted Cancer Risk at the PMI[d]	767	2.0 per million
Derived Adjusted Cancer Risk at the MEIR[d]	799	2.0 per million
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor[d]	9859	1.3 per million
Derived Cancer Risk at the MEIW[c]	767	0.36 per million
Chronic Hazard Index at the PMI	767	0.0063
Resident Chronic Hazard Index	799	0.0062
Worker Chronic Hazard Index	767	0.0063
Chronic Hazard Index at Sensitive Receptor	9859	0.0040
Acute Hazard Index at the PMI	21	0.042
Resident Acute Hazard Index	758	0.028
Worker Acute Hazard Index	21	0.042
Acute Hazard Index at Sensitive Receptor	9855	0.032

[a] The results in Table 5.9-4 represent the combined predicted risk for all three turbines operating simultaneously.

[b] A facility with an overall individual increase in cancer risk (MICR) less than 10 in 1 million individuals is considered to be less than significant. A facility chronic or acute hazard index less than 1.0 is considered to be a less-than-significant health risk.

[c] Cancer risk values represent the OEHHA Derived Methodology.

[d] Risk values represent the Derived Adjusted Methodology.

The predicted incremental increase in cancer risk at the PMI associated with RBEP is approximately 2.1 in 1 million[2] and is approximately 310 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk at the MEIR is predicted to be 2.0 in 1 million (Derived Adjusted). The receptor location for the MEIR is about 330 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk for the MEIW, which is located approximately 310 meters east-northeast of the project boundary, is predicted to be 0.36 in 1 million. The predicted incremental increase in cancer risk at the maximum exposed sensitive receptor is predicted to be 1.3 in 1 million (Derived Adjusted) located 0.7 kilometers east, northeast of the site. The predicted MICR for the MEIR, MEIW, and the sensitive receptors is below the facility-wide significance threshold of 10 in 1 million. Therefore, based on SCAQMD CEQA significance thresholds, the predicted incremental increase in cancer risk associated with the project will be less than significant.

The maximum chronic hazard index increment at the PMI is predicted to be 0.0063. The maximum predicted chronic impact is located approximately 310 meters east-northeast of the project boundary. The maximum acute hazard index at the PMI is predicted to be approximately 0.042. The maximum predicted acute impact is located along the east RBEP fence line. The chronic and acute index increments are below the project significance threshold of 1.0.

The predicted chronic and acute indices are well below the SCAQMD project significance threshold of 1.0. Therefore, the predicted impact from the project will be less than significant.

[1] All cancer risk values presented represent the 70-year Office of Environmental Health Hazard Assessment (OEHHA) Derived methodology, unless noted.

[2] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

b. Table 5.9-3

i. In Table 5.9-3, the derived cancer risk at the PMI for Turbine 1 is 0.088 x 10^{-6} and the derived adjusted cancer risk at the PMI is 0.07 x 10^{-6}.

aa. What is the difference between "derived" and "derived adjusted"?

Response: The SCAQMD's Risk Assessment Procedures for Rules 1401 and

212[1] indicate that the "Derived (OEHHA)" cancer risk method uses the high-end point-estimates of exposure whereas the "Derived (Adjusted)" cancer risk method uses the breathing rate at the 80th percentile of exposure rather than the high-end point-estimate when the inhalation pathway is one of the dominant exposure pathways.

[1] http://www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf

bb. Please explain which MICR is required for Rule 1401 compliance.

Response: The SCAQMD's Risk Assessment Procedures for Rules 1401 and 212 specify that the MICR be based on the derived adjusted value.

ii. In Table AQMD-2R, the MICR at the PMI for Turbine 1 is 0.73 x 10^{-6}. The 0.73 x 10^{-6} is significantly higher than the corresponding 0.088 x 10^{-6} in Table 5.9-3. Please explain which is correct.

Response: The public health risk values presented in Table 5.9-3 of the Application were based on the RBEP Toxic Air Contaminant (TAC) emissions estimates using emission factors from the Air Resources Board's California Toxic Emission Factors (CATEF). The public health risk values presented in Table AQMD-2R are based on the SCAQMD's December 21, 2012 request that the RBEP TAC emissions be estimated using the Environmental Protection Agency's AP-42 emission factors and the SCAQMD's February 8, 2013 request that a revised health risk assessment be prepared using the AP-42 based RBEP TAC emissions and a formaldehyde emission factor of 3.6x10^{-4} pounds per million British thermal units (lb/MMBtu). In our opinion, either public health risk value is correct as they only differ in the manner in which the TAC emissions were estimated. However, if the SCAQMD believes that the AP-42 emissions factors, combined with a formaldehyde emission factor of 3.6x10^{-4} lb/MMBtu, are more appropriate, then the 0.73 x 10^{-6} MICR is the value that should be used.

Please let me know if you have any questions.
Thanks,

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Thursday, July 25, 2013 2:26 PM
To: Stephen O'Kane
Cc: Salamy, Jerry/SAC
Subject: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Stephen O'Kane, AES--
Jerry Salamy, CH_2M Hill--

Thank you for providing the additional information we requested to deem the applications complete. Since this type of project is extensively reviewed, I would like to ask the following clarifying questions to ensure my understanding is correct.

If at all possible, please provide responses to items 1 and 2 BEFORE the responses to the remaining questions because Jillian Baker and Tom Chico are waiting for my modeling review request memo for the RBEP project.

1. Modeling

The Operation Impacts Analysis on pg. 5.1-23 of the Application for SCAQMD Permit to Construct and Modification to the Title V Permit to Operate ("Application") did not provide a discussion of the following. Please provide the following so that modeling review request memo is correct.

a. For the 1-hr averaging time--
   i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?
   ii. If for one turbine, why is the 1-hr for NOx and CO based on three turbines?

b. For the 3-hr averaging time—
   i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

c. For the 24-hr averaging time—
   i. Were the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?
   ii. Were the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

d. For the annual averaging time—
   i. Was the dispersion modeling for NOx based on one turbine operating or all three turbines operating?
   ii. Was the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?

2. Health Risk Assessment

In your letter dated 3/15/13 in response to our letter dated 2/8/13, item 7.b. provided (1) Table 5.1B.5bR (BASIS: AP-42 EMISSION FACTORS PER SCAQMD), Summary of Turbine Operation Emissions – Air Toxics; (2) Table AQMD-2R—RBEP Health Risk Assessment Summary: Individual Units (BASIS: AP-42 Emission Factors); and (3) compact disk containing the associated revised HARP input and output files, dated March 2013. These tables and HARP input/output files reflected the change from CATEF emission factors and 120 ppb formaldehyde (basis for AFC), to AP-42 emission factors and 3.60E-04 lb/MMBTU formaldehyde emission factor requested by the SCAQMD.

Please provide the following so I may include in my modeling review request memo, and health risk assessment evaluation.

a. Table AQMD-2R is an abbreviated table that provides only the revised MICR at the PMI, Chronic Hazard Index at the PMI, and Acute Hazard Index at the PMI.

   Please provide an update to the following information in the AFC: (1) Table 5.9-3 —"Health Risk Assessment Summary: Individual Units"; (2) Table 5.9-4—Health Risk Assessment Summary: Facility"; and (3) Section 5.9.3.1.4—"Summary of Air Toxic Exposure Assessment Results as appropriate to assist Jillian Baker with her modeling review.

b. Table 5.9.-3
   i. In Table 5.9-3, the derived cancer risk at the PMI for Turbine 1 is 0.088×10^{-6} and the derived adjusted cancer risk at the PMI is 0.07×10^{-6}.

      aa. What is the difference between "derived" and "derived adjusted"?

bb. Please explain which MICR is required for Rule 1401 compliance.

ii. In Table AQMD-2R, the MICR at the PMI for Turbine 1 is 0.73 x 10^{-6}. The 0.73 x 10^{-6} is significantly higher than the corresponding 0.088 x 10^{-6} in Table 5.9-3. Please explain which is correct.

3. Facility Permit Equipment Description

How would you like the three new turbines to be designated (numbered) in the facility permit equipment description (e.g., Turbine Nos. 1, 2, 3, or Turbine Nos. A, B, C)?

4. MW Rating

Pg. 1 of your cover letter dated 11/21/12 for the Application indicates the RBEP is rated at a nominal generating capacity of 496 MW and maximum 530 MW. Pg. 2-2 of the Application indicates a net generating capacity of 496 MW and gross generating capacity of 511 MW, with each CTG rated at 119 MW nominal and the STG rated at 151 MW. Pg. 2-16 indicates each CTG will generate 199 MW (gross) at SAAT conditions and the STG will produce 151 MW (gross). Form 400-E-12 indicates the STG is rated at 152 MW. Therefore, I need clarification.

Please provide the following data for RBEP. (You had provided similar information for the HBEP in your 10/23/12 letter to Chris Perri.)

	ISO 59 F- 60% RH (Evaporative Cooling Off)	106 F-9.6% RH (Evaporative Cooling On, Case 13)	33 F – 93.8% RH (Evaporative Cooling Off, Case 2)	63.3 F – 75.2% RH (Evaporative Cooling On, Case 7)
Gas Turbine Heat Input, mmbtu/h HHV				
Total Heat Input, mmbtu/h HHV (w/duct fire)				
Gas Turbine Gross Output, kW				
Steam Turbine Gross Output, kW				
Total Gross Power Output, kW				
Net Power Output, Kw				
Net Plant Heat Rate, btu/kWh, LHV				
Net Plant Heat Rate, btu/kWh, HHV				

5. Emissions Calculations

On pg. 5.1-16, Table 5.1-17—"RBEP Facility Emissions" provides values for Average Daily Facility Emissions, lb/day. Footnote b indicates the average daily emissions represents the maximum monthly total divided by 30 days. Thus my understanding is that these values are the sum of the 30-day averages ("30-DA") for three turbines. My calculated 30-day averages for pollutants other than PM_{10} do not match the Average Daily Facility Emissions in Table 5.1-17. Therefore, I am providing my calculations below and requesting clarification regarding how the calculations to derive the "Average Daily Facility Emissions" differ.

a. CO

My calculations are as follows:

5 cold starts, 25 warm starts, 60 hot starts, 90 shutdowns
489.5 hr of operation at 100% load, 63.3 °F ambient, without duct burner

186 hr of operation at 100% load, 63.3 °F ambient, with duct burner

CO, lb/month = (5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.02 lb/hr) + (186 hr) (8.27 lb/hr) = 12,307.51 lb/month

30-DA = (12,307.51 lb/month) (month/30 days) = 410.25 lb/day

From Table 5.1-17:

30-DA = 1258 lb/day for three turbines → 419.33 lb/day

***Please provide emissions calculations for the 419.33 lb/day.

b. NOx

My calculations are as follows:

NOx, lb/month = (5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (9.89 lb/hr) + (186 hr) (13.59 lb/hr) = 9733.40 lb/month

30-DA = (9733.40 lb/month) (month/30 days) = 324.45 lb/day

From Table 5.1-17:

30-DA = 1018 lb/day for three turbines → 339.33 lb/day

***Please provide emissions calculations for the 339.33 lb/day.

c. PM_{10}

My calculations are as follows:

-

PM_{10}, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (4.5 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (4.5 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (4.5 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (4.5 lb/hr) + (489.5 hr) (4.5 lb/hr) + (186 hr) (9.5 lb/hr) = 4278.19 lb/month

30-DA = (4278.19 lb/month) (month/30 days) = 142.60 lb/day

From Table 5.1-17:

30-DA = 428 lb/day for three turbines → 142.67 lb/day

***Please confirm that your emissions calculations for the 142.67 lb/day are the same as mine.

d. SO_2

My calculations are as follows:

SO_2, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (1.84 lb/hr) + (25 warm starts)
(32.5 min/warm start) (hr/60 min) (1.84 lb/hr) + (60 hot starts)
(32.5 min/hot start) (hr/60 min) (1.84 lb/hr) + (90 shutdowns)
(10 min/shutdown) (hr/60 min) (1.84 lb/hr) + (489.5 hr) (1.84 lb/hr) +
(186 hr) (2.51 lb/hr) = 1493.66 lb/month

30-DA = (1493.66 lb/month) (month/30 days) = 49.79 lb/day

From Table 5.1-17:

30-DA = 158.5 lb/day for three turbines → 52.83 lb/day

***Please provide emissions calculations for the 52.83 lb/day.

e. VOC

My calculations are as follows:

VOC, lb/month = (5 cold starts) (27.9 lb/cold start) + (25 warm starts)
(21 lb/warm start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns)
(31.0 lb/shutdown) + (489.5 hr) (1.72 lb/hr) + (186 hr) (2.36 lb/hr) = 5959.40 lb/month

30-DA = (5959.40 lb/month) (month/30 days) = 198.65 lb/day

From Table 5.1-17:

30-DA = 604 lb/day for three turbines → 201.33 lb/day

***Please provide emissions calculations for the 201.33 lb/day.

6. Costs

a. Capital Costs

On pg. 3-17, Section 3.2.2.4.1—Carbon Capture and Sequestration of the Application states the estimated RBEP capital cost is $250 million to $275 million for the plant and equipment. However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage, footnote a to Table AQMD-7A-1 states the RBEP capital costs is based on $510 million.

Please provide the updated capital cost of RBEP for my evaluation on Carbon Capture and Storage.

b. O & M Costs—Ask John if need.

On pg. 5.10-11, Section 5.10.3.4.4—Impacts on the Local Economy and Employment of the Socioeconomics section of the AFC indicates the RBEP annual non-payroll operations and maintenance budget is expected to be approximately $2,515,000 (in 2012). However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage indicates a variable O&M cost of $3,255,070/yr, a fixed O&M of $3,066,000/yr, for a total annual O&M of $6,321,070/yr.

Please provide the updated O&M cost for my evaluation on Carbon Capture and Storage.

7. Thermal Efficiency Calculations

My evaluation will need to show that the 1100 lbs CO2/MW_{net} standard is not applicable since I have been receiving a number of questions.

a. Expected Operating Profile

Item 7 of your 1/11/13 response letter provided supporting calculations for the thermal efficiency of 1082 lbs CO2/ MWh_{gross} for the expected operating profile. I reviewed the plant CO2 efficiency calculation in Table AQMD-5. I think there is a math error and the 1082 lbs CO2/MWh_{gross} should actually be 1088 lbs CO2/MW-hr $_{gross}$, as shown below.

Plant CO2 Efficiency Calculation

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7564 Btu/kWh + 1600 hrs * 7353 btu/kWh + 730 hrs * 7350 btu/kWh + 18267 btu/kWh * 52.5 hrs + 16520 btu/kWh * 55.4 hrs)/(2455 hrs + 52.5 hrs + 55.4 hrs) = ~~7743~~ 7784 Btu LHV / kWh Gross

- 8% Assumed Plant Degradation
  Gross Annual Average CO2 Efficiency with SU/SD and Degradation = (~~7743~~ 7784 btu/kWh / (1 - 0.08)) = ~~8416~~ 8461 Btu LHV / kWh Gross

- Annual Average CO2 Efficiency with SU/SD and Degradation
  (~~8417~~ 8461 btu/kWh * 1000 kWh/MWh * 1.1 HHV/LHV * 1*10-6 MMBtu/Btu * 53.02 kg CO2/MMBtu-HHV * 2.205 lb/kg) = ~~1082~~ 1088 lb CO2 /MWh Gross

Please confirm that the 1088 lb/CO2/MWh_{gross} is correct.

b. Conversion from Gross Basis to Net Basis

Item 3.a. of your 5/9/13 response letter indicated the 1082 lbs CO2/MWh_{gross} converts to 1125 lbs CO2/MWh_{net} based on a 3% parasitic electric load. With a 3% parasitic load only, the 1082 lbs CO2/MW_{gross} converts to 1115 lbs CO2/MWh_{net}, not 1125 lbs CO2/MWh_{net}. Since it does not appear to be 3%, please explain the basis for converting the 1082 lbs CO2/MWh_{gross} to 1125 lbs CO2/MWh_{net}.

c. Capacity Factor for Permitted Operating Profile

Item 5.b.i. of your 3/15/13 response letter provided emission rate calculations for the permitted operating profile. I had performed a preliminary capacity factor calculations based on the information provided in Table AQMD-5b-1 to verify that the capacity factor for the permitted operating profile is below 60% and was not a completeness issue.

To avoid applicability of the GHG Emission Performance Standard of 1,100 lbs CO2/MWh, there will be a permit condition limiting the annualized plant capacity to less than 60 percent. In addition, I will include capacity factor calculations for the expected operating profile and the permitted operating profile in my evaluation. Item 3.b. of your 5/9/13 response letter provided Table AQMD-2—RBEP GHG Performance at a 60 Percent Capacity Factor.

To ensure accuracy in my evaluation (PDOC/FDOC), please provide the following:

i. Please provide capacity factor calculation for the expected operating profile.

ii. Please provide capacity factor calculation for the permitted operating profile.

Thank you for your assistance. Again, please provide the responses to items 1 and 2 as soon as you can.

Vicky Lee
Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive, 3rd Floor
Diamond Bar, CA 91765
909-396-2284
909-396-3341 (fax)

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[1] All cancer risk values presented represent the 70-year Office of Environmental Health Hazard Assessment (OEHHA) Derived methodology, unless noted.

[2] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

[1] http://www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf

From: Salamy, Jerry/SAC
To: "Vicky Lee"
Cc: stephen.okane@AES.com; Madams, Sarah/SAC; Engel, Elyse/SJC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions
Date: Tuesday, August 13, 2013 12:09:00 PM

Vicky,

Below are the remainder of the responses (Items 3 to 7) of your information request.

3. Facility Permit Equipment Description
How would you like the three new turbines to be designated (numbered) in the facility permit equipment description (e.g., Turbine Nos. 1, 2, 3, or Turbine Nos. A, B, C)?

Response: Please designate the turbines as 03-A, 03-B, and 03-C.

4. MW Rating
Pg. 1 of your cover letter dated 11/21/12 for the Application indicates the RBEP is rated at a nominal generating capacity of 496 MW and maximum 530 MW. Pg. 2-2 of the Application indicates a net generating capacity of 496 MW and gross generating capacity of 511 MW, with each CTG rated at 119 MW nominal and the STG rated at 151 MW. Pg. 2-16 indicates each CTG will generate 199 MW (gross) at SAAT conditions and the STG will produce 151 MW (gross). Form 400-E-12 indicates the STG is rated at 152 MW. Therefore, I need clarification.

Please provide the following data for RBEP. (You had provided similar information for the HBEP in your 10/23/12 letter to Chris Perri.)

Response: Below is the completed table.

	ISO 59 F-60% RH (Evaporative Cooling Off)	106 F-9.6% RH (Evaporative Cooling On, Case 12)	33 F – 93.8% RH (Evaporative Cooling Off, Case 2)	63.3 F – 75.2% RH (Evaporative Cooling On, Case 7)
Gas Turbine Heat Input, mmbtu/h HHV[1]	1,388	1,353	1,492	1,398
Total Heat Input, mmbtu/h HHV (w/duct fire) [2]	1,895	1,860	1,999	1,905
Gas Turbine Gross Output, kW[3]	121,435	115,496	131,896	121,445
Steam Turbine Gross Output, kW[3]	51,865	45,335	50,386	50,919
Total Gross Power Output, kW[3]	173,300	160,830	182,282	172,364
Net Power Output, Kw[3]	167,583	155,831	176,987	167,242
Net Plant Heat Rate, btu/kWh, LHV	7,354	7,706	7,481	7,417
Net Plant Heat Rate, btu/kWh, HHV	8,285	8,681	8,428	8,356

Notes:
1. Cases 106F, 33F and 63F heat input taken directly from M501DA Gas Turbine Expected Performance and Emissions Provided by MPSA and included in Table 5.1B.2 of *RBEP_Appendix 5.1B_Ops Emissions Calcs.pdf*. Other Case Heat input taken from GT PRO model.

2. Total Heat Input per gas turbine with duct firing can only be achieved while operating in a 1-on-1 or 2-on-1 mode. The steam cycle is sized such that the maximum heat input into the steam cycle is reached in a 3-on-1 mode without duct firing.

3. All output is provided on a per turbine basis assuming a 3-on-1 operating mode. To calculate total output for the entire power block these values must be multiplied by 3

5. Emissions Calculations
On pg. 5.1-16, Table 5.1-17—"RBEP Facility Emissions" provides values for Average Daily Facility Emissions, lb/day. Footnote b indicates the average daily emissions represent the maximum monthly total divided by 30 days. Thus my understanding is that these values are the sum of the 30-day averages ("30-DA") for three turbines. My calculated 30-day averages for pollutants other than PM_{10} do not match the Average Daily Facility Emissions in Table 5.1-17. Therefore, I am

providing my calculations below and requesting clarification regarding how the calculations to derive the "Average Daily Facility Emissions" differ.

a. CO

My calculations are as follows:

5 cold starts, 25 warm starts, 60 hot starts, 90 shutdowns
489.5 hr of operation at 100% load, 63.3 °F ambient, without duct burner
186 hr of operation at 100% load, 63.3 °F ambient, with duct burner

CO, lb/month = (5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.02 lb/hr) + (186 hr) (8.27 lb/hr) = 12,307.51 lb/month

30-DA = (12,307.51 lb/month) (month/30 days) = 410.25 lb/day

From Table 5.1-17:

30-DA = 1258 lb/day for three turbines → 419.33 lb/day

***Please provide emissions calculations for the 419.33 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient condition of 33°F (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily CO emissions of 419.33 lb/day. Please note that Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.42 lb/hr) + (186 hr) (8.68 lb/hr) = 12,579.90 lb/month or 419.33 lb/day

b. NOx

My calculations are as follows:

NOx, lb/month = (5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (9.89 lb/hr) + (186 hr) (13.59 lb/hr) = 9733.40 lb/month

30-DA = (9733.40 lb/month) (month/30 days) = 324.45 lb/day

From Table 5.1-17:

30-DA = 1018 lb/day for three turbines → 339.33 lb/day

***Please provide emissions calculations for the 339.33 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient conditions (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily NOx emissions of 339.33 lb/day. Please note that Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (10.55 lb/hr) + (186 hr) (14.26 lb/hr) = 10,180.21 lb/month or 339.34 lb/day

c. PM_{10}

My calculations are as follows:

-

PM_{10}, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (4.5 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (4.5 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (4.5 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (4.5 lb/hr) + (489.5 hr) (4.5 lb/hr) + (186 hr) (9.5 lb/hr) = 4278.19 lb/month

30-DA = (4278.19 lb/month) (month/30 days) = 142.60 lb/day

From Table 5.1-17:

30-DA = 428 lb/day for three turbines → 142.67 lb/day

***Please confirm that your emissions calculations for the 142.67 lb/day are the same as mine.

Response: The PM_{10} monthly and daily emission calculations reported in the Application and those calculated by the SCAQMD are the same: 142.67 lb /day.

d. SO_2

My calculations are as follows:

SO_2, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (1.84 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (1.84 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (1.84 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (1.84 lb/hr) + (489.5 hr) (1.84 lb/hr) + (186 hr) (2.51 lb/hr) = 1493.66 lb/month

30-DA = (1493.66 lb/month) (month/30 days) = 49.79 lb/day

From Table 5.1-17:

30-DA = 158.5 lb/day for three turbines → 52.83 lb/day

***Please provide emissions calculations for the 52.83 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient conditions (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily SO_2 emissions of 52.83 lb/day. Please note that Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (90 min/cold start) (hr/60 min) (1.964 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (1.964 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (1.964 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (1.964 lb/hr) + (489.5 hr) (1.964 lb/hr) + (186 hr) (2.631 lb/hr) = 1,585.05 lb/month or 52.84 lb/day

e. VOC

My calculations are as follows:

VOC, lb/month = (5 cold starts) (27.9 lb/cold start) + (25 warm starts) (21 lb/warm

start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns) (31.0 lb/shutdown) + (489.5 hr) (1.72 lb/hr) + (186 hr) (2.36 lb/hr) = 5959.40 lb/month

30-DA = (5959.40 lb/month) (month/30 days) = 198.65 lb/day

From Table 5.1-17:

30-DA = 604 lb/day for three turbines → 201.33 lb/day

***Please provide emissions calculations for the 201.33 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient conditions (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily VOC emissions of 201.33 lb/day. Please note that the Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (27.9 lb/cold start) + (25 warm starts) (21 lb/warm start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns) (31.0 lb/shutdown) + (489.5 hr) (1.83 lb/hr) + (186 hr) (2.48 lb/hr) = 6,037.75 lb/month or 201.26 lb/day

6. Costs

a. Capital Costs

On pg. 3-17, Section 3.2.2.4.1—Carbon Capture and Sequestration of the Application states the estimated RBEP capital cost is $250 million to $275 million for the plant and equipment. However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage, footnote a to Table AQMD-7A-1 states the RBEP capital costs is based on $510 million.

Please provide the updated capital cost of RBEP for my evaluation on Carbon Capture and Storage.

Response: The capital cost presented in Section 3.2.2.4.1 of the Application represents the cost of purchasing plant equipment and does not include construction costs (estimated at $167 million), $35 million in local construction supplies (rock/sand, concrete, etc.), and 7 percent contingency/management costs (approximately $33 million). Combining these additional costs results in an estimated RBEP installed cost of $510 million. The expected installed RBEP cost of approximately $1,000 per kilowatt (kW) is consistent with the costs reported in the National Renewable Energy Laboratory reference[1] cited in the March 15, 2013 letter.

b. O & M Costs

On pg. 5.10-11, Section 5.10.3.4.4—Impacts on the Local Economy and Employment of the Socioeconomics section of the AFC indicates the RBEP annual non-payroll operations and maintenance budget is expected to be approximately $2,515,000 (in 2012). However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage indicates a variable O&M cost of $3,255,070/yr, a fixed O&M of $3,066,000/yr, for a total annual O&M of $6,321,070/yr.

Please provide the updated O&M cost for my evaluation on Carbon Capture and Storage.

Response: The operations and maintenance (O&M) cost includes operational/administrative labor costs, maintenance labor and material costs, and consumable costs. Based on Application Section 5.10.3.4.4, these costs are $2.515 million for maintenance costs (labor and materials) and $2.94 million for operational/administrative labor costs, resulting in a total O&M cost of $5.455 million. The O&M cost included in Item 7, Table AQMD-7A-2 of the March 15, 2013 letter was based on the cost presented in Table AQMD-7A-1. This was done to show a comparable cost basis for the three technologies shown in Table AQMD-7A-2. Below is a revision to Table AQMD-7A-2R using the lower O&M cost from Application Section 5.10.3.4.4. The results of using this

lower O&M cost does not alter the conclusions reached in the March 15, 2013 letter, which is that employment of carbon capture and sequestration on the RBEP is not cost effective.

TABLE AQMD-7A-2R
REVISED COST COMPARISON FOR RBEP WITH AND WITHOUT CARBON CAPTURE AND SEQUESTRATION

Technology	Capital Cost[a] ($/kW)	Capital Cost (Dollars)	Variable O&M Cost[b] ($/Year)	Fixed O&M Cost[b] ($/Year)	Total Annual O&M Cost ($/Year)
RBEP	<1,000	510,000,000	2,515,000	2,940,000	5,455,000
RBEP with CCS[c]	3,520	1,916,250,000	32,550,700	9,402,400	41,953,100
Incremental Cost of CCS[d]	2520	1,406,250,000	30,035,700	6,462,400	36,498,100

[a]RBEP cost calculated at $1,000/kW.

[b]RBEP O&M cost is based on $2.515 million for maintenance costs (labor and materials) and $2.94 million for operational labor costs (see Section 5.10.3.4.4 of the RBEP Application for Certification).

[c]RBEP with CCS cost is $3750/kW - $1230/kW + $1000/kW.

[d]Cost of CCS is the difference between RBEP with CCS and RBEP.

7. Thermal Efficiency Calculations

My evaluation will need to show that the 1100 lbs CO2/MW_{net} standard is not applicable since I have been receiving a number of questions.

Response: The California Emissions Performance Standard (EPS) of 1100 lbs CO_2/MW-hour of electricity applies to local publicly owned electric utilities. California regulations stipulate that no local publicly owned electric utility shall enter into a covered procurement if greenhouse gases emissions from the power plant(s) subject to the covered procurement exceed the EPS.[2] A covered procurement is defined as (1) A new ownership investment in a base load generation power plant, or (2) A new or renewed contract commitment, including a lease, for the procurement of electricity with a term of five years or greater by a local publicly owned electric utility with: (A) a base load generation power plant, unless the power plant is deemed compliant, or (B) any generating units added to a deemed-compliant base load generation power plant that combined result in an increase of 50 MW or more to the power plant's rated capacity. AES will attempt to enter into a covered procurement for RBEP with a local publicly owned electric utility. If AES is successful in securing a covered procurement for RBEP with a local publicly owned electric utility, then that utility is required to submit a compliance filing to the California Energy Commission. The Commission then issues a decision on whether the covered procurement complies with the EPS.

Therefore, it does not appear that the SCAQMD is required by state law or regulation to make a determination of RBEP's compliance with the EPS. Nevertheless, we have provided responses to your questions.

a. Expected Operating Profile

Item 7 of your 1/11/13 response letter provided supporting calculations for the thermal efficiency of 1082 lbs CO2/ MWh_{gross} for the expected operating profile. I reviewed the plant CO2 efficiency calculation in Table AQMD-5. I think there is a math error and the 1082 lbs CO2/MWh_{gross} should actually be 1088 lbs CO2/MW-hr_{gross}, as shown below.

Plant CO2 Efficiency Calculation

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7564 Btu/kWh + 1600 hrs * 7353 btu/kWh + 730 hrs * 7350 btu/kWh + 18267 btu/kWh * 52.5 hrs + 16520 btu/kWh * 55.4 hrs)/(2455 hrs + 52.5 hrs + 55.4 hrs)
  = ~~7743~~ 7784 Btu LHV / kWh Gross

- 8% Assumed Plant Degradation

Gross Annual Average CO2 Efficiency with SU/SD and Degradation = (~~7743~~ 7784 btu/kWh / (1 - 0.08)) = ~~8416~~ 8461 Btu LHV / kWh Gross

- Annual Average CO2 Efficiency with SU/SD and Degradation
  (~~8417~~ 8461 btu/kWh * 1000 kWh/MWh * 1.1 HHV/LHV * 1*10-6 MMBtu/Btu * 53.02 kg CO2/MMBtu-HHV * 2.205 lb/kg) = ~~1082~~ 1088 lb CO2 /MWh Gross

Please confirm that the 1088 lb CO2/MWh_{gross} is correct.

Response: The difference between the SCAQMD's greenhouse gas (GHG) efficiency calculations and those included in our January 11, 2013 letter is 0.6 percent, which represents rounding errors in the data used to calculate the GHG efficiency. Given the very small discrepancy between the two calculations, AES suggests using the SCAQMD's GHG efficiency of 1,088 pounds of carbon dioxide per megawatt-hour on a gross basis (lb CO_2/MWh_{gross}).

b. Conversion from Gross Basis to Net Basis

Item 3.a. of your 5/9/13 response letter indicated the 1082 lbs CO2/MWh_{gross} converts to 1125 lbs CO2/MWh_{net} based on a 3% parasitic electric load. With a 3% parasitic load only, the 1082 lbs CO2/MW_{gross} converts to 1115 lbs CO2/MWh_{net}, not 1125 lbs CO2/MWh_{net}. Since it does not appear to be 3%, please explain the basis for converting the 1082 lbs CO2/MWh_{gross} to 1125 lbs CO2/MWh_{net}.

Response: We used a more refined method to convert the GHG efficiency from a gross output basis to a net output basis by converting all of the heat rates from a gross basis to a net basis (including start and stop heat rates). This calculation is presented below.

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7,798 Btu/kWh + 1,600 hrs * 7,580 Btu/kWh + 730 hrs * 7,577 Btu/kWh + 19,379 Btu/kWh * 52.5 hrs + 17,542 Btu/kWh * 55.4 hrs)/(2,455 hrs + 52.5 hrs + 55.4 hrs) = 8,047 Btu LHV/kWh_{net}

- 8% Assumed Plant Degradation
  Gross Annual Average CO_2 Efficiency with SU/SD and Degradation = (8,047 Btu/kWh / (1 - 0.08)) = 8,747 Btu LHV/kWh_{net}

- Annual Average CO_2 Efficiency with SU/SD and Degradation.
  (8,747 Btu/kWh * 1,000 kWh/MWh * 1.1 HHV/LHV * $1*10^{-6}$ MMBtu/Btu * 53.02 kg CO_2/MMBtu HHV * 2.205 lb/kg) = 1,125 lb CO_2/MWh_{net}

c. Capacity Factor for Permitted Operating Profile

Item 5.b.i. of your 3/15/13 response letter provided emission rate calculations for the permitted operating profile. I had performed a preliminary capacity factor calculations based on the information provided in Table AQMD-5b-1 to verify that the capacity factor for the permitted operating profile is below 60% and was not a completeness issue.

To avoid applicability of the GHG Emission Performance Standard of 1,100 lbs CO2/MWh, there will be a permit condition limiting the annualized plant capacity to less than 60 percent. In addition, I will include capacity factor calculations for the expected operating profile and the permitted operating profile in my evaluation. Item 3.b. of your 5/9/13 response letter provided Table AQMD-2—RBEP GHG Performance at a 60 Percent Capacity Factor.

To ensure accuracy in my evaluation (PDOC/FDOC), please provide the following:

i. Please provide capacity factor calculation for the expected operating profile.

Response: The expected capacity factor for the expected operating profile is presented below.

Weighted Annual Capacity Factor
RBEP at Expected Operating Profile
(125 hrs * 151,346 kW + 1,600 hrs * 300,575 kW + 730 hrs * 414,031 kW + 2.52 kW * 52.5 hrs + 0.49 kW * 55.4 hrs) = 802,081,040 kWh/Year

RBEP Theoretical Capacity
(8,652.1 hrs * 414,031 kW + 2.52 kW * 93.6 hrs + 0.49 kW * 98.8 hrs) = 3,582,237,899 kWh/Year

Capacity Factor = 802,081,040 kWh/Year / 3,582,237,899 kWh/Year * 100 = 22.4 percent

ii. Please provide capacity factor calculation for the permitted operating profile.

Response: The capacity factor for the permitted operating profile is presented below. This permitted capacity factor is based on the same percentage of operating time in a 1x1 (300.4 hours), 2x1 (3845.2 hours), and 3x1 (1754.4 hours) configuration with the weighted electrical production for unfired operating rates. Duct burner operating hours were evenly split between the 1x1 and 2x1 operating configurations (235 hours each) as RBEP is not capable of firing the duct burners at full capacity in all three heat recovery steam generators simultaneously.

Weighted Annual Capacity Factor
RBEP at Permitted Operating Profile
(300.4 hrs * 138,291 kW + 235 hrs duct firing * 203,570 kW + 3,845.2 hrs * 283,741 kW + 235 hours duct firing * 367,913 kW + 1,754.4 hrs * 414,031 kW + 2.52 kW * 93.6 hrs + 0.49 kW * 98.8 hrs) = 1,993,252,000 kWh/Year

RBEP Theoretical Capacity
(8,652.1 hrs * 414,031 kW + 2.52 kW * 93.6 hrs + 0.49 kW * 98.8 hrs) = 3,582,237,899 kWh/Year

Capacity Factor = 1,993,252,000 kWh/Year / 3,582,237,899 kWh/Year * 100 = 55.6 percent

Jerry Salamy
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CH2M HILL/Sacramento
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Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Wednesday, August 07, 2013 7:38 AM
To: Salamy, Jerry/SAC
Cc: stephen.okane@AES.com; Madams, Sarah/SAC; Engel, Elyse/SJC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Jerry,

Thank you very much for providing responses to Items 1 and 2 so expeditiously, which allowed me to complete the modeling review request memo for Tom Chico and Jillian Baker. I look forward to receiving the remainder of the responses. As I continue working on the engineering evaluation/PDOC, I am developing a separate second list of clarifying questions. Thank you for your assistance.

Vicky Lee
Air Quality Engineer
909-396-2284

From: Jerry.Salamy@CH2M.com [mailto:Jerry.Salamy@CH2M.com]
Sent: Monday, August 05, 2013 2:17 PM
To: Vicky Lee
Cc: stephen.okane@AES.com; Sarah.Madams@CH2M.com; Elyse.Engel@ch2m.com
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Vicky,

Below are AES's responses to Items 1 and 2. The remainder of the responses should be submitted this week.

1. Modeling

The Operation Impacts Analysis on pg. 5.1-23 of the Application for South Coast Air Quality Management District (SCAQMD) Permit to Construct and Modification to the Title V Permit to Operate ("Application") did not provide a discussion of the following. Please provide the following so that the modeling review request memo is correct.

a. For the 1-hour averaging time:

i. Was the dispersion modeling for oxides of sulfur (SOx) based on one turbine operating or all three turbines operating?

Response: The Redondo Beach Energy Project (RBEP) operational SOx impacts presented in the Application are based on all three turbines operating.

ii. If for one turbine, why is the 1-hour for oxides of nitrogen (NOx) and carbon monoxide (CO) based on three turbines?

Response: The RBEP operational NOx and CO impacts presented in the Application are based on all three turbines operating, with the exception of Rule 2005 NOx impacts shown in Table 5.1-30 as Rule 2005 limits are on a per permit unit basis.

b. For the 3-hour averaging time:

i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

Response: The RBEP 3-hour averaging time operational SOx impacts presented in the Application are based on all three turbines operating.

c. For the 24-hour averaging time:

i. Was the dispersion modeling for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) and particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) based on one turbine operating or all three turbines operating?

Response: The RBEP 24-hour operational PM_{10} and $PM_{2.5}$ impacts presented in the Application are based on all three turbines operating.

ii. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

Response: The RBEP 24-hour averaging time operational SOx impacts presented in the Application are based on all three turbines operating.

d. For the annual averaging time:

i. Was the dispersion modeling for NOx based on one turbine operating or all three turbines operating?

Response: The RBEP annual operational NOx impacts presented in the Application are based on all three turbines operating, with the exception of Rule 2005 NOx modeling impacts shown in Table 5.1-30 as Rule 2005 limits are on a per permit unit basis.

ii. Was the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?

Response: The RBEP annual operational PM_{10} and $PM_{2.5}$ impacts presented in the

Application are based on all three turbines operating.

2. Health Risk Assessment

In your letter dated 3/15/13 in response to our letter dated 2/8/13, item 7.b. provided (1) Table 5.1B.5bR (BASIS: AP-42 EMISSION FACTORS PER SCAQMD), Summary of Turbine Operation Emissions – Air Toxics; (2) Table AQMD-2R—RBEP Health Risk Assessment Summary: Individual Units (BASIS: AP-42 Emission Factors); and (3) compact disk containing the associated revised HARP input and output files, dated March 2013. These tables and HARP input/output files reflected the change from CATEF emission factors and 120 ppb formaldehyde (basis for AFC), to AP-42 emission factors and 3.60E-04 lb/MMBTU formaldehyde emission factor requested by the SCAQMD.

Please provide the following so I may include in my modeling review request memo, and health risk assessment evaluation.

a. Table AQMD-2R is an abbreviated table that provides only the revised MICR at the PMI, Chronic Hazard Index at the PMI, and Acute Hazard Index at the PMI.

Please provide an update to the following information in the AFC: (1) Table 5.9-3—"Health Risk Assessment Summary: Individual Units"; (2) Table 5.9-4—Health Risk Assessment Summary: Facility"; and (3) Section 5.9.3.1.4—" Summary of Air Toxic Exposure Assessment Results as appropriate to assist Jillian Baker with her modeling review.

Response: Below is the updated Application Section 5.9.3.1.4, which includes updated Tables 5.9-3 and 5.9-4.

Updated Application Section 5.9.3.1.4:

A summary of the MICR, chronic health index, and acute health index at the point of maximum impact (PMI) locations, as well as the maximum predicted public health impacts for worker, residential, and sensitive receptors, has been included in Table 5.9-3 and Table 5.9-4. In accordance with SCAQMD Rule 1401, the results in Table 5.9-3 represent the predicted risk for each individual emission unit, while the results in Table 5.9-4 represent a comparison of the total predicted RBEP impact to the SCAQMD California Environmental Quality Act (CEQA) significance thresholds. The receptor grid used to evaluate the predicted impacts is included in Appendix 5.1C.

As presented in Table 5.9-3, the predicted MICR at the PMI for an individual turbine is approximately 0.73 in 1 million.[1] The maximum impact is located approximately 260 meters east-northeast of the project boundary. The predicted MICR for the maximum exposed individual resident (MEIR), which is approximately 330 meters east-northeast of the project boundary, is predicted to be 0.70 in 1 million (Derived Adjusted) for an individual turbine; and the predicted MICR for the maximum exposed individual worker (MEIW), which is located approximately 260 meters east-northeast of the project boundary, is predicted to be 0.13 in 1 million for an individual turbine. The predicted MICR at the maximum exposed sensitive receptor is predicted to be 0.46 in 1 million (Derived Adjusted) for an individual turbine. Overall, the predicted MICR for the MEIR, MEIW, and the sensitive receptors is below the individual source significance threshold of 1 in 1 million. Therefore, based on SCAQMD Rule 1401, the predicted incremental increase in cancer risk from each individual turbine will be less than significant, and Best Available Control Technology for Toxics (T-BACT) would not be required. However, while not required, the emission control technologies included in this project are considered to be T-BACT.

The maximum chronic hazard index for an individual turbine at the PMI is predicted to be 0.0022, which is located approximately 260 meters east-northeast of the project boundary. The maximum acute hazard index for an individual turbine at the PMI is predicted to be 0.022, which is located on the east side of the facility fence line. The predicted chronic and acute indices are well below the SCAQMD individual source significance threshold of 1.0. Therefore, the predicted impact from each individual turbine will be less than significant, and T-BACT will not be required. However, as previously noted, the emission control technologies included in this project are considered to be T-BACT.

TABLE 5.9-3

a

Health Risk Assessment Summary: Individual Units

Risk[b]	Turbine 1	Turbine 2	Turbine 3
Derived Cancer Risk at the PMI[c] (per million)	0.73	0.67	0.66
Derived Adjusted Cancer Risk at the PMI[d] (per million)	0.71	0.65	0.65
Derived Adjusted Cancer Risk at the MEIR[d] (per million)	0.70	0.65	0.65
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor [d] (per million)	0.46	0.42	0.41
Derived Cancer Risk at the MEIW[c] (per million)	0.13	0.12	0.12
Chronic Hazard Index at the PMI	0.0022	0.0020	0.0020
Resident Chronic Hazard Index	0.0022	0.0020	0.0020
Worker Chronic Hazard Index	0.0022	0.0020	0.0020
Chronic Hazard Index at Sensitive Receptor	0.0014	0.0013	0.0013
Acute Hazard Index at the PMI	0.022	0.015	0.011
Resident Acute Hazard Index	0.010	0.010	0.0094
Worker Acute Hazard Index	0.022	0.015	0.011
Acute Hazard Index at Sensitive Receptor	0.011	0.012	0.0093

[a] The results in Table 5.9-3 represent the predicted excess risk for each individual emission unit in accordance with SCAQMD Rule 1401.

[b] A source with an excess MICR less than 1 in 1 million individuals is considered to be less than significant. A chronic or acute hazard index less than 1.0 for each source is considered to be a less-than-significant health risk.

[c] Cancer risk values are based on the OEHHA Derived Methodology.

[d] Risk values are based on the Derived Adjusted Methodology.

A risk analysis was also performed to evaluate the potential facility-wide impacts. The potential health impacts at the PMI, the MEIR, the MEIW, and sensitive receptors resulting from RBEP operation are summarized in Table 5.9-4.

It should be noted that the maximum impacts reported in Table 5.9-4 represent the maximum predicted impacts at one receptor from all sources combined. In contrast, the maximum impacts reported for each individual source in Table 5.9-3 may occur at different receptors. Therefore, the RBEP totals in Table 5.9-3 are not directly additive and should not be directly compared to the results presented in Table 5.9-4.

TABLE 5.9-4
Health Risk Assessment Summary: Facility[a]

Risk[b]	Receptor Number	Value
Derived Cancer Risk at the PMI[c]	767	2.1 per million
Derived Adjusted Cancer Risk at the PMI[d]	767	2.0 per million
Derived Adjusted Cancer Risk at the MEIR[d]	799	2.0 per million
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor[d]	9859	1.3 per million
Derived Cancer Risk at the MEIW[c]	767	0.36 per million
Chronic Hazard Index at the PMI	767	0.0063
Resident Chronic Hazard Index	799	0.0062
Worker Chronic Hazard Index	767	0.0063
Chronic Hazard Index at Sensitive Receptor	9859	0.0040
Acute Hazard Index at the PMI	21	0.042
Resident Acute Hazard Index	758	0.028
Worker Acute Hazard Index	21	0.042
Acute Hazard Index at Sensitive Receptor	9855	0.032

[a] The results in Table 5.9-4 represent the combined predicted risk for all three turbines operating simultaneously.

[b] A facility with an overall individual increase in cancer risk (MICR) less than 10 in 1 million individuals is considered to be less than significant. A facility chronic or acute hazard index less than 1.0 is considered to be a less-than-significant health risk.

[c] Cancer risk values represent the OEHHA Derived Methodology.

[d] Risk values represent the Derived Adjusted Methodology.

The predicted incremental increase in cancer risk at the PMI associated with RBEP is approximately 2.1 in 1 million[2] and is approximately 310 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk at the MEIR is predicted to be 2.0 in 1 million (Derived Adjusted). The receptor location for the MEIR is about 330 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk for the MEIW, which is located approximately 310 meters east-northeast of the project boundary, is predicted to be 0.36 in 1 million. The predicted incremental increase in cancer risk at the maximum exposed sensitive receptor is predicted to be 1.3 in 1 million (Derived Adjusted) located 0.7 kilometers east, northeast of the site. The predicted MICR for the MEIR, MEIW, and the sensitive receptors is below the facility-wide significance threshold of 10 in 1 million. Therefore, based on SCAQMD CEQA significance thresholds, the predicted incremental increase in cancer risk associated with the project will be less than significant.

The maximum chronic hazard index increment at the PMI is predicted to be 0.0063. The maximum predicted chronic impact is located approximately 310 meters east-northeast of the project boundary. The maximum acute hazard index at the PMI is predicted to be approximately 0.042. The maximum predicted acute impact is located along the east RBEP fence line. The chronic and acute index increments are below the project significance threshold of 1.0.

The predicted chronic and acute indices are well below the SCAQMD project significance threshold of 1.0. Therefore, the predicted impact from the project will be less than significant.

[1] All cancer risk values presented represent the 70-year Office of Environmental Health Hazard Assessment (OEHHA) Derived methodology, unless noted.

[2] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

b. Table 5.9-3

i. In Table 5.9-3, the derived cancer risk at the PMI for Turbine 1 is 0.088 x 10^{-6} and the derived adjusted cancer risk at the PMI is 0.07 x 10^{-6}.

aa. What is the difference between "derived" and "derived adjusted"?

Response: The SCAQMD's Risk Assessment Procedures for Rules 1401 and 212[1] indicate that the "Derived (OEHHA)" cancer risk method uses the high-end point-estimates of exposure whereas the "Derived (Adjusted)" cancer risk method uses the breathing rate at the 80th percentile of exposure rather than the high-end point-estimate when the inhalation pathway is one of the dominant exposure pathways.

[1] http://www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf

bb. Please explain which MICR is required for Rule 1401 compliance.

Response: The SCAQMD's Risk Assessment Procedures for Rules 1401 and 212 specify that the MICR be based on the derived adjusted value.

ii. In Table AQMD-2R, the MICR at the PMI for Turbine 1 is 0.73 x 10^{-6}. The 0.73 x 10^{-6} is significantly higher than the corresponding 0.088 x 10^{-6} in Table 5.9-3. Please explain which is correct.

Response: The public health risk values presented in Table 5.9-3 of the Application were based on the RBEP Toxic Air Contaminant (TAC) emissions estimates using emission factors from the Air Resources Board's California Toxic Emission Factors (CATEF). The public health risk values presented in Table AQMD-2R are based on the SCAQMD's December 21, 2012 request that the RBEP TAC emissions be estimated using the Environmental Protection Agency's AP-42 emission factors and the SCAQMD's February 8,

2013 request that a revised health risk assessment be prepared using the AP-42 based RBEP TAC emissions and a formaldehyde emission factor of 3.6×10^{-4} pounds per million British thermal units (lb/MMBtu). In our opinion, either public health risk value is correct as they only differ in the manner in which the TAC emissions were estimated. However, if the SCAQMD believes that the AP-42 emissions factors, combined with a formaldehyde emission factor of 3.6×10^{-4} lb/MMBtu, are more appropriate, then the 0.73×10^{-6} MICR is the value that should be used.

Please let me know if you have any questions.
Thanks,

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Thursday, July 25, 2013 2:26 PM
To: Stephen O'Kane
Cc: Salamy, Jerry/SAC
Subject: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Stephen O'Kane, AES--
Jerry Salamy, CH_2M Hill--

Thank you for providing the additional information we requested to deem the applications complete. Since this type of project is extensively reviewed, I would like to ask the following clarifying questions to ensure my understanding is correct.

If at all possible, please provide responses to items 1 and 2 BEFORE the responses to the remaining questions because Jillian Baker and Tom Chico are waiting for my modeling review request memo for the RBEP project.

1. Modeling
   The Operation Impacts Analysis on pg. 5.1-23 of the Application for SCAQMD Permit to Construct and Modification to the Title V Permit to Operate ("Application") did not provide a discussion of the following. Please provide the following so that modeling review request memo is correct.

   a. For the 1-hr averaging time--
      i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?
      ii. If for one turbine, why is the 1-hr for NOx and CO based on three turbines?

   b. For the 3-hr averaging time—
      i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   c. For the 24-hr averaging time—
      i. Were the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?
      ii. Were the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   d. For the annual averaging time—
      i. Was the dispersion modeling for NOx based on one turbine operating or all three turbines operating?
      ii. Was the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or

all three turbines operating?

2. Health Risk Assessment

In your letter dated 3/15/13 in response to our letter dated 2/8/13, item 7.b. provided (1) Table 5.1B.5bR (BASIS: AP-42 EMISSION FACTORS PER SCAQMD), Summary of Turbine Operation Emissions – Air Toxics; (2) Table AQMD-2R—RBEP Health Risk Assessment Summary: Individual Units (BASIS: AP-42 Emission Factors); and (3) compact disk containing the associated revised HARP input and output files, dated March 2013. These tables and HARP input/output files reflected the change from CATEF emission factors and 120 ppb formaldehyde (basis for AFC), to AP-42 emission factors and 3.60E-04 lb/MMBTU formaldehyde emission factor requested by the SCAQMD.

Please provide the following so I may include in my modeling review request memo, and health risk assessment evaluation.

a. Table AQMD-2R is an abbreviated table that provides only the revised MICR at the PMI, Chronic Hazard Index at the PMI, and Acute Hazard Index at the PMI.

Please provide an update to the following information in the AFC: (1) Table 5.9-3—"Health Risk Assessment Summary: Individual Units"; (2) Table 5.9-4—Health Risk Assessment Summary: Facility"; and (3) Section 5.9.3.1.4—"Summary of Air Toxic Exposure Assessment Results as appropriate to assist Jillian Baker with her modeling review.

b. Table 5.9.-3

i. In Table 5.9-3, the derived cancer risk at the PMI for Turbine 1 is 0.088×10^{-6} and the derived adjusted cancer risk at the PMI is 0.07×10^{-6}.

aa. What is the difference between "derived" and "derived adjusted"?

bb. Please explain which MICR is required for Rule 1401 compliance.

ii. In Table AQMD-2R, the MICR at the PMI for Turbine 1 is 0.73×10^{-6}. The 0.73×10^{-6} is significantly higher than the corresponding 0.088×10^{-6} in Table 5.9-3. Please explain which is correct.

3. Facility Permit Equipment Description

How would you like the three new turbines to be designated (numbered) in the facility permit equipment description (e.g., Turbine Nos. 1, 2, 3, or Turbine Nos. A, B, C)?

4. MW Rating

Pg. 1 of your cover letter dated 11/21/12 for the Application indicates the RBEP is rated at a nominal generating capacity of 496 MW and maximum 530 MW. Pg. 2-2 of the Application indicates a net generating capacity of 496 MW and gross generating capacity of 511 MW, with each CTG rated at 119 MW nominal and the STG rated at 151 MW. Pg. 2-16 indicates each CTG will generate 199 MW (gross) at SAAT conditions and the STG will produce 151 MW (gross). Form 400-E-12 indicates the STG is rated at 152 MW. Therefore, I need clarification.

Please provide the following data for RBEP. (You had provided similar information for the HBEP in your 10/23/12 letter to Chris Perri.)

	ISO 59 F- 60% RH (Evaporative Cooling Off)	106 F-9.6% RH (Evaporative Cooling On, Case 13)	33 F – 93.8% RH (Evaporative Cooling Off, Case 2)	63.3 F – 75.2% RH (Evaporative Cooling On, Case 7)
Gas Turbine Heat Input, mmbtu/h HHV				

Total Heat Input, mmbtu/h HHV (w/duct fire)				
Gas Turbine Gross Output, kW				
Steam Turbine Gross Output, kW				
Total Gross Power Output, kW				
Net Power Output, Kw				
Net Plant Heat Rate, btu/kWh, LHV				
Net Plant Heat Rate, btu/kWh, HHV				

5. Emissions Calculations

On pg. 5.1-16, Table 5.1-17—"RBEP Facility Emissions" provides values for Average Daily Facility Emissions, lb/day. Footnote b indicates the average daily emissions represents the maximum monthly total divided by 30 days. Thus my understanding is that these values are the sum of the 30-day averages ("30-DA") for three turbines. My calculated 30-day averages for pollutants other than PM_{10} do not match the Average Daily Facility Emissions in Table 5.1-17. Therefore, I am providing my calculations below and requesting clarification regarding how the calculations to derive the "Average Daily Facility Emissions" differ.

a. CO

My calculations are as follows:

5 cold starts, 25 warm starts, 60 hot starts, 90 shutdowns
489.5 hr of operation at 100% load, 63.3 °F ambient, without duct burner
186 hr of operation at 100% load, 63.3 °F ambient, with duct burner

CO, lb/month = (5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.02 lb/hr) + (186 hr) (8.27 lb/hr) = 12,307.51 lb/month

30-DA = (12,307.51 lb/month) (month/30 days) = 410.25 lb/day

From Table 5.1-17:

30-DA = 1258 lb/day for three turbines → 419.33 lb/day

***Please provide emissions calculations for the 419.33 lb/day.

b. NOx

My calculations are as follows:

NOx, lb/month = (5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (9.89 lb/hr) + (186 hr) (13.59 lb/hr) = 9733.40 lb/month

30-DA = (9733.40 lb/month) (month/30 days) = 324.45 lb/day

From Table 5.1-17:

30-DA = 1018 lb/day for three turbines → 339.33 lb/day

***Please provide emissions calculations for the 339.33 lb/day.

c. PM

10

My calculations are as follows:

-

PM_{10}, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (4.5 lb/hr) + (25 warm starts)
(32.5 min/warm start) (hr/60 min) (4.5 lb/hr) + (60 hot starts)
(32.5 min/hot start) (hr/60 min) (4.5 lb/hr) + (90 shutdowns)
(10 min/shutdown) (hr/60 min) (4.5 lb/hr) + (489.5 hr) (4.5 lb/hr) +
(186 hr) (9.5 lb/hr) = 4278.19 lb/month

30-DA = (4278.19 lb/month) (month/30 days) = 142.60 lb/day

From Table 5.1-17:

30-DA = 428 lb/day for three turbines → 142.67 lb/day

***Please confirm that your emissions calculations for the 142.67 lb/day are the same as mine.

d. SO_2

My calculations are as follows:

SO_2, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (1.84 lb/hr) + (25 warm starts)
(32.5 min/warm start) (hr/60 min) (1.84 lb/hr) + (60 hot starts)
(32.5 min/hot start) (hr/60 min) (1.84 lb/hr) + (90 shutdowns)
(10 min/shutdown) (hr/60 min) (1.84 lb/hr) + (489.5 hr) (1.84 lb/hr) +
(186 hr) (2.51 lb/hr) = 1493.66 lb/month

30-DA = (1493.66 lb/month) (month/30 days) = 49.79 lb/day

From Table 5.1-17:

30-DA = 158.5 lb/day for three turbines → 52.83 lb/day

***Please provide emissions calculations for the 52.83 lb/day.

e. VOC

My calculations are as follows:

VOC, lb/month = (5 cold starts) (27.9 lb/cold start) + (25 warm starts)
(21 lb/warm start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns)
(31.0 lb/shutdown) + (489.5 hr) (1.72 lb/hr) + (186 hr) (2.36 lb/hr)
= 5959.40 lb/month

30-DA = (5959.40 lb/month) (month/30 days) = 198.65 lb/day

From Table 5.1-17:

30-DA = 604 lb/day for three turbines → 201.33 lb/day

***Please provide emissions calculations for the 201.33 lb/day.

6. Costs

a. Capital Costs

On pg. 3-17, Section 3.2.2.4.1—Carbon Capture and Sequestration of the Application states

the estimated RBEP capital cost is $250 million to $275 million for the plant and equipment. However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage, footnote a to Table AQMD-7A-1 states the RBEP capital costs is based on $510 million.

Please provide the updated capital cost of RBEP for my evaluation on Carbon Capture and Storage.

b. O & M Costs—Ask John if need.

On pg. 5.10-11, Section 5.10.3.4.4—Impacts on the Local Economy and Employment of the Socioeconomics section of the AFC indicates the RBEP annual non-payroll operations and maintenance budget is expected to be approximately $2,515,000 (in 2012). However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage indicates a variable O&M cost of $3,255,070/yr, a fixed O&M of $3,066,000/yr, for a total annual O&M of $6,321,070/yr.

Please provide the updated O&M cost for my evaluation on Carbon Capture and Storage.

7. Thermal Efficiency Calculations

My evaluation will need to show that the 1100 lbs CO2/MW_{net} standard is not applicable since I have been receiving a number of questions.

a. Expected Operating Profile

Item 7 of your 1/11/13 response letter provided supporting calculations for the thermal efficiency of 1082 lbs CO2/ MWh_{gross} for the expected operating profile. I reviewed the plant CO2 efficiency calculation in Table AQMD-5. I think there is a math error and the 1082 lbs CO2/MWh_{gross} should actually be 1088 lbs CO2/MW-hr $_{gross}$, as shown below.

Plant CO2 Efficiency Calculation

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7564 Btu/kWh + 1600 hrs * 7353 btu/kWh + 730 hrs * 7350 btu/kWh + 18267 btu/kWh * 52.5 hrs + 16520 btu/kWh * 55.4 hrs)/(2455 hrs + 52.5 hrs + 55.4 hrs)
  = ~~7743~~ 7784 Btu LHV / kWh Gross

- 8% Assumed Plant Degradation
  Gross Annual Average CO2 Efficiency with SU/SD and Degradation = (~~7743~~ 7784 btu/kWh / (1 - 0.08)) = ~~8416~~ 8461 Btu LHV / kWh Gross

- Annual Average CO2 Efficiency with SU/SD and Degradation
  (~~8417~~ 8461 btu/kWh * 1000 kWh/MWh * 1.1 HHV/LHV * 1*10-6 MMBtu/Btu * 53.02 kg CO2/MMBtu-HHV * 2.205 lb/kg) = ~~1082~~ 1088 lb CO2 /MWh Gross

Please confirm that the 1088 lb/CO2/MWh_{gross} is correct.

b. Conversion from Gross Basis to Net Basis

Item 3.a. of your 5/9/13 response letter indicated the 1082 lbs CO2/MWh_{gross} converts to 1125 lbs CO2/MWh_{net} based on a 3% parasitic electric load. With a 3% parasitic load only, the 1082 lbs CO2/MW_{gross} converts to 1115 lbs CO2/MWh_{net}, not 1125 lbs CO2/MWh_{net}. Since it does not appear to be 3%, please explain the basis for converting the 1082 lbs CO2/MWh_{gross} to 1125 lbs CO2/$MWh_{net.}$

c. Capacity Factor for Permitted Operating Profile

Item 5.b.i. of your 3/15/13 response letter provided emission rate calculations for the permitted operating profile. I had performed a preliminary capacity factor calculations based on the information provided in Table AQMD-5b-1 to verify that the capacity factor for the permitted operating profile is below 60% and was not a completeness issue.

To avoid applicability of the GHG Emission Performance Standard of 1,100 lbs CO2/MWh,

there will be a permit condition limiting the annualized plant capacity to less than 60 percent. In addition, I will include capacity factor calculations for the expected operating profile and the permitted operating profile in my evaluation. Item 3.b. of your 5/9/13 response letter provided Table AQMD-2—RBEP GHG Performance at a 60 Percent Capacity Factor.

To ensure accuracy in my evaluation (PDOC/FDOC), please provide the following:

i. Please provide capacity factor calculation for the expected operating profile.

ii. Please provide capacity factor calculation for the permitted operating profile.

Thank you for your assistance. Again, please provide the responses to items 1 and 2 as soon as you can.

Vicky Lee
Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive, 3rd Floor
Diamond Bar, CA 91765
909-396-2284
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[1] http://bv.com/docs/reports-studies/nrel-cost-report.pdf

[2] California Code of Regulations (CCR), Chapter 11, Article 1,§ 2902 Greenhouse Gases Emission Performance Standard (b)

[1] All cancer risk values presented represent the 70-year Office of Environmental Health Hazard Assessment (OEHHA) Derived methodology, unless noted.

[2] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

[1] http://www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf

From:	Salamy, Jerry/SAC
To:	"Vicky Lee"; "Stephen O"Kane"
Cc:	Madams, Sarah/SAC; Engel, Elyse/SJC
Subject:	RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions Set Three
Date:	Monday, October 14, 2013 2:21:00 PM
Attachments:	RBEP_SCAOMD_#17bii.xlsx RBEP_1304_1Calculator.xls

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Hi Vicky,

Below are AES's responses to your questions.

16. Ammonia Emissions

I am trying to reproduce the hourly and annual emissions for ammonia provided in Response Letter No. 2, dated 3/15/13, item 3.b., Table 5.1B.5bR on pg. 4. The reason is that I show emissions calculations in my evaluation.

-

a. Hourly Emissions

Since the hourly emissions for the other compounds are based on an emissions rate of 1999 MMBtu/hr (maximum hourly heat input per turbine with duct burner), I assumed that was also the emissions rate for ammonia. My calculations are as follows:

$$\text{Ammonia, lb/hr} = (1{,}999{,}000{,}000\ \text{Btu/hr})\ (8710\ \text{dscf}/10^6\ \text{Btu})(5\ \text{ppm}\ NH_3\ \text{BACT}\ /10^6)\ (20.9/(20.9\text{-}15.0))\ (17\ \text{lbs}\ NH_3/385\ \text{scf}) = 13.6\ \text{lb/hr}$$

Since your table shows 13.2 lb/hr, how are your emissions calculations different?

Response: The difference in your calculation and the reported ammonia emissions are a function of mathematical rounding. The ammonia concentration that equates to the 13.2 pounds per hour emission rate is 4.86 parts per million by volume dry (ppmvd) corrected to 15 percent oxygen, which was rounded up to 5 ppmvd corrected to 15 percent oxygen.

b. Annual Emissions

I cannot figure out the basis for the annual emissions of 85,844 lb/yr presented in the table. Presumably, the ammonia injection is not operating during some part of the start-ups and shutdowns. Please provide emissions calculations for the 85,844 lb/yr. The accompanying explanations must be sufficient to allow me to calculate the maximum monthly emissions which will be on the public notice.

Response: The intent of Table 5.1B.5bR was to estimate the maximum potential toxic air contaminants (TAC) for use in a health risk assessment. As such, Table 5.1B.5bR provides a conservative estimate of RBEP's TAC emissions. The ammonia emissions of 85,844 lb/year per turbine was calculated by multiplying the annual average operating conditions[1] ammonia emission rate by the sum of the operating hours, including start up and shutdown hours. The calculation is 12.56 pounds of ammonia/hour (rounded from 12.55947 lb/hr) multiplied by 6835 hours/year (5900 +470+ 465).

17. VOC BACT and Emissions

a. VOC BACT

The AFC proposed VOC emissions limits of 1.0 ppmvd at 15% O2, 1-hr average (without duct burner) and 1.0 ppmvd @ 15% O2, 3-hr average (with duct burner). The guarantee provided by Vogt Power International, in a letter dated 11/13/12, is for 1 ppmvd at 15% O2. The current SCAQMD BACT/LAER limit is 2 ppmvd at 15% O2, and does not differentiate between operation without and with duct burner.

The AFC explained that the VOC limit of 1 ppmvd at 15% O_2 was derived from the EPA RACT/BACT/LAER Clearinghouse and the CEC. As John Yee explained in our meeting on 2/21/13, the 1 ppmvd at 15% O_2 limits for the non-SCAQMD projects are based on a VOC test method that is not recognized by the SCAQMD. Using the District-approved method for VOC (Method 25.3 or the alternate approved method) which will be required to be used by permit condition, there is a likelihood that the RBEP turbines will be unable to consistently meet the proposed 1.0 ppmvd at 15% O2.

Please let me know whether RBEP wishes to stay with the proposed 1 ppmvd (but at 1-hr averaging time for both operation with and without duct burner, not the proposed 1-hr without duct burner and 3-hr with duct burner), or whether RBEP wishes to go with the current BACT/LAER limit for VOC of 2 ppmv at 15% O2, 1-hr averaging.

Response: AES prepared and submitted a best available control technology (BACT) analysis for RBEP based on EPA's "Top Down" methodology. In this analysis, AES proposed a VOC emission rate of 1 ppmvd at 15 percent oxygen. However, if the District determines that the RBEP turbine VOC BACT limit is 2 ppmvd at 15 percent oxygen, then AES readily accepts this determination.

b. VOC Emissions

i. Startup and shutdown emissions

Based on 1 ppm BACT, the AFC provides the following emissions: (1) 27.9 lb/cold start, (2) 21 lb/warm start, (3) 20.4 lb/hot start, and (4) 31.0 lb/shutdown. If you wish to go with the current BACT/LAER limit of 2 ppm VOC, please provide revised emissions per event. Please explain if the emissions remain the same per event.

Response: The start up and shutdown VOC emissions are not expected to change if the District determines BACT/LAER is 2 ppm.

ii. Operating Emissions Rates

I am reproducing a portion of the following table in the PDOC: Table 5.1B.2—MPSA 501DA Performance Data found in Appendix 5.1B—Operational and Commissioning Emission Calculations. If you wish to proceed with the 2 ppmvd BACT level, please provide revisions to the Stack VOC Emissions with the Effects of Catalytic Reduction (CO Catalyst) entries to reflect the 2 ppm BACT.

Response: Attached is a revised Table 5.1B.2 showing the stack VOC emissions at 2 ppmvd BACT level.

18. Maximum Daily Emissions

a. As typical, there will be a maximum daily emissions section in the PDOC. I reviewed Table 5.1B.4—Summary of Turbine Operation Emissions—Criteria Pollutants found in Appendix 5.1B—Operational and Commissioning Emission Calculations. This table provides maximum daily emissions for each of the 15 cases, with each case assuming one cold start, two warm starts, and three shutdowns. Accordingly, the maximum daily emissions section in the PDOC will be based on the one cold start, two warm starts, and three shutdowns. Please provide a breakdown for the normal operating hours for realistic maximum daily emissions, i.e., hours for Case 1 (duct burner) and hours for Case 2 (no duct burner). The purpose is primarily informational, but the number of startups/shutdowns per day will be limited to three pursuant to a permit condition.

Response: The breakdown for the normal operating hours for a realistic maximum daily emissions estimate are 6.2 hours/day for Case 1 duct burner firing and 14.72 hours/day for Case 2 no duct burner firing combined with 1 cold start, 2 warm starts, and 3 shutdowns (3.08 start/shutdown hours).

19. Maximum Monthly Emissions

a. Commissioning

Pg. 5.1-12 states that the total duration of the commissioning period is expected to take up to 180 days, with each turbine anticipated to take 491 hours. Maximum hourly and event commissioning emission rates were provided. A statement was made that the annual impacts for commissioning were not evaluated because the commissioning is expected to be completed within 180 days and the combined commissioning and operational emissions for a rolling 12-month period are not expected to exceed the maximum permitting annual emissions.

For New Source Review offset purposes, we are concerned with monthly emissions, not annual emissions, for the criteria pollutants (except NOx). Therefore, I need to know how the commissioning is expected to take place.

Response: AES requests the District issue monthly emission limits for the RBEP facility. This request is due to the fact that the RBEP offset liability is based on the combined emissions of non-attainment pollutants and not on the monthly emissions of each permit unit. Furthermore, the RBEP permit units (turbines, duct burners, and emission control systems) are integrated to form a single electrical generating unit and AES expects to operate RBEP as a single generating unit. Therefore, a facility wide monthly emission limit is consistent with the District's New Source Review offsetting requirements.

i. First month

aa. Is a turbine expected to be commissioned in one month?

Response: The table below presents the monthly commissioning and operating emissions for all three turbines. The commissioning emissions are based on the total commissioning emissions for one turbine (presented in AFC

Appendix Table 5.1B.1) multiplied by 3. The operating emissions are based on the monthly emissions presented in our response to your question #5 (transmitted via email on August 13, 2013).

Based on the table below, the monthly VOC and CO emissions during the month of commissioning are greater than the monthly operating emissions. AES requests the ability to commission all three turbines within the same month. This provides the AES with the flexibility to make up construction schedule delays by accelerating the commissioning process if necessary.

Comparison of RBEP Monthly Operating and Commissioning Emissions for 3 Turbines

	NOx	CO	VOC	SO2	PM10/2.5
Monthly Commissioning Emissions	24,847.4	338,645.9	42,363.4	3,181.2	8,788.5
Monthly Operating Emissions	30,540.6	37,739.7	18,113.3	4,755.2	12,834.6

bb. If it is, then please provide a breakdown for the remaining days of the first month, i.e., hours under Case 1, hours under Case 2, number of cold, warm, and hot starts, and corresponding number of shutdowns. In the alternative, we can prorate the normal operating month emissions if you provide the number of days (e.g., 7 days/30 days times normal operating month emissions).

Response: Please see the response above.

ii. Second month

aa. If the turbine is not fully commissioned in the first month, then which activities will be carried over to the second month? Please reference the activities by the same designation as in Table 5.1B.1—Summary of Commissioning Emission Estimates found in Appendix 5.1B.

Response: Please see the response above.

bb. If commissioning is completed this month, the please provide a breakdown for the remaining days of the first month, i.e., hours under Case 1, hours under Case 2, number of cold, warm, and hot starts, and corresponding number of shutdowns. In the alternative, we can prorate the normal operating month emissions if you provide the number of days.

Response: Please see the response above.

cc. If the commissioning is anticipated to be completed the first month, then I will calculate the emissions for the second month based on a normal operating month.

Response: The second month emissions should be calculated based on a normal operating month.

b. Emission Factors

i. I need the natural gas heat content to determine the emission factors (lb/mmscf) that will be included as part of the monthly limit permit

condition(s). Table 5.1B.5b—Summary of Turbine Operation Emissions—Air Toxics in Appendix 5.1B used 1020 MMBtu/MMSCF. Table 5.1B.8a – 5.1B.8e—Summary of [Units 5, 6, 7, 8 and Boiler 17] Past Actual Emissions – Years 2007-2011 assumed 1030 MMBtu/hr. Table 5.1B.9b—Redondo Beach Generating Station Existing Units 5-8 and Unit 17 PTE Calculations used 1050 MMBtu/MMSCF.

For NOx, RECLAIM requires 1050 MMBtu/MMSCF. Which heat content shall be used for the other criteria pollutants?

Response: Please use 1050 MMBtu/MMSCF.

20. Greenhouse Gas Emissions Calculations

a. Table 5.1B.7—Summary of Turbine Operation Emissions—Greenhouse Gas Pollutants in Appendix 5.1B indicates the GHG emission factors are from TRC General Reporting Protocol, Default Emission Factors (January 6, 2012 update). For your information, the PDOC will use the GHG emission factors from the EPA (minor difference in emission factors).

Response: Comment noted.

b. In Table 5.1B.6—Facility Wide Natural Gas Fuel Use found in Appendix 5.1B, the "Annual Average Fuel use Per Year (MMBtu) is 9,551,981 per turbine. The 9,551,981 MMBtu appears to be derived from multiplying 1492 MMBtu/hr-turbine by 6402 hours. This 6402 hours is less than the 6835 hours of normal operation including startups and shutdowns, but greater than the 5900 hours not including startups and shutdowns. Apparently, the calculations are based on fuel usage for startups and shutdowns that are different than the fuel usage for normal operations at full load. Please explain how the 9,551,981 MMBtu/yr-turbine was calculated.

Response: The 9,551,981 MMBtu/yr-turbine was calculated by multiplying the annual average ambient[2] turbine heat input of 1398 MMBtu/hr by the total turbine operating hours including duct firing and start up/shutdown hours of 6835 (5900 turbine hours + 470 duct firing hours + 465 start up/shutdown hours). The annual turbine heat input should be 8,898,270 MMBtu/hr [1398 MMBtu/hr * (5900 + 465)].

21. Rule 1304.1—Electrical Generating Facility Fee for Use of Offset Exemption

Since Rule 1304.1 was adopted on September 6, 2013, a Rule 1304.1 analysis is required.

a. Will AES select the annual payment option or the single payment option.

Response: AES will select the annual payment option.

b. Please provide the offset fee calculation for the selected option.

i. Please provide sufficient explanation to allow me to understand the calculations.

Response: Attached is the District's Rule 1304.1 fee calculation workbook for

RBEP, which shows an annual fee of $1,950,632. The spreadsheet includes annotations specifying the source of the data used.

ii. $C_{2YRAvgExisting}$ is defined as "the average annual megawatt-hour (MWh) generation of the existing unit(s) to be replaced using the last twenty-four (24) month period immediately prior to issuance of the permit to construct." For a preliminary estimate, please use the last twenty-four month period prior to October 1, 2013. Prior to issuance of the permits to construct (contingent on any future rule interpretations), I will request an update.

Response: Included the District's Rule 1304.1 fee calculation workbook is a download of the Redondo Beach Generating Station's megawatt-hours reported to the EPA through the EPA's Acid Rain program (http://ampd.epa.gov/ampd/). It shows the 2-year average MWh generation for Units 5 and 8 is 99339.5.

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Fax 916-614-3407
Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Friday, September 27, 2013 6:35 PM
To: 'Stephen O'Kane'; Salamy, Jerry/SAC
Subject: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions Set Three

Stephen O'Kane, AES--
Jerry Salamy, CH_2M Hill--

I am working on the emissions calculations section of the PDOC. I will set forth an emissions calculation analysis, then conclude at the end that RBEP is exempt from offsets except for RTCs. I am asking detailed questions now instead of making assumptions without your input.

16. Ammonia Emissions
I am trying to reproduce the hourly and annual emissions for ammonia provided in Response Letter No. 2, dated 3/15/13, item 3.b., Table 5.1B.5bR on pg. 4. The reason is that I show emissions calculations in my evaluation.

-

a. Hourly Emissions
Since the hourly emissions for the other compounds are based on an emissions rate of 1999 MMBtu/hr (maximum hourly heat input per turbine with duct burner), I assumed that was also the emissions rate for ammonia. My calculations are as follows:

Ammonia, lb/hr = (1,999,000,000 Btu/hr) (8710 dscf/10^6 Btu)(5 ppm NH_3 BACT /10^6) (20.9/(20.9-15.0)) (17 lbs NH_3/385 scf)
= 13.6 lb/hr

Since your table shows 13.2 lb/hr, how are your emissions calculations different?

b. Annual Emissions

I cannot figure out the basis for the annual emissions of 85,844 lb/yr presented in the table. Presumably, the ammonia injection is not operating during some part of the start-ups and shutdowns. Please provide emissions calculations for the 85,844 lb/yr. The accompanying explanations must be sufficient to allow me to calculate the maximum monthly emissions which will be on the public notice.

17. VOC BACT and Emissions

a. VOC BACT

The AFC proposed VOC emissions limits of 1.0 ppmvd at 15% O_2, 1-hr average (without duct burner) and 1.0 ppmvd @ 15% O_2, 3-hr average (with duct burner). The guarantee provided by Vogt Power International, in a letter dated 11/13/12, is for 1 ppmvd at 15% O2. The current SCAQMD BACT/LAER limit is 2 ppmvd at 15% O_2, and does not differentiate between operation without and with duct burner.

The AFC explained that the VOC limit of 1 ppmvd at 15% O_2 was derived from the EPA RACT/BACT/LAER Clearinghouse and the CEC. As John Yee explained in our meeting on 2/21/13, the 1 ppmvd at 15% O_2 limits for the non-SCAQMD projects are based on a VOC test method that is not recognized by the SCAQMD. Using the District-approved method for VOC (Method 25.3 or the alternate approved method) which will be required to be used by permit condition, there is a likelihood that the RBEP turbines will be unable to consistently meet the proposed 1.0 ppmvd at 15% O2.

Please let me know whether RBEP wishes to stay with the proposed 1 ppmvd (but at 1-hr averaging time for both operation with and without duct burner, not the proposed 1-hr without duct burner and 3-hr with duct burner), or whether RBEP wishes to go with the current BACT/LAER limit for VOC of 2 ppmv at 15% O2, 1-hr averaging.

b. VOC Emissions

i. Startup and shutdown emissions

Based on 1 ppm BACT, the AFC provides the following emissions: (1) 27.9 lb/cold start, (2) 21 lb/warm start, (3) 20.4 lb/hot start, and (4) 31.0 lb/shutdown. If you wish to go with the current BACT/LAER limit of 2 ppm VOC, please provide revised emissions per event. Please explain if the emissions remain the same per event.

ii. Operating Emissions Rates

I am reproducing a portion of the following table in the PDOC: Table 5.1B.2—MPSA 501DA Performance Data found in Appendix 5.1B—Operational and Commissioning Emission Calculations. If you wish to proceed with the 2 ppmvd BACT level, please provide revisions to the Stack VOC Emissions with the Effects of Catalytic Reduction (CO Catalyst) entries to reflect the 2 ppm BACT.

18. Maximum Daily Emissions

a. As typical, there will be a maximum daily emissions section in the PDOC. I reviewed Table 5.1B.4—Summary of Turbine Operation Emissions—Criteria Pollutants found in Appendix 5.1B—Operational and Commissioning Emission Calculations. This table provides maximum daily emissions for each of the 15 cases, with each case assuming one cold start, two warm starts, and three shutdowns. Accordingly, the maximum daily emissions section in the PDOC will be based on the one cold start, two warm starts, and three shutdowns. Please provide a breakdown for the normal operating hours for realistic maximum daily emissions, i.e., hours for Case 1 (duct burner) and hours for Case 2 (no duct burner). The purpose is primarily informational, but the number of startups/shutdowns per day will be limited to three pursuant to a permit condition.

19. Maximum Monthly Emissions

a. Commissioning

Pg. 5.1-12 states that the total duration of the commissioning period is expected to take up to 180 days, with each turbine anticipated to take 491 hours. Maximum hourly and event commissioning emission rates were provided. A statement was made that the annual impacts for commissioning were not evaluated because the commissioning is expected to be completed within 180 days and the combined commissioning and operational emissions for a rolling 12-month period are not expected to exceed the maximum permitting annual emissions.

For New Source Review offset purposes, we are concerned with monthly emissions, not annual emissions, for the criteria pollutants (except NOx). Therefore, I need to know how the commissioning is expected to take place.

i. First month

aa. Is a turbine expected to be commissioned in one month?

bb. If it is, then please provide a breakdown for the remaining days of the first month, i.e., hours under Case 1, hours under Case 2, number of cold, warm, and hot starts, and corresponding number of shutdowns. In the alternative, we can prorate the normal operating month emissions if you provide the number of days (e.g., 7 days/30 days times normal operating month emissions).

ii. Second month

aa. If the turbine is not fully commissioned in the first month, then which activities will be carried over to the second month? Please reference the activities by the same designation as in Table 5.1B.1—Summary of Commissioning Emission Estimates found in Appendix 5.1B.

bb. If commissioning is completed this month, the please provide a breakdown for the remaining days of the first month, i.e., hours under Case 1, hours under Case 2, number of cold, warm, and hot starts, and corresponding number of shutdowns. In the

alternative, we can prorate the normal operating month emissions if you provide the number of days.

cc. If the commissioning is anticipated to be completed the first month, then I will calculate the emissions for the second month based on a normal operating month.

b. Emission Factors

i. I need the natural gas heat content to determine the emission factors (lb/mmscf) that will be included as part of the monthly limit permit condition(s). Table 5.1B.5b—Summary of Turbine Operation Emissions—Air Toxics in Appendix 5.1B used 1020 MMBtu/MMSCF. Table 5.1B.8a – 5.1B.8e—Summary of [Units 5, 6, 7, 8 and Boiler 17] Past Actual Emissions – Years 2007-2011 assumed 1030 MMBtu/hr. Table 5.1B.9b—Redondo Beach Generating Station Existing Units 5-8 and Unit 17 PTE Calculations used 1050 MMBtu/MMSCF.

For NOx, RECLAIM requires 1050 MMBtu/MMSCF. Which heat content shall be used for the other criteria pollutants?

20. Greenhouse Gas Emissions Calculations

a. Table 5.1B.7—Summary of Turbine Operation Emissions—Greenhouse Gas Pollutants in Appendix 5.1B indicates the GHG emission factors are from TRC General Reporting Protocol, Default Emission Factors (January 6, 2012 update). For your information, the PDOC will use the GHG emission factors from the EPA (minor difference in emission factors).

b. In Table 5.1B.6—Facility Wide Natural Gas Fuel Use found in Appendix 5.1B, the "Annual Average Fuel use Per Year (MMBtu) is 9,551,981 per turbine. The 9,551,981 MMBtu appears to be derived from multiplying 1492 MMBtu/hr-turbine by 6402 hours. This 6402 hours is less than the 6835 hours of normal operation including startups and shutdowns, but greater than the 5900 hours not including startups and shutdowns. Apparently, the calculations are based on fuel usage for startups and shutdowns that are different than the fuel usage for normal operations at full load. Please explain how the 9,551,981 MMBtu/yr-turbine was calculated.

21. Rule 1304.1—Electrical Generating Facility Fee for Use of Offset Exemption

Since Rule 1304.1 was adopted on September 6, 2013, a Rule 1304.1 analysis is required.

a. Will AES select the annual payment option or the single payment option.

b. Please provide the offset fee calculation for the selected option.

i. Please provide sufficient explanation to allow me to understand the calculations.

ii. $C_{2YRAvgExisting}$ is defined as "the average annual megawatt-hour (MWh) generation of the existing unit(s) to be replaced using the last twenty-four (24) month period immediately prior to issuance of the

permit to construct." For a preliminary estimate, please use the last twenty-four month period prior to October 1, 2013. Prior to issuance of the permits to construct (contingent on any future rule interpretations), I will request an update.

Since item 21 on Rule 1304.1 may take some time, would you mind providing responses to items 16 to 20 first. Thanks for your input.

Vicky Lee
Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive, 3rd Floor
Diamond Bar, CA 91765
909-396-2284
909-396-3341 (fax)

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[1] Based on annual average operating conditions of 63 ° F at 100 percent turbine load with duct burners firing as shown in AFC Appendix Table 5.1B.2.

[2] Based on annual average operating conditions of 63 ° F at 100 percent turbine load with duct burners firing as shown in AFC Appendix Table 5.1B.2.

From: Salamy, Jerry/SAC
To: "Vicky Lee"
Cc: stephen.okane@AES.com; Madams, Sarah/SAC; Engel, Elyse/SJC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions Set One--Follow-up
Date: Friday, November 01, 2013 2:27:00 PM
Attachments: RBEP Heat Balance.pdf

Vicky,

Below are the responses to your questions.

MW Rating

Please provide the following clarifying information.

c. Gross MW Ratings

i. For the equipment description on the facility permit, what is the gross MW rating for each CTG?

Response: The combustion turbine output increases/decreases with ambient temperature with higher outputs occurring at lower ambient air temperatures. Based on the lowest ambient temperature measured in the last 30 years of 33 ° F, the maximum rating for each combustion turbine is 131.9 megawatts (MW) gross. See the attached heat and mass balance showing the electrical production of the CTG and steam turbine generator at 33 °F.

ii. For the equipment description on the facility permit, what is the gross MW rating for the steam turbine?

Response: Based on the maximum turbine output identified above, the steam turbine generator's maximum electrical output is 150.7 MWs gross.

iii. Does the combined gross MW rating for the facility add up to 530 MW?

Response: The total combined gross electrical production is 546 MWs (131.9 * 3 + 150.7). The 530 MW rating for RBEP represents net electrical output.

iv. If not, then what is the gross MW rating for the facility?

Response: As noted above, the gross electrical rating for RBEP is 546 MWs.

v. How is the gross MW rating for the facility supported by the table you provided? Since the Btu/hr ratings for the CTGs (1492 Btu/hr) and the steam turbine (507 Btu/hr) are based on 33 deg F, I would have expected that the MW ratings would be as well.

Response: The RBEP gross MW rating assumes the three CTGs are operating at full load operating at an ambient temperature of 33 °F, without the duct burners. This operating profile correlates with the CTG heat input rate of 1492 MMBtu/hr – HHV from the table. As stated previously, RBEP's steam cycle design will not allow for more than 105 MMBtu/hr of combined duct burner firing while all three CTGs are operating. Therefore, the duct burners do not contribute to the maximum gross RBEP electrical production.

vi. If not supported by the table, then how was the gross MW rating derived for the CTGs, steam turbine, and facility?

Response: See the responses above.

d. Net MW Ratings

i. What is the net MW rating for each CTG?

Response: The net MW rating of each CTG is approximately 128 MWs [131.9 MWs * (530 MW/546 MW)].

ii. What is the net MW rating for the steam turbine?

Response: The net MW rating of the steam turbine generator is approximately 146.4 MWs [150.7 * (530 MW/546 MW)].

iii. Does the combined net MW rating for the facility add up to 460 MW?

Response: The combined net MW rating of RBEP is 530 MWs (128 * 3 + 146.4).

iv. If not, then what is the net MW rating for the facility?

Response: See the response above.

v. How is the net MW rating for the facility supported by the table you provided?

Response: See the response to item 4(c)(v) above.

vi. If not supported by the table, then how was the net MW rating derived for the CTGs, steam turbine, and facility?

Response: See the response above.

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Thursday, October 31, 2013 6:14 PM
To: Salamy, Jerry/SAC
Cc: stephen.okane@AES.com; Madams, Sarah/SAC; Engel, Elyse/SJC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions Set One--Follow-up

Jerry,

Please provide responses to my 10/9/13 e-mail below requesting the MW rating of the proposed equipment ASAP.

Please note that your response e-mail, dated 10/14/13, to my RBEP Clarifying Questions Set Three, includes an attachment including two worksheets for the Rule 1304.1 calculator. The ">100 MW" worksheet lists "528 MW" for the replacement units, and the "commissioning VOC" worksheet lists 511 MW. Both worksheet reference "AFC Section 2.0 Project Description, Figure 2.1-4a" as the source, which is the "Heat and Mass Balance Diagram – Case 1." There is no need to resend the Rule 1304.1 calculator attachment. Please just provide responses to my e-mail below.

Vicky Lee
Air Quality Engineer
909-396-2284

From: Vicky Lee
Sent: Wednesday, October 09, 2013 9:37 AM
To: 'Jerry.Salamy@CH2M.com'
Cc: 'stephen.okane@AES.com'; 'Sarah.Madams@CH2M.com'; 'Elyse.Engel@ch2m.com'
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions Set One--Follow-up

Jerry,

This is a follow-up to item 4 on MW ratings.

4. MW Rating
Please provide the following clarifying information.

c. Gross MW Ratings
i. For the equipment description on the facility permit, what is the gross MW rating for each CTG?
ii. For the equipment description on the facility permit, what is the gross MW rating for the steam turbine?
iii. Does the combined gross MW rating for the facility add up to 530 MW?
iv. If not, then what is the gross MW rating for the facility?
v. How is the gross MW rating for the facility supported by the table you provided? Since the Btu/hr ratings for the CTGs (1492 Btu/hr) and the steam turbine (507 Btu/hr) are based on 33 deg F, I would have expected that the MW ratings would be as well.
vi. If not supported by the table, then how was the gross MW rating derived for the CTGs, steam turbine, and facility?

d. Net MW Ratings
i. What is the net MW rating for each CTG?
ii. What is the net MW rating for the steam turbine?
iii. Does the combined net MW rating for the facility add up to 460 MW?
iv. If not, then what is the net MW rating for the facility?
v. How is the net MW rating for the facility supported by the table you provided?
vi. If not supported by the table, then how was the net MW rating derived for the CTGs, steam turbine, and facility?

Thanks for the clarification.

Vicky Lee
Air Quality Engineer
909-396-2284

From: Vicky Lee
Sent: Wednesday, August 14, 2013 6:06 PM
To: 'Jerry.Salamy@CH2M.com'
Cc: stephen.okane@AES.com; Sarah.Madams@CH2M.com; Elyse.Engel@ch2m.com
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions Set One

Jerry,

Thank you for your responses. I may have more questions and comments after the responses for items 3 - 7 are reviewed more thoroughly.

Regarding item 5 on emissions calculations, your response is that "[the] operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient condition of 33 °F." Consequently, I checked on why my emissions calculations were based on operational emission rates at 63.3 °F. The reason is that footnote c to Table 5.1-17—RBEP Facility Emissions indicates the maximum monthly facility emissions are based on operational emission rates at 63.3 °F (also reiterated at the top of pg. 5.1-16), but your explanation is that the maximum monthly facility emissions in Table 5.1-17 are actually based on operational emission rates at 33 °F. As I continue my evaluation, I would have noticed the highest operational emission rates occur at 33 °F, but thanks for clearing up the discrepancy now as it saves me some time.

I am sending additional clarifying questions, items 8 -15, in a separate e-mail. I would like to keep the e-mail strings separate, as there may be follow-up questions to items 3 – 7.

Thank you for your assistance.

Vicky Lee
Air Quality Engineer
909-396-2284

From: Jerry.Salamy@CH2M.com [mailto:Jerry.Salamy@CH2M.com]
Sent: Tuesday, August 13, 2013 12:10 PM
To: Vicky Lee
Cc: stephen.okane@AES.com; Sarah.Madams@CH2M.com; Elyse.Engel@ch2m.com
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Vicky,

Below are the remainder of the responses (Items 3 to 7) of your information request.

3. Facility Permit Equipment Description
How would you like the three new turbines to be designated (numbered) in the facility permit equipment description (e.g., Turbine Nos. 1, 2, 3, or Turbine Nos. A, B, C)?

Response: Please designate the turbines as 03-A, 03-B, and 03-C.

4. MW Rating
Pg. 1 of your cover letter dated 11/21/12 for the Application indicates the RBEP is rated at a nominal generating capacity of 496 MW and maximum 530 MW. Pg. 2-2 of the Application indicates a net generating capacity of 496 MW and gross generating capacity of 511 MW, with each CTG rated at 119 MW nominal and the STG rated at 151 MW. Pg. 2-16 indicates each CTG will generate 199 MW (gross) at SAAT conditions and the STG will produce 151 MW (gross). Form 400-E-12 indicates the STG is rated at 152 MW. Therefore, I need clarification.

Please provide the following data for RBEP. (You had provided similar information for the HBEP in your 10/23/12 letter to Chris Perri.)

Response: Below is the completed table.

	ISO 59 F-60% RH (Evaporative Cooling Off)	106 F-9.6% RH (Evaporative Cooling On, Case 12)	33 F – 93.8% RH (Evaporative Cooling Off, Case 2)	63.3 F – 75.2% RH (Evaporative Cooling On, Case 7)
Gas Turbine Heat Input, mmbtu/h HHV[1]	1,388	1,353	1,492	1,398
Total Heat Input, mmbtu/h HHV (w/duct fire) [2]	1,895	1,860	1,999	1,905
Gas Turbine Gross Output, kW[3]	121,435	115,496	131,896	121,445
Steam Turbine Gross Output, kW[3]	51,865	45,335	50,386	50,919
Total Gross Power Output, kW[3]	173,300	160,830	182,282	172,364
Net Power Output, Kw[3]	167,583	155,831	176,987	167,242
Net Plant Heat Rate, btu/kWh, LHV	7,354	7,706	7,481	7,417
Net Plant Heat Rate, btu/kWh, HHV	8,285	8,681	8,428	8,356

Notes:
1. Cases 106F, 33F and 63F heat input taken directly from M501DA Gas Turbine Expected Performance and Emissions Provided by MPSA and included in Table 5.1B.2 of *RBEP_Appendix 5.1B_Ops Emissions Calcs.pdf*. Other Case Heat input taken from GT PRO model.

2. Total Heat Input per gas turbine with duct firing can only be achieved while operating in a 1-on-1 or 2-on-1 mode. The steam cycle is sized such that the maximum heat input into the steam cycle is reached in a 3-on-1 mode without duct firing.

3. All output is provided on a per turbine basis assuming a 3-on-1 operating mode. To calculate total output for the entire

power block these values must be multiplied by 3

5. Emissions Calculations

On pg. 5.1-16, Table 5.1-17—"RBEP Facility Emissions" provides values for Average Daily Facility Emissions, lb/day. Footnote b indicates the average daily emissions represent the maximum monthly total divided by 30 days. Thus my understanding is that these values are the sum of the 30-day averages ("30-DA") for three turbines. My calculated 30-day averages for pollutants other than PM_{10} do not match the Average Daily Facility Emissions in Table 5.1-17. Therefore, I am providing my calculations below and requesting clarification regarding how the calculations to derive the "Average Daily Facility Emissions" differ.

a. CO

My calculations are as follows:

5 cold starts, 25 warm starts, 60 hot starts, 90 shutdowns
489.5 hr of operation at 100% load, 63.3 °F ambient, without duct burner
186 hr of operation at 100% load, 63.3 °F ambient, with duct burner

CO, lb/month = (5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.02 lb/hr) + (186 hr) (8.27 lb/hr) = 12,307.51 lb/month

30-DA = (12,307.51 lb/month) (month/30 days) = 410.25 lb/day

From Table 5.1-17:

30-DA = 1258 lb/day for three turbines → 419.33 lb/day

***Please provide emissions calculations for the 419.33 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient condition of 33°F (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily CO emissions of 419.33 lb/day. Please note that Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.42 lb/hr) + (186 hr) (8.68 lb/hr) = 12,579.90 lb/month or 419.33 lb/day

b. NOx

My calculations are as follows:

NOx, lb/month = (5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (9.89 lb/hr) + (186 hr) (13.59 lb/hr) = 9733.40 lb/month

30-DA = (9733.40 lb/month) (month/30 days) = 324.45 lb/day

From Table 5.1-17:

30-DA = 1018 lb/day for three turbines → 339.33 lb/day

***Please provide emissions calculations for the 339.33 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient conditions (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily NOx emissions of 339.33 lb/day. Please note that Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (10.55 lb/hr) + (186 hr) (14.26 lb/hr) = 10,180.21 lb/month or 339.34 lb/day

c. PM_{10}

My calculations are as follows:

-

PM_{10}, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (4.5 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (4.5 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (4.5 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (4.5 lb/hr) + (489.5 hr) (4.5 lb/hr) + (186 hr) (9.5 lb/hr) = 4278.19 lb/month

30-DA = (4278.19 lb/month) (month/30 days) = 142.60 lb/day

From Table 5.1-17:

30-DA = 428 lb/day for three turbines → 142.67 lb/day

***Please confirm that your emissions calculations for the 142.67 lb/day are the same as mine.

Response: The PM_{10} monthly and daily emission calculations reported in the Application and those calculated by the SCAQMD are the same: 142.67 lb /day.

d. SO_2

My calculations are as follows:

SO_2, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (1.84 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (1.84 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (1.84 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (1.84 lb/hr) + (489.5 hr) (1.84 lb/hr) + (186 hr) (2.51 lb/hr) = 1493.66 lb/month

30-DA = (1493.66 lb/month) (month/30 days) = 49.79 lb/day

From Table 5.1-17:

30-DA = 158.5 lb/day for three turbines → 52.83 lb/day

***Please provide emissions calculations for the 52.83 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient conditions (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily SO_2 emissions of 52.83 lb/day. Please note that Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (90 min/cold start) (hr/60 min) (1.964 lb/hr) + (25 warm starts) (32.5 min/warm start) (hr/60 min) (1.964 lb/hr) + (60 hot starts) (32.5 min/hot start) (hr/60 min) (1.964 lb/hr) + (90 shutdowns) (10 min/shutdown) (hr/60 min) (1.964 lb/hr) + (489.5 hr) (1.964 lb/hr) + (186 hr) (2.631 lb/hr) = 1,585.05 lb/month or 52.84 lb/day

e. VOC

My calculations are as follows:

VOC, lb/month = (5 cold starts) (27.9 lb/cold start) + (25 warm starts) (21 lb/warm start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns) (31.0 lb/shutdown) + (489.5 hr) (1.72 lb/hr) + (186 hr) (2.36 lb/hr) = 5959.40 lb/month

30-DA = (5959.40 lb/month) (month/30 days) = 198.65 lb/day

From Table 5.1-17:

30-DA = 604 lb/day for three turbines → 201.33 lb/day

***Please provide emissions calculations for the 201.33 lb/day.

Response: The operational emission rates used by the SCAQMD represent annual average ambient conditions. The operational emission rates used in the Application were based on the maximum emission rates, which occur at the lowest ambient conditions (See Application Appendix 5.1B, Table 5.1B.2). Below are the emission rates used to calculate the average daily VOC emissions of 201.33 lb/day. Please note that the Table 5.1-17 presented average daily emissions for the facility to demonstrate necessary offsets required for RBEP; calculating these values on a per unit basis may result in slight deviations from the calculated average daily values.

(5 cold starts) (27.9 lb/cold start) + (25 warm starts) (21 lb/warm start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns) (31.0 lb/shutdown) + (489.5 hr) (1.83 lb/hr) + (186 hr) (2.48 lb/hr) = 6,037.75 lb/month or 201.26 lb/day

6. Costs

a. Capital Costs

On pg. 3-17, Section 3.2.2.4.1—Carbon Capture and Sequestration of the Application states the estimated RBEP capital cost is $250 million to $275 million for the plant and equipment. However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage, footnote a to Table AQMD-7A-1 states the RBEP capital costs is based on $510 million.

Please provide the updated capital cost of RBEP for my evaluation on Carbon Capture and Storage.

Response: The capital cost presented in Section 3.2.2.4.1 of the Application represents the cost of purchasing plant equipment and does not include construction costs (estimated at $167 million), $35 million in local construction supplies (rock/sand, concrete, etc.), and 7 percent contingency/management costs (approximately $33 million). Combining these additional costs results in an estimated RBEP installed cost of $510 million. The expected installed RBEP cost of approximately $1,000 per kilowatt (kW) is consistent with the costs reported in the National Renewable Energy Laboratory reference[1] cited in the March 15, 2013 letter.

b. O & M Costs

On pg. 5.10-11, Section 5.10.3.4.4—Impacts on the Local Economy and Employment of the Socioeconomics section of the AFC indicates the RBEP annual non-payroll operations and maintenance budget is expected to be approximately $2,515,000 (in 2012). However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage indicates a variable O&M cost of $3,255,070/yr, a fixed O&M of $3,066,000/yr, for a total annual O&M of $6,321,070/yr.

Please provide the updated O&M cost for my evaluation on Carbon Capture and Storage.

Response: The operations and maintenance (O&M) cost includes operational/administrative labor costs, maintenance labor and material costs, and consumable costs. Based on Application Section 5.10.3.4.4, these costs are $2.515 million for maintenance costs (labor and materials) and $2.94 million for operational/administrative labor costs, resulting in a total O&M cost of $5.455 million. The O&M cost included in Item 7, Table AQMD-7A-2 of the March 15, 2013 letter was based on the cost presented in Table AQMD-7A-1. This was done to show a comparable cost basis for the three technologies shown in Table AQMD-7A-2. Below is a revision to Table AQMD-7A-2R using the lower O&M cost from Application Section 5.10.3.4.4. The results of using this lower O&M cost does not alter the conclusions reached in the March 15, 2013 letter, which is that employment of carbon capture and sequestration on the RBEP is not cost effective.

TABLE AQMD-7A-2R
REVISED COST COMPARISON FOR RBEP WITH AND WITHOUT CARBON CAPTURE AND SEQUESTRATION

Technology	Capital Cost[a] ($/kW)	Capital Cost (Dollars)	Variable O&M Cost[b] ($/Year)	Fixed O&M Cost[b] ($/Year)	Total Annual O&M Cost ($/Year)
RBEP	<1,000	510,000,000	2,515,000	2,940,000	5,455,000
RBEP with CCS[c]	3,520	1,916,250,000	32,550,700	9,402,400	41,953,100
Incremental Cost of CCS[d]	2520	1,406,250,000	30,035,700	6,462,400	36,498,100

[a]RBEP cost calculated at $1,000/kW.

[b]RBEP O&M cost is based on $2.515 million for maintenance costs (labor and materials) and $2.94 million for operational labor costs (see Section 5.10.3.4.4 of the RBEP Application for Certification).

[c]RBEP with CCS cost is $3750/kW - $1230/kW + $1000/kW.

[d]Cost of CCS is the difference between RBEP with CCS and RBEP.

7. Thermal Efficiency Calculations

My evaluation will need to show that the 1100 lbs CO2/MW_{net} standard is not applicable since I have been receiving a number of questions.

Response: The California Emissions Performance Standard (EPS) of 1100 lbs CO_2/MW-hour of electricity applies to local publicly owned electric utilities. California regulations stipulate that no local publicly owned electric utility shall enter into a covered procurement if greenhouse gases emissions from the power plant(s) subject to the covered procurement exceed the EPS.[2] A covered procurement is defined as (1) A new ownership investment in a base load generation power plant, or (2) A new or renewed contract commitment, including a lease, for the procurement of electricity with a term of five years or greater by a local publicly owned electric utility with: (A) a base load generation power plant, unless the power plant is deemed compliant, or (B) any generating units added to a deemed-compliant base load generation power plant that combined result in an increase of 50 MW or more to the power plant's rated capacity. AES will attempt to enter into a covered procurement for RBEP with a local publicly owned electric utility. If AES is successful in securing a covered procurement for RBEP with a local publicly owned electric utility, then that utility is required to submit a compliance filing to the California Energy Commission. The Commission then issues a decision on whether the covered procurement complies with the EPS.

Therefore, it does not appear that the SCAQMD is required by state law or regulation to make a determination of RBEP's compliance with the EPS. Nevertheless, we have provided responses to your questions.

a. Expected Operating Profile

Item 7 of your 1/11/13 response letter provided supporting calculations for the thermal efficiency of 1082 lbs CO2/ MWh_{gross} for the expected operating profile. I reviewed the plant CO2 efficiency calculation in Table AQMD-5. I think there is a math error and the 1082 lbs CO2/MWh_{gross} should actually be 1088 lbs CO2/MW-hr $_{gross}$, as shown below.

Plant CO2 Efficiency Calculation

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7564 Btu/kWh + 1600 hrs * 7353 btu/kWh + 730 hrs * 7350 btu/kWh + 18267 btu/kWh * 52.5 hrs + 16520 btu/kWh * 55.4 hrs)/(2455 hrs + 52.5 hrs + 55.4 hrs)
  = ~~7743~~ 7784 Btu LHV / kWh Gross

- 8% Assumed Plant Degradation
  Gross Annual Average CO2 Efficiency with SU/SD and Degradation = (~~7743~~ 7784 btu/kWh / (1 - 0.08)) = ~~8416~~ 8461 Btu LHV / kWh Gross

- Annual Average CO2 Efficiency with SU/SD and Degradation
  (~~8417~~ 8461 btu/kWh * 1000 kWh/MWh * 1.1 HHV/LHV * 1*10-6 MMBtu/Btu * 53.02 kg CO2/MMBtu-HHV * 2.205 lb/kg) = ~~1082~~ 1088 lb CO2 /MWh Gross

Please confirm that the 1088 lb CO2/MWh_{gross} is correct.

Response: The difference between the SCAQMD's greenhouse gas (GHG) efficiency calculations and those included in our January 11, 2013 letter is 0.6 percent, which represents rounding errors in the data used to calculate the GHG efficiency. Given the very small discrepancy between the two calculations, AES suggests using the SCAQMD's GHG efficiency of 1,088 pounds of carbon dioxide per megawatt-hour on a gross basis (lb CO_2/MWh_{gross}).

b. Conversion from Gross Basis to Net Basis

Item 3.a. of your 5/9/13 response letter indicated the 1082 lbs CO2/MWh_{gross} converts to 1125 lbs CO2/MWh_{net} based on a 3% parasitic electric load. With a 3% parasitic load only, the 1082 lbs CO2/MW_{gross} converts to 1115 lbs CO2/MWh_{net}, not 1125 lbs CO2/MWh_{net}. Since it does not appear to be 3%, please explain the basis for converting the 1082 lbs CO2/MWh_{gross} to 1125 lbs CO2/$MWh_{net.}$

Response: We used a more refined method to convert the GHG efficiency from a gross output basis to a net output basis by converting all of the heat rates from a gross basis to a net basis (including start and stop heat rates). This calculation is presented below.

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7,798 Btu/kWh + 1,600 hrs * 7,580 Btu/kWh + 730 hrs * 7,577 Btu/kWh + 19,379 Btu/kWh * 52.5 hrs + 17,542 Btu/kWh * 55.4 hrs)/(2,455 hrs + 52.5 hrs + 55.4 hrs) = 8,047 Btu LHV/kWh_{net}

- 8% Assumed Plant Degradation
  Gross Annual Average CO_2 Efficiency with SU/SD and Degradation = (8,047 Btu/kWh / (1 - 0.08)) = 8,747 Btu LHV/kWh_{net}

- Annual Average CO_2 Efficiency with SU/SD and Degradation.
  (8,747 Btu/kWh * 1,000 kWh/MWh * 1.1 HHV/LHV * $1*10^{-6}$ MMBtu/Btu * 53.02 kg CO_2/MMBtu HHV * 2.205 lb/kg) = 1,125 lb CO_2/MWh_{net}

c. Capacity Factor for Permitted Operating Profile

Item 5.b.i. of your 3/15/13 response letter provided emission rate calculations for the permitted operating profile. I had performed a preliminary capacity factor calculations based on the information provided in Table AQMD-5b-1 to verify that the capacity factor for the permitted operating profile is below 60% and was not a completeness issue.

To avoid applicability of the GHG Emission Performance Standard of 1,100 lbs CO2/MWh, there will be a permit condition limiting the annualized plant capacity to less than 60 percent. In addition, I will include capacity factor calculations for the expected operating profile and the permitted operating profile in my evaluation. Item 3.b. of your 5/9/13

response letter provided Table AQMD-2—RBEP GHG Performance at a 60 Percent Capacity Factor.

To ensure accuracy in my evaluation (PDOC/FDOC), please provide the following:

i. Please provide capacity factor calculation for the expected operating profile.

Response: The expected capacity factor for the expected operating profile is presented below.

Weighted Annual Capacity Factor
RBEP at Expected Operating Profile
(125 hrs * 151,346 kW + 1,600 hrs * 300,575 kW + 730 hrs * 414,031 kW + 2.52 kW * 52.5 hrs + 0.49 kW * 55.4 hrs) = 802,081,040 kWh/Year

RBEP Theoretical Capacity
(8,652.1 hrs * 414,031 kW + 2.52 kW * 93.6 hrs + 0.49 kW * 98.8 hrs) = 3,582,237,899 kWh/Year

Capacity Factor = 802,081,040 kWh/Year / 3,582,237,899 kWh/Year * 100 = 22.4 percent

ii. Please provide capacity factor calculation for the permitted operating profile.

Response: The capacity factor for the permitted operating profile is presented below. This permitted capacity factor is based on the same percentage of operating time in a 1x1 (300.4 hours), 2x1 (3845.2 hours), and 3x1 (1754.4 hours) configuration with the weighted electrical production for unfired operating rates. Duct burner operating hours were evenly split between the 1x1 and 2x1 operating configurations (235 hours each) as RBEP is not capable of firing the duct burners at full capacity in all three heat recovery steam generators simultaneously.

Weighted Annual Capacity Factor
RBEP at Permitted Operating Profile
(300.4 hrs * 138,291 kW + 235 hrs duct firing * 203,570 kW + 3,845.2 hrs * 283,741 kW + 235 hours duct firing * 367,913 kW + 1,754.4 hrs * 414,031 kW + 2.52 kW * 93.6 hrs + 0.49 kW * 98.8 hrs) = 1,993,252,000 kWh/Year

RBEP Theoretical Capacity
(8,652.1 hrs * 414,031 kW + 2.52 kW * 93.6 hrs + 0.49 kW * 98.8 hrs) = 3,582,237,899 kWh/Year

Capacity Factor = 1,993,252,000 kWh/Year / 3,582,237,899 kWh/Year * 100 = 55.6 percent

Jerry Salamy
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Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Wednesday, August 07, 2013 7:38 AM
To: Salamy, Jerry/SAC
Cc: stephen.okane@AES.com; Madams, Sarah/SAC; Engel, Elyse/SJC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Jerry,

Thank you very much for providing responses to Items 1 and 2 so expeditiously, which allowed me to complete the modeling review request memo for Tom Chico and Jillian Baker. I look forward to receiving the remainder of the responses. As I continue working on the engineering evaluation/PDOC, I am developing a separate second list of clarifying questions. Thank you for your assistance.

Vicky Lee
Air Quality Engineer

909-396-2284

From: Jerry.Salamy@CH2M.com [mailto:Jerry.Salamy@CH2M.com]
Sent: Monday, August 05, 2013 2:17 PM
To: Vicky Lee
Cc: stephen.okane@AES.com; Sarah.Madams@CH2M.com; Elyse.Engel@ch2m.com
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Vicky,

Below are AES's responses to Items 1 and 2. The remainder of the responses should be submitted this week.

1. Modeling
The Operation Impacts Analysis on pg. 5.1-23 of the Application for South Coast Air Quality Management District (SCAQMD) Permit to Construct and Modification to the Title V Permit to Operate ("Application") did not provide a discussion of the following. Please provide the following so that the modeling review request memo is correct.

a. For the 1-hour averaging time:
   i. Was the dispersion modeling for oxides of sulfur (SOx) based on one turbine operating or all three turbines operating?

   Response: The Redondo Beach Energy Project (RBEP) operational SOx impacts presented in the Application are based on all three turbines operating.

   ii. If for one turbine, why is the 1-hour for oxides of nitrogen (NOx) and carbon monoxide (CO) based on three turbines?

   Response: The RBEP operational NOx and CO impacts presented in the Application are based on all three turbines operating, with the exception of Rule 2005 NOx impacts shown in Table 5.1-30 as Rule 2005 limits are on a per permit unit basis.

b. For the 3-hour averaging time:
   i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   Response: The RBEP 3-hour averaging time operational SOx impacts presented in the Application are based on all three turbines operating.

c. For the 24-hour averaging time:
   i. Was the dispersion modeling for particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) and particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) based on one turbine operating or all three turbines operating?

   Response: The RBEP 24-hour operational PM_{10} and $PM_{2.5}$ impacts presented in the Application are based on all three turbines operating.

   ii. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   Response: The RBEP 24-hour averaging time operational SOx impacts presented in the Application are based on all three turbines operating.

d. For the annual averaging time:
   i. Was the dispersion modeling for NOx based on one turbine operating or all three turbines operating?

Response: The RBEP annual operational NOx impacts presented in the Application are based on all three turbines operating, with the exception of Rule 2005 NOx modeling impacts shown in Table 5.1-30 as Rule 2005 limits are on a per permit unit basis.

ii. Was the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?

Response: The RBEP annual operational PM_{10} and $PM_{2.5}$ impacts presented in the Application are based on all three turbines operating.

2. Health Risk Assessment

In your letter dated 3/15/13 in response to our letter dated 2/8/13, item 7.b. provided (1) Table 5.1B.5bR (BASIS: AP-42 EMISSION FACTORS PER SCAQMD), Summary of Turbine Operation Emissions – Air Toxics; (2) Table AQMD-2R—RBEP Health Risk Assessment Summary: Individual Units (BASIS: AP-42 Emission Factors); and (3) compact disk containing the associated revised HARP input and output files, dated March 2013. These tables and HARP input/output files reflected the change from CATEF emission factors and 120 ppb formaldehyde (basis for AFC), to AP-42 emission factors and 3.60E-04 lb/MMBTU formaldehyde emission factor requested by the SCAQMD.

Please provide the following so I may include in my modeling review request memo, and health risk assessment evaluation.

a. Table AQMD-2R is an abbreviated table that provides only the revised MICR at the PMI, Chronic Hazard Index at the PMI, and Acute Hazard Index at the PMI.

Please provide an update to the following information in the AFC: (1) Table 5.9-3—"Health Risk Assessment Summary: Individual Units"; (2) Table 5.9-4—Health Risk Assessment Summary: Facility"; and (3) Section 5.9.3.1.4—" Summary of Air Toxic Exposure Assessment Results as appropriate to assist Jillian Baker with her modeling review.

Response: Below is the updated Application Section 5.9.3.1.4, which includes updated Tables 5.9-3 and 5.9-4.

Updated Application Section 5.9.3.1.4:

A summary of the MICR, chronic health index, and acute health index at the point of maximum impact (PMI) locations, as well as the maximum predicted public health impacts for worker, residential, and sensitive receptors, has been included in Table 5.9-3 and Table 5.9-4. In accordance with SCAQMD Rule 1401, the results in Table 5.9-3 represent the predicted risk for each individual emission unit, while the results in Table 5.9-4 represent a comparison of the total predicted RBEP impact to the SCAQMD California Environmental Quality Act (CEQA) significance thresholds. The receptor grid used to evaluate the predicted impacts is included in Appendix 5.1C.

As presented in Table 5.9-3, the predicted MICR at the PMI for an individual turbine is approximately 0.73 in 1 million.[1] The maximum impact is located approximately 260 meters east-northeast of the project boundary. The predicted MICR for the maximum exposed individual resident (MEIR), which is approximately 330 meters east-northeast of the project boundary, is predicted to be 0.70 in 1 million (Derived Adjusted) for an individual turbine; and the predicted MICR for the maximum exposed individual worker (MEIW), which is located approximately 260 meters east-northeast of the project boundary, is predicted to be 0.13 in 1 million for an individual turbine. The predicted MICR at the maximum exposed sensitive receptor is predicted to be 0.46 in 1 million (Derived Adjusted) for an individual turbine. Overall, the predicted MICR for the MEIR, MEIW, and the sensitive receptors is below the individual source significance threshold of 1 in 1 million. Therefore, based on SCAQMD Rule 1401, the predicted incremental increase in cancer risk from each individual turbine will be less than significant, and Best Available Control Technology for Toxics (T-BACT) would not be required. However, while not required, the emission control technologies included in this project are considered to be T-BACT.

The maximum chronic hazard index for an individual turbine at the PMI is predicted to be 0.0022, which is located approximately 260 meters east-northeast of the project boundary. The maximum acute hazard index for an individual

turbine at the PMI is predicted to be 0.022, which is located on the east side of the facility fence line. The predicted chronic and acute indices are well below the SCAQMD individual source significance threshold of 1.0. Therefore, the predicted impact from each individual turbine will be less than significant, and T-BACT will not be required. However, as previously noted, the emission control technologies included in this project are considered to be T-BACT.

TABLE 5.9-3
Health Risk Assessment Summary: Individual Units[a]

Risk[b]	Turbine 1	Turbine 2	Turbine 3
Derived Cancer Risk at the PMI[c] (per million)	0.73	0.67	0.66
Derived Adjusted Cancer Risk at the PMI[d] (per million)	0.71	0.65	0.65
Derived Adjusted Cancer Risk at the MEIR[d] (per million)	0.70	0.65	0.65
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor [d] (per million)	0.46	0.42	0.41
Derived Cancer Risk at the MEIW[c] (per million)	0.13	0.12	0.12
Chronic Hazard Index at the PMI	0.0022	0.0020	0.0020
Resident Chronic Hazard Index	0.0022	0.0020	0.0020
Worker Chronic Hazard Index	0.0022	0.0020	0.0020
Chronic Hazard Index at Sensitive Receptor	0.0014	0.0013	0.0013
Acute Hazard Index at the PMI	0.022	0.015	0.011
Resident Acute Hazard Index	0.010	0.010	0.0094
Worker Acute Hazard Index	0.022	0.015	0.011
Acute Hazard Index at Sensitive Receptor	0.011	0.012	0.0093

[a] The results in Table 5.9-3 represent the predicted excess risk for each individual emission unit in accordance with SCAQMD Rule 1401.
[b] A source with an excess MICR less than 1 in 1 million individuals is considered to be less than significant. A chronic or acute hazard index less than 1.0 for each source is considered to be a less-than-significant health risk.
[c] Cancer risk values are based on the OEHHA Derived Methodology.
[d] Risk values are based on the Derived Adjusted Methodology.

A risk analysis was also performed to evaluate the potential facility-wide impacts. The potential health impacts at the PMI, the MEIR, the MEIW, and sensitive receptors resulting from RBEP operation are summarized in Table 5.9-4.

It should be noted that the maximum impacts reported in Table 5.9-4 represent the maximum predicted impacts at one receptor from all sources combined. In contrast, the maximum impacts reported for each individual source in Table 5.9-3 may occur at different receptors. Therefore, the RBEP totals in Table 5.9-3 are not directly additive and should not be directly compared to the results presented in Table 5.9-4.

TABLE 5.9-4
Health Risk Assessment Summary: Facility[a]

Risk[b]	Receptor Number	Value
Derived Cancer Risk at the PMI[c]	767	2.1 per million
Derived Adjusted Cancer Risk at the PMI[d]	767	2.0 per million
Derived Adjusted Cancer Risk at the MEIR[d]	799	2.0 per million
Derived Adjusted Highest Cancer Risk at a Sensitive Receptor[d]	9859	1.3 per million
Derived Cancer Risk at the MEIW[c]	767	0.36 per million
Chronic Hazard Index at the PMI	767	0.0063
Resident Chronic Hazard Index	799	0.0062

Worker Chronic Hazard Index	767	0.0063
Chronic Hazard Index at Sensitive Receptor	9859	0.0040
Acute Hazard Index at the PMI	21	0.042
Resident Acute Hazard Index	758	0.028
Worker Acute Hazard Index	21	0.042
Acute Hazard Index at Sensitive Receptor	9855	0.032

[a] The results in Table 5.9-4 represent the combined predicted risk for all three turbines operating simultaneously.

[b] A facility with an overall individual increase in cancer risk (MICR) less than 10 in 1 million individuals is considered to be less than significant. A facility chronic or acute hazard index less than 1.0 is considered to be a less-than-significant health risk.

[c] Cancer risk values represent the OEHHA Derived Methodology.

[d] Risk values represent the Derived Adjusted Methodology.

The predicted incremental increase in cancer risk at the PMI associated with RBEP is approximately 2.1 in 1 million[2] and is approximately 310 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk at the MEIR is predicted to be 2.0 in 1 million (Derived Adjusted). The receptor location for the MEIR is about 330 meters east-northeast of the project boundary. The predicted incremental increase in cancer risk for the MEIW, which is located approximately 310 meters east-northeast of the project boundary, is predicted to be 0.36 in 1 million. The predicted incremental increase in cancer risk at the maximum exposed sensitive receptor is predicted to be 1.3 in 1 million (Derived Adjusted) located 0.7 kilometers east, northeast of the site. The predicted MICR for the MEIR, MEIW, and the sensitive receptors is below the facility-wide significance threshold of 10 in 1 million. Therefore, based on SCAQMD CEQA significance thresholds, the predicted incremental increase in cancer risk associated with the project will be less than significant.

The maximum chronic hazard index increment at the PMI is predicted to be 0.0063. The maximum predicted chronic impact is located approximately 310 meters east-northeast of the project boundary. The maximum acute hazard index at the PMI is predicted to be approximately 0.042. The maximum predicted acute impact is located along the east RBEP fence line. The chronic and acute index increments are below the project significance threshold of 1.0.

The predicted chronic and acute indices are well below the SCAQMD project significance threshold of 1.0. Therefore, the predicted impact from the project will be less than significant.

[1] All cancer risk values presented represent the 70-year Office of Environmental Health Hazard Assessment (OEHHA) Derived methodology, unless noted.

[2] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

b. Table 5.9-3

i. In Table 5.9-3, the derived cancer risk at the PMI for Turbine 1 is 0.088 x 10^{-6} and the derived adjusted cancer risk at the PMI is 0.07 x 10^{-6}.

aa. What is the difference between "derived" and "derived adjusted"?

Response: The SCAQMD's Risk Assessment Procedures for Rules 1401 and 212[1] indicate that the "Derived (OEHHA)" cancer risk method uses the high-end point-estimates of exposure whereas the "Derived (Adjusted)" cancer risk method uses the breathing rate at the 80th percentile of exposure rather than the high-end point-estimate when the inhalation pathway is one of the dominant exposure pathways.

[1] http://www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf

bb. Please explain which MICR is required for Rule 1401 compliance.

Response: The SCAQMD's Risk Assessment Procedures for Rules 1401 and 212 specify that the MICR be based on the derived adjusted value.

ii. In Table AQMD-2R, the MICR at the PMI for Turbine 1 is 0.73 x 10^{-6}. The 0.73 x 10^{-6} is significantly higher than the corresponding 0.088 x 10^{-6} in Table 5.9-3. Please

explain which is correct.

Response: The public health risk values presented in Table 5.9-3 of the Application were based on the RBEP Toxic Air Contaminant (TAC) emissions estimates using emission factors from the Air Resources Board's California Toxic Emission Factors (CATEF). The public health risk values presented in Table AQMD-2R are based on the SCAQMD's December 21, 2012 request that the RBEP TAC emissions be estimated using the Environmental Protection Agency's AP-42 emission factors and the SCAQMD's February 8, 2013 request that a revised health risk assessment be prepared using the AP-42 based RBEP TAC emissions and a formaldehyde emission factor of 3.6×10^{-4} pounds per million British thermal units (lb/MMBtu). In our opinion, either public health risk value is correct as they only differ in the manner in which the TAC emissions were estimated. However, if the SCAQMD believes that the AP-42 emissions factors, combined with a formaldehyde emission factor of 3.6×10^{-4} lb/MMBtu, are more appropriate, then the 0.73×10^{-6} MICR is the value that should be used.

Please let me know if you have any questions.
Thanks,

Jerry Salamy
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Phone 916-286-0207
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Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Thursday, July 25, 2013 2:26 PM
To: Stephen O'Kane
Cc: Salamy, Jerry/SAC
Subject: AES Redondo Beach (ID 115536)--RBEP Clarifying Questions

Stephen O'Kane, AES--
Jerry Salamy, CH_2M Hill--

Thank you for providing the additional information we requested to deem the applications complete. Since this type of project is extensively reviewed, I would like to ask the following clarifying questions to ensure my understanding is correct.

If at all possible, please provide responses to items 1 and 2 BEFORE the responses to the remaining questions because Jillian Baker and Tom Chico are waiting for my modeling review request memo for the RBEP project.

1. Modeling
   The Operation Impacts Analysis on pg. 5.1-23 of the Application for SCAQMD Permit to Construct and Modification to the Title V Permit to Operate ("Application") did not provide a discussion of the following. Please provide the following so that modeling review request memo is correct.

   a. For the 1-hr averaging time--
      i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?
      ii. If for one turbine, why is the 1-hr for NOx and CO based on three turbines?

   b. For the 3-hr averaging time—
      i. Was the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

   c. For the 24-hr averaging time—
      i. Were the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?

ii. Were the dispersion modeling for SOx based on one turbine operating or all three turbines operating?

d. For the annual averaging time—

i. Was the dispersion modeling for NOx based on one turbine operating or all three turbines operating?

ii. Was the dispersion modeling for PM_{10} and $PM_{2.5}$ based on one turbine operating or all three turbines operating?

2. Health Risk Assessment

In your letter dated 3/15/13 in response to our letter dated 2/8/13, item 7.b. provided (1) Table 5.1B.5bR (BASIS: AP-42 EMISSION FACTORS PER SCAQMD), Summary of Turbine Operation Emissions – Air Toxics; (2) Table AQMD-2R—RBEP Health Risk Assessment Summary: Individual Units (BASIS: AP-42 Emission Factors); and (3) compact disk containing the associated revised HARP input and output files, dated March 2013. These tables and HARP input/output files reflected the change from CATEF emission factors and 120 ppb formaldehyde (basis for AFC), to AP-42 emission factors and 3.60E-04 lb/MMBTU formaldehyde emission factor requested by the SCAQMD.

Please provide the following so I may include in my modeling review request memo, and health risk assessment evaluation.

a. Table AQMD-2R is an abbreviated table that provides only the revised MICR at the PMI, Chronic Hazard Index at the PMI, and Acute Hazard Index at the PMI.

Please provide an update to the following information in the AFC: (1) Table 5.9-3—"Health Risk Assessment Summary: Individual Units"; (2) Table 5.9-4—Health Risk Assessment Summary: Facility"; and (3) Section 5.9.3.1.4—"Summary of Air Toxic Exposure Assessment Results as appropriate to assist Jillian Baker with her modeling review.

b. Table 5.9.-3

i. In Table 5.9-3, the derived cancer risk at the PMI for Turbine 1 is 0.088×10^{-6} and the derived adjusted cancer risk at the PMI is 0.07×10^{-6}.

aa. What is the difference between "derived" and "derived adjusted"?

bb. Please explain which MICR is required for Rule 1401 compliance.

ii. In Table AQMD-2R, the MICR at the PMI for Turbine 1 is 0.73×10^{-6}. The 0.73×10^{-6} is significantly higher than the corresponding 0.088×10^{-6} in Table 5.9-3. Please explain which is correct.

3. Facility Permit Equipment Description

How would you like the three new turbines to be designated (numbered) in the facility permit equipment description (e.g., Turbine Nos. 1, 2, 3, or Turbine Nos. A, B, C)?

4. MW Rating

Pg. 1 of your cover letter dated 11/21/12 for the Application indicates the RBEP is rated at a nominal generating capacity of 496 MW and maximum 530 MW. Pg. 2-2 of the Application indicates a net generating capacity of 496 MW and gross generating capacity of 511 MW, with each CTG rated at 119 MW nominal and the STG rated at 151 MW. Pg. 2-16 indicates each CTG will generate 199 MW (gross) at SAAT conditions and the STG will produce 151 MW (gross). Form 400-E-12 indicates the STG is rated at 152 MW. Therefore, I need clarification.

Please provide the following data for RBEP. (You had provided similar information for the HBEP in your 10/23/12 letter to Chris Perri.)

	ISO 59 F- 60% RH (Evaporative Cooling Off)	106 F-9.6% RH (Evaporative Cooling On, Case 13)	33 F – 93.8% RH (Evaporative Cooling Off, Case 2)	63.3 F – 75.2% RH (Evaporative Cooling On, Case 7)
Gas Turbine Heat Input, mmbtu/h HHV				
Total Heat Input, mmbtu/h HHV (w/duct fire)				
Gas Turbine Gross Output, kW				
Steam Turbine Gross Output, kW				
Total Gross Power Output, kW				
Net Power Output, Kw				
Net Plant Heat Rate, btu/kWh, LHV				
Net Plant Heat Rate, btu/kWh, HHV				

5. Emissions Calculations

On pg. 5.1-16, Table 5.1-17—"RBEP Facility Emissions" provides values for Average Daily Facility Emissions, lb/day. Footnote b indicates the average daily emissions represents the maximum monthly total divided by 30 days. Thus my understanding is that these values are the sum of the 30-day averages ("30-DA") for three turbines. My calculated 30-day averages for pollutants other than PM_{10} do not match the Average Daily Facility Emissions in Table 5.1-17. Therefore, I am providing my calculations below and requesting clarification regarding how the calculations to derive the "Average Daily Facility Emissions" differ.

a. CO

My calculations are as follows:

5 cold starts, 25 warm starts, 60 hot starts, 90 shutdowns
489.5 hr of operation at 100% load, 63.3 °F ambient, without duct burner
186 hr of operation at 100% load, 63.3 °F ambient, with duct burner

CO, lb/month = (5 cold starts) (115.9 lb/cold start) + (25 warm starts) (46 lb/warm start) + (60 hot starts) (33.6 lb/hot start) + (90 shutdowns) (45.3 lb/shutdown) + (489.5 hr) (6.02 lb/hr) + (186 hr) (8.27 lb/hr) = 12,307.51 lb/month

30-DA = (12,307.51 lb/month) (month/30 days) = 410.25 lb/day

From Table 5.1-17:

30-DA = 1258 lb/day for three turbines → 419.33 lb/day

***Please provide emissions calculations for the 419.33 lb/day.

b. NOx

My calculations are as follows:

NOx, lb/month = (5 cold starts) (28.7 lb/cold start) + (25 warm starts) (16.6 lb/warm start) + (60 hot starts) (16.6 lb/hot start) + (90 shutdowns) (9.0 lb/shutdown) + (489.5 hr) (9.89 lb/hr) + (186 hr) (13.59 lb/hr) = 9733.40 lb/month

30-DA = (9733.40 lb/month) (month/30 days) = 324.45 lb/day

From Table 5.1-17:

30-DA = 1018 lb/day for three turbines → 339.33 lb/day

***Please provide emissions calculations for the 339.33 lb/day.

c. <u>PM_{10}</u>

My calculations are as follows:

-

PM_{10}, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (4.5 lb/hr) + (25 warm starts)
(32.5 min/warm start) (hr/60 min) (4.5 lb/hr) + (60 hot starts)
(32.5 min/hot start) (hr/60 min) (4.5 lb/hr) + (90 shutdowns)
(10 min/shutdown) (hr/60 min) (4.5 lb/hr) + (489.5 hr) (4.5 lb/hr) +
(186 hr) (9.5 lb/hr) = 4278.19 lb/month

30-DA = (4278.19 lb/month) (month/30 days) = 142.60 lb/day

From Table 5.1-17:

30-DA = 428 lb/day for three turbines → 142.67 lb/day

***Please confirm that your emissions calculations for the 142.67 lb/day are the same as mine.

d. <u>SO_2</u>

My calculations are as follows:

SO_2, lb/month = (5 cold starts) (90 min/cold start) (hr/60 min) (1.84 lb/hr) + (25 warm starts)
(32.5 min/warm start) (hr/60 min) (1.84 lb/hr) + (60 hot starts)
(32.5 min/hot start) (hr/60 min) (1.84 lb/hr) + (90 shutdowns)
(10 min/shutdown) (hr/60 min) (1.84 lb/hr) + (489.5 hr) (1.84 lb/hr) +
(186 hr) (2.51 lb/hr) = 1493.66 lb/month

30-DA = (1493.66 lb/month) (month/30 days) = 49.79 lb/day

From Table 5.1-17:

30-DA = 158.5 lb/day for three turbines → 52.83 lb/day

***Please provide emissions calculations for the 52.83 lb/day.

e. <u>VOC</u>

My calculations are as follows:

VOC, lb/month = (5 cold starts) (27.9 lb/cold start) + (25 warm starts)
(21 lb/warm start) + (60 hot starts) (20.4 lb/hot start) + (90 shutdowns)
(31.0 lb/shutdown) + (489.5 hr) (1.72 lb/hr) + (186 hr) (2.36 lb/hr)
= 5959.40 lb/month

30-DA = (5959.40 lb/month) (month/30 days) = 198.65 lb/day

From Table 5.1-17:

30-DA = 604 lb/day for three turbines → 201.33 lb/day

***Please provide emissions calculations for the 201.33 lb/day.

6. Costs

a. Capital Costs

On pg. 3-17, Section 3.2.2.4.1—Carbon Capture and Sequestration of the Application states the estimated RBEP capital cost is $250 million to $275 million for the plant and equipment. However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage, footnote a to Table AQMD-7A-1 states the RBEP capital costs is based on $510 million.

Please provide the updated capital cost of RBEP for my evaluation on Carbon Capture and Storage.

b. O & M Costs—Ask John if need.

On pg. 5.10-11, Section 5.10.3.4.4—Impacts on the Local Economy and Employment of the Socioeconomics section of the AFC indicates the RBEP annual non-payroll operations and maintenance budget is expected to be approximately $2,515,000 (in 2012). However, Stephen O'Kane's letter, dated 3/15/13, item 7 on Carbon Capture and Storage indicates a variable O&M cost of $3,255,070/yr, a fixed O&M of $3,066,000/yr, for a total annual O&M of $6,321,070/yr.

Please provide the updated O&M cost for my evaluation on Carbon Capture and Storage.

7. Thermal Efficiency Calculations

My evaluation will need to show that the 1100 lbs CO2/MW_{net} standard is not applicable since I have been receiving a number of questions.

a. Expected Operating Profile

Item 7 of your 1/11/13 response letter provided supporting calculations for the thermal efficiency of 1082 lbs CO2/ MWh_{gross} for the expected operating profile. I reviewed the plant CO2 efficiency calculation in Table AQMD-5. I think there is a math error and the 1082 lbs CO2/MWh_{gross} should actually be 1088 lbs CO2/MW-hr $_{gross}$, as shown below.

Plant CO2 Efficiency Calculation

- Weighted Annual Average Heat Rate with SU/SD and no Degradation.
  (125 hrs * 7564 Btu/kWh + 1600 hrs * 7353 btu/kWh + 730 hrs * 7350 btu/kWh + 18267 btu/kWh * 52.5 hrs + 16520 btu/kWh * 55.4 hrs)/(2455 hrs + 52.5 hrs + 55.4 hrs)
  = ~~7743~~ 7784 Btu LHV / kWh Gross

- 8% Assumed Plant Degradation
  Gross Annual Average CO2 Efficiency with SU/SD and Degradation = (~~7743~~ 7784 btu/kWh / (1 - 0.08)) = ~~8416~~ 8461 Btu LHV / kWh Gross

- Annual Average CO2 Efficiency with SU/SD and Degradation
  (~~8417~~ 8461 btu/kWh * 1000 kWh/MWh * 1.1 HHV/LHV * 1*10-6 MMBtu/Btu * 53.02 kg CO2/MMBtu-HHV * 2.205 lb/kg) = ~~1082~~ 1088 lb CO2 /MWh Gross

Please confirm that the 1088 lb/CO2/MWh_{gross} is correct.

b. Conversion from Gross Basis to Net Basis

Item 3.a. of your 5/9/13 response letter indicated the 1082 lbs CO2/MWh_{gross} converts to 1125 lbs CO2/MWh_{net} based on a 3% parasitic electric load. With a 3% parasitic load only, the 1082 lbs CO2/MW_{gross} converts to 1115 lbs CO2/MWh_{net}, not 1125 lbs CO2/MWh_{net}. Since it does not appear to be 3%, please explain the basis for converting the 1082 lbs CO2/MWh_{gross} to 1125 lbs CO2/$MWh_{net.}$

c. Capacity Factor for Permitted Operating Profile

Item 5.b.i. of your 3/15/13 response letter provided emission rate calculations for the permitted operating profile. I had performed a preliminary capacity factor calculations based on the information provided in Table AQMD-5b-1 to verify that the capacity factor for the permitted operating profile is below 60% and was not a completeness issue.

To avoid applicability of the GHG Emission Performance Standard of 1,100 lbs CO2/MWh, there will be a permit condition limiting the annualized plant capacity to less than 60 percent. In addition, I will include capacity factor calculations for the expected operating profile and the permitted operating profile in my evaluation. Item 3.b. of your 5/9/13 response letter provided Table AQMD-2—RBEP GHG Performance at a 60 Percent Capacity Factor.

To ensure accuracy in my evaluation (PDOC/FDOC), please provide the following:

i. Please provide capacity factor calculation for the expected operating profile.

ii. Please provide capacity factor calculation for the permitted operating profile.

Thank you for your assistance. Again, please provide the responses to items 1 and 2 as soon as you can.

Vicky Lee
Air Quality Engineer
South Coast Air Quality Management District
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Diamond Bar, CA 91765
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[1] http://bv.com/docs/reports-studies/nrel-cost-report.pdf

[2] California Code of Regulations (CCR), Chapter 11, Article 1,§ 2902 Greenhouse Gases Emission Performance Standard (b)

[1] All cancer risk values presented represent the 70-year Office of Environmental Health Hazard Assessment (OEHHA) Derived methodology, unless noted.

[2] All cancer risk values presented represent the 70-year OEHHA Derived methodology, unless noted.

[1] http://www.aqmd.gov/prdas/pdf/riskassessmentprocedures-v7.pdf

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November 4, 2013

Mr. Mohsen Nazemi, P.E.
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Subject: Redondo Beach Energy Project Permit Application (Facility ID# 115536)

Dear Mr. Nazemi:

AES Redondo Beach, LLC (AES) is submitting this letter in response to the South Coast Air Quality Management District's (SCAQMD) October 15, 2013 e-mail approving the methodology for performing the cumulative 1-hour nitrogen dioxide (NO_2) national ambient air quality impact assessment and the Class II visibility impact area analysis for the Redondo Beach Energy Project (RBEP). This letter presents AES's air quality impact assessment and incorporates comments received from the SCAQMD. This letter also demonstrates compliance with SCAQMD Rule 1401.

1) Cumulative 1-hour NO_2 National Ambient Air Quality Impact Assessment

Response: Table SCAQMD-1 presents a comparison of the maximum RBEP operational impacts to the California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively). The NO_2, carbon monoxide (CO), and sulfur dioxide (SO_2) concentrations combined with the background concentrations do not exceed either the CAAQS or NAAQS. Therefore, RBEP will not cause or contribute to the violation of a standard, and the NO_2, CO, and SO_2 impacts from operation will be less than significant.

For particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), modeled RBEP $PM_{2.5}$ concentrations combined with the background concentrations do not exceed the 24-hour NAAQS and will not cause or contribute to the violation of the 24-hour NAAQS. However, the background concentrations exceed both the annual CAAQS and NAAQS without the proposed project. As a result, the predicted project impacts plus background also exceed the annual CAAQS and NAAQS such that operation of the proposed project would further contribute to an existing violation of the annual standards absent mitigation. Similarly, for particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), the background concentrations exceed the 24-hour and annual CAAQS without the proposed project. As a result, the predicted project impacts plus background also exceed the CAAQS such that

operation of the proposed project would further contribute to an existing violation of the CAAQS absent mitigation. As discussed in Application for Certification (AFC) Section 5.1.8.2, which was submitted to the California Energy Commission (CEC) in November 2012, RBEP emissions will be fully offset consistent with SCAQMD Rules 1303, 1304, and 1304.1 using the SCAQMD internal offset bank. Therefore, the $PM_{2.5}$ and PM_{10} impacts from operation will be mitigated to a less-than-significant level.

A summary of the dispersion modeling input files for this analysis, as well as the modeling parameters used, are presented in Attachment 1. The AERMOD input and output files have been separately prepared and are included with this submission on compact disc.

TABLE SCAQMD-1
RBEP Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$) [a]	Total Predicted Concentration ($\mu g/m^3$)	CAAQS ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
NO_2 [b]	1-hour	32.1	184	216	339	—
	Federal 1-hour [c]	32.1	113	145	—	188
	Annual	0.32	29.9	30.2	57	100
SO_2	1-hour	3.35	67.8	71.2	655	—
	Federal 1-hour [d]	3.35	25.3	28.7	—	196
	3-hour	1.47	38.7	40.2	—	1,300
	24-hour	0.48	15.7	16.2	105	365
CO	1-hour	179	4,581	4,760	23,000	40,000
	8-hour	38.0	2,863	2,901	10,000	10,000
PM_{10}	24-hour	1.73	52.0	53.7	50	150
	Annual	0.21	25.6	25.8	20	—
$PM_{2.5}$	24-hour [c]	1.73	31.2	32.9	—	35
	Annual	0.21	15.5	15.7	12	12

[a] Background concentrations were the highest concentrations monitored during 2008 through 2012, with the exception of the 3-hour SO_2 averaging period, which was taken as the highest concentrations monitored during 2008 through 2010.
[b] The maximum 1-hour and annual NO_2 concentrations include ambient NO_2 ratios of 0.80 (U.S. Environmental Protection Agency [EPA], 2011) and 0.75 (EPA, 2005), respectively.
[c] Total predicted concentrations for the Federal 1-hour NO_2 standard and 24-hour $PM_{2.5}$ standard are the respective maximum modeled concentrations combined with the 3-year average of 98th percentile background concentrations.
[d] Total predicted concentrations for the Federal 1-hour SO_2 standard is the maximum modeled concentration combined with the 3-year average of 99th percentile background concentrations.

$\mu g/m^3$ = micrograms per cubic meter

Table SCAQMD-2 presents a summary of the predicted hourly and annual NO_2 and 24-hour and annual PM_{10} impacts from RBEP operation, as well as a comparison to the Class II Significant Impact Levels (SILs), Class II Prevention of Significant Deterioration (PSD) Increment Standards, and the significant monitoring concentration levels. The dispersion modeling was performed consistent with the RBEP dispersion modeling protocol and addendum. As shown, the maximum predicted annual NO_2, 24-hour PM_{10}, and annual PM_{10} impacts from RBEP operation are below the Class II SILs, PSD Class II Increment Standards, and significant monitoring concentrations. Therefore, additional analysis of annual NO_2, 24-hour PM_{10}, and annual PM_{10} impacts is not required. However, the maximum predicted 1-hour NO_2 impacts from RBEP

operation exceed the Class II SIL, with a radius of impact with predicted concentrations greater than 7.52 micrograms per cubic meter ($\mu g/m^3$) of 0.9 kilometers (km). Therefore, the cumulative impacts of the RBEP and competing sources were assessed for all receptors where RBEP impacts alone exceeded the 1-hour NO_2 SIL.

TABLE SCAQMD-2
RBEP Predicted Impacts Compared to the PSD Air Quality Impact Standards

Averaging Period/ Pollutant	Maximum Predicted Impact ($\mu g/m^3$) [a]	Significant Impact Level ($\mu g/m^3$)	PSD Class II Increment Standard ($\mu g/m^3$)	Significant Monitoring Concentration ($\mu g/m^3$)
NO_2 (1-hour)	32.1	7.52 [b]	N/A	N/A
NO_2 (Annual)	0.32	1.0	25	14
PM_{10} (24-hour)	1.73	5.0	30	10
PM_{10} (Annual)	0.21	1.0	17	N/A

[a] The maximum 1-hour and annual NO_2 concentrations include ambient NO_2 ratios of 0.80 (EPA, 2011) and 0.75 (EPA, 2005), respectively.
[b] The SIL for 1-hour NO_2 is based on SCAQMD correspondence.

N/A = Not Applicable (i.e., no standard)

The SCAQMD identified four facilities within 10 km of RBEP for inclusion in the cumulative impact assessment:

- Exxon Mobil Oil Corporation (Facility ID 800089): located in Torrance, California with 29 emission sources
- Chevron Products Corporation (Facility ID 800030): located in El Segundo, California with 37 emission sources
- Scattergood Generating Station (Facility ID 800075): located in Playa del Rey, California with four emission sources
- El Segundo Power, LLC (Facility ID 115663): located in El Segundo, California with five emission sources

The stack locations, stack parameters, and 1-hour NO_2 emission rates for the emission sources at these four facilities were provided by the SCAQMD[1]. Attachment 2 includes copies of the SCAQMD correspondence.

The cumulative impacts of the RBEP and competing sources were assessed for all receptors where RBEP impacts alone exceeded the 1-hour NO_2 SIL. Table SCAQMD-3 presents a summary of the maximum predicted cumulative 1-hour NO_2 impacts from RBEP operation and competing sources as well as a comparison to the NAAQS. As shown in Table SCAQMD-3, the predicted RBEP cumulative impacts, including a representative background NO_2 concentration, are below the NAAQS.

[1] SCAQMD staff provided information for Exxon Mobile Oil Corporation (Facility ID 800089) through a Public Records Request on June 19, 2013; information for Chevron Products Corporation (Facility ID 800030) via e-mail on September 5, 2013; and information for Scattergood Generating Station (Facility ID 800075) and El Segundo Power, LLC (Facility ID 115663) via e-mail on October 3, 2013.

TABLE SCAQMD-3
RBEP and Competing Source Predicted 1-hour NO_2 Impacts Compared to the NAAQS

Pollutant	Averaging Time	Total Predicted Concentration (µg/m^3) [a]	Federal Standard (µg/m^3)
NO_2	1-hour	146	188

[a] Total predicted concentration for the Federal 1-hour NO_2 standard is the maximum modeled concentration paired with the 3-year average of 98th percentile seasonal hour-of-day background concentrations, as provided by the SCAQMD.

The Federal 1-hour NO_2 impacts presented in Tables SCAQMD-1 and SCAQMD-3 cannot be directly compared primarily due to the different methods used to derive the applicable background concentrations (in addition to the receptor domains and the emission sources). In the case of Table SCAQMD-1, the background concentration used represents the 3-year average of 98th percentile background concentrations. Use of the 3-year average of 98th percentile background concentrations assumes this value occurs every hour of the year, which is not consistent with monitoring data. The SCAQMD provided representative 3-year average of the 98th percentile seasonal hour-of-day background concentrations for use in this analysis. These seasonal hour-of-day background NO_2 concentrations are based on actual monitoring data, resulting in the more refined NO_2 impact assessment presented in Table SCAQMD-3.

A summary of the dispersion modeling input files for this analysis, as well as the modeling parameters used, are presented in Attachment 3. The AERMOD input and output files have been separately prepared and are included with this submission on compact disc.

References

U.S. Environmental Protection Agency (EPA). 2005. *Guideline on Air Quality Models*, 40 Code of Federal Regulations 51, Appendix W. November.

U.S. Environmental Protection Agency (EPA). 2011. *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-Hour NO_2 National Ambient Air Quality Standard*. EPA Office of Air Quality Planning and Standards. March 1.

2) Revised Class II Visibility Impact Area Analysis

Response: As requested, a visibility analysis for Class II areas within 50 km of RBEP was performed using the VISCREEN plume modeling program per the procedures outlined in the *Workbook for Plume Visual Impact Screening and Analysis* (EPA, 1992), as further described in Attachment 4. Please note that the VISCREEN Tier I and II assessments were conducted using criteria for Class I areas, as no criteria exist for Class II areas. Therefore, the visibility assessment was conducted using overly conservative assumptions for Class II areas. However, even using the conservative approach, the modeled results from the visual assessment demonstrates that RBEP would not adversely affect visibility at nearby Class II Areas.

Table SCAQMD-4 summarizes the VISCREEN Tier I modeled results for each Class II area evaluated.[2] The maximum modeled values for color difference and contrast are presented for inside the area analyzed, regardless of the VISCREEN modeled lines of sight for the observer.

TABLE SCAQMD-4
RBEP Tier I VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Variable	Sky	Terrain	Criteria [a]
Kenneth Hahn State Park	16.9	18.9	Color Difference	1.011	**2.79**	2.0
			Contrast	0.01	0.018	|0.05|
Will Rogers State Park and Topanga State Park [b]	24.6	34.7	Color Difference	1.247	1.772	2.0
			Contrast	-0.013	0.013	|0.05|
Malibu Creek State Park and Malibu Lagoon State Park [c]	33.2	43.6	Color Difference	0.911	1.208	2.0
			Contrast	0.009	0.011	|0.05|

Bold values exceed the Class I significant impact criterion.
[a] Levels of concern for Class I areas were used because no specific requirements or criteria exist for assessing Class II visibility impacts (Federal Land Managers [FLM], 2010).
[b] Assumed Will Rogers State Park and Topanga State Park cover the same area since they are directly adjacent to one another.
[c] Assumed Malibu Creek State Park and Malibu Lagoon State Park cover the same area since they are directly adjacent to one another.

As shown in Table SCAQMD-4, the results of the Tier I assessment demonstrate that the proposed RBEP would be below the significance criterion for both color difference and contrast at Will Rogers State Park, Topanga State Park, Malibu Creek State Park, and Malibu Lagoon State Park. The Tier I assessment did, however, exceed the criterion for color difference at Kenneth Hahn State Park. As a result, a Tier II assessment was performed for the Kenneth Hahn State Park. The Tier II assessment utilized the Los Angeles International Airport AERMET meteorological dataset for years 2005 through 2009, to determine representative worst-case single combinations of wind speed, wind direction, and atmospheric stability for

[2] SCAQMD staff approved the Class II areas for evaluation via e-mail on June 20, 2013.

each Class II area above the screening criteria. The Tier II assessment results are summarized in Table SCAQMD-5.

TABLE SCAQMD-5
RBEP Tier II VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Wind Speed [a]	Stability [a]	Variable	Sky	Terrain	Criteria [b]
Kenneth Hahn State Park	16.9	18.9	3	E	Color Difference	0.387	0.795	2.0
					Contrast	0.004	0.004	|0.05|

[a] The Joint Frequency Distribution table used to calculate the wind speed and stability for the Tier II assessment is presented in Attachment 4.
[b] Levels of concern for Class I areas were used because no specific requirements or criteria exist for assessing Class II visibility impacts (FLM, 2010).

The RBEP VISCREEN Tier II assessment for Kenneth Hahn State Park did not exceed the criterion for color difference or contrast. As the modeled results are below the conservative Class I area criterion for both color difference and contrast, RBEP would not adversely affect visibility at these or other nearby Class II areas. The VISCREEN input and output files, as well as the meteorological data used in this analysis, have been separately prepared and are included with this submission on compact disc.

References

Federal Land Managers (FLM). 2010. *Federal Land Managers' Air Quality Related Values Workgroup (FLAG) Phase I Report – Revised (2010)*. October.

U.S. Environmental Protection Agency (EPA). 1992. *Workbook for Plume Visual Impact Screening and Analysis* (EPA-454/R-92-023). October.

3) SCAQMD Rule 1401 Compliance

Response: A summary of the maximum individual cancer risk (MICR), chronic health index, and acute health index at the point of maximum impact (PMI) locations, as well as the maximum predicted public health impacts for worker, residential, and sensitive receptors, has been included in Table SCAQMD-6. In accordance with SCAQMD Rule 1401, the results in Table SCAQMD-6 represent the predicted risk for each individual emission unit. The operational health risk assessment modeling followed the methodology outlined in AFC Section 5.9.3.1, which was submitted to the CEC in November 2012, and includes the use of the U.S. Environmental Protection Agency's (EPA) AP-42 emission factors and the SCAQMD-recommended formaldehyde emission factor. The HARP report files have been separately prepared and are included with this submission on compact disc.

As presented in Table SCAQMD-6, the MICR at the PMI for an individual turbine is predicted to be 0.73 in 1 million. The MICR for the Maximally Exposed Individual Resident (MEIR) is predicted to be 0.70 in 1 million (Derived Adjusted) for an individual unit, and the MICR for the Maximally Exposed Individual Worker (MEIW) is predicted to be 0.13 in 1 million for an individual unit. The MICR at the maximally exposed sensitive receptor is predicted to be 0.46 in 1 million for an individual unit. Overall, the predicted MICR for

the MEIR, MEIW, and the maximally exposed sensitive receptor are well below the individual source significance threshold of 1 in 1 million. Therefore, based on SCAQMD Rule 1401, the predicted incremental increase in cancer risk from each individual unit will be less than significant, and best available control technology for toxic organic compounds (T-BACT) would not be required. However, while not required, the emission control technologies included in this project are considered to be T-BACT.

The maximum chronic health index for an individual unit at the PMI is predicted to be 0.0022. The maximum acute health index for an individual unit at the PMI is predicted to be 0.022. The predicted chronic and acute health indices are well below the SCAQMD individual source significance threshold of 1.0. Therefore, the predicted impact from each individual unit will be less than significant, and T-BACT will not be required. However, as previously noted, the emission control technologies included in this project are considered to be T-BACT.

TABLE SCAQMD-6
Operation: Health Risk Assessment Summary – Individual Units

Risk	Turbine 1	Turbine 2	Turbine 3
Cancer Risk at the PMI [a] (per million)	0.73	0.67	0.66
Cancer Risk at the PMI [b] (per million)	0.71	0.65	0.65
Cancer Risk at the MEIR [b] (per million)	0.70	0.65	0.65
Highest Cancer Risk at a Sensitive Receptor [b] (per million)	0.46	0.42	0.41
Cancer Risk at the MEIW (per million)	0.13	0.12	0.12
Chronic Hazard Index at the PMI	0.0022	0.0020	0.0020
Resident Chronic Hazard Index	0.0022	0.0020	0.0020
Worker Chronic Hazard Index	0.0022	0.0020	0.0020
Chronic Hazard Index at a Sensitive Receptor	0.0014	0.0013	0.0013
Acute Hazard Index at the PMI	0.022	0.015	0.011
Resident Acute Hazard Index	0.010	0.010	0.0094
Worker Acute Hazard Index	0.022	0.015	0.011
Acute Hazard Index at a Sensitive Receptor	0.011	0.012	0.0093

[a] Cancer risk values represent the Office of Environmental Health Hazard Assessment (OEHHA) Derived Methodology.
[b] Risk values represent the Derived Adjusted Methodology.

If you require further information, please don't hesitate contacting me at 562-493-7840.

Sincerely,

Stephen O'Kane
Manager
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Attachment 1
RBEP Operational Impact Assessment

Redondo Beach Energy Project
Attachment 1 Table 1
Operational Modeling Parameters - Stack Parameters
October 2013

Point Sources

Scenario	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
1	Stack 1	371060	3746515	4.4	42.7	476	24.1	5.49
	Stack 2	371096	3746520	4.4	42.7	476	24.1	5.49
	Stack 3	371132	3746525	4.4	42.7	476	24.1	5.49
2	Stack 1	371060	3746515	4.4	42.7	479	24.1	5.49
	Stack 2	371096	3746520	4.4	42.7	479	24.1	5.49
	Stack 3	371132	3746525	4.4	42.7	479	24.1	5.49
3	Stack 1	371060	3746515	4.4	42.7	474	21.6	5.49
	Stack 2	371096	3746520	4.4	42.7	474	21.6	5.49
	Stack 3	371132	3746525	4.4	42.7	474	21.6	5.49
4	Stack 1	371060	3746515	4.4	42.7	469	19.1	5.49
	Stack 2	371096	3746520	4.4	42.7	469	19.1	5.49
	Stack 3	371132	3746525	4.4	42.7	469	19.1	5.49
5	Stack 1	371060	3746515	4.4	42.7	463	16.7	5.49
	Stack 2	371096	3746520	4.4	42.7	463	16.7	5.49
	Stack 3	371132	3746525	4.4	42.7	463	16.7	5.49
6	Stack 1	371060	3746515	4.4	42.7	475	22.8	5.49
	Stack 2	371096	3746520	4.4	42.7	475	22.8	5.49
	Stack 3	371132	3746525	4.4	42.7	475	22.8	5.49
7	Stack 1	371060	3746515	4.4	42.7	477	22.8	5.49
	Stack 2	371096	3746520	4.4	42.7	477	22.8	5.49
	Stack 3	371132	3746525	4.4	42.7	477	22.8	5.49
8	Stack 1	371060	3746515	4.4	42.7	472	20.4	5.49
	Stack 2	371096	3746520	4.4	42.7	472	20.4	5.49
	Stack 3	371132	3746525	4.4	42.7	472	20.4	5.49
9	Stack 1	371060	3746515	4.4	42.7	467	18.2	5.49
	Stack 2	371096	3746520	4.4	42.7	467	18.2	5.49
	Stack 3	371132	3746525	4.4	42.7	467	18.2	5.49
10	Stack 1	371060	3746515	4.4	42.7	462	16.0	5.49
	Stack 2	371096	3746520	4.4	42.7	462	16.0	5.49
	Stack 3	371132	3746525	4.4	42.7	462	16.0	5.49
11	Stack 1	371060	3746515	4.4	42.7	486	22.7	5.49
	Stack 2	371096	3746520	4.4	42.7	486	22.7	5.49
	Stack 3	371132	3746525	4.4	42.7	486	22.7	5.49
12	Stack 1	371060	3746515	4.4	42.7	481	22.3	5.49
	Stack 2	371096	3746520	4.4	42.7	481	22.3	5.49
	Stack 3	371132	3746525	4.4	42.7	481	22.3	5.49
13	Stack 1	371060	3746515	4.4	42.7	471	18.8	5.49
	Stack 2	371096	3746520	4.4	42.7	471	18.8	5.49
	Stack 3	371132	3746525	4.4	42.7	471	18.8	5.49
14	Stack 1	371060	3746515	4.4	42.7	467	17.0	5.49
	Stack 2	371096	3746520	4.4	42.7	467	17.0	5.49
	Stack 3	371132	3746525	4.4	42.7	467	17.0	5.49
15	Stack 1	371060	3746515	4.4	42.7	463	15.1	5.49
	Stack 2	371096	3746520	4.4	42.7	463	15.1	5.49
	Stack 3	371132	3746525	4.4	42.7	463	15.1	5.49

Redondo Beach Energy Project

Attachment 1 Table 2

Operational Modeling Parameters - Emission Rates

October 2013

Per Turbine Emission Rates for 1-hr, 3-hr, 8-hr, and 24-hr Emissions Scenarios

	1-hr NO_2		1-hr CO		8-hr CO		1-hr SO_2		3-hr SO_2		24-hr SO_2		24-hr PM_{10}		24-hr $PM_{2.5}$	
Scenario	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
1	3.21	25.4	14.35	114	6.09	48.3	0.33	2.63	0.33	2.63	0.33	2.63	1.20	9.50	1.20	9.50
2	3.21	25.4	14.35	114	5.91	46.9	0.25	1.96	0.25	1.96	0.25	1.96	0.57	4.50	0.57	4.50
3	3.21	25.4	14.35	114	5.86	46.5	0.22	1.78	0.22	1.78	0.22	1.78	0.57	4.50	0.57	4.50
4	3.21	25.4	14.35	114	5.82	46.2	0.20	1.60	0.20	1.60	0.20	1.60	0.57	4.50	0.57	4.50
5	3.21	25.4	14.35	114	5.78	45.8	0.18	1.44	0.18	1.44	0.18	1.44	0.57	4.50	0.57	4.50
6	3.21	25.4	14.35	114	6.06	48.1	0.32	2.51	0.32	2.51	0.32	2.51	1.20	9.50	1.20	9.50
7	3.21	25.4	14.35	114	5.88	46.7	0.23	1.84	0.23	1.84	0.23	1.84	0.57	4.50	0.57	4.50
8	3.21	25.4	14.35	114	5.83	46.3	0.21	1.66	0.21	1.66	0.21	1.66	0.57	4.50	0.57	4.50
9	3.21	25.4	14.35	114	5.79	46.0	0.19	1.50	0.19	1.50	0.19	1.50	0.57	4.50	0.57	4.50
10	3.21	25.4	14.35	114	5.75	45.7	0.17	1.35	0.17	1.35	0.17	1.35	0.57	4.50	0.57	4.50
11	3.21	25.4	14.35	114	6.04	47.9	0.31	2.45	0.31	2.45	0.31	2.45	1.20	9.50	1.20	9.50
12	3.21	25.4	14.35	114	5.87	46.6	0.22	1.78	0.22	1.78	0.22	1.78	0.57	4.50	0.57	4.50
13	3.21	25.4	14.35	114	5.79	45.9	0.19	1.48	0.19	1.48	0.19	1.48	0.57	4.50	0.57	4.50
14	3.21	25.4	14.35	114	5.75	45.7	0.17	1.35	0.17	1.35	0.17	1.35	0.57	4.50	0.57	4.50
15	3.21	25.4	14.35	114	5.72	45.4	0.15	1.22	0.15	1.22	0.15	1.22	0.57	4.50	0.57	4.50

Per Turbine Emission Rates for Annual Average Emissions Scenarios

	Annual NO_2		Annual PM_{10}		Annual $PM_{2.5}$	
Scenario	(g/s)	(lb/hr)	(g/s)	(lb/hr)	(g/s)	(lb/hr)
7	1.16	9.24	0.48	3.78	0.48	3.78
8	1.08	8.55	0.48	3.78	0.48	3.78
9	1.00	7.96	0.48	3.78	0.48	3.78
10	0.94	7.43	0.48	3.78	0.48	3.78

Redondo Beach Energy Project
Attachment 1 Table 3
Operational Building Parameters for AERMOD Input
October 2013

Building Name	Number of Tiers	Tier Number	Base Elevation (m)	Tier Height (m)	Number of Corners	Corner 1 East (X) (m)	Corner 1 North (Y) (m)	Corner 2 East (X) (m)	Corner 2 North (Y) (m)	Corner 3 East (X) (m)	Corner 3 North (Y) (m)	Corner 4 East (X) (m)	Corner 4 North (Y) (m)	Corner 5 East (X) (m)	Corner 5 North (Y) (m)	Corner 6 East (X) (m)	Corner 6 North (Y) (m)
offsite1	1	1	7.00	6.10	8	371099	3746803	371114	3746808	371121	3746790	371136	3746748	371136	3746731	371122	3746730
offsite2	1	1	7.22	6.10	4	371125	3746705	371142	3746707	371177	3746474	371162	3746472				
offsite3	1	1	9.91	12.19	23	371178	3746442	371211	3746443	371211	3746431	371220	3746430	371226	3746361	371212	3746360
STG	1	1	4.42	12.19	4	371105	3746567	371114	3746548	371133	3746557	371124	3746575				
acc	1	1	4.42	25.30	4	371033	3746607	371054	3746560	371110	3746585	371089	3746633				
Admin	1	1	4.42	5.79	4	370986	3746523	371004	3746484	371024	3746493	371006	3746531				
FGComp	1	1	4.42	7.62	4	370960	3746582	370975	3746547	370993	3746555	370978	3746589				
CTGBLDG	2	1	4.42	18.44	4	371038	3746510	371140	3746525	371150	3746460	371048	3746445				
CTGBLDG	*	2	*	25.45	4	371038	3746510	371140	3746525	371144	3746495	371043	3746481				
wail	1	1	4.42	27.13	8	371000	3746612	370958	3746580	371037	3746405	371071	3746410	371072	3746409	371036	3746404
finfan	1	1	4.42	4.57	4	371078	3746564	371104	3746568	371106	3746553	371080	3746549				
Trans1	1	1	4.42	9.14	4	371049	3746430	371061	3746432	371064	3746417	371052	3746415				
Trans2	1	1	4.42	9.14	4	371085	3746436	371097	3746438	371100	3746423	371088	3746421				
Trans3	1	1	4.42	9.14	4	371121	3746442	371133	3746443	371135	3746428	371123	3746426				

Redondo Beach Energy Project
Attachment 1 Table 3
Operational Building Parameters for AERMOD Input
October 2013

Building Name	Number of Tiers	Tier Number	Base Elevation (m)	Tier Height (m)	Number of Corners	Corner 7 East (X) (m)	Corner 7 North (Y) (m)	Corner 8 East (X) (m)	Corner 8 North (Y) (m)	Corner 9 East (X) (m)	Corner 9 North (Y) (m)	Corner 10 East (X) (m)	Corner 10 North (Y) (m)	Corner 11 East (X) (m)	Corner 11 North (Y) (m)	Corner 12 East (X) (m)	Corner 12 North (Y) (m)
offsite1	1	1	7.00	6.10	8	371120	3746746	371107	3746784								
offsite2	1	1	7.22	6.10	4												
offsite3	1	1	9.91	12.19	23	371217	3746295	371207	3746295	371212	3746288	371215	3746282	371216	3746275	371212	3746270
STG	1	1	4.42	12.19	4												
acc	1	1	4.42	25.30	4												
Admin	1	1	4.42	5.79	4												
FGComp	1	1	4.42	7.62	4												
CTGBLDG	2	1	4.42	18.44	4												
CTGBLDG	*	2	*	25.45	4												
wail	1	1	4.42	27.13	8	370956	3746580	370999	3746613								
finfan	1	1	4.42	4.57	4												
Trans1	1	1	4.42	9.14	4												
Trans2	1	1	4.42	9.14	4												
Trans3	1	1	4.42	9.14	4												

Redondo Beach Energy Project
Attachment 1 Table 3
Operational Building Parameters for AERMOD Input
October 2013

Building Name	Number of Tiers	Tier Number	Base Elevation (m)	Tier Height (m)	Number of Corners	Corner 13 East (X) (m)	Corner 13 North (Y) (m)	Corner 14 East (X) (m)	Corner 14 North (Y) (m)	Corner 15 East (X) (m)	Corner 15 North (Y) (m)	Corner 16 East (X) (m)	Corner 16 North (Y) (m)	Corner 17 East (X) (m)	Corner 17 North (Y) (m)	Corner 18 East (X) (m)	Corner 18 North (Y) (m)
offsite1	1	1	7.00	6.10	8												
offsite2	1	1	7.22	6.10	4												
offsite3	1	1	9.91	12.19	23	371207	3746264	371197	3746263	371190	3746265	371184	3746273	371185	3746281	371188	3746289
STG	1	1	4.42	12.19	4												
acc	1	1	4.42	25.30	4												
Admin	1	1	4.42	5.79	4												
FGComp	1	1	4.42	7.62	4												
CTGBLDG	2	1	4.42	18.44	4												
CTGBLDG	*	2	*	25.45	4												
wail	1	1	4.42	27.13	8												
finfan	1	1	4.42	4.57	4												
Trans1	1	1	4.42	9.14	4												
Trans2	1	1	4.42	9.14	4												
Trans3	1	1	4.42	9.14	4												

Redondo Beach Energy Project
Attachment 1 Table 3
Operational Building Parameters for AERMOD Input
October 2013

Building Name	Number of Tiers	Tier Number	Base Elevation (m)	Tier Height (m)	Number of Corners	Corner 19 East (X) (m)	Corner 19 North (Y) (m)	Corner 20 East (X) (m)	Corner 20 North (Y) (m)	Corner 21 East (X) (m)	Corner 21 North (Y) (m)	Corner 22 East (X) (m)	Corner 22 North (Y) (m)	Corner 23 East (X) (m)	Corner 23 North (Y) (m)
offsite1	1	1	7.00	6.10	8										
offsite2	1	1	7.22	6.10	4										
offsite3	1	1	9.91	12.19	23	371188	3746293	371174	3746436	371178	3746437	371178	3746441	371178	3746441
STG	1	1	4.42	12.19	4										
acc	1	1	4.42	25.30	4										
Admin	1	1	4.42	5.79	4										
FGComp	1	1	4.42	7.62	4										
CTGBLDG	2	1	4.42	18.44	4										
CTGBLDG	*	2	*	25.45	4										
wail	1	1	4.42	27.13	8										
finfan	1	1	4.42	4.57	4										
Trans1	1	1	4.42	9.14	4										
Trans2	1	1	4.42	9.14	4										
Trans3	1	1	4.42	9.14	4										

Redondo Beach Energy Project
Attachment 1 Table 4
Operational Modeling Results Summary
October 2013

Case 1: 33°F, 100% Load with Duct Burner Firing

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	15.4	-	86	14.1	1.99	1.22	0.28	1.03	-	1.03	-
2006	14.3	-	79.9	13.8	1.84	1.19	0.32	1.17	-	1.17	-
2007	13.4	-	75.1	18.4	1.73	1.47	0.34	1.23	-	1.23	-
2008	25.9	-	145.1	10.7	3.35	1.25	0.24	0.87	-	0.87	-
2009	12.3	-	69	14.8	1.59	1.22	0.29	1.04	-	1.04	-

Case 2: 33°F, 100% Load

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	15.4	-	86	13.6	1.48	0.91	0.21	0.48	-	0.48	-
2006	14.2	-	79.6	13.3	1.37	0.88	0.24	0.55	-	0.55	-
2007	13.4	-	74.8	17.8	1.29	1.09	0.25	0.58	-	0.58	-
2008	25.9	-	145.1	10.4	2.50	0.92	0.18	0.41	-	0.41	-
2009	12.3	-	69	14.3	1.18	0.90	0.21	0.49	-	0.49	-

Case 3: 33°F, 90% Load

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	17.4	-	97	15.3	1.52	0.89	0.22	0.55	-	0.55	-
2006	15.5	-	86.5	22.5	1.35	1.14	0.35	0.87	-	0.87	-
2007	15.7	-	87.6	21.9	1.37	1.08	0.30	0.75	-	0.75	-
2008	27.5	-	153.8	11.5	2.41	0.94	0.18	0.45	-	0.45	-
2009	13.6	-	76	16.7	1.19	0.90	0.22	0.55	-	0.55	-

Case 4: 33°F, 80% Load

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	20.0	-	112	17.8	1.57	0.97	0.24	0.69	-	0.69	-
2006	17.8	-	99.4	29.5	1.39	1.30	0.43	1.20	-	1.20	-
2007	17.8	-	100	23.8	1.40	1.06	0.29	0.83	-	0.83	-
2008	29.3	-	164.1	13.6	2.30	0.95	0.18	0.51	-	0.51	-
2009	17.2	-	96	18.3	1.35	0.88	0.22	0.61	-	0.61	-

Case 5: 33°F, 70% Load

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	22.9	-	128	23.5	1.61	1.06	0.26	0.83	-	0.83	-
2006	24.1	-	135	33.1	1.70	1.32	0.46	1.44	-	1.44	-
2007	20.1	-	113	27.2	1.42	1.10	0.31	0.96	-	0.96	-
2008	31.0	-	174	16.9	2.19	0.98	0.19	0.60	-	0.60	-
2009	20.3	-	114	20.2	1.43	0.88	0.23	0.71	-	0.71	-

Case 6: 63.3°F, 100% Load with Duct Burner Firing

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	16.5	-	93	14.6	2.04	1.21	0.29	1.12	-	1.12	-
2006	14.8	-	83.0	16.1	1.83	1.27	0.36	1.35	-	1.35	-
2007	14.0	-	78.5	19.1	1.73	1.46	0.34	1.28	-	1.28	-
2008	26.9	-	150.6	11.1	3.32	1.25	0.24	0.91	-	0.91	-
2009	12.9	-	72	16.4	1.59	1.20	0.29	1.11	-	1.11	-

Case 7: 63.3°F, 100% Load

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	16.5	0.27	92	14.1	1.49	0.88	0.21	0.53	0.15	0.53	0.15
2006	14.8	0.24	82.8	15.6	1.33	0.93	0.26	0.64	0.13	0.64	0.13
2007	14.0	0.25	78.3	18.5	1.26	1.07	0.25	0.61	0.14	0.61	0.14
2008	26.9	0.26	150.7	10.7	2.43	0.92	0.17	0.43	0.14	0.43	0.14
2009	12.9	0.26	72	15.9	1.16	0.88	0.21	0.52	0.14	0.52	0.14

Case 8: 63.3°F, 90% Load

	NO_2 ($\mu g/m^3$)		CO ($\mu g/m^3$)		SO_2 ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	18.4	0.28	103	16.9	1.50	0.86	0.22	0.58	0.17	0.58	0.17
2006	16.1	0.25	90.3	23.3	1.31	1.11	0.34	0.92	0.15	0.92	0.15
2007	16.2	0.26	90.7	22.7	1.32	1.05	0.29	0.79	0.15	0.79	0.15
2008	28.4	0.27	158.9	12.4	2.32	0.92	0.17	0.47	0.16	0.47	0.16
2009	14.6	0.28	82	17.4	1.19	0.87	0.21	0.58	0.16	0.58	0.16

Redondo Beach Energy Project
Attachment 1 Table 4
Operational Modeling Results Summary
October 2013

Case 9: 63.3°F, 80% Load

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	21.1	0.30	118	17.9	1.55	0.93	0.24	0.71	0.19	0.71	0.19
2006	18.6	0.26	104.0	30.4	1.37	1.26	0.43	1.29	0.17	1.29	0.17
2007	18.4	0.27	103	24.6	1.35	1.03	0.29	0.86	0.17	0.86	0.17
2008	29.8	0.28	167	14.4	2.20	0.94	0.18	0.54	0.18	0.54	0.18
2009	17.8	0.29	100	18.9	1.31	0.86	0.22	0.65	0.18	0.65	0.18

Case 10: 63.3°F, 70% Load

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	24.7	0.32	138	25.0	1.63	1.11	0.27	0.90	0.21	0.90	0.21
2006	26.1	0.29	146	35.3	1.73	1.33	0.48	1.61	0.19	1.61	0.19
2007	22.9	0.29	128	29.2	1.52	1.17	0.31	1.03	0.20	1.03	0.20
2008	31.5	0.30	176	17.5	2.09	1.01	0.19	0.63	0.20	0.63	0.20
2009	20.8	0.31	116	20.7	1.38	1.02	0.22	0.73	0.21	0.73	0.21

Case 11: 106°F, 100% Load with Duct Burner Firing

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	15.9	-	89	14.3	1.91	1.16	0.27	1.06	-	1.06	-
2006	14.6	-	81.6	15.7	1.75	1.21	0.34	1.32	-	1.32	-
2007	13.8	-	77.2	18.7	1.66	1.40	0.32	1.26	-	1.26	-
2008	27.0	-	150.8	10.8	3.24	1.19	0.23	0.89	-	0.89	-
2009	12.6	-	70	15.6	1.51	1.15	0.27	1.06	-	1.06	-

Case 12: 106°F, 100% Load

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	16.6	-	93	14.4	1.45	0.86	0.21	0.53	-	0.53	-
2006	14.9	-	83.3	15.6	1.30	0.90	0.25	0.64	-	0.64	-
2007	14.1	-	78.7	18.5	1.23	1.04	0.24	0.61	-	0.61	-
2008	27.1	-	151.8	10.8	2.37	0.89	0.17	0.43	-	0.43	-
2009	12.9	-	72	16.0	1.13	0.86	0.21	0.53	-	0.53	-

Case 13: 106°F, 90% Load

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	20.1	-	113	17.3	1.46	0.90	0.23	0.69	-	0.69	-
2006	17.8	-	99.9	29.5	1.29	1.21	0.40	1.21	-	1.21	-
2007	17.9	-	100	23.8	1.30	0.99	0.27	0.83	-	0.83	-
2008	29.5	-	165	13.6	2.14	0.89	0.17	0.52	-	0.52	-
2009	17.4	-	97	18.3	1.26	0.82	0.20	0.62	-	0.62	-

Case 14: 106°F, 80% Load

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	22.3	-	125	22.6	1.48	0.97	0.24	0.80	-	0.80	-
2006	22.8	-	127	31.6	1.51	1.19	0.41	1.38	-	1.38	-
2007	19.2	-	107	25.8	1.27	0.97	0.27	0.91	-	0.91	-
2008	30.6	-	171	16.4	2.03	0.89	0.18	0.59	-	0.59	-
2009	18.5	-	104	19.7	1.23	0.81	0.21	0.69	-	0.69	-

Case 15: 106°F, 70% Load

	NO_2 (µg/m^3)		CO (µg/m^3)		SO_2 (µg/m^3)			PM_{10} (µg/m^3)		$PM_{2.5}$ (µg/m^3)	
Year	1-hr	Annual	1-hr	8-hr	1-hr	3-hr	24-hr	24-hr	Annual	24-hr	Annual
2005	26.3	-	147	26.4	1.57	1.04	0.25	0.93	-	0.93	-
2006	27.6	-	154	38.0	1.65	1.32	0.47	1.73	-	1.73	-
2007	25.8	-	145	31.3	1.54	1.18	0.30	1.11	-	1.11	-
2008	32.1	-	179	21.2	1.92	0.94	0.20	0.76	-	0.76	-
2009	21.4	-	120	21.4	1.28	1.05	0.20	0.75	-	0.75	-

The maximum 1-hour and annual NO_2 concentrations include ambient NO_2 ratios of 0.80 and 0.75, respectively.

Attachment 2
RBEP SCAQMD Correspondence Related to Competing Sources

Engel, Elyse/SJC

From: Lisa Ramos [lramos1@aqmd.gov]
Sent: Wednesday, June 19, 2013 1:45 PM
To: Shapiro, Jeff/SFB
Cc: OB PR Support NA Docs
Subject: FW: #72953,
Attachments: 800089 - ExxonMobil.xlsx

JEFF SHAPIRO
CONTROL 72953

I HAVE ATTACHED THE REQUESTED INFORMATION FOR YOUR REQUEST.

Lisa Ramos
Public Records Unit
909.396.3211

Engel, Elyse/SJC

From: Lisa Ramos [lramos1@aqmd.gov]
Sent: Wednesday, June 19, 2013 1:45 PM
To: Shapiro, Jeff/SFB
Cc: OB PR Support NA Docs
Subject: FW: #72953,
Attachments: 800089 - ExxonMobil.xlsx

JEFF SHAPIRO
CONTROL 72953

I HAVE ATTACHED THE REQUESTED INFORMATION FOR YOUR REQUEST.

Lisa Ramos
Public Records Unit
909.396.3211

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

June 19, 2013

JEFF SHAPIRO
CH2M HILL
150 SPEAR ST.# SUITE 750
SAN FRANCISCO, CA 94105

Ref.: CONTROL NO. 72953
Received 6/4/2013

Re: RECENT AB2588 (AIR TOXICS HOT SPOTS) & SUPPORTING HARP TRANSACTION & DISPERSION MODELING FILES (ID 800089).

After a thorough search of this agency's records, the following records were found:
RECENT AB2588 (AIR TOXICS HOT SPOTS) & SUPPORTING HARP TRANSACTION & DISPERSION MODELING FILES (ID 800089).

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 06/19/2013

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m**. to **4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Colleen Paine
Public Records Coordinator

:lr

Exxon Mobile Corporation (Facility ID 800089)

Source Type	ID	X (m)	Y (m)	Elevation (m)	Emission Rate (lb/hr)	Release Height (m)	Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)
POINT	80008901	376802.8983	3746635.787	20	0.02	30.48	2.68	17.03	493.71
POINT	80008902	376790.8979	3746757.788	19.8	0.02	36.58	2.21	4.99	627.04
POINT	80008903	376806.8976	3746819.789	19	17.443	22.86	1.97	16.16	487.04
POINT	80008904	376796.8976	3746839.789	19	49.02	27.43	3.35	27.71	557.59
POINT	80008905	376669.8985	3746639.786	20	0.714	36.58	1.74	11.09	617.59
POINT	80008906	376690.8984	3746639.786	20	0.446	49.68	1.71	9.59	394.26
POINT	80008907	376621.8979	3746823.787	20	22.58	28.65	1.65	20	514.26
POINT	80008908	376613.8979	3746823.787	20	22.58	28.65	1.65	20	514.26
POINT	80008909	376943.8978	3746684.789	18	0.223	21.34	1.22	8.26	632.04
POINT	80008910	376943.8979	3746671.789	18	0.223	19.81	1.51	6.51	603.71
POINT	80008911	376798.8971	3746957.791	18	0.01	30.48	3.17	5.26	613.71
POINT	80008912	376797.8974	3746877.79	19	23	36.27	1.91	5.47	590.93
POINT	80008913	376786.8985	3746575.786	20	4.305	39.62	1.4	8.9	589.26
POINT	80008914	376786.8986	3746545.786	20	3.668	39.62	1.4	8.87	545.37
POINT	80008915	376785.8987	3746513.785	20	5.398	39.62	1.4	5.82	482.04
POINT	80008916	376785.8988	3746486.785	20.7	4.157	39.17	1.98	5.3	579.26
POINT	80008917	376784.8989	3746450.784	21	0.223	39.62	1.49	9.15	595.37
POINT	80008918	376784.8991	3746420.784	21	0.223	39.62	1.49	10.49	595.37
POINT	80008919	376532.8987	3746644.784	20	33.223	30.48	3.73	21.7	518.71
POINT	80008920	376426.8984	3746790.785	20	0.753	45.72	1.62	9.5	443.45
POINT	80008921	376279.8995	3746540.781	22	0.13	45.72	1.95	2.88	927.04
POINT	80008922	376475.8992	3746523.782	21	0.223	45.72	2.29	8.46	660.37
POINT	80008923	376717.8978	3746814.788	20	0.223	30.48	1.77	7.95	460.37
POINT	80008924	376729.8978	3746814.788	20	0.223	30.48	1.77	8.17	473.15
POINT	80008925	377999.7261	3746802.288	16.9	0.6	7.32	0.91	1.22	969.82
POINT	80008926	376746.8984	3746634.786	20	15.755	16.76	2.26	7.4	532.04
POINT	80008927	376797.8975	3746860.789	19	22	36.27	1.75	5.23	526.48
POINT	80008928	376192.9001	3746281.777	23	0.223	24.38	0.99	7.44	750.93
POINT	80008929	376214.7726	3746275.452	23	0.223	5.49	0.91	0.36	1088.71

Engel, Elyse/SJC

Subject: FW: RBEP Response to Public Records Request #72953
Attachments: 800030 - Chevron.xlsx

From: Jillian Baker [mailto:jbaker@aqmd.gov]
Sent: Thursday, September 05, 2013 6:29 PM
To: Salamy, Jerry/SAC; stephen.okane@AES.com
Cc: Tom Chico; Andrew Lee; John Yee; Charles Tupac; Vicky Lee
Subject: Response to Public Records Request #72953

Hi Jerry,

Attached are the parameters to use for Chevron (ID 800030). Please let me know if you have any questions.

You can process this facility with no building downwash.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

Chevron Products Corporation (Facility ID 800030)

Source Type	ID	UTM (NAD83) X (m)	UTM (NAD83) Y (m)	Elevation (m)	Emission Rate (lb/hr)	Release Height (m)	Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)	Sigma Y (m)	Sigma Z (m)	Length (m)
POINT	80003001	369663.02	3752777.81	31.6	3.856	42.67	2.38	8.86	580.93			
POINT	80003002	369187.26	3753481.38	35.1	5.5	22.25	2.82	1.9	417.04			
POINT	80003003	369655	3753546	31.1	6.16	24.99	1.42	2.01	664.26			
POINT	80003004	369655	3753538	31.1	1.928	24.99	1.51	1.06	633.15			
POINT	80003005	370172.88	3752652.79	32.6	3.856	30.48	1.32	2.22	866.48			
POINT	80003006	369507.03	3753619.9	31.1	90.128	47.24	3.05	8.22	640.93			
POINT	80003007	369765.92	3753670.19	33.8	1.23	36.58	1.45	0.71	534.82			
POINT	80003008	369510.07	3753357.55	31.7	6.018	30.48	2.9	6.74	482.59			
POINT	80003009	369492.67	3753435.27	31.9	2.82	36.27	1.36	3.88	599.26			
POINT	80003010	369756	3753596	32	14.28	52.12	2.21	1.34	469.26			
POINT	80003011	369760	3753622	31.5	6.17	33.53	1.33	2.5	509.26			
POINT	80003012	368992.96	3753604.98	35.9	1.928	35.66	1.55	2.72	516.48			
POINT	80003013	368892.63	3753657.62	36.9	1.938	58.52	3.96	1.38	552.59			
POINT	80003014	369835.02	3753077.6	31.4	1.69	39.62	1.22	4.08	745.37			
POINT	80003015	370224.49	3752674.3	32.4	3.53	56.39	2.59	8.15	647.59			
POINT	80003016	370072.01	3752651.22	37.3	1.928	31.09	1.33	0.85	745.93			
POINT	80003017	370055.37	3752650.89	38.7	1.528	31.09	1.28	1.34	715.37			
POINT	80003018	369641.45	3752869.85	29.6	5.784	44.5	2.15	14.07	550.93			
POINT	80003019	370328.32	3752492.88	41.7	11.129	36.58	1.91	2.55	616.48			
POINT	80003020	370327.69	3752466.61	43.4	12.187	36.58	1.91	2.72	622.04			
POINT	80003021	370328.27	3752549.74	35.9	6.642	39.32	1.91	1.64	560.93			
POINT	80003022	370327.95	3752522.1	39	6.467	39.32	1.91	1.29	560.93			
POINT	80003023	368400	3753385	37	1.928	10.97	1.04	8.71	330.93			
POINT	80003024	370241.58	3752622.49	32	14.63	54.86	3.93	2.69	583.15			
POINT	80003025	370244.43	3752642.58	31.9	5.92	54.86	3.1	2.06	533.15			
POINT	80003026	369334.5	3753599.77	27.6	0.25	4.57	0.91	0.36	1172.04			
POINT	80003027	368724.24	3752717.76	40.6	0.25	4.57	0.84	0.58	1149.82			
POINT	80003028	370542.22	3753131.89	30.8	0.03	4.57	0.34	1.01	1069.82			
POINT	80003029	369420.87	3753391.79	30.8	1.473	10.67	0.81	0.89	1059.82			
POINT	80003030	369901.65	3752365.77	29.6	43.8	4.27	0.1	23.76	777.59			
POINT	80003031	369219.59	3753437.49	35.1	2.11	2.13	0.1	177.42	710.93			
POINT	80003032	369515	3753144	35	3.856	45.73	1.8	2.6	550			
POINT	80003033	369543	3753144	34	3.856	45.73	1.8	2.1	550			
POINT	80003034	369724	3753182	32	3.856	46.04	2.5	1.6	553			
POINT	80003035	368058.3	3754068.01	11.15	42.6	91.44	9.14	8.25	735.37			
POINT	80003036	368079.84	3753961.4	1.22	41.18	100.58	7.12	8.25	735.37			
VOLUME	80003037	369494.1	3753385.19	39.3	15.9	2.13				27.97	0.93	120.271

Engel, Elyse/SJC

Subject: FW: AES Redondo Beach - Comments on Dispersion Modeling
Attachments: 800075 - LADWP Scattergood.xlsx; 115663 - El Segundo Energy.xlsx

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From: Jillian Baker [mailto:jbaker@aqmd.gov]
Sent: Thursday, October 03, 2013 7:52 AM
To: Salamy, Jerry/SAC
Cc: Charles Tupac; Mohsen Nazemi; Tom Chico; John Yee; Gbemis@energy.state.ca.us; patricia.kelly@energy.ca.gov; stephen.okane@AES.com; Madams, Sarah/SAC; Vicky Lee
Subject: RE: AES Redondo Beach - Comments on Dispersion Modeling

Good morning Jerry,

Per your previous email, it looks like you would like to include El Segundo Energy (ID# 115663) and LADWP Scattergood (ID# 800075). Since both these projects have modifications (one approved, one undergoing review) whose emissions are not captured in the current background monitoring, it would be appropriate and a conservative approach to add them to the cumulative projects, in addition to what EPA has agreed to. I am attaching the stack parameters to be used for the 2 additional facilities to this email. Instead of sending me an Excel spreadsheet that is a consolidation of previous spreadsheets I sent you, it would be more beneficial if you sent me your AERMOD input file for review prior to modeling.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

From: Jerry.Salamy@CH2M.com [mailto:Jerry.Salamy@CH2M.com]
Sent: Friday, September 27, 2013 10:06 AM
To: Jillian Baker
Cc: Charles Tupac; Mohsen Nazemi; Tom Chico; John Yee; Gbemis@energy.state.ca.us; patricia.kelly@energy.ca.gov; stephen.okane@AES.com; Sarah.Madams@CH2M.com; Jerry.Salamy@CH2M.com
Subject: AES Redondo Beach - Comments on Dispersion Modeling

Hi Jillian,

Attached for your review is a spreadsheet containing the emission inventory (including location, emission and exhaust parameters) we proposed to include in the RBEP 1-hour cumulative NO2 impact assessment. In addition to the Chevron refinery cumulative sources you provided on 9/5 via email, we have identified a few other sources that the AQMD may want to consider for inclusion in this assessment. Once we receive the AQMD's written confirmation of the applicable sources to include in the RBEP 1-hour NO2 cumulative impact assessment, we will submit a final report (including the NO2 and Class II visibility impact assessments) within 10 business days.

As discussed in a recent call with my staff, I will be sending you a copy of the AERMOD-based meteorological dataset that will be used to develop the joint frequency distribution table needed to perform the VISCREEN Tier II analysis for the Kenneth Hahn State Park.

Thanks,

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento

Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

From: Jillian Baker [mailto:jbaker@aqmd.gov]
Sent: Thursday, September 05, 2013 6:18 PM
To: Salamy, Jerry/SAC; stephen.okane@AES.com
Cc: Mohsen Nazemi; Andrew Lee; Charles Tupac; John Yee; Vicky Lee; Tom Chico; Bemis, Gerry@Energy
Subject: AES Redondo Beach - Comments on Dispersion Modeling

Hi Jerry and Stephen,

I have conducted a review of the dispersion modeling performed for the Redondo Beach Energy Project and have the following comments:

1) Federal 1-hour NO2 Cumulative Impact Assessment – I spoke with EPA Region 9 and the feedback received is that the Chevron refinery (Facility ID 800030) will need to be considered in the cumulative impact assessment for the 1-hour NO2 federal standard, in addition to what has been modeled. Jerry, I will send you the modeling parameters in a separate email.
2) Class II Visibility Impact Analysis – The analysis submitted was based on the District's old ISC meteorological data for the stability class determination, which is not appropriate. In order to maintain consistency with the modeling performed for the project, we recommend that the meteorological data used for the AERMOD dispersion modeling be used for the visibility analysis. Please submit a revised visibility analysis using the AERMOD meteorological data for our review.

Please let me know if you have any questions or need additional clarification. FYI, I will be out of the office from 9/9-24, with limited email access.

Jillian Baker, Ph.D.
South Coast AQMD
21865 Copley Drive,
Diamond Bar, CA 91765
Direct: 909.396.3176

Scattergood Generating Station (Facility ID 800075)

Source Type	ID	UTM (NAD83) X (m)	UTM (NAD83) Y (m)	Elevation (m)	Emission Rate (lb/hr)	Release Height (m)	Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)
POINT	80007501	368058.298	3754068.01	10.4	6.89	91.4	9.14	8.25	735.37
POINT	80007502	368053.57	3754130.02	11.3	27.5	64.92	5.79	19.45	366.48
POINT	80007503	368145.4	3754122.11	31.7	17.9	30.48	4.11	28.75	661.48
POINT	80007504	368194.2	3754003.96	31.7	17.9	30.48	4.11	28.75	661.48

El Segundo Power, LLC (Facility ID 115663)

Source Type	ID	UTM (NAD83) X (m)	UTM (NAD83) Y (m)	Elevation (m)	Emission Rate (lb/hr)	Release Height (m)	Diameter (m)	Exit Velocity (m/s)	Exit Temp (K)
POINT	11566301	368191.91	3753219.54	6.1	91.11	64	6.1	14.24	440.93
POINT	11566302	368224.2	3753149.13	6.1	91.11	64	6.1	14.24	440.93
POINT	11566303	368282.89	3753052.79	6.1	81.78	64	6.1	12.41	371.26
POINT	11566304	368301.2	3753007.82	6.1	35.89	45.7	3.4	26.909	664.54
POINT	11566305	368303.56	3753001.79	6.1	35.89	45.7	3.4	26.909	664.54

Attachment 3
RBEP Cumulative Impact Assessment

Redondo Beach Energy Project
Attachment 3 Table 1
Cumulative Modeling Parameters - Stack Parameters
October 2013

Point Sources

Facility	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
RBEP	RBEP Stack 1	371060	3746515	4.42	42.7	463	15.1	5.49
	RBEP Stack 2	371096	3746520	4.42	42.7	463	15.1	5.49
	RBEP Stack 3	371132	3746525	4.42	42.7	463	15.1	5.49
Exxon	Exxon 80008901	376803	3746636	20.0	30.5	494	17.0	2.68
	Exxon 80008902	376791	3746758	19.8	36.6	627	4.99	2.21
	Exxon 80008903	376807	3746820	19.0	22.9	487	16.2	1.97
	Exxon 80008904	376797	3746840	19.0	27.4	558	27.7	3.35
	Exxon 80008905	376670	3746640	20.0	36.6	618	11.1	1.74
	Exxon 80008906	376691	3746640	20.0	49.7	394	9.59	1.71
	Exxon 80008907	376622	3746824	20.0	28.7	514	20.0	1.65
	Exxon 80008908	376614	3746824	20.0	28.7	514	20.0	1.65
	Exxon 80008909	376944	3746685	18.0	21.3	632	8.26	1.22
	Exxon 80008910	376944	3746672	18.0	19.8	604	6.51	1.51
	Exxon 80008911	376799	3746958	18.0	30.5	614	5.26	3.17
	Exxon 80008912	376798	3746878	19.0	36.3	591	5.47	1.91
	Exxon 80008913	376787	3746576	20.0	39.6	589	8.90	1.40
	Exxon 80008914	376787	3746546	20.0	39.6	545	8.87	1.40
	Exxon 80008915	376786	3746514	20.0	39.6	482	5.82	1.40
	Exxon 80008916	376786	3746487	20.7	39.2	579	5.30	1.98
	Exxon 80008917	376785	3746451	21.0	39.6	595	9.15	1.49
	Exxon 80008918	376785	3746421	21.0	39.6	595	10.5	1.49
	Exxon 80008919	376533	3746645	20.0	30.5	519	21.7	3.73
	Exxon 80008920	376427	3746791	20.0	45.7	443	9.50	1.62
	Exxon 80008921	376280	3746541	22.0	45.7	927	2.88	1.95
	Exxon 80008922	376476	3746524	21.0	45.7	660	8.46	2.29
	Exxon 80008923	376718	3746815	20.0	30.5	460	7.95	1.77
	Exxon 80008924	376730	3746815	20.0	30.5	473	8.17	1.77
	Exxon 80008925	378000	3746802	16.9	7.32	970	1.22	0.91
	Exxon 80008926	376747	3746635	20.0	16.8	532	7.40	2.26
	Exxon 80008927	376798	3746861	19.0	36.3	526	5.23	1.75
	Exxon 80008928	376193	3746282	23.0	24.4	751	7.44	0.99
	Exxon 80008929	376215	3746275	23.0	5.49	1,089	0.36	0.91
	Chevron 80003001	369663	3752778	31.6	42.7	581	8.86	2.38
	Chevron 80003002	369187	3753481	35.1	22.3	417	1.90	2.82
	Chevron 80003003	369655	3753546	31.1	25.0	664	2.01	1.42
	Chevron 80003004	369655	3753538	31.1	25.0	633	1.06	1.51
	Chevron 80003005	370173	3752653	32.6	30.5	866	2.22	1.32
	Chevron 80003006	369507	3753620	31.1	47.2	641	8.22	3.05
	Chevron 80003007	369766	3753670	33.8	36.6	535	0.71	1.45
	Chevron 80003008	369510	3753358	31.7	30.5	483	6.74	2.90
	Chevron 80003009	369493	3753435	31.9	36.3	599	3.88	1.36
	Chevron 80003010	369756	3753596	32.0	52.1	469	1.34	2.21
	Chevron 80003011	369760	3753622	31.5	33.5	509	2.50	1.33
	Chevron 80003012	368993	3753605	35.9	35.7	516	2.72	1.55
	Chevron 80003013	368893	3753658	36.9	58.5	553	1.38	3.96

Redondo Beach Energy Project
Attachment 3 Table 1
Cumulative Modeling Parameters - Stack Parameters
October 2013

Point Sources

Facility	Source ID	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
Chevron	Chevron 80003014	369835	3753078	31.4	39.6	745	4.08	1.22
	Chevron 80003015	370224	3752674	32.4	56.4	648	8.15	2.59
	Chevron 80003016	370072	3752651	37.3	31.1	746	0.85	1.33
	Chevron 80003017	370055	3752651	38.7	31.1	715	1.34	1.28
	Chevron 80003018	369641	3752870	29.6	44.5	551	14.1	2.15
	Chevron 80003019	370328	3752493	41.7	36.6	616	2.55	1.91
	Chevron 80003020	370328	3752467	43.4	36.6	622	2.72	1.91
	Chevron 80003021	370328	3752550	35.9	39.3	561	1.64	1.91
	Chevron 80003022	370328	3752522	39.0	39.3	561	1.29	1.91
	Chevron 80003023	368400	3753385	37.0	11.0	331	8.71	1.04
	Chevron 80003024	370242	3752622	32.0	54.9	583	2.69	3.93
	Chevron 80003025	370244	3752643	31.9	54.9	533	2.06	3.10
	Chevron 80003026	369335	3753600	27.6	4.57	1,172	0.36	0.91
	Chevron 80003027	368724	3752718	40.6	4.57	1,150	0.58	0.84
	Chevron 80003028	370542	3753132	30.8	4.57	1,070	1.01	0.34
	Chevron 80003029	369421	3753392	30.8	10.7	1,060	0.89	0.81
	Chevron 80003030	369902	3752366	29.6	4.27	778	23.8	0.10
	Chevron 80003031	369220	3753437	35.1	2.13	711	177	0.10
	Chevron 80003032	369515	3753144	35.0	45.7	550	2.60	1.80
	Chevron 80003033	369543	3753144	34.0	45.7	550	2.10	1.80
	Chevron 80003034	369724	3753182	32.0	46.0	553	1.60	2.50
	Chevron 80003035	368058	3754068	11.2	91.4	735	8.25	9.14
	Chevron 80003036	368080	3753961	1.22	101	735	8.25	7.12
Scattergood	Scattergood 80007501	368058	3754068	10.4	91.4	735	8.25	9.14
	Scattergood 80007502	368054	3754130	11.3	64.9	366	19.5	5.79
	Scattergood 80007503	368145	3754122	31.7	30.5	661	28.8	4.11
	Scattergood 80007504	368194	3754004	31.7	30.5	661	28.8	4.11
El Segundo	ESP 11566301	368192	3753220	6.10	64.0	441	14.2	6.10
	ESP 11566302	368224	3753149	6.10	64.0	441	14.2	6.10
	ESP 11566303	368283	3753053	6.10	64.0	371	12.4	6.10
	ESP 11566304	368301	3753008	6.10	45.7	665	26.9	3.40
	ESP 11566305	368304	3753002	6.10	45.7	665	26.9	3.40

Volume Sources

Facility	Source ID	Base Elevation (m)	Stack Height (m)	Initial Horizontal Dimension (m)	Initial Vertical Dimension (m)
Chevron	Chevron 80003037	39.3	2.13	28.0	0.93

Redondo Beach Energy Project
Attachment 3 Table 2
Cumulative Modeling Parameters - Emission Rates
October2013

Facility	Source ID	1-hr NO_2 (g/s)	(lb/hr)
RBEP	Stack 1	3.21	25.5
	Stack 2	3.21	25.5
	Stack 3	3.21	25.5
Exxon	Exxon 80008901	0.003	0.020
	Exxon 80008902	0.003	0.020
	Exxon 80008903	2.20	17.4
	Exxon 80008904	6.18	49.0
	Exxon 80008905	0.090	0.71
	Exxon 80008906	0.056	0.45
	Exxon 80008907	2.85	22.6
	Exxon 80008908	2.85	22.6
	Exxon 80008909	0.028	0.22
	Exxon 80008910	0.028	0.22
	Exxon 80008911	0.001	0.010
	Exxon 80008912	2.90	23.0
	Exxon 80008913	0.54	4.30
	Exxon 80008914	0.46	3.67
	Exxon 80008915	0.68	5.40
	Exxon 80008916	0.52	4.16
	Exxon 80008917	0.028	0.22
	Exxon 80008918	0.028	0.22
	Exxon 80008919	4.19	33.2
	Exxon 80008920	0.095	0.75
	Exxon 80008921	0.016	0.13
	Exxon 80008922	0.028	0.22
	Exxon 80008923	0.028	0.22
	Exxon 80008924	0.028	0.22
	Exxon 80008925	0.076	0.60
	Exxon 80008926	1.99	15.8
	Exxon 80008927	2.77	22.0
	Exxon 80008928	0.028	0.22
	Exxon 80008929	0.028	0.22
	Chevron 80003001	0.49	3.86
	Chevron 80003002	0.69	5.50
	Chevron 80003003	0.78	6.16
	Chevron 80003004	0.24	1.93
	Chevron 80003005	0.49	3.86
	Chevron 80003006	11.4	90.1
	Chevron 80003007	0.15	1.23
	Chevron 80003008	0.76	6.02
	Chevron 80003009	0.36	2.82
	Chevron 80003010	1.80	14.3
	Chevron 80003011	0.78	6.17
	Chevron 80003012	0.24	1.93
	Chevron 80003013	0.24	1.94
	Chevron 80003014	0.21	1.69
	Chevron 80003015	0.44	3.53
	Chevron 80003016	0.24	1.93

Redondo Beach Energy Project
Attachment 3 Table 2
Cumulative Modeling Parameters - Emission Rates
October2013

Facility	Source ID	1-hr NO_2 (g/s)	(lb/hr)
Chevron	Chevron 80003017	0.19	1.53
	Chevron 80003018	0.73	5.78
	Chevron 80003019	1.40	11.1
	Chevron 80003020	1.54	12.2
	Chevron 80003021	0.84	6.64
	Chevron 80003022	0.81	6.47
	Chevron 80003023	0.24	1.93
	Chevron 80003024	1.84	14.6
	Chevron 80003025	0.75	5.92
	Chevron 80003026	0.031	0.25
	Chevron 80003027	0.031	0.25
	Chevron 80003028	0.004	0.030
	Chevron 80003029	0.19	1.47
	Chevron 80003030	5.52	43.8
	Chevron 80003031	0.27	2.11
	Chevron 80003032	0.49	3.86
	Chevron 80003033	0.49	3.86
	Chevron 80003034	0.49	3.86
	Chevron 80003035	5.37	42.6
	Chevron 80003036	5.19	41.2
	Chevron 80003037	2.00	15.9
Scattergood	Scattergood 80007501	0.87	6.89
	Scattergood 80007502	3.47	27.5
	Scattergood 80007503	2.26	17.9
	Scattergood 80007504	2.26	17.9
El Segundo	ESP 11566301	11.5	91.1
	ESP 11566302	11.5	91.1
	ESP 11566303	10.3	81.8
	ESP 11566304	4.52	35.9
	ESP 11566305	4.52	35.9

Redondo Beach Energy Project
Attachment 3 Table 3
Cumulative Modeling Results Summary
October 2013

Source Group	Year	1-hr NO_2 Concentrations
ALL	2005	146
	2006	139
	2007	138
	2008	142
	2009	141
RBEP	2005	26.3
	2006	27.6
	2007	25.8
	2008	32.1
	2009	21.4
Exxon	2005	13.4
	2006	13.5
	2007	13.5
	2008	13.5
	2009	13.5
Chevron	2005	42.5
	2006	41.1
	2007	43.2
	2008	42.2
	2009	43.1
Scattergood	2005	1.05
	2006	1.01
	2007	0.98
	2008	1.00
	2009	0.99
El Segundo	2005	7.98
	2006	7.98
	2007	7.98
	2008	7.90
	2009	7.93

Total predicted concentration for the Federal 1-hour NO_2 standard is the maximum modeled concentration paired with the three-year average of 98th percentile seasonal hourly background concentrations, as provided by the SCAQMD.

Attachment 4
RBEP Class II Visibility Assessment

AES RBEP Class II Visibility Assessment

PREPARED FOR: AES Southland Development, LLC

COPY TO: CH2M HILL Project Folder

PREPARED BY: John Frohning/CH2M HILL

DATE: October 25, 2013

AES Redondo Beach, LLC (AES) owns and operates the Redondo Beach Generating Station located in Redondo Beach, California and is proposing to replace the existing power boilers with more efficient natural gas-fired combustion turbines in a combined cycle configuration. The proposed Redondo Beach Energy Project (RBEP) would be one of the 28 major source categories defined in Title 40 of the Code of Federal Regulations (CFR), Section 51.166, and the modification would trigger Prevention of Significant Deterioration (PSD) permitting requirements.

The South Coast Air Quality Management District (SCAQMD) is the responsible agency with regards to the permitting of RBEP. In addition to the information needed to satisfy the requirements for a complete PSD permit application, the SCAQMD has requested an analysis of the project's impacts on visibility for nearby Class II areas. This memorandum outlines the RBEP visibility analysis approach and results at the Class II areas of concern identified through consultation with SCAQMD.

Class II Areas of Concern

A survey of California State Parks and Wilderness areas designated as Class II areas was conducted within 50 kilometers (km) of RBEP. The results of this survey were presented to the SCAQMD staff for review and approval. The Class II areas identified and approved by the SCAQAMD for inclusion in the Class II visibility analysis are presented in Table 1 below and shown on Figure 1.

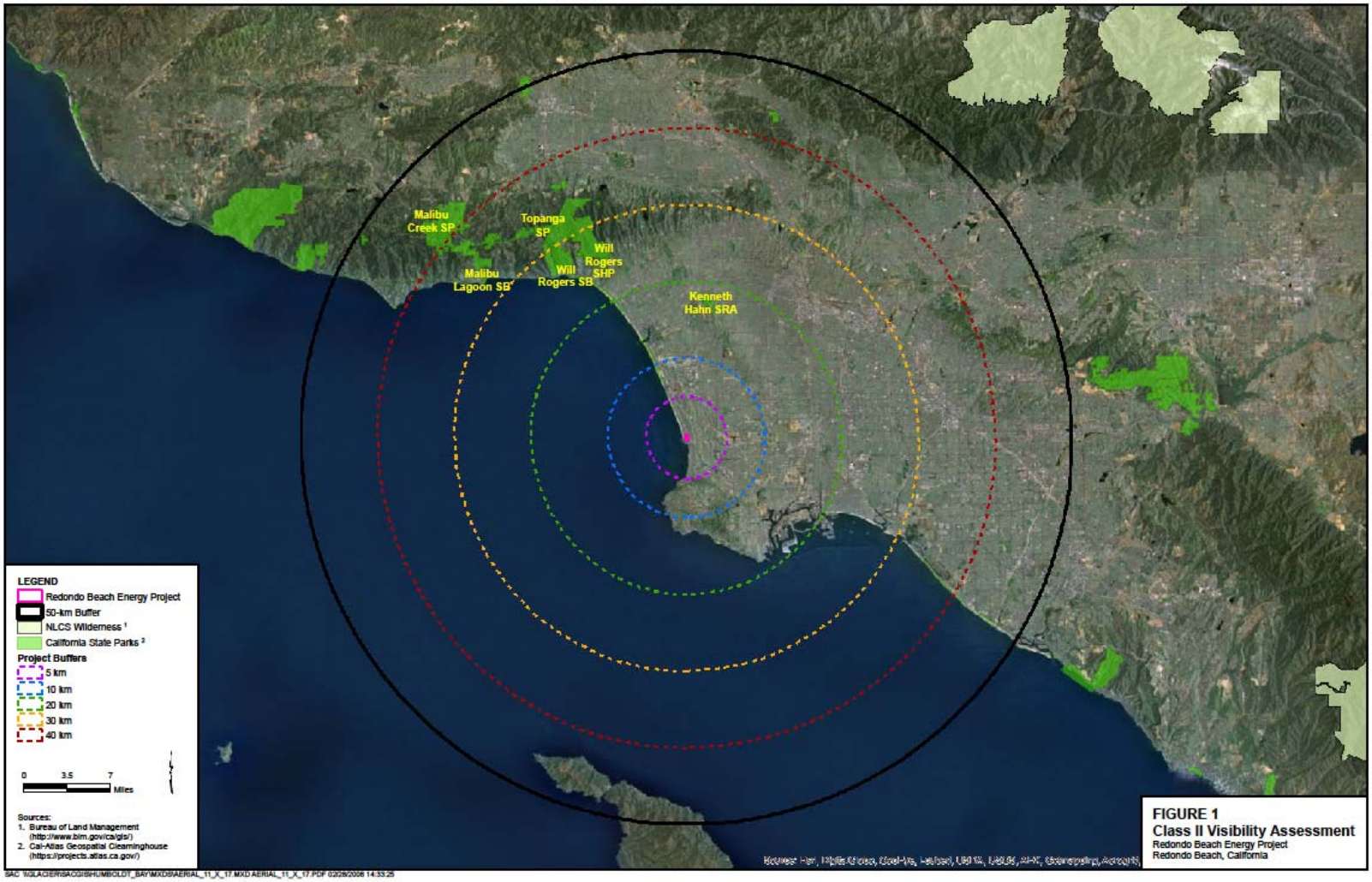
TABLE 1

Class II Areas within 50 km of RBEP

Class II Area	Nearest Distance	Furthest Distance
Kenneth Hahn State Park	16.9 km	18.9 km
Will Rogers State Park [a]	24.6 km	34.7 km
Topanga State Park [a]	24.6 km	34.7 km
Malibu Creek State Park [b]	33.2 km	43.6 km
Malibu Lagoon State Park [b]	33.2 km	43.6 km

[a] Assumed Will Rogers State Park and Topanga State Park cover the same area since they are directly adjacent to one another.
[b] Assumed Malibu Creek State Park and Malibu Lagoon State Park cover the same area since they are directly adjacent to one another.

FIGURE 1
Class II Areas within 50 km of RBEP



Visibility Assessment Approach

No specific requirements or criteria exist in the PSD regulations for assessing Class II visibility impacts. Therefore, the conservative approach used to assess visibility impacts of Class I areas within 50 km of a PSD project site was used.

The *Federal Land Managers' Air Quality Related Values Workgroup (FLAG) Phase I Report – Revised (2010)* (Federal Land Managers [FLM], 2010) guidance document for addressing Class I areas initially recommends the use of the U.S Environmental Protection Agency's (EPA) VISCREEN screening model to assess the change in color difference (ΔE) and contrast between the facility's plume and the viewing background. The VISCREEN screening model can use a tiered approach to determine if the facility's emissions would impact visibility at a nearby Class I area. If the VISCREEN Tier I and Tier II screening assessment demonstrate that visibility could be impacted at the Class I area, then the PLUVUE II model is recommended for a Tier III assessment. The PLUVUE II model differs from the VISCREEN screening model as VISCREEN uses a single representative worst-case meteorological condition to determine the facility's potential impacts on visibility while PLUVUE II considers a realistic array of all conditions that would be expected to occur in a typical year in the region. Procedures outlined in the *Workbook for Plume Visual Impact Screening and Analysis* (EPA, 1992) were followed to conduct a visibility assessment with VISCREEN at the nearby Class II areas.

The VISCREEN screening model was developed to present a visual effect evaluation of emissions from a source as observed from a given vantage point on either a sky or terrain background. Emissions input into the model are assumed to travel along an infinitely long, straight line toward the specified area of concern. As mentioned above, the VISCREEN screening model allows for the use of a tiered approach to assess a proposed source's impacts on visibility. A Tier I assessment utilizes conservative assumptions for both plume characteristics and dispersion conditions to determine if the plume would have an impact on visibility. If a Tier I assessment exceeds the FLAG guidance levels of concern for Class I areas of 2.0 for ΔE and 0.05 for contrast, then a Tier II assessment would be conducted. A Tier II assessment provides a more realistic representation of the possible worst-case meteorology and plume transport for a specific area to be analyzed.

Background visual ranges for the Class II areas presented in Table 1 were selected from the Interagency Monitoring of Protected Visual Environments (IMPROVE) annual average background visual range map. These data are provided on the IMPROVE website[1]. The average of the annual upper and lower bounds of the background visual range for the identified Class II areas was used for the analysis.

For RBEP, if a VISCREEN Tier I assessment exceeded the conservative criteria for Class I areas for either ΔE or contrast, a Tier II assessment utilized the Los Angeles International Airport AERMET meteorological dataset, which was provided by SCAQMD staff for the PSD modeling analysis for years 2005 through 2009, to determine representative worst-case single combinations of wind speed, wind direction, and atmospheric stability for each Class II area above the screening criteria. The 5-years of Los Angeles International Airport meteorological data were pre-processed with the EPA Meteorological Processor for Regulatory Modeling Applications (MPRM, Version 99349) for the Industrial Source Complex (ISC) modeling system. These data, pre-processed with MPRM, contain the required parameters of wind speed, wind direction, and stability class to create the joint frequency distributions[2]. These meteorological data would be considered representative for creating the joint frequency tables for determining the conservative representative worst-case single wind speed and stability class required for a Class I area VISCREEN assessment.

The meteorological data processing utilized the SCAQMD-provided AERMET data for wind speed, wind direction, temperature, and cloud cover. The ceiling height data were from the raw integrated surface hourly (ISH) format from the Los Angeles International Airport National Weather Service (NWS) station. The meteorological data processed with MPRM would be representative of the Class II area VISCREEN assessment. These parameters are

[1] http://www2.nature.nps.gov/air/monitoring/vismonresults.cfm. Accessed June 15, 2013.

[2] Meteorological data processed for ISC is preferred to create the joint frequency distribution tables for a Tier II VISCREEN assessment since the data contain Pasquill-Gifford Stability Classes. Meteorological data pre-processed for AERMOD do not contain the Pasquill-Gifford stability parameters.

required to create the corresponding hourly Pasquill-Gifford stability classes (EPA, 1996). The meteorological data joint frequency distribution of these parameters for each Class II area requiring a Tier II assessment is provided in Attachment A.

Since the annual average background visual ranges for each Class II area was used, the annual average RBEP emissions in tons per year (tpy) were used for oxides of nitrogen (NOx) and total particulate matter (PM). The assessment conservatively assumes only the project increases in emissions from RBEP would be modeled and would not consider any contemporaneous decreases of these pollutants from removal of the existing Redondo Beach Generating Station Units 5, 6, 7, and 8 boilers. The RBEP potential to emit are 121.5 tpy of NOx and 49.7 tpy of PM.

Visibility Assessment Results

Following the approach above, Table 2 summarizes the VISCREEN Tier I modeled results for each Class II area shown in Table 1. The maximum modeled values for ΔE and contrast are presented for inside the area analyzed, regardless of the VISCREEN modeled lines of sight for the observer.

TABLE 2

Tier I VISCREEN Results

Class II Area	Minimum Distance	Maximum Distance	Variable	Sky	Terrain	Criteria
Kenneth Hahn State Park	16.9	18.9	Delta E	1.011	**2.79**	2.0
			Contrast	0.01	0.018	|0.05|
Will Rogers State Park and Topanga State Park	24.6	34.7	Delta E	1.247	1.772	2.0
			Contrast	-0.013	0.013	|0.05|
Malibu Creek State Park and Malibu Lagoon State Park	33.2	43.6	Delta E	0.911	1.208	2.0
			Contrast	0.009	0.011	|0.05|

Bold Values exceed the Class I significant impact criteria.

As shown in Table 2, the results of the Tier I assessment demonstrate that the proposed RBEP would be below the significance criteria for both ΔE and contrast at Will Rogers State Park, Topanga State Park, Malibu Creek State Park, and Malibu Lagoon State Park. The Tier I assessment exceeded the criteria for ΔE at Kenneth Hahn State Park. As a result, a Tier II assessment was performed for the Kenneth Hahn State Park. The Tier II VISCREEN results are summarized in Table 3.

TABLE 3

Tier II RBEP VISCREEN Results for Kenneth Hahn State Park

Class II Area	Minimum Distance	Maximum Distance	Wind Speed [a]	Stability [a]	Variable	Sky	Terrain	Criteria
Kenneth Hahn State Park	16.9	18.9	3	E	Delta E	0.387	0.795	2.0
					Contrast	0.004	0.004	|0.05|

[a] The joint frequency distribution table used to calculate the wind speed and stability for the Tier II assessment is presented in Attachment A.

The VISCREEN Tier II assessment for Kenneth Hahn State Park did not exceed the criteria for ΔE or contrast. As the modeled results are below the conservative Class I area criteria for both ΔE and contrast, RBEP would not adversely affect visibility at nearby Class II Areas.

References

U.S. Environmental Protection Agency (EPA). 1992. *Workbook for Plume Visual Impact Screening and Analysis* (EPA-454/R-92-023). October.

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South Coast Air Quality Management District (AQMD). 2013. *AQMD Meteorological Data*. http://www.aqmd.gov/smog/metdata/ISCST3_Table1.html. Accessed June 17.

Interagency Monitoring of Protected Visual Environments (IMPROVE). 2013. *Visibility Monitoring Data, Results*. http://www2.nature.nps.gov/air/monitoring/vismonresults.cfm. Accessed June 15.

Attachment A

Kenneth Hahn State Park Joint Frequency Distribution for Tier II VISCREEN Assessment

Table A-1
Kenneth Hahn Joint Frequency Distribution

Dispersion Condition		σz·σy·u [a]	Transport Time (hours)	Count (hours) [b]	Frequency	Cumulative Frequency
Stability	Wind Speed					
F	1	2.46E+04	4.7	109	0.0025	0.0025
F	2	4.92E+04	2.3	162	0.0037	0.0062
E	1	6.55E+04	4.7	24	0.0005	0.0067
F	3	7.39E+04	1.6	50	0.0011	0.0079
F	4	9.86E+04	0.9	2	0.0000	0.0079
E	2	1.31E+05	2.3	52	0.0012	0.0091
D	1	1.57E+05	4.7	30	0.0007	0.0098
E	3	1.97E+05	1.6	33	0.0008	0.0105
E	4	2.62E+05	1.2	20	0.0005	0.0110
D	2	3.14E+05	2.3	49	0.0011	0.0121
E	5	3.28E+05	0.9	4	0.0001	0.0122
D	3	4.72E+05	1.6	41	0.0009	0.0131
D	4	6.29E+05	1.2	38	0.0009	0.0140

[a] σz·σy·u is based on a distance of 16.9 km.
[b] Count is for hours during which winds blow toward the sector between 6 and 16 degrees from true north.
The highlighted row represents the top 1 percent of the data; the corresponding wind speed and stability were used for the Tier II analysis.

From: Salamy, Jerry/SAC
To: "Vicky Lee"
Cc: stephen.okane@AES.com; Engel, Elyse/SJC; Madams, Sarah/SAC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Rule 1325 Requirements
Date: Monday, November 04, 2013 8:50:00 AM

Hi Vicky,

Below are the responses to your questions.

3. PM_{10} Emission Rates

a. What does "reported AER PM_{10} emission rate for each unit (based on source test results)" mean?

Response: The SCAQMD requires the filing of an Annual Emissions Report (AER) and payment of annual fees based on a facility's emission of air contaminants, as specified in Rule 301(e) and (l)(10). When AES prepares its AER for the existing Redondo Beach Generating Station, AES uses source test derived emission factors for PM_{10} as allowed by Rule 301(e)(8)(c).

b. Please explain why the 2011 PM10 EFs are different from the 2012 PM10 EFs for Units 5 and 6.

Response: The PM_{10} emission factors were derived from the results of SCAQMD-approved source testing conducted for each year of the applicable AER. Therefore, there will always be some variability in test data from year to year as is seen in the 2011 and 2012 PM_{10} emission factors.

c. You e-mail states: "Additional years of PM_{10} emission factors can be provided, if necessary." Please provide PM_{10} emission factors for 2010.

Response: The following table presents the RBGS fuel use and source test derived PM_{10} emission factors by unit as reported in the 2010 Annual Emissions Report.

	2010 PM_{10} EF	2010 PM_{10} EF	2010 Fuel Use
Unit	lb/MMSCF	lb/MMBtu	MMSCF
5	2.52	0.0024	344.39
6	1.85	0.0018	245.17
7	1.1	0.001	777.83
8	1.0	0.001	237.13
17	7.6	0.0072	24.64

d. For each specific unit, please provide source test results for each different PM10 emission factor for 2010, 2011, and 2012. The source test results should identify the facility ID, unit no, make, model, and rating of the turbine.

Response: The following table presents the source test date by unit for the PM_{10} emissions factors provided. Prior to conducting the source testing, a protocol was submitted to the SCAQMD. After completion of PM_{10} source testing, source test reports were also submitted to the SCAQMD.

RBGS PM10 Emission Factors			
	2010	2011	2012
Unit	Source Test Date		
5	8/30/2010	8/30/2010	3/5/2012
6	9/14/2010	9/14/2010	2/2/2012
7	7/16/2009	7/16/2009	7/16/2009
8	7/27/2009	9/3/2011	9/3/2011

e. For each emission factor, please indicate whether the source test results were approved by the SCAQMD.

Response: The Redondo Beach Generating Station boilers (Units 5 – 8) PM_{10} source test was submitted to the SCAQMD prior to conducting the source testing and the agency notified in advance of all tests.

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Thursday, October 31, 2013 6:14 PM
To: Salamy, Jerry/SAC
Cc: stephen.okane@AES.com; Engel, Elyse/SJC; Madams, Sarah/SAC
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Rule 1325 Requirements

Hi Jerry,

Thank you for your responses. My senior engineer John Yee is not familiar with the "reported AER PM_{10} emission rate for each unit (based on source test results)."

3. PM_{10} Emission Rates

a. What does "reported AER PM_{10} emission rate for each unit (based on source test results)" mean?

b. Please explain why the 2011 PM10 EFs are different from the 2012 PM10 EFs for Units 5 and 6.

c. You e-mail states: "Additional years of PM_{10} emission factors can be provided, if necessary." Please provide PM_{10} emission factors for 2010.

d. For each specific unit, please provide source test results for each different PM10 emission factor for 2010, 2011, and 2012. The source test results should identify the facility ID, unit no, make, model, and rating of the turbine.

e. For each emission factor, please indicate whether the source test results were approved by the SCAQMD.

Please provide responses as soon as you can.

Vicky Lee
Air Quality Engineer

909-396-2284

From: Jerry.Salamy@CH2M.com [mailto:Jerry.Salamy@CH2M.com]
Sent: Thursday, October 31, 2013 9:22 AM
To: Vicky Lee
Cc: stephen.okane@AES.com; Elyse.Engel@ch2m.com; Sarah.Madams@CH2M.com
Subject: RE: AES Redondo Beach (ID 115536)--RBEP Rule 1325 Requirements

Hi Vicky,

Please see my responses to your questions below.

My analysis is to be based on whether the RBEP results in "major modifications to a major polluting facility." The first step is to determine whether is a major polluting facility for PM2.5 and precursors. Based on Table 5.1-17—RBEP Facility Emissions on pg. 5.1-16 of the AFC, the potentials to emit for RBGS are: (1) NO_x, 1037 tpy; (2) SO_2, 121 tpy; and (3) $PM_{2.5}$, 209.0 tpy. Therefore, RBGS is a major polluting facility for NO_x, SO_2, and $PM_{2.5}$, because the PTEs for these pollutants are 100 tons or more per year.

Response: The Redondo Beach Generating Station (RBGS) PTE emissions estimate presented in Table 5.1-17 is based on emissions limits contained in the facility's Title V permit. For instance, the PM_{10} emission limit for Units 5-8 is limited to a maximum of 11 pounds per hour (or 11 lb/hr * 4 * 8,760 hours/year / 2,000 lb/ton = 193 TPY). With Unit 17 (16.3 TPY), RBGS's PM_{10} permitted emissions are estimated to be 209 TPY. However, the actual PM_{10} emission rates of the subject equipment are significantly less than the permitted emissions. For this reason, the PM_{10} PTE and $PM_{2.5}$ PTE (assuming all emitted PM_{10} is $PM_{2.5}$) should be based on the highest expected emission rates, incorporating any federally-enforceable permit conditions in the calculation. The table below presents calendar year 2011 and 2012 PM_{10} emissions for the RBGS Units 5, 6, 7, 8, and 17. The PTE estimates are based on the maximum permit heat input for each unit, the reported AER PM_{10} emission rate for each unit (based on source test results), and 8,760 hours per year of operation for all units except Unit 17, which has a federally-enforceable annual limit of 600 hours. Assuming all of the annual PM_{10} emissions are in the form of $PM_{2.5}$, RBGS's $PM_{2.5}$ baseline actual emissions (82.9 TPY) are less than the Rule 1325 major polluting facility threshold. Additional years of PM_{10} emission factors can be provided, if necessary.

	Heat Input	2011 PM_{10} EF	2011 PM_{10} EF	2011 PM_{10}	2012 PM_{10} EF	2012 PM_{10} EF	2012 PM_{10}
Unit	MMBtu/Hr	lb/MMSCF	lb/MMBtu	TPY	lb/MMSCF	lb/MMBtu	TPY
5	1785	2.52	0.0024	18.8	2.72	0.0026	20.3
6	1785	1.85	0.0018	13.8	2.62	0.0025	19.5
7	4752.2	1.1	0.0010	21.8	1.1	0.0010	21.8
8	4752.2	1.2	0.0011	23.8	1.2	0.0011	23.8
17*	514.14	7.6	0.0072	1.1	7.6	0.0072	1.1
			Total	79.2		Total	86.5

*RBGS Title V Condition C1.2 limits Unit 17 to a maximum of 600 hours of operation per year.

For $PM_{2.5}$, the requirement to provide offsets would be onerous since the PTE for RBEP is 49.7 tpy.

1. EPA suggested a facility permit condition to limit the $PM_{2.5}$ to 100 tons per year for RBEP (synthetic minor, not PAL), thereby exempting the $PM_{2.5}$ from Rule 1325. Will AES accept

such a condition? (The current practice is that an extra application is not necessary.)

Response: The RBGS's PTE does not exceed the Rule 1325 major polluting facility threshold. Furthermore, based on vendor estimates, RBEP's $PM_{2.5}$ PTE does not exceed the Rule 1325 major pollution facility threshold and the existing RBGS units will be permanently retired upon commercial operation of RBEP. Therefore, Rule 1325 does not apply and an annual limit is not necessary.

2. If yes, we will need to include a PM_{10} emissions calculation formula as part of the permit condition. John Yee explained that the formula would need to include the existing utility boilers since they have not been retired yet. Would you provide PM_{10} emission factors for Units 5 – 8 for the formula?

   Response: See the table presented above for the Units 5 - 8 and 17 PM_{10} emission factors. The calculation is presented below.

   Units 5 – 8 Baseline Actual Emissions = Heat Input (MMBtu/hr) * Emission Factor by unit and year (lb/MMBtu) * 8,760 hours/year * 1 ton/2,000 lb
   Unit 17 Baseline Actual Emissions = Heat Input (MMBtu/hr) * Emission Factor by year (lb/MMBtu) * 600 hours/year * 1 ton/2,000 lb

Jerry Salamy
Principal Project Manager
CH2M HILL/Sacramento
Phone 916-286-0207
Fax 916-614-3407
Cell Phone 916-769-8919

From: Vicky Lee [mailto:VLee1@aqmd.gov]
Sent: Tuesday, October 22, 2013 5:52 PM
To: Salamy, Jerry/SAC
Cc: Stephen O'Kane
Subject: AES Redondo Beach (ID 115536)--RBEP Rule 1325 Requirements

Jerry,

This is regarding the requirements for Rule 1325—Federal $PM_{2.5}$ New Source Review Program. Rule 1325(a) states: "This rule applies to any new major polluting facility, major modifications to a major polluting facility, and any modification to an existing facility that would constitute a major polluting facility in and of itself; located in areas federally designated pursuant to Title 40 of the Code of Federal Regulations (40 CFR) 81.305 as non-attainment for $PM_{2.5}$. With respect to major modifications, this rule applies on a pollutant-specific basis to those pollutants for which (1) the source is major, (2) the modification results in a significant increase, and (3) the modification results in a significant net emissions increase."

In the AFC, pg. 5.1-43 provided a Rule 1325 analysis that concluded: "RBEP will not exceed the 100 tpy threshold for $PM_{2.5}$ (or $PM_{2.5}$ precursors on a per-pollutant basis). Therefore, Rule 1325 is not applicable to RBEP." This analysis would be correct if the RBEP is a "new major polluting facility."

I consulted Robert Pease, the program supervisor for Administrative and NSR Rules, about how this rule would apply to RBEP since the actual emissions for Redondo Beach Generating System (RBGS) are so low. He conferenced in EPA for guidance while I was meeting with him. Then I

discussed their guidance with my senior engineer John Yee.

My analysis is to be based on whether the RBEP results in "major modifications to a major polluting facility." The first step is to determine whether is a major polluting facility for PM2.5 and precursors. Based on Table 5.1-17—RBEP Facility Emissions on pg. 5.1-16 of the AFC, the potentials to emit for RBGS are: (1) NO_x, 1037 tpy; (2) SO_2, 121 tpy; and (3) $PM_{2.5}$, 209.0 tpy. Therefore, RBGS is a major polluting facility for NO_x, SO_2, and $PM_{2.5}$, because the PTEs for these pollutants are 100 tons or more per year.

Based on Table 5.1-17, the net increase (RBEP PTE – RBGS Past Actual) is: (1) NO_x, 102.3 tpy; (2) SO_2, 4.8 tpy; and (3) PM_{10}, 46.3 tpy. Significant net emissions increase is defined as (1) NO_x, 40 tpy; (2) SO_2, 40 tpy; and (3) $PM_{2.5}$, 10 tpy. The net increases for NO_x and PM_{10} are significant, but the net increase for SO_2 is not significant. Thus, NOx and PM_{10} are subject to the requirements of Rule 1325(c)(1)(A) – (c)(1)(D), which provides:

(c) Requirements

(1) The Executive Officer shall deny the Permit for a new major polluting facility; or major modification to a major polluting facility; or any modification to an existing facility that would constitute a major polluting facility in and of itself s, unless each of the following requirements is met:

(A) LAER is employed for the new or relocated source or for the actual modification to an existing source; and

(B) Emission increases shall be offset at an offset ratio of 1.1:1 for $PM_{2.5}$ and the ratio required in Regulation XIII or Rule 2005 for NO_x and SO_2 as applicable; and

(C) Certification is provided by the owner/operator that all major sources, as defined in the jurisdiction where the facilities are located, that are owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in the State of California are subject to emission limitations and are in compliance or on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act; and

(D) An analysis is conducted of alternative sites, sizes, production processes, and environmental control techniques for such proposed source and demonstration made that the benefits of the proposed project outweigh the environmental and social costs associated with that project.

For NOx, the RBEP project will meet all the above requirements, since Rule 2005 will require RTCs anyway.

For $PM_{2.5}$, the requirement to provide offsets would be onerous since the PTE for RBEP is 49.7 tpy.

1. EPA suggested a facility permit condition to limit the $PM_{2.5}$ to 100 tons per year for RBEP (synthetic minor, not PAL), thereby exempting the $PM_{2.5}$ from Rule 1325. Will AES accept such a condition? (The current practice is that an extra application is not necessary.)

2. If yes, we will need to include a PM_{10} emissions calculation formula as part of the permit

condition. John Yee explained that the formula would need to include the existing utility boilers since they have not been retired yet. Would you provide PM_{10} emission factors for Units 5 – 8 for the formula?

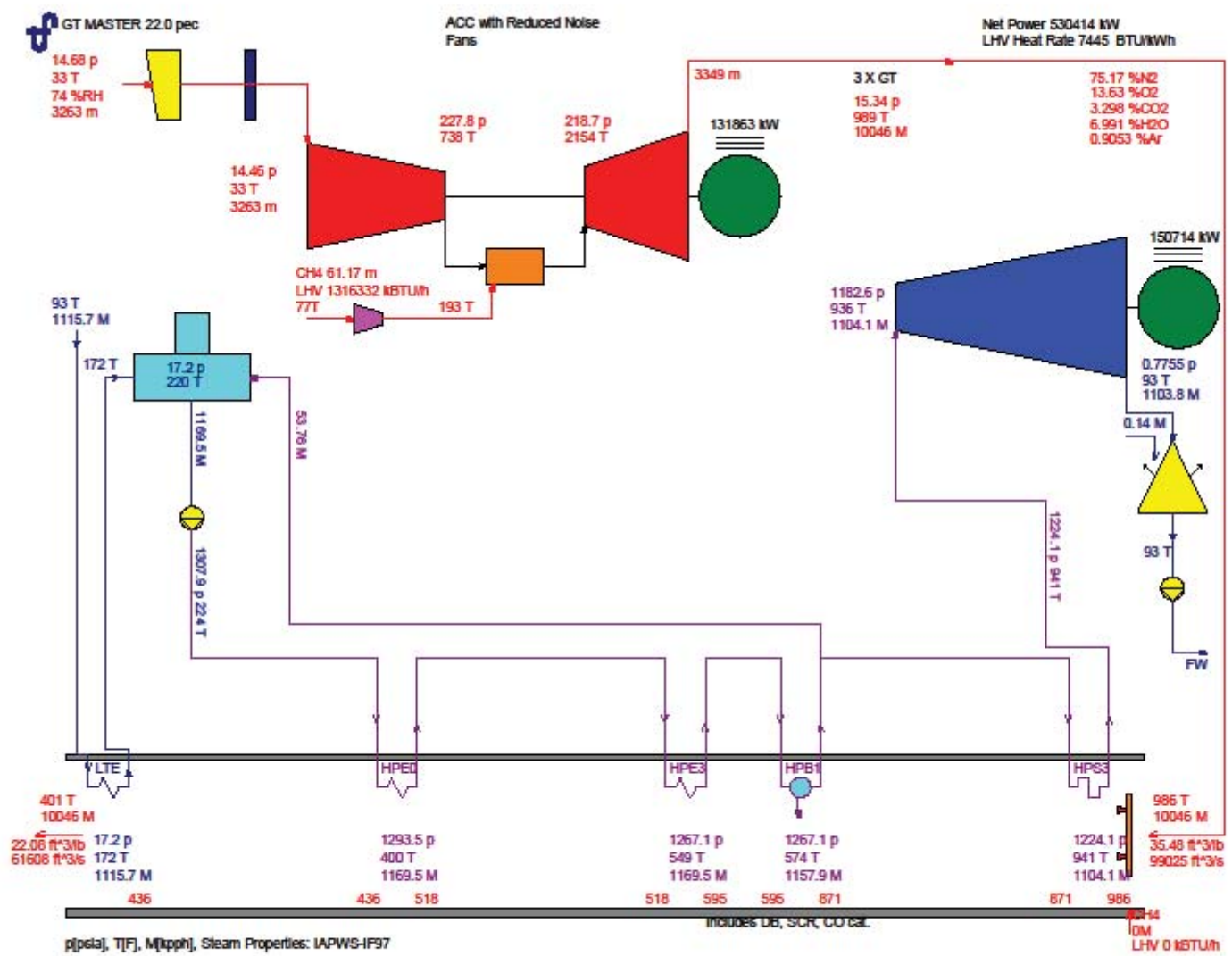
Please let me know.

Vicky Lee
Air Quality Engineer
South Coast Air Quality Management District
21865 Copley Drive, 3rd Floor
Diamond Bar, CA 91765
909-396-2284
909-396-3341 (fax)

Case 16

Case 16 Heat Balance Number 5 Three Combustion Turbines Operating at Maximum Heat Input without Evaporative Cooling

Site Minimum Winter Ambient Temperature (SMWAT) is 33 °F (Dry Bulb) and 30.5 °F (Wet Bulb) and relative humidity (RH) of 93.8%)



Attachment DR2-1
Appendix 5.1A and B Emission Calculation Files (on CD)

Attachment DR2-1, *Appendix 5.1A and B Emission Calculation Files (on CD)* has been provided under separate cover. Additional copies are available upon request.

Attachment DR6-1
Redondo Beach Generating Station Title V Permit

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive, Diamond Bar, CA 91765

Title Page	
Facility ID:	115536
Revision #:	24
Date:	January 19, 2012

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC
1100 N. HARBOR DR
REDONDO BEACH, CA 90277

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Barry R. Wallerstein, D. Env.
EXECUTIVE OFFICER

By
Mohsen Nazemi, P.E.
Deputy Executive Officer
Engineering & Compliance

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

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FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION A: FACILITY INFORMATION

LEGAL OWNER &/OR OPERATOR:	AES REDONDO BEACH, LLC
LEGAL OPERATOR (if different than owner):	
EQUIPMENT LOCATION:	1100 N. HARBOR DR REDONDO BEACH, CA 90277
MAILING ADDRESS:	1100 N HARBOR DR REDONDO BEACH, CA 90277
RESPONSIBLE OFFICIAL:	TONY CHAVEZ
TITLE:	PLANT MANAGER
TELEPHONE NUMBER:	(310) 318-7420
CONTACT PERSON:	RANAE LOVELAND
TITLE:	ENVIRONMENTAL COORDINATOR
TELEPHONE NUMBER:	(310) 318-7418
TITLE V PERMIT ISSUED:	February 27, 2009
TITLE V PERMIT EXPIRATION DATE:	February 26, 2014

TITLE V	RECLAIM
YES	NOx: YES SOx: NO CYCLE: 1 ZONE: COASTAL

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	End	Zone	NOx RTC Initially Allocated	NOx RTC [1] Holding as of 01/01/2012 (pounds)	Non-Tradable [2] Non-Usable RTCs (pounds)
1/2010	12/2010	Coastal	545919	401316	44219
1/2011	12/2011	Coastal	545919	109007	58959
1/2012	12/2012	Coastal	545919	293987	58959
1/2013	12/2013	Coastal	545919	293987	58959
1/2014	12/2014	Coastal	545919	293987	58959
1/2015	12/2015	Coastal	545919	293987	58959
1/2016	12/2016	Coastal	545919	293987	58959
1/2017	12/2017	Coastal	545919	293987	58959
1/2018	12/2018	Coastal	545919	293987	58959
1/2019	12/2019	Coastal	545919	293987	58959
1/2020	12/2020	Coastal	545919	293987	58959
1/2021	12/2021	Coastal	545919	293987	58959
1/2022	12/2022	Coastal	545919	293987	58959
1/2023	12/2023	Coastal	545919	293987	58959
1/2024	12/2024	Coastal	545919	293987	58959
1/2025	12/2025	Coastal	545919	293987	58959
1/2026	12/2026	Coastal	545919	293987	58959

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	End	Zone	NOx RTC Initially Allocated	NOx RTC [1] Holding as of 01/01/2011 (pounds)	Non-Tradable [2] Non-Usable RTCs (pounds)
1/2026	12/2026	Coastal	545919	293987	58959

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. If the facility submits a permit application to increase in an annual allocation to a level greater than the facility's starting Allocation plus Non-Tradable credits as listed below, the application will be evaluated for compliance with Rule 2005 (c)(4). Rule 2005 (e) - Trading Zone Restrictions applies if an annual allocation is increased to a level greater than the facility's Starting Allocation plus Non-Tradable Credits:

Year Begin (month/year)	Year End (month/year)	Zone	NOx RTC Starting Allocation (pounds)	Non-Tradable Credits(NTC) (pounds)
1/1994	12/1994	Coastal	2540631	1084464

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AES REDONDO BEACH, LLC

SECTION C: FACILITY PLOT PLAN

(TO BE DEVELOPED)

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
BOILER, NO. 5, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, FRONT FIRED, WITH STAGED COMBUSTION, OXYGEN CONTENT CONTROL, 1785 MMBTU/HR WITH A/N: 408714 BURNER, SIXTEEN, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, MODEL 5R21-1 / 5R3-1, WITH STAGED COMBUSTION, 1785 MMBTU/HR GENERATOR, 175 MW	D20	C79	NOX: MAJOR SOURCE**	**CO**: 500 PPMV (5) **[RULE 1303(b)(2)-Offset, 5-10-1996]**; **CO**: 2000 PPMV (5A) **[RULE 407, 4-2-1982]**; **NOX**: 7 PPMV (5B) [RULE 2009, 5-11-2001]; **PM10**: 0.01 GRAINS/SCF (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **PM10**: 11 LBS/HR (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**	A195.2, A305.1, B59.1, B61.3, C1.1, D12.2, D28.2, D90.1, E193.2, K40.1
SELECTIVE CATALYTIC REDUCTION, SERVING BOILER NO. 5, IN-DUCT TYPE, CORMETECH, TITANIA-VANADIA HONEYCOMB EXTRUSION, 1871 CU.FT. WITH A/N: 376879 AMMONIA INJECTION, TWO INJECTION GRIDS	C79	D20		**NH3**: 10 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996]**	A195.1, D12.5, D12.6, D12.7, D28.4, E179.1, E179.2, E193.2

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
BOILER, NO. 6, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, FRONT FIRED, WITH STAGED COMBUSTION, OXYGEN CONTENT CONTROL, 1785 MMBTU/HR WITH A/N: 408716 BURNER, SIXTEEN, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, MODEL 5R21-1 / 5R3-1, WITH STAGED COMBUSTION, 1785 MMBTU/HR GENERATOR, 175 MW	D23	C81	NOX: MAJOR SOURCE**	**CO**: 500 PPMV (5) **[RULE 1303(b)(2)-Offset, 5-10-1996]**; **CO**: 2000 PPMV (5A) **[RULE 407, 4-2-1982]**; **NOX**: 7 PPMV (5B) [RULE 2009, 5-11-2001]; **PM10**: 0.01 GRAINS/SCF (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **PM10**: 11 LBS/HR (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**	A195.2, A305.2, B59.1, B61.3, C1.1, D12.2, D28.2, D90.1, E193.2, K40.1
SELECTIVE CATALYTIC REDUCTION, SERVING BOILER NO. 6, IN-DUCT TYPE, CORMETECH, TITANIA-VANADIA HONEYCOMB EXTRUSION, 1871 CU.FT. WITH A/N: 376881 AMMONIA INJECTION, TWO INJECTION GRIDS	C81	D23		**NH3**: 10 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996]**	A195.1, D12.5, D12.6, D12.7, D28.4, E179.1, E179.2, E193.2

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
BOILER, NO. 7, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, OPPOSED FIRING, SUPERCRITICAL, WITH STAGED COMBUSTION, FLUE GAS RECIRCULATION, OXYGEN CONTENT CONTROL, 4752.2 MMBTU/HR WITH A/N: 408717 BURNER, THIRTY TWO, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, MODEL UP-24, WITH STAGED COMBUSTION, 4752.2 MMBTU/HR GENERATOR, 480 MW	D6	C26	NOX: MAJOR SOURCE**	**CO**: 2000 PPMV (5) **[RULE 407, 4-2-1982]**; **NH3**: 20 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996]**; **NOX**: 5 PPMV (5B) [RULE 2009, 5-11-2001]; **PM**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**	A195.3, B59.1, B61.1, C1.1, D12.2, D90.1
SELECTIVE CATALYTIC REDUCTION, VANADIUM PENTOXIDE CATALYST BED, WITH 3475 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 30 FT ; HEIGHT: 35 FT ; LENGTH: 58 FT WITH A/N: 339759 AMMONIA INJECTION, INJECTION GRID, WITH A TOTAL OF 1880 INJECTION NOZZLES	C26	D6			D12.1, D12.4, D28.1, E73.1, E193.1, K48.1, K67.3

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
BOILER, NO. 8, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, OPPOSED FIRING, SUPERCRITICAL, WITH STAGED COMBUSTION, FLUE GAS RECIRCULATION, OXYGEN CONTENT CONTROL, 4752.2 MMBTU/HR WITH A/N: 408719 BURNER, THIRTY-TWO, NATURAL GAS, REFINERY GAS, BABCOCK AND WILCOX, MODEL UP-24, WITH STAGED COMBUSTION, 4752.2 MMBTU/HR GENERATOR, 480 MW	D8	C28	NOX: MAJOR SOURCE**	**CO**: 2000 PPMV (5) **[RULE 407, 4-2-1982]**; **NH3**: 20 PPMV (4) **[RULE 1303(a)(1)-BACT, 5-10-1996]**; **NOX**: 5 PPMV (5B) [RULE 2009, 5-11-2001]; **PM**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**	A195.3, B59.1, B61.1, C1.1, D12.2, D90.1
SELECTIVE CATALYTIC REDUCTION, VANADIUM PENTOXIDE CATALYST BED, WITH 3475 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 40 FT 6 IN; HEIGHT: 23 FT 8 IN; LENGTH: 60 FT 8 IN WITH A/N: 339760 AMMONIA INJECTION, INJECTION GRID, WITH A TOTAL OF 1880 INJECTION NOZZLES	C28	D8			D12.1, D12.4, D28.1, E73.1, E193.1, K48.1, K67.3

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: EXTERNAL COMBUSTION					
BOILER, NO. 17, NATURAL GAS, BABCOCK AND WILCOX, 514.14 MMBTU/HR A/N: 408720	D72		NOX: MAJOR SOURCE**	**CO**: 2000 PPMV (5) **[RULE 407, 4-2-1982]**; **NOX**: 90 PPMV (5B) [RULE 2009, 5-11-2001]; **PM**: 0.1 GRAINS/SCF (5) **[RULE 409, 8-7-1981]**; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**	A195.4, C1.2
BOILER, PRESSURE WASHER TYPE, 0.104 MMBTU/HR, PORTABLE, DIESEL FUEL, GOODWAY, MODEL HPW-2600-G, WITH A 7,0 BHP GASLOLINE FIRED IC ENGINE DRIVING A PUMP A/N: 511883	D84		NOX: PROCESS UNIT**	**NOX**: 469 LBS/1000 GAL DIESEL (1) **[RULE 2012, 5-6-2005]**	C1.3, C1.4, H23.3, I296.1, K67.4
Process 5: INORGANIC CHEMICAL STORAGE					
STORAGE TANK, UNDERGROUND, AQUEOUS AMMONIA, DOUBLE WALLED, 20000 GALS; DIAMETER: 10 FT ; LENGTH: 32 FT A/N: 339764	D18				C157.1, E57.1
STORAGE TANK, FIXED ROOF, NO. 2, WITH A VAPOR RETURN LINE, AQUEOUS AMMONIA 29%, 20000 GALS A/N: 376877	D83				C157.2, E144.1, E193.2
Process 8: R219 EXEMPT EQUIPMENT SUBJECT TO A SOURCE-SPECIFIC RULE					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E77			**ROG**: (9) **[RULE 1113, 11-8-1996;** *RULE 1113, 7-13-2007;* **RULE 1171, 11-7-2003;** *RULE 1171, 2-1-2008*]	K67.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 8: R219 EXEMPT EQUIPMENT SUBJECT TO A SOURCE-SPECIFIC RULE					
RULE 219 EXEMPT EQUIPMENT, OIL WATER SEPARATORS, GRAVITY-TYPE, < 45 FT2 AIR/LIQUID INTERFACIAL AREA	E78				H23.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: DEVICE ID INDEX

The following sub-section provides an index to the devices that make up the facility description sorted by device ID.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: DEVICE ID INDEX

Device Index For Section D			
Device ID	**Section D Page No.**	**Process**	**System**
D6	3	1	0
D8	4	1	0
D18	5	5	0
D20	1	1	0
D23	2	1	0
C26	3	1	0
C28	4	1	0
D72	5	1	0
E77	5	8	0
E78	6	8	0
C79	1	1	0
C81	2	1	0
D83	5	5	0
D84	5	1	0

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[**RULE 401, 3-2-1984;** RULE 401, 9-11-1998]

F18.1 Acid Rain SO2 Allowance Allocation for affected units are as follows:

Device ID	Boiler ID	Contaminant	Tons in any year
20	Boiler No. 5	SO2	80
23	Boiler No. 6	SO2	105
6	Boiler No. 7	SO2	554
8	Boiler No. 8	SO2	596
72	Boiler No. 17	SO2	0

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

a). The allowance allocation(s) shall apply to calendar years 2000 through 2009.

b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO2 allowance allocations identified in this permit (see 40 CFR 72.84)

[40CFR 73 Subpart B, 1-11-1993]

F21.1 Acid Rain SO2 Allowance Allocation for retired units are as follows:

Boiler ID	Contaminant	Tons in year
Boiler No. 11	SO2	36
Boiler No. 12	SO2	0
Boiler No. 13	SO2	0
Boiler No. 14	SO2	0
Boiler No. 15	SO2	0
Boiler No. 16	SO2	0

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

a). The allowance allocation(s) shall apply to calendar years 2000 through 2009.

b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO2 allowance allocations identified in this permit (see 40 CFR 72.84).

c). A unit exempted under 40CFR72.8 shall not emit any sulfur dioxide starting on the date it is exempted.

d). The owners and operators of a unit exempted under 40CFR72.8 shall comply with monitoring requirements in accordance with part 75 and will be allocated allowances in accordance with 40CFR73.

e). A unit exempted under 40CFR73 shall not resume operation unless the designated representative of the source that includes the unit submits an Acid Rain permit application for the unit not less than 24 months prior to the later of January 1, 2000, or the date the unit is to resume operation. On the earlier of the date the written exemption expires or the date an Acid Rain permit application is submitted or is required to be submitted under this paragraph, the unit shall no longer be exempted and shall be subject to all requirements of 40CFR72.

[40CFR 73 Subpart B, 1-11-1993]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

F24.1 Accidental release prevention requirements of Section 112(r)(7):

a). The operator shall comply with the accidental release prevention requirements pursuant to 40 CFR Part 68 and shall submit to the Executive Officer, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and submission of a risk management plan (RMP).

b). The operator shall submit any additional relevant information requested by the Executive Officer or designated agency.

[40CFR 68 - Accidental Release Prevention, 5-24-1996]

DEVICE CONDITIONS

A. Emission Limits

A195.1 The 10 PPMV NH3 emission limit(s) is averaged over 60 mins at 3 percent O2 dry. The operator shall calculate and continuously record the NH3 slip concentration using the following: NH3 (ppmv)=[a-(b*c/1000000)]*1000000/b, where a=NH3 injection rate(lb/hr)/17(lb/lbmole), b=dry exhaust gas flow rate(lb/hr)/29(lb/lbmole), and c=change in measured NOx across the SCR (ppmvd at stack O2). The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppmv accurate to plus or minus 5 percent calibrated at least once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C79, C81]

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A195.2 The 7 PPMV NOX emission limit(s) is averaged over 720 operating hours and is a heat input weighted average with consecutive, non-overlapping averaging periods, as detailed below.

A data acquisition system shall be installed and maintained to continuously record the raw data necessary to calculate the heat input weighted average NOx concentration (ppmv) and to calculate and record the heat input weighted average NOx concentration for each averaging period.

The average shall be calculated based on emissions during all boiler operating hours, except startups, shutdowns, CEMS calibration and maintenance periods, Part 75 linearity testing, RATA testing, equipment breakdown periods as defined in Rule 2004, and periods of zero fuel flow.

Startups are defined as whenever the unit is being brought up to normal operating temperature from an inactive status, and the exhaust temperature entering the SCR catalyst is less than 465 degrees F.

Shutdowns are defined as whenever the unit is allowed to cool from a normal operating temperature to inactive status and the exhaust temperature entering the SCR catalyst is less than 465 degrees F.

The heat input weighted NOx concentration shall be calculated using the following equation, or other equivalent equation:

1. PPMV(3% O2) = (Et/Qt)*K; where PPMV(3% O2) = the concentration of NOx in PPMV corrected to 3% O2; K = a conversion factor from lbs/MMBtu to PPM, which can be determined using EPA 40CFR60 Method 19 (the default value of K is 819); Et = total reported NOx emissions during the averaging period including emissions reported as a result of missing data procedures pursuant to Rule 2012; and Qt = Total heat input during the averaging period.

[RULE 2009, 5-11-2001]

[Devices subject to this condition : D20, D23]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A195.3 The 5 PPMV NOX emission limit(s) is averaged over 720 operating hours and is a heat input weighted average with consecutive, non-overlapping averaging periods, as detailed below.

A data acquisition system shall be installed and maintained to continuously record the raw data necessary to calculate the heat input weighted average NOx concentration (ppmv) and to calculate and record the heat input weighted average NOx concentration for each averaging period.

The average shall be calculated based on emissions during all boiler operating hours, except startups, shutdowns, CEMS calibration and maintenance periods, Part 75 linearity testing, RATA testing, equipment breakdown periods as defined in Rule 2004, and periods of zero fuel flow.

Startups are defined as whenever the unit is being brought up to normal operating temperature from an inactive status, and the exhaust temperature entering the SCR catalyst is less than 465 degrees F.

Shutdowns are defined as whenever the unit is allowed to cool from a normal operating temperature to inactive status and the exhaust temperature entering the SCR catalyst is less than 465 degrees F.

The heat input weighted NOx concentration shall be calculated using the following equation, or other equivalent equation:

1. PPMV(3% O2) = (Et/Qt)*K; where PPMV(3% O2) = the concentration of NOx in PPMV corrected to 3% O2; K = a conversion factor from lbs/MMBtu to PPM, which can be determined using EPA 40CFR60 Method 19 (the default value of K is 819); Et = total reported NOx emissions during the averaging period including emissions reported as a result of missing data procedures pursuant to Rule 2012; and Qt = Total heat input during the averaging period.

[RULE 2009, 5-11-2001]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : D6, D8]

A195.4 The 90 PPMV NOX emission limit(s) is averaged over an annual basis (heat input weighted average).

A data acquisition system shall be installed and maintained to continuously calculate and record the NOx ppm based on an annual block average (calendar year).

The heat input weighted average NOx concentration shall be calculated using the following equation, or other equivalent equation:

The average shall be calculated based on emissions during all boiler operating hours except start-ups defined as whenever the unit is being brought up to normal operating temperature from an inactive status, and the exhaust temperature entering the SCR catalyst is less than 465 degrees F.

Shutdowns are defined as whenever the unit is allowed to cool from a normal operating temperature to inactive status, and the exhaust temperature entering the SCR catalyst is less than 465 degrees F, calibration and maintenance periods, Part 75 linearity testing, RATA testing, equipment breakdown periods as defined in Rule 2004, and periods of zero fuel flow.

PPMV(3%O2) = (Et/Qt)*K; where PPMV(3%O2) = the concentration of NOx in PPMV at 3% O2; K = a conversion factor from lbs/MMBtu to PPM, which can be determined using EPA 40 CFR60 Method 19. The default K value is 819; Et = Total reported NOx emissions during the averaging period including emissions reported as a result of missing data procedures pursuant to Rule 2012; Qt = Total heat input during the averaging period

[RULE 2009, 5-11-2001]

[Devices subject to this condition : D72]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A305.1 Whenever this equipment is in operation, control device C79 may be operated at any control efficiency provided that the emission concentrations being monitored by the certified CEMS serving this equipment is below the valid upper range specified in the approved CEMS plan.

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D20]

A305.2 Whenever this equipment is in operation, control device C81 may be operated at any control efficiency provided that the emission concentrations being monitored by the certified CEMS serving this equipment is below the valid upper range specified in the approved CEMS plan.

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D23]

B. Material/Fuel Type Limits

B59.1 The operator shall only use the following material(s) in this device :

409 stainless steel or other equivelant material for air preheater baskets

[RULE 402, 5-7-1976]

[Devices subject to this condition : D6, D8, D20, D23]

B61.1 The operator shall not use refinery gas containing the following specified compounds:

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Compound	ppm by volume
sulfur compounds calculated as htdrogen sulfide greater than	40

the 40 ppm limit is averaged over 4 hours

[RULE 431.1, 6-12-1998]

[Devices subject to this condition : D6, D8]

B61.3 The operator shall not use refinery gas containing the following specified compounds:

Compound	ppm by volume
sulfur compounds calculated as hydrogen sulfide greater than	40

the 40 ppm limit is averaged over 4 hours

[RULE 431.1, 6-12-1998]

[Devices subject to this condition : D20, D23]

C. Throughput or Operating Parameter Limits

C1.1 The operator shall limit the refinery gas fuel usage to no more than 35 MM cubic feet per day.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

This limit shall be based on the total combined limit for equipment D6, D8, D20, D23, D72.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : D6, D8, D20, D23]

C1.2 The operator shall limit the operating time to no more than 600 hour(s) in any one year.

The operator shall install and maintain a non-resettable elapsed time meter to accurately indicate the elapsed operating time of the boiler.

[RULE 2009, 5-11-2001]

[Devices subject to this condition : D72]

C1.3 The operator shall limit the operating time to no more than 1 hour(s) in any one day.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D84]

C1.4 The operator shall limit the operating time to no more than 52 hour(s) in any one year.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D84]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

C157.1 The operator shall install and maintain a pressure relief valve set at 50 psig.

[RULE 402, 5-7-1976]

[Devices subject to this condition : D18]

C157.2 The operator shall install and maintain a pressure relief valve set at 25 psig.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D83]

D. Monitoring/Testing Requirements

D12.1 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the boiler exhaust at the inlet of the selective catalytic reduction(SCR) reactor.

The operator shall maintain the exhaust temperature between 425 and 750 degrees F except during start ups and shutdowns

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C26, C28]

D12.2 The operator shall install and maintain a(n) non-resettable totalizing fuel meter to accurately indicate the flow rate of the refinery gas supplied to this boiler.

FACILITY PERMIT TO OPERATE
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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition : D6, D8, D20, D23]

D12.4 The operator shall install and maintain a(n) continuous monitoring system to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH3).

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The operator shall maintain the ammonia injection rate between 0 and 180 gallons per hour

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C26, C28]

D12.5 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH3).

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The operator shall maintain the ammonia flow rate between 0 and 100 lbs per hour

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C79, C81]

D12.6 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the boiler exhaust at the inlet of the SCR reactor.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The operator shall maintain the exhaust temperature between 465 and 800 degrees F except during start ups and shut downs

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C79, C81]

D12.7 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches water column.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The operator shall maintain the differential pressure between 0 and 10 inches water column

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C79, C81]

D28.1 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted to determine the NH3 emissions using District method 207.1 measured over a 60 minute averaging time period.

The test shall be conducted at least annually.

The test shall be conducted to determine the NH3 emissions at the outlet.

The test shall be conducted that the NOx concentration during the source test does not exceed the limit in condition A195.3 averaged over the full duration of the test and corrected to 3% O2 dry.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C26, C28]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

D28.2 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted at least annually.

The test shall be conducted to determine the CO emissions at the outlet.

The test shall be conducted to demonstrate compliance with Rule 1303 concentration limit.

The test shall be conducted when the equipment is operating under normal conditions. No test shall be required in any one year for which the equipment is not in operation.

The test shall be conducted to determine compliance with the CO emissions by either: (a) conducting a source test using District method 100.1 measured over a 30 minute averaging time, or (b) using a portable analyzer and a District-approved test method.

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : D20, D23]

D28.4 The operator shall conduct source test(s) in accordance with the following specifications:

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test shall be conducted during ammonia injection periods, at least quarterly during the first twelve months of operation of the SCR, and at least annually thereafter.

The test shall be conducted to determine the NH3 emissions using District Methods 207.1 and 5.3, or EPA Method 17 measured over a 60 minute averaging time period. The NOx concentration, as determined by reading the CEMS, shall be simultaneously recorded during the test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 miniute averaging time period.

The District shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted and the results submitted to the District within 45 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted that the NOx concentration during the source test does not exceed the limit in condition A195.2 averaged over the full duration of the test and corrected to 3% O2 dry.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1401, 3-17-2000]

[Devices subject to this condition : C79, C81]

D90.1 The operator shall sample and analyze the sulfur content of the blended refinery-natural gas according to the following specifications:

The operator shall sample once per month or once per batch when burning the blended refinery-natural gas. The draw time for the sample shall be at least 15 minutes. The analysis shall be conducted using District Method 307.91.

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The operator shall comply with the terms and conditions set forth below:

[40CFR 72 - Acid Rain Provisions, 11-24-1997]

[Devices subject to this condition : D6, D8, D20, D23]

E. Equipment Operation/Construction Requirements

E57.1 The operator shall vent this equipment to the delivery tank truck whenever the aqueous ammonia storage tank is being filled.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D18]

E73.1 Notwithstanding the requirements of Section E conditions, the operator shall not use ammonia injection if all of the following requirement(s) are met:

Inlet exhaust temperature of the SCR reactor is 400 Deg F or less

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C26, C28]

E144.1 The operator shall vent this equipment, during filling, only to the vessel from which it is being filled.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D83]

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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

Condition Number 12-5

Condition Number 12-6

Condition Number 195-1

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C79, C81]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as recording at least once every month and shall be calculated based upon the average of the continuous monitoring for that month.

Condition Number 12-7

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C79, C81]

E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the Mitigation Monitoring Plan document (Environmental Impact Report SCH Number 91031056) dated December, 1992 that was prepared for this project.

[CA PRC CEQA, 11-23-1970]

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C26, C28]

E193.2 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In accordance with all mitigation measures stipulated in the Mitigated Negative Declaration No. 00-144 that was prepared for this project by the City of Redondo Beach Planning Commission

In accordance with the settlement between AES Alamitos and the SCAQMD dated December 12, 2000, AES shall demonstrate compliance with item 5 of the agreement by installing and operating the air pollution control (APC) equipment by no later than July 22, 2001.

The schedule for installation of APC equipment shall be done in consultation with the California Energy Commission (CEC) and the California Independent System Operator (CISO) to ensure that compliance with air pollution laws and requirements can be achieved with no significant power interruption.

For facilities operating under an Order of Abatement or a Settlement Agreement, in the event the specified schedule of installation of APC equipment under these agreements cannot be met, the operator must seek amendment of the Order of Abatement or Settlement Agreement at SCAQMD discretion.

[RULE 2010, 10-15-1993; CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D20, D23, C79, C81, D83]

H. Applicable Rules

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Contaminant	Rule	Rule/Subpart
ROG	District Rule	464

[RULE 464, 12-7-1990]

[Devices subject to this condition : E78]

H23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Sulfur compounds	District Rule	431.2

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

[Devices subject to this condition : D84]

I. Administrative

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the annual emissions increase for the first 12 months of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the start of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

To comply with this condition, the operator shall, prior to each compliance year hold a minimum of 6 lbs.

In accordance with Rule 2005(f) unused RTCs may be sold only during the reconciliation period of the fourth quarter of the applicable compliance year inclusive of the first compliance year.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D84]

K. Record Keeping/Reporting

K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 3 percent oxygen, dry basis.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 3 percent oxygen.

Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Emission data shall be expressed in terms of lbs/MM cubic feet.

Source test results shall also include fuel flow rate (CFH) and generator output (MW) under which the test was conducted.

[**RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1401, 3-17-2000; **RULE 2012, 5-11-2001; RULE 2012, 12-5-2003**]

[Devices subject to this condition : D20, D23]

K48.1 The operator shall maintain records in a manner approved by the District, to demonstrate compliance with the following condition number(s):

Condition no. 12-1

Condition no. 12-4

[**RULE 2012, 5-11-2001; RULE 2012, 12-5-2003**]

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C26, C28]

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]

[Devices subject to this condition : E77]

K67.3 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

the total hourly amount of injected ammonia (NH3)

[RULE 2012, 5-11-2001; RULE 2012, 12-5-2003]

[Devices subject to this condition : C26, C28]

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

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SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The date, time, and reason for operation

The time, in hours, of operation of the equipment

[**RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D84]

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SECTION E: ADMINISTRATIVE CONDITIONS

The operating conditions in this section shall apply to all permitted equipment at this facility unless superseded by condition(s) listed elsewhere in this permit.

1. The permit shall remain effective unless this permit is suspended, revoked, modified, reissued, denied, or it is expired for nonpayment of permit processing or annual operating fees. [201, 203, 209, 301]

   a. The permit must be renewed annually by paying annual operating fees, and the permit shall expire if annual operating fees are not paid pursuant to requirements of Rule 301(d). [301(d)]
   b. The Permit to Construct listed in Section H shall expire one year from the Permit to Construct issuance date, unless a Permit to Construct extension has been granted by the Executive Officer or unless the equipment has been constructed and the operator has notified the Executive Officer prior to the operation of the equipment, in which case the Permit to Construct serves as a temporary Permit to Operate. [202, 205]
   c. The Title V permit shall expire as specified under Section K of the Title V permit. The permit expiration date of the Title V facility permit does not supercede the requirements of Rule 205. [205, 3004]

2. The operator shall maintain all equipment in such a manner that ensures proper operation of the equipment. [204]

3. This permit does not authorize the emissions of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the Rules and Regulations of the AQMD. This permit cannot be considered as permission to violate existing laws, ordinances, regulations, or statutes of other governmental agencies. [204]

4. The operator shall not use equipment identified in this facility permit as being connected to air pollution control equipment unless they are so vented to the identified air pollution control equipment which is in full use and which has been included in this permit. [204]

5. The operator shall not use any equipment having air pollution control device(s) incorporated within the equipment unless the air pollution control device is in full operation. [204]

6. The operator shall maintain records to demonstrate compliance with rules or permit conditions that limit equipment operating parameters, or the type or quantity of material processed. These records shall be made available to AQMD personnel upon request and be maintained for at least: [204]

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AES REDONDO BEACH, LLC

SECTION E: ADMINISTRATIVE CONDITIONS

a. Three years for a facility not subject to Title V; or
b. Five years for a facility subject to Title V.

7. The operator shall maintain and operate all equipment to ensure compliance with all emission limits as specified in this facility permit. Compliance with emission limits shall be determined according to the following specifications, unless otherwise specified by AQMD rules or permit conditions: [204]

   a. For internal combustion engines and gas turbines, measured concentrations shall be corrected to 15 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1110.2, 1134, 204]
   b. For other combustion devices, measured concentrations shall be corrected to 3 percent stack-gas oxygen content on a dry basis and be averaged over a period of 15 consecutive minutes; [1146, 1146.1, 204]
   c. For a large NOx source, compliance with a RECLAIM concentration limit shall be measured over a continuous 60 minutes for that source; [2012]
   d. For non-combustion sources, compliance with emission limits shall be determined and averaged over a period of 60 minutes; [204]
   e. For the purpose of determining compliance with Rule 407, carbon monoxide (CO) shall be measured on a dry basis and be averaged over 15 consecutive minutes, and sulfur compounds which would exist as liquid or gas at standard conditions shall be calculated as sulfur dioxide (SO2) and be averaged over 15 consecutive minutes; [407]
   f. For the purpose of determining compliance with Rule 409, combustion contaminant emission measurements shall be corrected to 12 percent of carbon dioxide (CO2) at standard conditions and averaged over 15 consecutive minutes. [409]
   g. For the purpose of determining compliance with Rule 475, combustion contaminant emission measurements shall be corrected to 3 percent of oxygen (O2) at standard conditions and averaged over 15 consecutive minutes or any other averaging time specified by the Executive Officer. [475]

8. All equipment operating under the RECLAIM program shall comply concurrently with all provisions of AQMD Rules and Regulations, except those listed in Table 1 of Rule 2001 for NOx RECLAIM sources and Table 2 of Rule 2001 for SOx RECLAIM sources. Those provisions listed in Tables 1 or 2 shall not apply to NOx or SOx emissions after the date the facility has demonstrated compliance with all monitoring and reporting requirements of Rules 2011 or 2012, as applicable. Provisions of the listed AQMD rules in Tables 1 or 2 which have initial implementation dates in 1994 shall not apply to a RECLAIM NOx or SOx source, respectively. [2001]

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SECTION E: ADMINISTRATIVE CONDITIONS

9. The operator shall, when a source test is required by AQMD, provide a source test protocol to AQMD no later than 60 days before the proposed test date. The test shall not commence until the protocol is approved by AQMD. The test protocol shall contain the following information: [204, 304]

   a. Brief description of the equipment tested.
   b. Brief process description, including maximum and normal operating temperatures, pressures, through-put, etc.
   c. Operating conditions under which the test will be performed.
   d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, and distances of flow disturbances, (e,g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
   e. Brief description of sampling and analytical methods used to measure each pollutant, temperature, flow rates, and moisture.
   f. Description of calibration and quality assurance procedures.
   g. Determination that the testing laboratory qualifies as an "independent testing laboratory" under Rule 304 (no conflict of interest).

10. The operator shall submit a report no later than 60 days after conducting a source test, unless otherwise required by AQMD Rules or equipment-specific conditions. The report shall contain the following information: [204]

   a. The results of the source test.
   b. Brief description of the equipment tested.
   c. Operating conditions under which test will be performed.
   d. Method of measuring operating parameters, such as fuel rate and process weight. Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, and distances of flow disturbances, (e.g. elbows, tees, fans, dampers) from the sampling locations (upstream and downstream).
   e. Field and laboratory data forms, strip charts and analyses.
   f. Calculations for volumetric flow rates, emission rates, control efficiency, and overall control efficiency.

11. The operator shall, when a source test is required, provide and maintain facilities for sampling and testing. These facilities shall comply with the requirements of AQMD Source Test Method 1.1 and 1.2. [217]

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SECTION E: ADMINISTRATIVE CONDITIONS

12. Whenever required to submit a written report, notification or other submittal to the Executive Officer, AQMD, or the District, the operator shall mail or deliver the material to: Deputy Executive Officer, Engineering and Compliance, AQMD, 21865 E. Copley Drive, Diamond Bar, CA 91765-4182. [204]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS

The Facility shall comply with all applicable monitoring and source testing requirements in Regulation XX. These requirements may include but are not limited to the following:

I. NOx Monitoring Conditions

A. The Operator of a NOx Major Source, as defined in Rule 2012, shall, as applicable:

1. Install, maintain, and operate an AQMD certified direct or time-shared monitoring device or an approved alternative monitoring device for each major NOx source to continuously measure the concentration of NOx emissions and all other applicable variables specified in Rule 2012, Table 2012-1 and Rule 2012, Appendix A, Table 2-A to determine the NOx emissions rate from each source. The time-sharing of CEMS among NOx sources may be allowed by the Executive Officer in accordance with the requirements for time sharing specified in Appendix A. [2012]

2. Install, maintain, and operate a totalizing fuel meter approved by the Executive Officer for each major source. [2012]

3. If the facility is operating existing CEMS and fuel meters, continue to follow recording and reporting procedures required by AQMD Rules and Regulations in effect prior to October 15, 1993 until the CEMS is certified pursuant to Rule 2012. [2012]

4. Use valid data collected by an AQMD certified or provisionally certified CEMS in proper operation that meets all the requirements of Appendix A of Rule 2012, unless final certification of the CEMS is denied, to determine mass emissions for all purposes, including, but not limited to, determining: [2012]

   a. compliance with the annual Allocation;
   b. excess emissions;
   c. the amount of penalties; and
   d. fees.

5. Follow missing data procedures as specified in Rule 2012 Appendix A whenever valid data is not available or collected to determine mass emissions for all purposes, including, but not limited to, determining: [2012]

   a. compliance with the annual Allocation;
   b. excess emissions;
   c. the amount of penalties; and
   d. fees.

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SECTION F: RECLAIM MONITORING AND SOURCE TESTING REQUIREMENTS

B. The Operator of a NOx Large Source, as defined in Rule 2012, shall, as applicable:

Not Applicable

C. The Operator of a NOx Process Unit, as defined in Rule 2012, shall, as applicable:

Not Applicable

II. NOx Source Testing and Tune-up Conditions

1. The operator shall conduct all required NOx source testing in compliance with an AQMD-approved source test protocol. [2012]

2. The operator shall, as applicable, conduct source tests for every large NOx source no later than December 31, 1996 and every 3 years thereafter. The source test shall include the determination of NOx concentration and a relative accuracy audit of the exhaust stack flow determination (e.g. in-stack flow monitor or fuel flow monitor based F-factor calculation). Such source test results shall be submitted per the schedule described by APEP. In lieu of submitting the first source test report, the facility permit holder may submit the results of a source test not more than 3 years old which meets the requirements when conducted. [2012]

3. All NOx large sources and NOx process units shall be tuned-up in accordance with the schedule specified in Rule 2012, Appendix A, Chapter 5, Table 5-B. [2012]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive, Diamond Bar, CA 91765

FACILITY PERMIT TO OPERATE
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SECTION G: RECORDKEEPING AND REPORTING REQUIREMENTS FOR RECLAIM SOURCES

The Facility shall comply with all applicable reporting and recordkeeping requirements in Regulation XX. These requirements may include but are not limited to the following:

I. Recordkeeping Requirements for all RECLAIM Sources

1. The operator shall maintain all monitoring data required to be measured or reported pursuant to Rule 2011 and Rule 2012, whichever is applicable. All records shall be made available to AQMD staff upon request and be maintained for at least:

   a. Three years after each APEP report is submitted to AQMD for a facility not subject to Title V, unless a different time period is required in Rule 2011 or Rule 2012 [2011 & 2012]; or
   b. Five years after each APEP report is submitted to AQMD for a facility subject to Title V. [3004(a)(4)(E)]
   c. Notwithstanding the above, all data gathered or computed for intervals of less than 15 minutes shall only be maintained a minimum of 48 hours. [2011 & 2012]

2. The operator shall store on site and make available to the Executive Officer upon request: records used to determine emissions, maintenance records, sources test reports, relative accuracy test audit reports, relative accuracy audit reports and fuel meter calibration records. [2011 & 2012]

II. Reporting Requirements for all RECLAIM Sources

1. The operator shall submit a quarterly certification of emissions including the facility's total NOx or SOx emissions, whichever is applicable, for the quarter within 30 days after the end of the first three quarters and 60 days after the end of the fourth quarter of a compliance year. [2011 & 2012]

NOx Reporting Requirements

A. The Operator of a NOx Major Source, as defined in Rule 2012, shall, as applicable:

1. No later than 12 months after entry into the RECLAIM program or after the initial operation of a new major source, whichever is later, install, maintain, and operate a reporting device to electronically report everyday to the AQMD central station for each major NOx source, the total daily mass emissions of NOx and daily status codes. Such data

SECTION G: RECORDKEEPING AND REPORTING REQUIREMENTS FOR RECLAIM SOURCES

shall be transmitted by 5:00 p.m. of the following day. If the facility experiences a power, computer, or other system failure that prevents the submittal of the daily report, the Facility Permit holder shall be granted 24 hours extension to submit the report. [2012]

2. Calculate NOx emissions pursuant to missing data procedures set forth in Appendix A, Chapter 2 of Rule 2012 if the Facility Permit holder fails to meet the deadline for submitting the daily report. [2012]

3. Submit an electronic report within 15 days following the end of each month totaling NOX emissions from all major NOx sources during the month. [2012]

4. For those facilities with existing CEMS and fuel meters as of October 15, 1993, continue to follow recording and reporting procedures required by AQMD Rules and Regulations in effect until the CEMS is certified pursuant to Rule 2011 and/or Rule 2012, as applicable. [2012]

B. The Operator of a NOx Large Source, as defined in Rule 2012, shall:

Not Applicable

C. The Operator of a NOx Process Unit, as defined in Rule 2012, shall:

Not Applicable

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

NONE

FACILITY PERMIT TO OPERATE
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SECTION I: PLANS AND SCHEDULES

This section lists all plans approved by AQMD for the purposes of meeting the requirements of applicable AQMD rules.

NONE

NOTE: This section does not list compliance schedules pursuant to the requirements of Regulation XXX - Title V Permits; Rule 3004(a)(10)(C). For equipment subject to a variance, order for abatement, or alternative operating condition granted pursuant to Rule 518.2, equipment specific conditions are added to the equipment in Section D or H of the permit.

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SECTION J: AIR TOXICS

NOT APPLICABLE

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SECTION K: TITLE V Administration

GENERAL PROVISIONS

1. This permit may be revised, revoked, reopened and reissued, or terminated for cause, or for failure to comply with regulatory requirements, permit terms, or conditions. [3004(a)(7)(C)]

2. This permit does not convey any property rights of any sort or any exclusive privilege. [3004(a)(7)(E)]

Permit Renewal and Expiration

3. (A) Except for solid waste incineration facilities subject to standards under Section 129(e) of the Clean Air Act, this permit shall expire five years from the date that this Title V permit is issued. The operator's right to operate under this permit terminates at midnight on this date, unless the facility is protected by an application shield in accordance with Rule 3002(b), due to the filing of a timely and complete application for a Title V permit renewal, consistent with Rule 3003. [3004(a)(2), 3004(f)]

   (B) A Title V permit for a solid waste incineration facility combusting municipal waste subject to standards under Section 129(e) of the Clean Air Act shall expire 12 years from the date of issuance unless such permit has been renewed pursuant to this regulation. These permits shall be reviewed by the Executive Officer at least every five years from the date of issuance. [3004(f)(2)]

4. To renew this permit, the operator shall submit to the Executive Officer an application for renewal at least 180 days, but not more than 545 days, prior to the expiration date of this permit. [3003(a)(6)]

Duty to Provide Information

5. The applicant for, or holder of, a Title V permit shall furnish, pursuant to Rule 3002(d) and (e), timely information and records to the Executive Officer or designee within a reasonable time as specified in writing by the Executive Officer or designee. [3004(a)(7)(F)]

Payment of Fees

6. The operator shall pay all required fees specified in Regulation III - Fees. [3004(a)(7)(G)]

Reopening for Cause

7. The Executive Officer will reopen and revise this permit if any of the following circumstances occur:

   (A) Additional regulatory requirements become applicable with a remaining permit term of three or more years. Reopening is not required if the effective date of the requirement is later than the expiration date of this permit, unless the permit or any of its terms and conditions has been extended pursuant to paragraph (f)(4) of Rule 3004.

(B) The Executive Officer or EPA Administrator determines that this permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.

(C) The Executive Officer or EPA Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements. [3005(g)(1)]

COMPLIANCE PROVISIONS

8. The operator shall comply with all regulatory requirements, and all permit terms and conditions, except:

(A) As provided for by the emergency provisions of condition no. 17 or condition no. 18, or

(B) As provided by an alternative operating condition granted pursuant to a federally approved (SIP-approved) Rule 518.2.

Any non-compliance with any federally enforceable permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or denial of a permit renewal application. Non-compliance may also be grounds for civil or criminal penalties under the California State Health and Safety Code. [3004(a)(7)(A)]

9. The operator shall allow the Executive Officer or authorized representative, upon presentation of appropriate credentials to:

(A) Enter the operator's premises where emission-related activities are conducted, or records are kept under the conditions of this permit;

(B) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(C) Inspect at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(D) Sample or monitor at reasonable times, substances or parameters for the purpose of assuring compliance with the facility permit or regulatory requirements. [3004(a)(10)(B)]

10. All terms and conditions in this permit, including any provisions designed to limit a facility's potential to emit, are enforceable by the EPA Administrator and citizens under the federal Clean Air Act, unless the term or condition is designated as not federally enforceable. Each day during any portion of which a violation occurs is a separate offense. [3004(g)]

11. A challenge to any permit condition or requirement raised by EPA, the operator, or any other person, shall not invalidate or otherwise affect the remaining portions of this permit. [3007(b)]

12. The filing of any application for a permit revision, revocation, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition. [3004(a)(7)(D)]

13. It shall not be a defense for a person in an enforcement action, including those listed in Rule 3002(c)(2), that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit, except as provided for in "Emergency Provisions" of this section. [3004(a)(7)(H)]

14. The operator shall not build, erect, install, or use any equipment, the use of which, without resulting in a reduction in the total release of air contaminants to atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Chapter 3 (commencing with Section 41700) of Part 4, of Division 26 of the California Health and Safety Code or of AQMD rules. This rule shall not apply to cases in which the only violation involved is of Section 41700 of the California Health and Safety Code, or Rule 402 of AQMD Rules. [408]

15. Nothing in this permit or in any permit shield can alter or affect:

    (A) Under Section 303 of the federal Clean Air Act, the provisions for emergency orders;

    (B) The liability of the operator for any violation of applicable requirements prior to or at the time of permit issuance;

    (C) The applicable requirements of the Acid Rain Program, Regulation XXXI;

    (D) The ability of EPA to obtain information from the operator pursuant to Section 114 of the federal Clean Air Act;

    (E) The applicability of state or local requirements that are not "applicable requirements", as defined in Rule 3000, at the time of permit issuance but which do apply to the facility, such as toxics requirements unique to the State; and

    (F) The applicability of regulatory requirements with compliance dates after the permit issuance date. [3004(c)(3)]

16. For any portable equipment that requires an AQMD or state permit or registration, excluding a) portable engines, b) military tactical support equipment and c) AQMD-permitted portable equipment that are not a major source, are not located at the facility for more than 12 consecutive months after

commencing operation, and whose operation does not conflict with the terms or conditions of this Title V permit: 1) the facility operator shall keep a copy of the AQMD or state permit or registration; 2) the equipment operator shall comply with the conditions on the permit or registration and all other regulatory requirements; and 3) the facility operator shall treat the permit or registration as a part of its Title V permit, subject to recordkeeping, reporting and certification requirements. [3004(a)(1)]

EMERGENCY PROVISIONS

17. An emergency[1] constitutes an affirmative defense to an action brought for non-compliance with a technology-based emission limit only if:

    (A) Properly signed, contemporaneous operating records or other credible evidence demonstrate that:

        (1) An emergency occurred and the operator can identify the cause(s) of the emergency;

        (2) The facility was operated properly (i.e. operated and maintained in accordance with the manufacturer's specifications, and in compliance with all regulatory requirements or a compliance plan), before the emergency occurred;

        (3) The operator took all reasonable steps to minimize levels of emissions that exceeded emissions standard, or other requirements in the permit; and,

        (4) The operator submitted a written notice of the emergency to the AQMD within two working days of the time when the emissions limitations were exceeded due to the emergency. The notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

    (B) The operator complies with the breakdown provisions of Rule 430 - Breakdown Provisions, or subdivision (i) of Rule 2004 - Requirements, whichever is applicable. [3002(g), 430, 2004(i)]

18. The operator is excused from complying with any regulatory requirement that is suspended by the Executive Officer during a state of emergency or state of war emergency, in accordance with Rule 118 - Emergencies. [118]

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1 "Emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the operator, including acts of God, which: (A) requires immediate corrective action to restore normal operation; and (B) causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency; and (C) is not caused by improperly designed equipment, lack of preventative maintenance, careless or imporper operation, or operator error.

RECORDKEEPING PROVISIONS

19. In addition to any other recordkeeping requirements specified elsewhere in this permit, the operator shall keep records of required monitoring information, where applicable, that include:

    (A) The date, place as defined in the Title V permit, and time of sampling or measurements;

    (B) The date(s) analyses were performed;

    (C) The company or entity that performed the analyses;

    (D) The analytical techniques or methods used;

    (E) The results of such analyses; and

    (F) The operating conditions as existing at the time of sampling or measurement. [3004(a)(4)(B)]

20. The operator shall maintain records pursuant to Rule 109 and any applicable material safety data sheet (MSDS) for any equipment claimed to be exempt from a written permit by Rule 219 based on the information in those records. [219(t)]

21. The operator shall keep all records of monitoring data required by this permit or by regulatory requirements for a period of at least five years from the date of the monitoring sample, measurement, report, or application. [3004(a)(4)(E)]

REPORTING PROVISIONS

22. The operator shall comply with the following requirements for prompt reporting of deviations:

    (A) Breakdowns shall be reported as required by Rule 430 - Breakdown Provisions or subdivision (i) of Rule 2004 - Requirements, whichever is applicable.

    (B) Other deviations from permit or applicable rule emission limitations, equipment operating conditions, or work practice standards, determined by observation or by any monitoring or testing required by the permit or applicable rules that result in emissions greater than those allowed by the permit or applicable rules shall be reported within 72 hours (unless a shorter reporting period is specified in an applicable State or Federal Regulation) of discovery of the deviation by contacting AQMD enforcement personnel assigned to this facility or otherwise calling (800) CUT-SMOG.

(C) A written report of such deviations reported pursuant to (B), and any corrective actions or preventative measures taken, shall be submitted to AQMD, in an AQMD approved format, within 14 days of discovery of the deviation.

(D) All other deviations shall be reported with the monitoring report required by condition no. 23. [3004(a)(5)]

23. Unless more frequent reporting of monitoring results are specified in other permit conditions or in regulatory requirements, the operator shall submit reports of any required monitoring to the AQMD at least twice per year. The report shall include a) a statement whether all monitoring required by the permit was conducted; and b) identification of all instances of deviations from permit or regulatory requirements. A report for the first six calendar months of the year is due by August 31 and a report for the last six calendar months of the year is due by February 28. [3004(a)(4)(F)]

24. The operator shall submit to the Executive Officer and to the Environmental Protection Agency (EPA), an annual compliance certification. For RECLAIM facilities, the certification is due when the Annual Permit Emissions Program (APEP) report is due and shall cover the same reporting period. For other facilities, the certification is due on March 1 for the previous calendar year. The certification need not include the period preceding the date the initial Title V permit was issued. Each compliance certification shall include:

(A) Identification of each permit term or condition that is the basis of the certification;

(B) The compliance status during the reporting period;

(C) Whether compliance was continuous or intermittent;

(D) The method(s) used to determine compliance over the reporting period and currently, and

(E) Any other facts specifically required by the Executive Officer to determine compliance.

The EPA copy of the certification shall be sent to: Director of the Air Division Attn: Air-3 USEPA, Region IX 75 Hawthorne St. San Francisco, CA 94105 [3004(a)(10)(E)]

25. All records, reports, and documents required to be submitted by a Title V operator to AQMD or EPA shall contain a certification of accuracy consistent with Rule 3003(c)(7) by a responsible official (as defined in Rule 3000). [3004(a)(12)]

PERIODIC MONITORING

26. All periodic monitoring required by this permit pursuant to Rule 3004(a)(4)(c) is based on the requirements and justifications in the AQMD document "Periodic Monitoring Guidelines for Title V Facilities" or in case-by-case determinations documented in the Title V application file. [3004(a)(4)]

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION K: TITLE V Administration

FACILITY RULES

This facility is subject to the following rules and regulations:

With the exception of Rule 402, 473, 477, 1118 and Rules 1401 through 1420, the following rules that are designated as non-federally enforceable are pending EPA approval as part of the state implementation plan. Upon the effective date of that approval, the approved rule(s) will become federally enforceable, and any earlier versions of those rules will no longer be federally enforceable.

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 1113	11-8-1996	Federally enforceable
RULE 1113	7-13-2007	Non federally enforceable
RULE 1171	11-7-2003	Federally enforceable
RULE 1171	2-1-2008	Non federally enforceable
RULE 118	12-7-1995	Non federally enforceable
RULE 1303(a)(1)-BACT	5-10-1996	Federally enforceable
RULE 1303(b)(2)-Offset	5-10-1996	Federally enforceable
RULE 1401	3-17-2000	Non federally enforceable
RULE 2009	5-11-2001	Non federally enforceable
RULE 2010	10-15-1993	Federally enforceable
RULE 2012	12-5-2003	Federally enforceable
RULE 2012	5-11-2001	Federally enforceable
RULE 204	10-8-1993	Federally enforceable
RULE 217	1-5-1990	Federally enforceable
RULE 219	9-4-1981	Federally enforceable
RULE 3002	11-14-1997	Federally enforceable
RULE 3003	11-14-1997	Federally enforceable
RULE 3004(a)(4)-Periodic Monitoring	12-12-1997	Federally enforceable
RULE 3005	11-14-1997	Federally enforceable
RULE 3007	10-8-1993	Federally enforceable
RULE 304	1-14-1982	Non federally enforceable
RULE 401	3-2-1984	Federally enforceable
RULE 402	5-7-1976	Non federally enforceable
RULE 407	4-2-1982	Federally enforceable
RULE 408	5-7-1976	Federally enforceable
RULE 409	8-7-1981	Federally enforceable
RULE 430	7-12-1996	Non federally enforceable
RULE 431.1	6-12-1998	Federally enforceable
RULE 464	12-7-1990	Federally enforceable

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

SECTION K: TITLE V Administration

RULE SOURCE	Adopted/Amended Date	FEDERAL Enforceability
RULE 475	10-8-1976	Federally enforceable
RULE 475	8-7-1978	Non federally enforceable
40CFR 68 - Accidental Release Prevention	5-24-1996	Federally enforceable
RULE 701	6-13-1997	Federally enforceable
40CFR 72 - Acid Rain Provisions	11-24-1997	Federally enforceable
40CFR 73 Subpart B	1-11-1993	Federally enforceable
CA PRC CEQA	11-23-1970	Non federally enforceable

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Drive, Diamond Bar, CA 91765

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX A: NOX AND SOX EMITTING EQUIPMENT EXEMPT FROM WRITTEN PERMIT PURSUANT TO RULE 219

1. MAINTENANCE EQUIPMENT
2. PUMPS, GASOLINE
3. ICE, GENERATOR, GASOLINE

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

(1) Except as provided in paragraphs (c)(2), (c)(3), and (c)(4) of Rule 1113, the operator shall not supply, sell, offer for sale, apply, or solicit the application of, any architectural coating which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, or manufacture, blend, or repackage such a coating for use within the District.

(2) Except as provided in paragraphs (c)(3) and (c)(4) of Rule 1113, the operator shall not supply, sell, offer for sale, apply, solicit the application of, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified.

TABLE OF STANDARDS

VOC LIMITS

Grams of VOC Per Liter of Coating, Less Water And Less Exempt Compounds

COATING	Limit*	Effective Date of Adoption	Effective 1/1/1998	Effective 1/1/1999	Effective 7/1/2001	Effective 1/1/2005	Effective 7/1/2008
Bond Breakers	350						
Clear Wood Finishes							
Varnish	350						
Sanding Sealers	350						
Lacquer	680		550			275	
Concrete-Curing Compounds	350						
Dry-Fog Coatings	400						
Fire-proofing Exterior Coatings	350	450		350			
Fire-Retardant Coatings							
Clear	650						
Pigmented	350						
Flats	250				100		50
Graphic Arts (Sign) Coatings	500						
Industrial Maintenance							

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

Primers and Topcoats							
Alkyds	420						
Catalyzed Epoxy	420						
Bituminous Coatings	420						
Materials							
Inorganic Polymers	420						
Vinyl Chloride Polymers	420						
Chlorinated Rubber	420						
Acrylic Polymers	420						
Urethane Polymers	420						
Silicones	420						
Unique Vehicles	420						
Japans/Faux Finishing	350	700		350			
Coatings							
Magnesite Cement Coatings	600			450			
Mastic Coatings	300						
Metallic Pigmented Coatings	500						
Multi-Color Coatings	420		250				
Pigmented Lacquer	680		550			275	
Pre-Treatment Wash Primers	780						
Primers, Sealers, and	350						
Undercoaters							
Quick-Dry Enamels	400						
Roof Coatings	300						
Shellac							
Clear	730						
Pigmented	550						
Stains	350						
Swimming Pool Coatings							
Repair	650						
Other	340						
Traffic Coatings	250		150				
Waterproofing Sealers	400						
Wood Preservatives							
Below-Ground	350						
Other	350						

* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 11-8-1996]

TABLE OF STANDARDS (cont.)

VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[RULE 1113 7-13-2007]

(1) Except as provided in paragraphs (c)(2), (c)(3), (c)(4), and specified coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage any architectural coating for use in the District which, at the time of sale or manufacture, contains more than 250 grams of VOC per liter of coating (2.08 pounds per gallon), less water, less exempt compounds, and less any colorant added to tint bases, and no person shall apply or solicit the application of any architectural coating within the District that exceeds 250 grams of VOC per liter of coating as calculated in this paragraph.

(2) Except as provided in paragraphs (c)(3), (c)(4), and designated coatings averaged under (c)(6), no person shall supply, sell, offer for sale, manufacture, blend, or repackage, for use within the District, any architectural coating listed in the Table of Standards which contains VOC (excluding any colorant added to tint bases) in excess of the corresponding VOC limit specified in the table, after the effective date specified, and no person shall apply or solicit the application of any architectural coating within the District that exceeds the VOC limit as specified in this paragraph. No person shall apply or solicit the application within the District of any industrial maintenance coatings, except anti-graffiti coatings, for residential use or for use in areas such as office space and meeting rooms of industrial, commercial or institutional facilities not exposed to such extreme environmental conditions described in the definition of industrial maintenance coatings; or of any rust-preventative coating for industrial use, unless such a rust preventative coating complies with the Industrial Maintenance Coating VOC limit specified in the Table of Standards.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[RULE 1113 7-13-2007]

TABLE OF STANDARDS
VOC LIMITS

Grams of VOC Per Liter of Coating,
Less Water and Less Exempt Compounds

COATING CATEGORY	Ceiling Limit*	Current Limit	Effective Date					
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Bond Breakers	350							
Clear Wood Finishes	350					275		
Varnish	350					275		
Sanding Sealers	350					275		
Lacquer	680	550			275			
Clear Brushing Lacquer	680				275			
Concrete-Curing Compounds	350						100	
Concrete-Curing Compounds For Roadways and Bridges**	350							
Dry-Fog Coatings	400						150	
Fire-Proofing Exterior Coatings	450	350						
Fire-Retardant Coatings***								
Clear	650							
Pigmented	350							
Flats	250	100						50
Floor Coatings	420		100			50		
Graphic Arts (Sign) Coatings	500							
Industrial Maintenance (IM) Coatings	420			250		100		
High Temperature IM Coatings			420					
Zinc-Rich IM Primers	420		340			100		
Japans/Faux Finishing Coatings	700	350						
Magnesite Cement Coatings	600	450						
Mastic Coatings	300							
Metallic Pigmented Coatings	500							
Multi-Color Coatings	420	250						
Nonflat Coatings	250		150			50		
Nonflat High Gloss	250		150				50	

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 7-13-2007]

COATING CATEGORY	Ceiling Limit*	Current Limit	Effective Date					
			1/1/03	1/1/04	1/1/05	7/1/06	7/1/07	7/1/08
Pigmented Lacquer	680	550			275			
Pre-Treatment Wash Primers	780		420					
Primers, Sealers, and Undercoaters	350		200			100		
Quick-Dry Enamels	400		250			150	50	
Quick-Dry Primers, Sealers, and Undercoaters	350		200			100		
Recycled Coatings			250					
Roof Coatings	300		250		50			
Roof Coatings, Aluminum	500				100			
Roof Primers, Bituminous	350		350					
Rust Preventative Coatings	420		400			100		
Shellac								
Clear	730							
Pigmented	550							
Specialty Primers	350					250	100	
Stains	350		250				100	
Stains, Interior	250							
Swimming Pool Coatings								
Repair	650		340					
Other	340							
Traffic Coatings	250	150					100	
Waterproofing Sealers	400		250			100		
Waterproofing Concrete/Masonry Sealers	400					100		
Wood Preservatives								
Below-Ground	350							
Other	350							

* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.

** Does not include compounds used for curbs and gutters, sidewalks, islands, driveways and other miscellaneous concrete areas.

*** The Fire-Retardant Coating category will be eliminated on January 1, 2007 and subsumed by the coating category for which they are formulated.

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1113 7-13-2007]

TABLE OF STANDARDS (cont.)
VOC LIMITS

Grams of VOC Per Liter of Material

COATING	Limit
Low-Solids Coating	120

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 11-7-2003]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application	
(i) General	25 (0.21)
(ii) Electrical Apparatus Components & Electronic Components	500 (4.2)
(iii) Medical Devices & Pharmaceuticals	800 (6.7)
(B) Repair and Maintenance Cleaning	
(i) General	25 (0.21)
(ii) Electrical Apparatus Components & Electronic Components	900 (7.5)
(iii) Medical Devices & Pharmaceuticals	
(A) Tools, Equipment, & Machinery	800 (6.7)
(B) General Work Surfaces	600 (5.0)

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 11-7-2003]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS VOC g/l (lb/gal)
(C) Cleaning of Coatings or Adhesives Application Equipment	550 (4.6)
(D) Cleaning of Ink Application Equipment	
(i) General	25 (0.21)
(ii) Flexographic Printing	25 (0.21)
(iii) Gravure Printing	
(A) Publication	750 (6.3)
(B) Packaging	25 (0.21)
(iv) Lithographic or Letter Press Printing	
(A) Roller Wash – Step 1	600 (5.0)
(B) Roller Wash-Step 2, Blanket Wash, & On-Press Components	800 (6.7)
(C) Removable Press Components	25 (0.21)
(v) Screen Printing	750 (6.3)
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	800 (6.7)

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 11-7-2003]

SOLVENT CLEANING ACTIVITY	CURRENT LIMITS VOC g/l (lb/gal)
(vii) Specialty Flexographic Printing	600 (5.0)
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[RULE 1171 2-1-2008]

(1) Solvent Requirements

A person shall not use a solvent to perform solvent cleaning operations unless the solvent complies with the applicable requirements set forth below:

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY	VOC g/l (lb/gal)	VOC g/l (lb/gal)	VOC g/l (lb/gal)
(A) Product Cleaning During Manufacturing Process Or Surface Preparation For Coating, Adhesive, Or Ink Application			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		
(iii) Medical Devices & Pharmaceuticals	800 (6.7)		
(B) Repair and Maintenance Cleaning			
(i) General	25 (0.21)		
(ii) Electrical Apparatus Components & Electronic Components	100 (0.83)		

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 2-1-2008]

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY (cont.)	**VOC g/l (lb/gal)**	**VOC g/l (lb/gal)**	**VOC g/l (lb/gal)**
(iii) Medical Devices & Pharmaceuticals			
(A) Tools, Equipment, & Machinery	800 (6.7)		
(B) General Work Surfaces	600 (5.0)		
(C) Cleaning of Coatings or Adhesives Application Equipment	25 (0.21)		
(D) Cleaning of Ink Application Equipment			
(i) General	25 (0.21)		
(ii) Flexographic Printing	25 (0.21)		
(iii) Gravure Printing			
(A) Publication	100 (0.83)		
(B) Packaging	25 (0.21)		
(iv) Lithographic (Offset) or Letter Press Printing			
(A) Roller Wash, Blanket Wash, & On-Press Components			
(I) Newsprint	100 (0.83)		

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS [RULE 1171 2-1-2008]

	CURRENT LIMITS*	EFFECTIVE 1/1/2008*	EFFECTIVE 1/1/2009
SOLVENT CLEANING ACTIVITY (cont.)	**VOC g/l (lb/gal)**	**VOC g/l (lb/gal)**	**VOC g/l (lb/gal)**
(II) Other Substrates	500 (4.2)	100 (0.83)	
(B) Removable Press Components	25 (0.21)		
(v) Screen Printing	500 (4.2)	100 (0.83)	
(vi) Ultraviolet Ink/ Electron Beam Ink Application Equipment (except screen printing)	650 (5.4)	650 (5.4)	100 (0.83)
(vii) Specialty Flexographic Printing	100 (0.83)		
(E) Cleaning of Polyester Resin Application Equipment	25 (0.21)		

* The specified limits remain in effect unless revised limits are listed in subsequent columns.

FACILITY PERMIT TO OPERATE
AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[40CFR 72 - Acid Rain Provisions 11-24-1997]

1. A Title V permit revision is not required for emission increases that are authorized by allowances acquired under the Acid Rain Program, provided that the increases do not trigger a Title V permit revision under any other applicable requirement. [70.6 (a)(4)(ii)]

Monitoring Requirements

2. The owners and operators and, to the extent applicable, the designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR Parts 74, 75, and 76. [40 CFR 72.50, 72.31, 72.9(b)(1)]

3. The emissions measurements recorded and reported in accordance with 40 CFR Part 75 shall be used to determine compliance by the unit with the acid rain emissions limitations and emissions reduction requirements for sulfur dioxide (SO_2) under the Acid Rain Program. [40 CFR 72.9(b)(2), 40 CFR 75.2]

4. The requirements of 40 CFR Parts 74 and 75 shall not affect the responsibility of the operator to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements and other provisions of this permit. [40 CFR 72.9(b)(3), 40 CFR 72.5]

Sulfur Dioxide Requirements

5. The owners and operators of each source and each affected unit at the source shall:
   (A) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR Part 73, Section 73.34(C)) not less than the total annual emissions of SO_2 for the previous calendar year from the unit; and, [40 CFR 72.9(c)(i)],

   (B) Comply with the applicable acid rain emissions limitations for SO_2.[40 CFR 72.9(c)(ii)]

6. Each ton of SO_2 emitted in excess of the acid rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 72.9(g)(7)]

7. SO_2 allowances shall be held in, deducted from, or transferred among allowance tracking system accounts in accordance with the Acid Rain Program. [40 CFR 72.9(g)(4)]

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[40CFR 72 - Acid Rain Provisions 11-24-1997]

8. A SO_2 allowance shall not be deducted in order to comply with the requirements under paragraph 41(A) of the SO_2 requirements prior to the calendar year for which the allowance was allocated. [40 CFR 72.9(g)(5)]

9. An affected unit shall be subject to the SO_2 requirements under the Acid Rain Program as follows:[40 CFR 72.6(a)]

   (A) Starting January 1, 2000, an affected unit under 40 CFR Part 72, Section 72.6(a)(2); or [40 CFR 72.6(a)(2)]

   (B) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR Part 75, an affected unit under 40 CFR Part 72, Section 72.6(a)(3). [40CFR 72.6(a)(3)]

10. An allowance allocated by the EPA administrator under the Acid Rain Program is a limited authorization to emit SO_2 in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the acid rain permit application, the acid rain permit, or the written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14, and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72.9 (c)(6)]

11. An allowance allocated by the EPA Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72.9(c)(7)]

Excess Emissions Requirements

12. The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77. [40 CFR 72.9(e)]

13. The owners and operators of an affected unit that has excess emissions in any calendar year shall: [40 CFR 72.9(e)(2)]

    (A) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR Part 77; and[40 CFR 72.9(e)(2)(i)]

    (B) Comply with the terms of an approved offset plan, as required by 40 CFR Part 77. [40 CFR 72.9(e)(2)(ii)]

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[40CFR 72 - Acid Rain Provisions 11-24-1997]

Recordkeeping and Reporting Requirements

14. Unless otherwise provided, the owners and operators of the source and each affected unit at the source that are subject to the acid rain provisions under Title IV shall keep on site at the source each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the EPA Administrator or the Executive Officer: [40 CFR 72.9(f)(1)]

    (A) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such five year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative; [40 CFR 72.9(f)(1)(i)]

    (B) All emissions monitoring information, in accordance with 40 CFR Part 75; [40 CFR 72.9(f)(1)(ii)]

    (C) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and, [40 CFR 72.9(f)(1)(iii)]

    (D) Copies of all documents used to complete an acid rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program. [40 CFR 72.9(f)(1)(iv)]

15. The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR Part 72 Subpart I and 40 CFR Part 75. [40 CFR 72.9(f)(2)]

Liability

16. Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete acid rain permit application, an acid rain permit, or a written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to Section 113(c) of the Act. [40 CFR 72.9 (g)(1)]

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[40CFR 72 - Acid Rain Provisions 11-24-1997]

17. Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to Section 113(c) of the Act and 18 U.S.C. 1001. [40 CFR 72.9 (g)(2)]

18. No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect. [40 CFR 72.9 (g)(3)]

19. Each affected source and each affected unit shall meet the requirements of the Acid Rain Program. [40 CFR 72.9 (g)(4)]

20. Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source. [40 CFR 72.9 (g)(5)]

21. Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR Part 72, Section 72.44 (Phase II repowering extension plans) and 40 CFR Part 76, Section 76.11 (NOx averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR Part 75 (including 40 CFR Part 75, Sections 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative. [40 CFR 72.9 (g)(6)]

22. Each violation of a provision of 40 CFR Parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act. [40 CFR 72.9 (g)(7)]

Effect on Other Authorities

23. No provision of the Acid Rain Program, an acid rain permit application, an acid rain permit, or a written exemption under 40 CFR Part 72, Sections 72.7, 72.8, or 72.14 shall be construed as: [40 CFR 72.9 (h)]

FACILITY PERMIT TO OPERATE

AES REDONDO BEACH, LLC

APPENDIX B: RULE EMISSION LIMITS
[40CFR 72 - Acid Rain Provisions 11-24-1997]

(A) Except as expressly provided in Title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of Title I of the Act relating to applicable National Ambient Air Quality Standards or state implementation plans; [40 CFR 72.9 (h)(1)]

(B) Limiting the number of allowances a unit can hold; *provided,* that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act; [40 CFR 72.9 (h)(2)]

(C) Requiring a change of any kind in any state law regulating electric utility rates and charges, affecting any state law regarding such state regulation, or limiting such state regulation, including any prudence review requirements under such state law; [40 CFR 72.9 (h)(3)]

(D) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or, [40 CFR 72.9 (h)(4)]

(E) Interfering with or impairing any program for competitive bidding for power supply in a state in which such program is established. [40 CFR 72.9 (h)(5)]

Attachment DR11-1
SCAQMD Correspondence for Cumulative Sources

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
FAX: (909) 396-3330

PUBLIC RECORDS REQUEST FORM

PRU Office Use Only
CONTROL NUMBER

ATTENTION REQUESTOR: To expedite your request for District records, please fill out this form completely, and identify specifically the type of records you are requesting. Please limit your request to one facility or one site address for each request form filed, and three requested items per form. Additional forms or pages can be used if requesting information for more than one facility or for records not identified on this form. Requests should reasonably describe identifiable records prepared, owned, used, or retained by the District. Public Records Unit staff is available to assist you in identifying those records in the District's possession. The District is not required by law to create a new record or list from an existing record.

REQUESTOR INFORMATION

NAME: Keith McGregor		DATE: 8/13/2012
COMPANY: CH2M HILL		
MAILING ADDRESS: 2485 Natomas Park Drive, Suite 600		
CITY: Sacramento	STATE: CA	ZIP CODE: 95833
PHONE NUMBER: (916) 286-0221	FAX NUMBER: (916) 614-3450	
EMAIL ADDRESS: kmcgrego@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

☐ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
☐ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	☐ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	✔ Other (describe below or on additional pages):

See attached memo.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME:		
FACILITY ADDRESS:		
CITY:	STATE:	ZIP CODE:
FACILITY I.D. NO. (if known):	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

✔ I wish to inspect the requested records, where applicable, or receive the requested records electronically at no charge. I do not want copies produced at this time.

☐ I request that the SCAQMD contact me prior to copying the requested records if the cost exceeds $20.00.

☐ I would like copies of the requested records and I hereby agree to reimburse the SCAQMD for the direct cost of duplicationin accordance with Gov. Code Sec. 6253(b).

Signature of Requestor

Note: After a preliminary estimate, advance payment may be required.

MEMORANDUM

CH2MHILL®

Public Records Request for Cumulative Source Information for the Redondo Beach Energy Project

PREPARED FOR: Lisa Ramos/Public Records
South Coast Air Quality
Management District

PREPARED BY: Keith McGregor/CH2M HILL
Jerry Salamy/CH2MHILL

DATE: August 13, 2012

PROJECT NUMBER: 424103

CH2MHILL is currently working on the preparation of an Application for Certification (AFC) for the Redondo Beach Energy Project (RBEP). AES Southland Development, LLC, (AES) proposes to construct the RBEP at the existing AES Redondo Beach Generating Station site at 1100 N. Harbor Drive, Redondo Beach, CA 90277. The RBEP will consist of one three-on-one natural-gas-fired combined-cycle power block with a nominal generating capacity of 495 megawatts (MW) and maximum generating capacity of 529 MW. The power block will consist of three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbines with fired heat recovery steam generators, one steam turbine, and an air cooled condenser.

A cumulative air quality modeling impacts analysis will be required by the California Energy Commission (CEC) as part of the AFC process. Prior to completing the cumulative impacts analysis, the CEC requests that the applicant contact the respective air districts to obtain the appropriate source information. Therefore, on behalf of AES, CH2M HILL would like to request a list of all stationary sources (including their physical address) of new or modified emissions which meet each of the following criteria:

1) sources that are located within a six-mile radius, and
2) sources that have recently received construction permits but are not yet operational or are currently in the permitting process (such as, the NSR or CEQA permitting process), and
3) sources that have a potential to emit five tons or more per year of NOx, CO, PM_{10}, $PM_{2.5}$, or SOx.

Based on the three criteria above, it is anticipated the following sources would be excluded from the cumulative impacts analysis: VOC only sources, equipment shutdowns, permit-exempt equipment registrations, rule compliance, permit renewals, or replacement/system upgrades.

A list of zip codes within a six-mile radius of the RBEP is attached.

If you have any questions regarding this request or if there are additional data request forms required, please contact Keith McGregor (kmcgrego@ch2m.com) at (916) 286-0221 or Jerry Salamy (jerry.salamy@ch2m.com) at (916) 286-0270.

Redondo Beach Energy Project
List of Zip Codes within a 6-mile Radius of the RBEP
August 2012

NAME	POSTAL
Los Angeles	90045
El Segundo	90245
Gardena	90247
Gardena	90248
Gardena	90249
Hawthorne	90250
Hermosa Beach	90254
Lawndale	90260
Manhattan Beach	90266
Palos Verdes Peninsula	90274
Rancho Palos Verdes	90275
Redondo Beach	90277
Redondo Beach	90278
Playa del Rey	90293
Inglewood	90303
Inglewood	90304
Inglewood	90304
Torrance	90501
Torrance	90502
Torrance	90503
Torrance	90504
Torrance	90505
Torrance	90506
Harbor City	90710
Lomita	90717

-----Original Message-----
From: Lisa Ramos [mailto:lramos1@aqmd.gov]
Sent: Wednesday, August 15, 2012 2:47 PM
To: McGregor, Keith/SAC; Lisa Ramos
Subject: Request for Records from the South Coast Air Quality Management District

KEITH MCGREGOR
2485 NATOMAS PARK DR
SACRAMENTO, CA 95833-

RE: Request for Records
Control #: 69661
Request: LIST OF STATIONARY SOURCES LOCATED WITHING A 6-MILE RADIUS, PERMITTING PROCESS UNDER NSR OR CEQA OR PTE OF 5 TONS OR MORE FOR NOX, CO, PM10, PM25 & SOX.

Your request for records has been recieved by the Public Records Unit and has been assigned for processing.

Should you have any questions or need additional information, please do not hesitate to contact me at (909) 396-3700, Tuesday through Friday, between the hours of 8:00 a.m. 4:30 p.m. Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

LISA RAMOS

For Colleen Paine
Public Records Coordinator

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

August 17, 2012

KEITH MCGREGOR
CH2M HILL
2485 NATOMAS PARK DR.# SUITE 600
SACRAMENTO, CA 95833

Ref.: CONTROL NO. 69661
Received 8/15/2012

Re: LIST OF STATIONARY SOURCES LOCATED WITHING A 6-MILE RADIUS, PERMITTING PROCESS UNDER NSR OR CEQA OR PTE OF 5 TONS OR MORE FOR NOX, CO, PM10, PM25 & SOX.

After a thorough search of this agency's records, the following records were found:
LIST OF STATIONARY SOURCES LOCATED WITHING A 6-MILE RADIUS, PERMITTING PROCESS UNDER NSR OR CEQA OR PTE OF 5 TONS OR MORE FOR NOX, CO, PM10, PM25 & SOX.

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 08/17/2012

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m**. to **4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Colleen Paine
Public Records Coordinator

:lr

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	539157	6/7/2012	210	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	539156	6/7/2012	210	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	539155	6/7/2012	210	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	539154	6/7/2012	210	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	512657	7/13/2010	21	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	460604	9/27/2006	21	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
8582	SO CAL GAS CO/PLAYA DEL REY STORAGE	407305	10/2/2002	26	166.075	0	47.085	6.205	8141 GULANA AVE	PLAYA DEL REY	CA	**90293**	7930	310	5782610		CHARLIE	SOARES	8141 GULANA AVE ATTN: JOHN A. THOMPSOI	PLAYA DEL REY	CA	90293	7930				DEANNA	HAINES
9243	TORRANCE MEMORIAL MEDICAL CENTER	527374	9/16/2011	26	8.395	0	25.915	1.825	3330 LOMITA BLVD	TORRANCE	CA	**90505**	5073	310	7844825		JON	CROVETTI	3330 LOMITA BLVD ATTN: ACCOUNTING DEPT	TORRANCE	CA	90505	5073	310	5174755		BUD	MAXFIELD
9243	TORRANCE MEMORIAL MEDICAL CENTER	527373	9/16/2011	26	8.395	0	25.915	1.825	3330 LOMITA BLVD	TORRANCE	CA	**90505**	5073	310	7844825		JON	CROVETTI	3330 LOMITA BLVD ATTN: ACCOUNTING DEPT	TORRANCE	CA	90505	5073	310	5174755		BUD	MAXFIELD
9755	UNITED AIRLINES INC	521638	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521637	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521636	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521635	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521634	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521633	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521631	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521630	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521629	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521628	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521627	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521626	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521625	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	521624	3/31/2011	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
9755	UNITED AIRLINES INC	400754	4/30/2002	21	52.195	2.7375	16.9725	2.3725	6010 & 6020 AVION DR	LOS ANGELES	CA	**90045**		310	3428404		AZADEH	KHOROUSHI	P.O. BOX 92245 AZADEH KHOROUSHI	LOS ANGELES	CA	90009		310	3428405		AZADEH	KHOROUSHI
10407	EXXONMOBIL OIL CORPORATION	533847	3/14/2012	210	254.9525	29.3825	80.665	8.2125	3700 W 190TH ST	TORRANCE	CA	**90503**		310	2124409		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2124409		CRAIG	SAKAMOTO
10407	EXXONMOBIL OIL CORPORATION	511914	6/17/2010	20	254.9525	29.3825	80.665	8.2125	3700 W 190TH ST	TORRANCE	CA	**90503**		310	2124409		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2124409		CRAIG	SAKAMOTO
10407	EXXONMOBIL OIL CORPORATION	455156	3/24/2006	21	254.9525	29.3825	80.665	8.2125	3700 W 190TH ST	TORRANCE	CA	**90503**		310	2124409		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2124409		CRAIG	SAKAMOTO
10407	EXXONMOBIL OIL CORPORATION	455153	3/24/2006	21	254.9525	29.3825	80.665	8.2125	3700 W 190TH ST	TORRANCE	CA	**90503**		310	2124409		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2124409		CRAIG	SAKAMOTO
10991	LA CITY, HYPERION TREATMENT PLANT	431055	6/30/2004	26	32.6675	0.1825	44.53	3.0514	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**	8504	310	6485168		STEVE	FAN	12000 VISTA DEL MAR AQMG	PLAYA DEL REY	CA	90293	8506	310	6485168		STEVE	FAN
10991	LA CITY, HYPERION TREATMENT PLANT	388675	7/6/2001	26	32.6675	0.1825	44.53	3.0514	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**	8504	310	6485168		STEVE	FAN	12000 VISTA DEL MAR AQMG	PLAYA DEL REY	CA	90293	8506	310	6485168		STEVE	FAN
10991	LA CITY, HYPERION TREATMENT PLANT	281664	5/12/1993	26	32.6675	0.1825	44.53	3.0514	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**	8504	310	6485168		STEVE	FAN	12000 VISTA DEL MAR AQMG	PLAYA DEL REY	CA	90293	8506	310	6485168		STEVE	FAN
15509	US GOVT, AF DEPT, L.A. A.F.B. AREA B	518907	2/11/2011	21	5.6575	0.1825	2.92	0.1825	483 N AVIATION BLVD	EL SEGUNDO	CA	**90245**		310	3630496		MEHDI	SANWARI	483 N AVIATION BLVD ATTN: 61 CELS/CEAE	EL SEGUNDO	CA	90245	4659	310	3630496		MEHDI	SANWARI
15794	NISSIN FOODS (USA) CO., INC.	530051	12/7/2011	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	530050	12/7/2011	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	530049	12/7/2011	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	530048	12/7/2011	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	530046	12/7/2011	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	530045	12/7/2011	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	516944	12/9/2010	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	516943	12/9/2010	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	516940	12/9/2010	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
15794	NISSIN FOODS (USA) CO., INC.	516939	12/9/2010	26	2.3725	0	18.98	12.2275	2001 W ROSECRANS AVE	GARDENA	CA	**90249**	2994	714	2828240		ESTEBAN	LOYA	2001 W ROSECRANS AVE ATTN: ESTEBAN LC	GARDENA	CA	90249		714	2828240		ESTEBAN	LOYA
18522	EXXONMOBIL OIL CORPORATION	482659	5/15/2008	20	24.82	0	0	0	3700 W 190 TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	P O BOX 2845	TORRANCE	CA	90509	2845	310	2123763		CRAIG	SAKAMOTO
18522	EXXONMOBIL OIL CORPORATION	454678	3/14/2006	20	24.82	0	0	0	3700 W 190 TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	P O BOX 2845	TORRANCE	CA	90509	2845	310	2123763		CRAIG	SAKAMOTO
18522	EXXONMOBIL OIL CORPORATION	452861	1/31/2006	21	24.82	0	0	0	3700 W 190 TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	P O BOX 2845	TORRANCE	CA	90509	2845	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	515360	10/12/2010	20	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	512803	7/21/2010	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	512802	7/21/2010	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	512801	7/21/2010	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	512799	7/21/2010	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	501189	8/7/2009	20	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	501188	8/7/2009	20	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	485911	7/31/2008	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	485910	7/31/2008	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	485909	7/31/2008	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	485908	7/31/2008	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	485241	7/25/2008	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	475624	11/14/2007	20	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	475623	11/14/2007	20	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	458745	6/30/2006	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	458744	6/30/2006	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	458743	6/30/2006	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	458742	6/30/2006	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	458740	6/30/2006	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	458739	6/30/2006	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18592	EXXONMOBIL OIL CORPORATION	368565	4/12/2000	26	167.3525	0	0	127.75	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN:	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	482658	5/15/2008	20	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	454677	3/14/2006	20	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	452860	1/31/2006	21	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	426123	2/20/2004	21	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	426122	2/20/2004	21	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	426121	2/20/2004	21	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
18609	EXXONMOBIL OIL CORPORATION	422361	11/26/2003	21	267.7275	28.47	6.935	35.04	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATT	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	515151	9/23/2010	21	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	7834824		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	512450	7/1/2010	20	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	7834824		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	511635	6/10/2010	21	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	7834824		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	509104	3/23/2010	26	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	7834824		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	483878	6/17/2008	26	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	7834824		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	475234	11/6/2007	26	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	7834824		CRAIG	SAKAMOTO
20149	EXXONMOBIL OIL CORPORATION	475232	11/6/2007	26	1.095	31.39	0	4.015	3700 W 190 TH ST	TORRANCE	CA	**90504**	5790	310	7834824		CRAIG	SAKAMOTO	3

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
22868	EXXONMOBIL OIL CORPORATION	384501	3/29/2001	20	0.73	0.73	0	6.0225	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
22868	EXXONMOBIL OIL CORPORATION	369338	5/10/2000	26	0.73	0.73	0	6.0225	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
22868	EXXONMOBIL OIL CORPORATION	369334	5/10/2000	26	0.73	0.73	0	6.0225	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
22868	EXXONMOBIL OIL CORPORATION	369333	5/10/2000	26	0.73	0.73	0	6.0225	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
22868	EXXONMOBIL OIL CORPORATION	369332	5/10/2000	26	0.73	0.73	0	6.0225	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
22868	EXXONMOBIL OIL CORPORATION	358440	8/24/1999	26	0.73	0.73	0	6.0225	3700 W 190TH ST	TORRANCE	CA	**90504**	5733	310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F&S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
24520	LA CNTY SANITATION DISTRICT-PALOS VER	533440	2/22/2012	21	6.57	11.4975	16.06	4.015	26301 S CRENSHAW B &2570	ROLLING HILLS ESTA	CA	**90274**	2514	310	6997411	2432	CHARLOTTE	NESBIT	P O BOX 4998	WHITTIER	CA	90607	4998	310	6997411	2432	CHARLOTTE	NESBIT
24520	LA CNTY SANITATION DISTRICT-PALOS VER	526209	8/19/2011	20	6.57	11.4975	16.06	4.015	26301 S CRENSHAW B &2570	ROLLING HILLS ESTA	CA	**90274**	2514	310	6997411	2432	CHARLOTTE	NESBIT	P O BOX 4998	WHITTIER	CA	90607	4998	310	6997411	2432	CHARLOTTE	NESBIT
24520	LA CNTY SANITATION DISTRICT-PALOS VER	522386	5/6/2011	21	6.57	11.4975	16.06	4.015	26301 S CRENSHAW B &2570	ROLLING HILLS ESTA	CA	**90274**	2514	310	6997411	2432	CHARLOTTE	NESBIT	P O BOX 4998	WHITTIER	CA	90607	4998	310	6997411	2432	CHARLOTTE	NESBIT
24520	LA CNTY SANITATION DISTRICT-PALOS VER	483623	6/5/2008	26	6.57	11.4975	16.06	4.015	26301 S CRENSHAW B &2570	ROLLING HILLS ESTA	CA	**90274**	2514	310	6997411	2432	CHARLOTTE	NESBIT	P O BOX 4998	WHITTIER	CA	90607	4998	310	6997411	2432	CHARLOTTE	NESBIT
24812	FARMER BROS CO	494345	12/24/2008	26	9.4097	0.2701	0.9563	-0.8541	20333 S NORMANDIE AVE	TORRANCE	CA	**90502**		310	7875277		ERIC	NARCISO	20333 S NORMANDIE AVE ERIC NARCISO	TORRANCE	CA	90502		310	7875277		ERIC	NARCISO
24812	FARMER BROS CO	494344	12/24/2008	26	9.4097	0.2701	0.9563	-0.8541	20333 S NORMANDIE AVE	TORRANCE	CA	**90502**		310	7875277		ERIC	NARCISO	20333 S NORMANDIE AVE ERIC NARCISO	TORRANCE	CA	90502		310	7875277		ERIC	NARCISO
24812	FARMER BROS CO	494343	12/24/2008	26	9.4097	0.2701	0.9563	-0.8541	20333 S NORMANDIE AVE	TORRANCE	CA	**90502**		310	7875277		ERIC	NARCISO	20333 S NORMANDIE AVE ERIC NARCISO	TORRANCE	CA	90502		310	7875277		ERIC	NARCISO
24812	FARMER BROS CO	494342	12/24/2008	26	9.4097	0.2701	0.9563	-0.8541	20333 S NORMANDIE AVE	TORRANCE	CA	**90502**		310	7875277		ERIC	NARCISO	20333 S NORMANDIE AVE ERIC NARCISO	TORRANCE	CA	90502		310	7875277		ERIC	NARCISO
24812	FARMER BROS CO	494339	12/24/2008	26	9.4097	0.2701	0.9563	-0.8541	20333 S NORMANDIE AVE	TORRANCE	CA	**90502**		310	7875277		ERIC	NARCISO	20333 S NORMANDIE AVE ERIC NARCISO	TORRANCE	CA	90502		310	7875277		ERIC	NARCISO
43522	KAISER FOUNDATION HOSPITAL	537398	4/13/2012	210	4.5625	0	8.9425	1.6425	25825 S VERMONT AVE	HARBOR CITY	CA	**90710**	3518	310	2575121		RICHARD	MURILLO	25825 S VERMONT AVE ATTN: PLANT SERV D	HARBOR CITY	CA	90710	3511	310	2575121		RICHARD	MURILLO
43522	KAISER FOUNDATION HOSPITAL	537396	4/13/2012	210	4.5625	0	8.9425	1.6425	25825 S VERMONT AVE	HARBOR CITY	CA	**90710**	3518	310	2575121		RICHARD	MURILLO	25825 S VERMONT AVE ATTN: PLANT SERV D	HARBOR CITY	CA	90710	3511	310	2575121		RICHARD	MURILLO
43522	KAISER FOUNDATION HOSPITAL	516677	11/30/2010	21	4.5625	0	8.9425	1.6425	25825 S VERMONT AVE	HARBOR CITY	CA	**90710**	3518	310	2575121		RICHARD	MURILLO	25825 S VERMONT AVE ATTN: PLANT SERV D	HARBOR CITY	CA	90710	3511	310	2575121		RICHARD	MURILLO
43522	KAISER FOUNDATION HOSPITAL	511417	5/28/2010	26	4.5625	0	8.9425	1.6425	25825 S VERMONT AVE	HARBOR CITY	CA	**90710**	3518	310	2575121		RICHARD	MURILLO	25825 S VERMONT AVE ATTN: PLANT SERV D	HARBOR CITY	CA	90710	3511	310	2575121		RICHARD	MURILLO
43522	KAISER FOUNDATION HOSPITAL	511416	5/28/2010	26	4.5625	0	8.9425	1.6425	25825 S VERMONT AVE	HARBOR CITY	CA	**90710**	3518	310	2575121		RICHARD	MURILLO	25825 S VERMONT AVE ATTN: PLANT SERV D	HARBOR CITY	CA	90710	3511	310	2575121		RICHARD	MURILLO
47882	EXXONMOBIL OIL CORPORATION	500502	7/9/2009	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	483739	6/10/2008	20	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	483736	6/10/2008	20	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	464390	1/3/2007	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	455148	3/24/2006	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	455147	3/24/2006	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	455135	3/24/2006	20	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	435110	9/24/2004	26	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	433428	8/10/2004	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	433426	8/10/2004	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	430959	6/8/2004	26	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	422931	12/3/2003	26	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	422359	11/26/2003	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	422167	11/25/2003	21	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	355279	6/3/1999	26	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
47882	EXXONMOBIL OIL CORPORATION	353806	5/14/1999	26	62.05	0	0.5475	0.365	3700 W 190TH ST	TORRANCE	CA	**90504**		310	2123763		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2123763		CRAIG	SAKAMOTO
53611	CHEVRON PRODUCTS COMPANY	413909	4/8/2003	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	413907	4/8/2003	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	344025	8/27/1998	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	336991	2/18/1998	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	331016	8/13/1997	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	324987	2/28/1997	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	318765	8/14/1996	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	308382	7/19/1995	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	305409	7/26/1995	26	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	305408	7/26/1995	26	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	303462	5/11/1995	26	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	293167	5/27/1994	21	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	284290	8/16/1993	26	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
53611	CHEVRON PRODUCTS COMPANY	284288	8/16/1993	26	57.305	25.7774	29.65	31.7999	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155889		NEAL	TRUONG	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155889		NEAL	TRUONG
82513	BREA CANON OIL COMPANY INC	505276	1/8/2010	21	2.92	0	9.125	0	23903 S NORMANDIE	HARBOR CITY	CA	**90710**	1400	310	3264002		TIMOTHY	BURCH	23903 S NORMANDIE	HARBOR CITY	CA	90710	1400	310	3264002		TIMOTHY	BURCH
88508	AMERICAN HONDA MOTOR CO INC	510542	5/7/2010	21	3.1025	0	10.0375	0	1919 TORRANCE BLVD	TORRANCE	CA	**90501**		310	7832063		KAY	MILLS	1919 TORRANCE BLVD	TORRANCE	CA	90501		310	7832063		KAY	MILLS
1E+05	LOYOLA MARYMOUNT UNIVERSITY	517694	12/29/2010	26	-2.7375	0	5.475	0.365	ONE LMU DR	LOS ANGELES	CA	**90045**		310	3381932		DAVID	FRENCH	1 LMU DR. MS 8120 ATN: DAVID E FRENCH DI	LOS ANGELES	CA	90045		310	3381932		DAVID	FRENCH
1E+05	LOYOLA MARYMOUNT UNIVERSITY	517693	12/29/2010	26	-2.7375	0	5.475	0.365	ONE LMU DR	LOS ANGELES	CA	**90045**		310	3381932		DAVID	FRENCH	1 LMU DR. MS 8120 ATN: DAVID E FRENCH DI	LOS ANGELES	CA	90045		310	3381932		DAVID	FRENCH
1E+05	CAITAC GARMENT PROCESSING INC	531393	1/3/2012	20	2.3725	0	8.9425	1.095	14725 S BROADWAY	GARDENA	CA	**90248**		310	2179888		CHIANG	KIM	14725 S BROADWAY	GARDENA	CA	90248		310	2179888		CHIANG	KIM
1E+05	CAITAC GARMENT PROCESSING INC	500172	6/30/2009	21	2.3725	0	8.9425	1.095	14725 S BROADWAY	GARDENA	CA	**90248**		310	2179888		CHIANG	KIM	14725 S BROADWAY	GARDENA	CA	90248		310	2179888		CHIANG	KIM
1E+05	BOEING SATELLITE SYSTEMS INC	505876	1/28/2010	21	9.3075	0	18.25	0.73	2240 E IMPERIAL HWY	EL SEGUNDO	CA	**90245**	3546	310	4165627		KIMBERLY	BALCERZAK	P O BOX 92919, W-S01-D381 ATTN: KIMBERLY	LOS ANGELES	CA	90009	2919	310	4165627		KIMBERLY	BALCERZAK
1E+05	EL SEGUNDO POWER, LLC	539317	6/12/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	538964	6/5/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	537852	5/11/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	537851	5/11/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	537035	5/3/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	537034	5/3/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	536716	5/16/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	536715	5/16/2012	210	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	536349	5/10/2012	215	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	536347	5/10/2012	215	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	528833	11/1/2011	20	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	528832	11/1/2011	20	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	525883	7/27/2011	21	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	522873	5/24/2011	21	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	492049	10/30/2008	21	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	470656	6/21/2007	26	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	470655	6/21/2007	21	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	470654	6/21/2007	26	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	470653	6/21/2007	26	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	470652	6/21/2007	26	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	EL SEGUNDO POWER, LLC	379904	1/18/2001	26	3,236.09	850.998	2,836.96	473.04	301 VISTA DEL MAR	EL SEGUNDO	CA	**90245**		609	5245124		STEVEN	WARSAW	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		609	5245124		STEVEN	WARSAW
1E+05	ALCOA GLOBAL FASTENERS, INC. SOUTH B	492523	11/19/2008	21	0.73	0	22.63	1.825	3000 W LOMITA BLVD	TORRANCE	CA	**90505**	5157	310	7845245		JEFFREY	BENZ	3000 W LOMITA BLVD	TORRANCE	CA	90505	5157	310	7845245		JEFFREY	BENZ
1E+05	LITHOGRAPHIX INC	513562	8/4/2010	26	1.825	0	10.22	0.73	12250 CRENSHAW BLVD	HAWTHORNE	CA	**90250**		323	7701000		GEORGE	WOLDEN	12250 S CRENSHAW BLVD	HAWTHORNE	CA	90250		323	7701000		GEORGE	WOLDEN
1E+05	LITHOGRAPHIX INC	513409	8/4/2010	21	1.825	0	10.22	0.73	12250 CRENSHAW BLVD	HAWTHORNE	CA	**90250**		323	7701000		GEORGE	WOLDEN	12250 S CRENSHAW BLVD	HAWTHORNE	CA	90250		323	7701000		GEORGE	WOLDEN
1E+05	LITHOGRAPHIX INC	500189	6/30/2009	21	1.825	0	10.22	0.73	12250 CRENSHAW BLVD	HAWTHORNE	CA	**90250**		323	7701

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
1E+05	TOYOTA MOTOR ENG & MFG NORTH AMERI	498180	4/28/2009	26	0	0	6.3875	0	1630 W 186TH ST	GARDENA	CA	**90248**	3898	310	7875829		ED	DE LA CRUZ	1630 W 186TH ST ATTN: ED DE LA CRUZ	GARDENA	CA	90248	3898	310	7875829		ED	DE LA CRUZ
1E+05	TOYOTA MOTOR ENG & MFG NORTH AMERI	478928	3/4/2008	21	0	0	6.3875	0	1630 W 186TH ST	GARDENA	CA	**90248**	3898	310	7875829		ED	DE LA CRUZ	1630 W 186TH ST ATTN: ED DE LA CRUZ	GARDENA	CA	90248	3898	310	7875829		ED	DE LA CRUZ
2E+05	AMERICAS STYRENICS LLC	518015	1/7/2011	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	518014	1/7/2011	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	518013	1/7/2011	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	518012	1/7/2011	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	518011	1/7/2011	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	518009	1/7/2011	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	515247	10/5/2010	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	509819	4/8/2010	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	509818	4/8/2010	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	AMERICAS STYRENICS LLC	486776	8/12/2008	21	7.3	21.9	10.585	6.57	305 CRENSHAW BLVD	TORRANCE	CA	**90503**		310	2245459		BRIAN	STITH	305 CRENSHAW BLVD	TORRANCE	CA	90503		310	2245459		BRIAN	STITH
2E+05	TRIUMPH AEROSTRUCTURES, LLC	540809	7/26/2012	25	2.555	0	0	10.585	3901 W JACK NORTHROP AVI	HAWTHORNE	CA	**90250**	3277	310	3316891		SAAD	ASKANDER	3901 JACK NORTHROP AVE	HAWTHORNE	CA	90250		310	3316891		SAAD	ASKANDER
2E+05	TRIUMPH AEROSTRUCTURES, LLC	536877	4/5/2012	210	2.555	0	0	10.585	3901 W JACK NORTHROP AVI	HAWTHORNE	CA	**90250**	3277	310	3316891		SAAD	ASKANDER	3901 JACK NORTHROP AVE	HAWTHORNE	CA	90250		310	3316891		SAAD	ASKANDER
2E+05	T5@ LOS ANGELES, LLC	527577	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527576	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527575	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527574	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527572	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527571	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527570	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527569	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
2E+05	T5@ LOS ANGELES, LLC	527568	9/23/2011	26	6.0225	0	1.46	0	444 N NASH ST	EL SEGUNDO	CA	**90245**	2822	404	2397575		MIKE	CASEY	3565 PIEDMONT NE RD STE 318	ATLANTA	GA	30305	4606	404	2397575		MIKE	CASEY
8E+05	CHEVRON PRODUCTS CO.	541583	8/10/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	541582	8/10/2012	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	539644	7/3/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	539643	7/3/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	539642	7/3/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	539641	7/3/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	534783	4/3/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	533644	3/13/2012	25	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	532429	2/21/2012	25	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530811	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530809	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530796	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530795	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530794	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530793	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530792	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530791	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530789	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530788	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530786	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530784	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530783	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530782	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530780	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530779	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530777	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530775	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530774	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530772	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530771	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530769	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530768	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530767	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530765	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530763	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530761	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530760	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530758	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530757	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530756	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530755	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530753	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530752	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530750	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530747	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530746	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530745	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530744	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530742	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530740	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530739	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530737	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530735	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530734	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530733	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530732	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530731	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530729	12/22/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	530728	12/22/2011	21

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
8E+05	CHEVRON PRODUCTS CO.	530641	1/4/2012	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	527432	9/20/2011	215	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	527431	9/20/2011	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	527312	9/13/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	527311	9/13/2011	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	526609	9/1/2011	25	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	526608	9/1/2011	25	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	526607	9/1/2011	25	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	521770	4/21/2011	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	516647	12/9/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	516645	12/9/2010	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	513759	8/17/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	511514	6/8/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	511206	5/26/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	508902	3/11/2010	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	508901	3/11/2010	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	508900	3/11/2010	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	507253	2/9/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	505995	1/27/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	505399	1/14/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	505289	1/12/2010	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	504226	12/4/2009	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502783	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502782	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502781	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502780	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502779	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502778	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502777	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502776	10/1/2009	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502775	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502774	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502773	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502772	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502771	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502770	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	502769	10/1/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	499878	6/4/2009	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	499877	6/4/2009	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	499500	6/9/2009	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	498947	5/22/2009	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	498739	4/7/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	498632	5/12/2009	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	493753	12/9/2008	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	493750	12/9/2008	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	493748	12/9/2008	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	493746	12/9/2008	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	482505	5/7/2008	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	482504	5/7/2008	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	480558	4/1/2008	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	475142	11/1/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	475136	11/1/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	470783	6/13/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	470782	6/13/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	470739	6/14/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	470738	6/14/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	469794	5/29/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	469712	5/22/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	469711	5/22/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	467544	4/10/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	467141	3/30/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	466876	3/27/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	465015	1/30/2007	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	464819	1/23/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	464818	1/23/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	464817	1/23/2007	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	458950	7/25/2006	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	458606	6/30/2006	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	457644	6/6/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	457643	6/6/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	457642	6/6/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	457400	5/31/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	457255	5/23/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	457074	5/19/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	456768	5/9/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	454964	3/21/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	454963	3/21/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	454962	3/21/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	454408	3/8/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
8E+05	CHEVRON PRODUCTS CO.	452969	2/1/2006	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	449487	10/11/2005	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	449364	10/5/2005	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	449360	10/5/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	449359	10/5/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	448302	8/16/2005	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	448251	8/16/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	448248	8/16/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445758	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445757	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445737	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445728	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445727	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445717	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	445705	7/7/2005	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	434099	8/24/2004	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	432922	7/28/2004	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	429687	5/12/2004	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	427936	3/19/2004	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	425880	2/18/2004	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	422682	12/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421230	10/21/2003	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421184	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421183	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421111	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421110	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421109	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421108	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421107	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	421106	10/17/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	419472	8/29/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	419317	8/28/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	419215	8/22/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	416188	6/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	416187	6/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	416186	6/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	414157	4/11/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	414154	4/11/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	414153	4/11/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	413819	4/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	413818	4/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	413817	4/4/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	412224	2/21/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	410462	1/10/2003	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405783	8/20/2002	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405764	8/20/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405763	8/20/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405762	8/20/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405761	8/20/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405760	8/20/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405527	8/16/2002	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405267	8/9/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	405265	8/9/2002	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	403039	6/19/2002	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	394758	12/14/2001	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	392137	10/17/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	388738	6/21/2001	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	388737	6/21/2001	20	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	388733	6/26/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	385373	4/24/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	385372	4/18/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	380728	1/31/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	380701	1/31/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	380597	1/30/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	380595	1/30/2001	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	368003	4/11/2000	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	362340	10/11/1999	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	362227	10/29/1999	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	362226	10/29/1999	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	362223	10/29/1999	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	362221	10/29/1999	21	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	360168	9/23/1999	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	345242	9/24/1998	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	345241	9/15/1998	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	338307	3/31/1998	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	332236	9/3/1997	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	329869	7/1/1997	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	329719	7/3/1997	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E+05	CHEVRON PRODUCTS CO.	326619	3/16/1997	26	1,610.75	554.07	2,187.81	287.985	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	**90245**	3680	310	6155267		PAT	KITTIKUL	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6154182		PETER	ALLEN
8E

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
8E+05	HITCO CARBON COMPOSITES INC	536013	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536012	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536011	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536009	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536008	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536007	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536006	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536005	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536004	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536003	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536002	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	536001	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535999	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535998	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535997	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535992	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535991	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535990	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535989	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535988	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535987	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535986	4/13/2012	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535985	4/13/2012	20	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535984	4/13/2012	20	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535983	4/13/2012	20	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535982	4/13/2012	20	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535981	4/13/2012	20	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	535979	4/13/2012	20	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	518798	2/9/2011	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	496192	2/17/2009	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	HITCO CARBON COMPOSITES INC	496191	2/17/2009	21	6.2196	0	4.9275	-3.6865	1600 W 135TH ST	GARDENA	CA	**90249**	2506	310	9705298		SIMON	RICKS	1600 W 135 TH ST	GARDENA	CA	90249					SIMON	RICKS
8E+05	EXXONMOBIL OIL CORPORATION	541581	8/10/2012	210	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	533846	3/14/2012	210	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	533844	3/14/2012	210	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	528281	10/13/2011	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	528280	10/13/2011	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	524093	6/21/2011	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	518902	2/11/2011	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	517240	12/15/2010	20	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	515361	10/12/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	515154	9/23/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	515124	9/23/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	514680	9/14/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	512449	7/1/2010	20	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	512448	7/1/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	511915	6/17/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	511636	6/10/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	511447	6/4/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	510467	5/4/2010	26	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	509119	3/23/2010	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	483504	6/4/2008	26	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	477259	1/15/2008	26	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	472912	8/17/2007	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	469348	5/17/2007	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	466853	3/27/2007	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	464136	12/22/2006	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	458580	7/6/2006	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	453455	2/9/2006	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	450711	11/22/2005	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	448986	9/23/2005	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	410235	12/17/2002	21	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	368567	4/12/2000	26	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	EXXONMOBIL OIL CORPORATION	358122	7/27/1999	26	1,278.78	834.025	189.253	225.205	3700 W 190TH ST	TORRANCE	CA	**90504**	5790	310	2121884		CRAIG	SAKAMOTO	3700 W 190TH F & S BLDG ROOM 201 ST ATTN	TORRANCE	CA	90509	2929	310	2121826		CRAIG	SAKAMOTO
8E+05	AMERICAN AIRLINES INC (EIS USE)	539711	6/29/2012	21	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	AMERICAN AIRLINES INC (EIS USE)	539710	6/29/2012	20	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	AMERICAN AIRLINES INC (EIS USE)	529455	11/15/2011	26	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	AMERICAN AIRLINES INC (EIS USE)	525805	8/5/2011	21	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	AMERICAN AIRLINES INC (EIS USE)	525804	8/5/2011	25	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	AMERICAN AIRLINES INC (EIS USE)	525802	8/5/2011	21	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	AMERICAN AIRLINES INC (EIS USE)	479712	3/20/2008	21	12.9575	0	0.1825	0.73	7260 WORLD WAY WEST	LOS ANGELES	CA	**90045**		310	6464420		JAY	VALENZUELA	P.O. BOX 92246 ATTN: JAY VALENZUELA	LOS ANGELES	CA	90009		310	6464420		JAY	VALENZUEL/
8E+05	LA CITY, SANITATION BUREAU (HTP)	531841	2/1/2012	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	531838	2/1/2012	21	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	522847	5/20/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	522846	5/20/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	522845	5/20/2011	21	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519544	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519543	3/8/2011	21	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519532	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519528	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519527	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519526	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519521	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CITY, SANITATION BUREAU (HTP)	519520	3/8/2011	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310

SCAQMD Facilities with Potental Emissions >= 5 Tons, with Specified Zip Codes and Open Applications

Facility ID	Facility Name	Application Number	Application Date	Application Status	NOx tons_year	Sox tons_year	CO tons_year	PM10 tons_year	Location Street Address	Location City	Location State	**Location Zip Code**	Location Zip (plus 4)	Location Area Code	Location Phone Nbr	Location Phone Ext.	Location Rep. First Name	Location Rep. Last Name	Mailing Street Address	Mailing City	Mailing State	Mailing Zip Code	Mailing Zip (plus 4)	Mailing Area Code	Mailing Phone Nbr	Mailing Phone Ext.	Mailing Rep. First Name	Mailing Rep. Last Name
8E+05	LA CITY, SANITATION BUREAU (HTP)	478446	6/10/2008	20	34.4925	0.365	54.385	3.9639	12000 VISTA DEL MAR	PLAYA DEL REY	CA	**90293**		310	6485510		RAMA V	KORAND	12000 VISTA DEL MAR SHERI SYMONS	PLAYA DEL REY	CA	90293	8506	310	6485510		RAMA V	KORAND
8E+05	LA CO HARBOR-UCLA MEDICAL CENTER	530239	12/9/2011	25	16.06	0	34.4925	3.2339	1000 W CARSON ST	TORRANCE	CA	**90502**		310	2223324		JOHN	SKOGLUND	1000 W CARSON ST. BOX 499 JOHN SKOGLUI	TORRANCE	CA	90509		310	2223204		JOHN	SKOGLUND
8E+05	LA CO HARBOR-UCLA MEDICAL CENTER	530238	12/9/2011	25	16.06	0	34.4925	3.2339	1000 W CARSON ST	TORRANCE	CA	**90502**		310	2223324		JOHN	SKOGLUND	1000 W CARSON ST. BOX 499 JOHN SKOGLUI	TORRANCE	CA	90509		310	2223204		JOHN	SKOGLUND
8E+05	LA CO HARBOR-UCLA MEDICAL CENTER	530237	12/9/2011	25	16.06	0	34.4925	3.2339	1000 W CARSON ST	TORRANCE	CA	**90502**		310	2223324		JOHN	SKOGLUND	1000 W CARSON ST. BOX 499 JOHN SKOGLUI	TORRANCE	CA	90509		310	2223204		JOHN	SKOGLUND
8E+05	LA CO HARBOR-UCLA MEDICAL CENTER	526111	8/3/2011	21	16.06	0	34.4925	3.2339	1000 W CARSON ST	TORRANCE	CA	**90502**		310	2223324		JOHN	SKOGLUND	1000 W CARSON ST. BOX 499 JOHN SKOGLUI	TORRANCE	CA	90509		310	2223204		JOHN	SKOGLUND
8E+05	LA CO HARBOR-UCLA MEDICAL CENTER	517832	1/4/2011	20	16.06	0	34.4925	3.2339	1000 W CARSON ST	TORRANCE	CA	**90502**		310	2223324		JOHN	SKOGLUND	1000 W CARSON ST. BOX 499 JOHN SKOGLUI	TORRANCE	CA	90509		310	2223204		JOHN	SKOGLUND
8E+05	LA CO HARBOR-UCLA MEDICAL CENTER	517831	1/4/2011	20	16.06	0	34.4925	3.2339	1000 W CARSON ST	TORRANCE	CA	**90502**		310	2223324		JOHN	SKOGLUND	1000 W CARSON ST. BOX 499 JOHN SKOGLUI	TORRANCE	CA	90509		310	2223204		JOHN	SKOGLUND
8E+05	LA CITY, DEPT OF AIRPORTS	504551	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504550	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504549	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504548	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504547	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504546	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504545	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504544	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	LA CITY, DEPT OF AIRPORTS	504542	12/16/2009	26	150.9253	24.8198	96.1742	26.0959	275 CENTER WAY	LOS ANGELES	CA	**90045**	5834	424	6466481		LIN	WANG	7301 WORLD WAY WEST 3RD FLR - ATTN LIN	LOS ANGELES	CA	90045	5803	424	6466481		LIN	WANG
8E+05	NORTHROP GRUMMAN SYSTEMS	537112	5/22/2012	20	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	537105	5/22/2012	20	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	537102	5/22/2012	20	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	537100	5/22/2012	20	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	537099	5/22/2012	20	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	537096	5/22/2012	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	517013	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	517012	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516987	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516986	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516984	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516983	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516982	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516981	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516973	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516972	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516967	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516966	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516965	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516963	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516962	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516961	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516960	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516958	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516956	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516953	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516952	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516951	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516948	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516947	12/9/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516126	11/9/2010	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516125	11/9/2010	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	516124	11/9/2010	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	515057	9/28/2010	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	515056	9/28/2010	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	509409	3/30/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	509407	3/30/2010	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	503382	11/4/2009	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	502644	9/24/2009	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	484856	6/27/2008	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	474044	9/26/2007	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	474041	9/26/2007	26	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	460766	10/3/2006	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS	445598	6/30/2005	21	4.1975	0	6.7525	0.2263	3301 AVIATION & ROSECRAN	MANHATTAN BEACH	CA	**90266**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: RON FRA	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	537869	5/17/2012	210	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	521846	4/27/2011	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	521845	4/27/2011	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	521844	4/27/2011	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	521843	4/27/2011	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	521841	4/27/2011	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	517347	12/21/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	515761	10/26/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	515760	10/26/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	515759	10/26/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	515758	10/26/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	509885	4/14/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	509884	4/14/2010	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	506093	1/29/2010	21	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	503256	10/27/2009	26	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	484391	6/24/2008	21	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU
8E+05	NORTHROP GRUMMAN SYSTEMS CORPORA	484390	6/24/2008	21	5.2925	0	6.935	0.5475	1 SPACE PARK BLDGS. D1,3,4	REDONDO BEACH	CA	**90278**		310	8148576		ANTONIO	LU	ONE SPACE PARK, CS1/1800 ATTN: ANTONIO	REDONDO BEACH	CA	90278		310	8148576		ANTONIO	LU

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Information Management
Public Records Unit

Direct Dial: (909) 396-3700
FAX: (909) 396-3330

PUBLIC RECORDS REQUEST FORM

PRU Office Use Only
CONTROL NUMBER

ATTENTION REQUESTOR: To expedite your request for District records, please fill out this form completely, and identify specifically the type of records you are requesting. Please limit your request to one facility or one site address for each request form filed, and three requested items per form. Additional forms or pages can be used if requesting information for more than one facility or for records not identified on this form. Requests should reasonably describe identifiable records prepared, owned, used, or retained by the District. Public Records Unit staff is available to assist you in identifying those records in the District's possession. The District is not required by law to create a new record or list from an existing record.

REQUESTOR INFORMATION

NAME: Elyse Engel		DATE: 4/24/13
COMPANY: CH2M HILL		
MAILING ADDRESS: 1737 N First Street, Suite 300		
CITY: San Jose	STATE: CA	ZIP CODE: 95112
PHONE NUMBER: (408) 436-4936 x37432	FAX NUMBER: (408) 436-4829	
EMAIL ADDRESS: elyse.engel@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

☐ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
☐ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	☐ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☑ Other (describe below or on additional pages):

See attached memo.

TIME PERIOD OF DOCUMENTS REQUESTED From: 8/17/12 To: Present

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME:		
FACILITY ADDRESS:		
CITY:	STATE:	ZIP CODE:
FACILITY I.D. NO. (if known):	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

☑ I wish to inspect the requested records, where applicable, or receive the requested records electronically at no charge. I do not want copies produced at this time.

☐ I request that the SCAQMD contact me prior to copying the requested records if the cost exceeds $20.00.

☐ I would like copies of the requested records and I hereby agree to reimburse the SCAQMD for the direct cost of duplication in accordance with Gov. Code Sec. 6253(b).

Elyse Jay Engel
Signature of Requestor

Note: After a preliminary estimate, advance payment may be required.

(Rev. 06/17/08-lkoenig)

MEMORANDUM

CH2MHILL®

Public Records Request for Cumulative Source Information for the Redondo Beach Energy Project

PREPARED FOR: Lisa Ramos/Public Records
South Coast Air Quality
Management District

PREPARED BY: Elyse Engel/CH2M HILL
Jerry Salamy/CH2MHILL

DATE: April 24, 2013

PROJECT NUMBER: 469784

CH2MHILL is currently working on the preparation of an Application for Certification (AFC) for the Redondo Beach Energy Project (RBEP). AES Southland Development, LLC, (AES) proposes to construct the RBEP at the existing AES Redondo Beach Generating Station site at 1100 N. Harbor Drive, Redondo Beach, CA 90277. The RBEP will consist of one three-on-one natural-gas-fired combined-cycle power block with a nominal generating capacity of 495 megawatts (MW) and maximum generating capacity of 529 MW. The power block will consist of three Mitsubishi Power Systems Americas (MPSA) 501DA combustion turbines with fired heat recovery steam generators, one steam turbine, and an air cooled condenser.

A cumulative air quality modeling impacts analysis will be required by the California Energy Commission (CEC) as part of the AFC process. Prior to completing the cumulative impacts analysis, the CEC requests that the applicant contact the respective air districts to obtain the appropriate source information. Therefore, on behalf of AES, CH2M HILL would like to request a list of all stationary sources (including their physical address) of new or modified emissions which meet each of the following criteria:

1) sources that are located within a six-mile radius, and
2) sources that have recently received construction permits but are not yet operational or are currently in the permitting process (such as, the NSR or CEQA permitting process), and
3) sources that have a potential to emit five tons or more per year of NOx, CO, PM_{10}, $PM_{2.5}$, or SOx.

Based on the three criteria above, it is anticipated the following sources would be excluded from the cumulative impacts analysis: VOC only sources, equipment shutdowns, permit-exempt equipment registrations, rule compliance, permit renewals, or replacement/system upgrades.

A list of zip codes within a six-mile radius of the RBEP is attached. **Note that a similar request was submitted August 13, 2012 and deemed complete on August 17, 2012. As such, CH2M HILL requests that the South Coast Air Quality Management District only consider sources that may have received construction permits or entered into the permitting process since August 17, 2012.**

If you have any questions regarding this request or if there are additional data request forms required, please contact Elyse Engel (elyse.engel@ch2m.com) at (408) 436-4936 x37432 or Jerry Salamy (jerry.salamy@ch2m.com) at (916) 286-0270.

Redondo Beach Energy Project
List of Zip Codes within a 6-mile Radius of the RBEP
April 2013

NAME	POSTAL
Los Angeles	90045
El Segundo	90245
Gardena	90247
Gardena	90248
Gardena	90249
Hawthorne	90250
Hermosa Beach	90254
Lawndale	90260
Manhattan Beach	90266
Palos Verdes Peninsula	90274
Rancho Palos Verdes	90275
Redondo Beach	90277
Redondo Beach	90278
Playa del Rey	90293
Inglewood	90303
Inglewood	90304
Inglewood	90304
Torrance	90501
Torrance	90502
Torrance	90503
Torrance	90504
Torrance	90505
Torrance	90506
Harbor City	90710
Lomita	90717

From: Lisa Ramos
To: Engel, Elyse/SJC; OB PR Support NA Docs
Subject: Request for Records from the South Coast Air Quality Management District #72515,
Date: Wednesday, April 24, 2013 2:44:51 PM

ELYSE ENGEL
1737 N FIRST ST
SAN JOSE, CA 95112-

RE: Request for Records
Control #: 72515
Request: LIST OF ALL STATIONARY SOURCES (WITHIN 6 MILE RADIUS, NSR OR CEQQ PERMITTING PROCESS, PTE 5 MORE TONS OF NOX,CO,PM10,PM25 OR SOX) FOR REDONDO BEACH PROJECT 469784

Your request for records has been recieved by the Public Records Unit and has been assigned for processing.

When your requested records are ready, they will be sent electronically to your email address unless other arrangements are made or necessary.

Should you have any questions or need additional information, please do not hesitate to contact me at (909) 396-3700, Tuesday through Friday, between the hours of 8:00 a.m. 4:30 p.m. Please reference your Control Number listed above in all communications and correspondence.

Sincerely,

LISA RAMOS

For Colleen Paine
Public Records Coordinator

Information Management
Public Records Unit

Direct Dial (909) 396-3700
Fax:(909) 396-3330

COMPLETION LETTER

May 07, 2013

ELYSE ENGEL
CH2M HILL
1737N. FIRST ST.# SUITE 300
SAN JOSE, CA 95112

Ref.: CONTROL NO. 72515
Received 4/24/2013

Re: LIST OF ALL STATIONARY SOURCES (WITHIN 6 MILE RADIUS, NSR OR CEQQ PERMITTING PROCESS, PTE 5 MORE TONS OF NOX,CO,PM10,PM25 OR SOX) FOR REDONDO BEACH PROJECT 469784

After a thorough search of this agency's records, the following records were found:
LIST OF ALL STATIONARY SOURCES (WITHIN 6 MILE RADIUS, NSR OR CEQQ PERMITTING PROCESS, PTE 5 MORE TONS OF NOX,CO,PM10,PM25 OR SOX) FOR REDONDO BEACH PROJECT 469784

YOUR REQUESTED RECORDS WERE PROVIDED ELECTRONICALLY ON 05/07/2013

If you have any questions, please do not hesitate to contact me, Tuesday through Friday, **8:00 a.m**. to **4:30 p.m.**

Sincerely,

LISA RAMOS x3211
For Colleen Paine
Public Records Coordinator

:lr

Active SCAQMD Facilities Located in Provided Redondo Beach ZIP Code Areas

Facility ID	Facility Name	Facility Status	SIC Code	SIC Code Description	NAICS Code	NAICS Descripltion	Appl Nbr	Appl Status	Appl Date	Appl Type	UTM East	UTM North	Street Address	City	State	Zip Code	ZIP4	Area Code	Phone Nbr	Phone Ext.	Rep First Name	Rep Last Name	Fac CO (tons yrly)	Fac NOx (tons yrly)	Fac Sox (tons yrly)	Fac PM10 (tons yrly)
5259	NEUTROGENA CORP	A	2834	PHARMACEUTICAL PREPARATIONS	325620	..Chemical Manufacturing	542215	21	120822 00:0	30	372.24	3757.22	5755-60 W 96TH ST	LOS ANGELES	CA	90045	5595	310	2587742		RICK	WILLIAMS	4	5	0	2
9755	UNITED AIRLINES INC	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488190	Transportation & Warehousing	544739	21	121113 00:0	74	371.673	3756.603	6010 & 6020 AVION DR	LOS ANGELES	CA	90045		310	3428405		AZADEH	KHOROUSHI	93	285	15	13
18294	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	548797	32	130314 00:0	25	372.5	3753.88	ONE HORNET WAY M/S PA12/W5	EL SEGUNDO	CA	90245		310	3311473		KAREN	CARDARELLI	19	25	0	2
18294	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	549028	21	130320 00:0	63	372.5	3753.88	ONE HORNET WAY M/S PA12/W5	EL SEGUNDO	CA	90245		310	3311473		KAREN	CARDARELLI	19	25	0	2
18294	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	549029	21	130320 00:0	63	372.5	3753.88	ONE HORNET WAY M/S PA12/W5	EL SEGUNDO	CA	90245		310	3311473		KAREN	CARDARELLI	19	25	0	2
18294	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	549031	21	130320 00:0	63	372.5	3753.88	ONE HORNET WAY M/S PA12/W5	EL SEGUNDO	CA	90245		310	3311473		KAREN	CARDARELLI	19	25	0	2
18294	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	549032	21	130320 00:0	63	372.5	3753.88	ONE HORNET WAY M/S PA12/W5	EL SEGUNDO	CA	90245		310	3311473		KAREN	CARDARELLI	19	25	0	2
18294	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	549509	21	130411 00:0	85	372.5	3753.88	ONE HORNET WAY M/S PA12/W5	EL SEGUNDO	CA	90245		310	3311473		KAREN	CARDARELLI	19	25	0	2
22312	LA AIRPORT MARRIOTT HOTEL	A	7011	HOTELS, MOTELS & TOURIST COURT	721110	..Accommodation	550714	210	130501 00:0	25	372.246	3756.791	5855 W CENTURY BLVD	LOS ANGELES	CA	90045	5629	310	3375370		TRACY SCOTT	TOMASEK	18.521	15.507	0.767	2.822
24520	LA CNTY SANITATION DISTRICT-PALOS VERDES	A	4953	REFUSE SYSTEMS	562112	..Other Services	545653	20	121211 00:0	10	375.145	3738.914	26301 S CRENSHAW B &25704, 06 F	ROLLING HILLS ESTATE	CA	90274	2514	310	6997411	2432	CHARLOTTE	NESBIT	88	36	63	22
24520	LA CNTY SANITATION DISTRICT-PALOS VERDES	A	4953	REFUSE SYSTEMS	562112	..Other Services	545690	21	121211 00:0	57	375.145	3738.914	26301 S CRENSHAW B &25704, 06 F	ROLLING HILLS ESTATE	CA	90274	2514	310	6997411	2432	CHARLOTTE	NESBIT	88	36	63	22
43522	KAISER FOUNDATION HOSPITAL	A	8060		621111	..Health Care & Social Assistance	542469	31	120829 00:0	96	380.318	3739.459	25825 S VERMONT AVE	HARBOR CITY	CA	90710	3518	310	2575121		RICHARD	MURILLO	51	31	0	9
43522	KAISER FOUNDATION HOSPITAL	A	8060		621111	..Health Care & Social Assistance	542470	31	120829 00:0	96	380.318	3739.459	25825 S VERMONT AVE	HARBOR CITY	CA	90710	3518	310	2575121		RICHARD	MURILLO	51	31	0	9
44173	LOS ANGELES AIRPORT HILTON	A	7011	HOTELS, MOTELS & TOURIST COURT	721110	..Accommodation	546923	32	130129 00:0	25	372.491	3756.788	5711 W CENTURY BLVD	LOS ANGELES	CA	90045	5672	310	4106152		JIM	ASTGEN	18	12	0	4
44173	LOS ANGELES AIRPORT HILTON	A	7011	HOTELS, MOTELS & TOURIST COURT	721110	..Accommodation	546925	32	130129 00:0	23	372.491	3756.788	5711 W CENTURY BLVD	LOS ANGELES	CA	90045	5672	310	4106152		JIM	ASTGEN	18	12	0	4
44173	LOS ANGELES AIRPORT HILTON	A	7011	HOTELS, MOTELS & TOURIST COURT	721110	..Accommodation	546926	32	130129 00:0	23	372.491	3756.788	5711 W CENTURY BLVD	LOS ANGELES	CA	90045	5672	310	4106152		JIM	ASTGEN	18	12	0	4
44173	LOS ANGELES AIRPORT HILTON	A	7011	HOTELS, MOTELS & TOURIST COURT	721110	..Accommodation	546927	32	130129 00:0	23	372.491	3756.788	5711 W CENTURY BLVD	LOS ANGELES	CA	90045	5672	310	4106152		JIM	ASTGEN	18	12	0	4
49630	GLOBAL DIGITAL MEDIA XCHANGE INC (GDMX)	A	7812	MOTION PICTURE & VIDEO PRDTN	512110	..Motion Picture & Sound Recording	543073	32	120926 00:0	25	372.95	3756.56	5432 W 102ND ST	LOS ANGELES	CA	90045	6005	818	9543880		BRENT	GALE	1	7	0	0
52191	VERIZON CALIFORNIA INC	A	4813	TELEPHONE COMMS, EXC RADIO	323110	..Other Manufacturing	542450	31	120830 00:0	50	373.07	3744.808	5431 TORRANCE BLVD	TORRANCE	CA	90503	4005	805	3725682		WILLIAM	POSERINA	4	10	0	0
62649	CALIFORNIA PORTLAND CEMENT CO.	A	3273	READY-MIXED CONCRETE	327310	..Nonmetallic Mineral Product mfg.	546286	230	130103 00:0	50	372.522	3753.061	339 S AVIATION BLVD	EL SEGUNDO	CA	90245	4605	626	8526262		JAY	GRADY	9	40	3	9
62649	CALIFORNIA PORTLAND CEMENT CO.	A	3273	READY-MIXED CONCRETE	327310	..Nonmetallic Mineral Product mfg.	546944	20	130130 00:0	50	372.522	3753.061	339 S AVIATION BLVD	EL SEGUNDO	CA	90245	4605	626	8526262		JAY	GRADY	9	40	3	9
74795	DELTA AIR LINES, INC	A	4731	FREIGHT TRANS ARRANGEMENT	481111	Transportation & Warehousing	542660	21	120907 00:0	30	371.61	3756.61	6060 AVION DR	LOS ANGELES	CA	90045		310	2582140		DON	LITTLEWOOD	2	18	0	0
74795	DELTA AIR LINES, INC	A	4731	FREIGHT TRANS ARRANGEMENT	481111	Transportation & Warehousing	542661	21	120907 00:0	52	371.61	3756.61	6060 AVION DR	LOS ANGELES	CA	90045		310	2582140		DON	LITTLEWOOD	2	18	0	0
74795	DELTA AIR LINES, INC	A	4731	FREIGHT TRANS ARRANGEMENT	481111	Transportation & Warehousing	542662	20	120907 00:0	60	371.61	3756.61	6060 AVION DR	LOS ANGELES	CA	90045		310	2582140		DON	LITTLEWOOD	2	18	0	0
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	542859	32	120918 00:0	56	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	542860	26	120918 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	542861	26	120918 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	542862	26	120918 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	542974	26	120925 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	543265	230	120927 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	546545	32	130116 00:0	56	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	546546	25	130116 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	547179	25	130208 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
100806	ROBINSON HELICOPTER CO INC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	547181	25	130208 00:0	50	376.165	3740.231	2901-31 AIRPORT DR	TORRANCE	CA	90505		310	5390508	120	BRAD	SOPA	22	29	0	7
102334	MOOG, INC	A	3471	PLATING AND POLISHING	332813	..Primary & Fabricated Metal Mfg.	544572	21	121106 00:0	50	378.851	3745.783	20263 S WESTERN AVE	TORRANCE	CA	90501		310	6186596		TODD	BADIANG	11	6	0	8
102334	MOOG, INC	A	3471	PLATING AND POLISHING	332813	..Primary & Fabricated Metal Mfg.	547022	32	130201 00:0	25	378.851	3745.783	20263 S WESTERN AVE	TORRANCE	CA	90501		310	6186596		TODD	BADIANG	11	6	0	8
110146	ECOLOGY CONTROL INDUSTRIES	A	4212	LOCAL TRUCKING,WITHOUT STORAGE	561210	..Other Services	546608	32	130116 00:0	25	0	0	VARIOUS LOCATIONS IN SCAQMD	TORRANCE	CA	90502		310	3549999		JENNA	HACKLER	8	15	1	1
113936	RADIANT SRVS CORP, EL SEGUNDO CLNRS/LDRY	A	7211	POWER LAUNDRIES, FAMILY & COMM	812320	..Dry Cleaning & Laundry Services	549619	20	130411 00:0	10	380.925	3746.546	651 W KNOX ST	GARDENA	CA	90248		310	3276300		CYRUS	SHABAZ	19	7	0	3
114997	RAYTHEON COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334511	..Computer and Electronic Product Mfg.	549481	210	130402 00:0	25	371.081	3755.194	1970 E IMPERIAL HWY	EL SEGUNDO	CA	90245		310	6474195		TIM	HILLS	2	22	0	1
115172	RAYTHEON COMPANY	A	3812	SEARCH & NAVIGATION EQUIPMENT	336412	..Motor Vehicle & Trans. Equipment Mfg.	545906	230	121226 00:0	80	371.014	3753.576	2000- E EL SEGUNDO 2101 BLVD	EL SEGUNDO	CA	90245		310	6474195		TOM	HILLS	11	9	0	0
115172	RAYTHEON COMPANY	A	3812	SEARCH & NAVIGATION EQUIPMENT	336412	..Motor Vehicle & Trans. Equipment Mfg.	545908	230	121226 00:0	80	371.014	3753.576	2000- E EL SEGUNDO 2101 BLVD	EL SEGUNDO	CA	90245		310	6474195		TOM	HILLS	11	9	0	0
115172	RAYTHEON COMPANY	A	3812	SEARCH & NAVIGATION EQUIPMENT	336412	..Motor Vehicle & Trans. Equipment Mfg.	549476	210	130402 00:0	25	371.014	3753.576	2000- E EL SEGUNDO 2101 BLVD	EL SEGUNDO	CA	90245		310	6474195		TOM	HILLS	11	9	0	0
115241	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543948	230	121016 00:0	10	371.94	3755.16	2240 E IMPERIAL HWY	EL SEGUNDO	CA	90245	3546	310	4165627		KIMBERLY	BALCERZAK	100	51	0	4
115241	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543949	32	121016 00:0	80	371.94	3755.16	2240 E IMPERIAL HWY	EL SEGUNDO	CA	90245	3546	310	4165627		KIMBERLY	BALCERZAK	100	51	0	4
115241	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543950	31	121016 00:0	10	371.94	3755.16	2240 E IMPERIAL HWY	EL SEGUNDO	CA	90245	3546	310	4165627		KIMBERLY	BALCERZAK	100	51	0	4
115241	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543951	31	121016 00:0	10	371.94	3755.16	2240 E IMPERIAL HWY	EL SEGUNDO	CA	90245	3546	310	4165627		KIMBERLY	BALCERZAK	100	51	0	4
115241	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	548803	32	130320 00:0	25	371.94	3755.16	2240 E IMPERIAL HWY	EL SEGUNDO	CA	90245	3546	310	4165627		KIMBERLY	BALCERZAK	100	51	0	4
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545065	21	121127 00:0	87	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545066	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545067	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545068	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545069	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545070	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545071	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545072	20	121127 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	549120	20	130328 00:0	10	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115536	AES REDONDO BEACH, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	549522	21	130410 00:0	76	370.725	3746.464	1100 N. HARBOR DR	REDONDO BEACH	CA	90277		310	3187512		CORRIE	CHITLIK	50690	25892	296	479
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543927	21	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543929	21	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543931	230	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543937	230	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543939	21	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543941	21	121102 00:0	85	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543942	21	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	543944	21	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	544208	21	121102 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	545692	21	121213 00:0	30	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548587	215	130319 00:0	86	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548588	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548589	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548590	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548591	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548592	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548593	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
115663	EL SEGUNDO POWER, LLC	A	4911	ELECTRIC SERVICES	221112	Utilities	548594	215	130319 00:0	10	368.024	3753.571	301 VISTA DEL MAR	EL SEGUNDO	CA	90245		760	7102156		GEORGE	PIANTKA	15545	17732	4663	2592
121539	VERIZON	A	4813	TELEPHONE COMMS, EXC RADIO	517110	..Other Information	542177	32	120821 00:0	25	379.79	3746.12	1501 FRANCISCO ST	LOS ANGELES	CA	90501		972	7296692		STEPHEN M	VENNEMAN	6	30	6	0
146909	PROV HLTH SYS/LITTLE CO MARY MED CTR TOR	A	8062	GENERAL MED/SURGICAL HOSPITALS	622110	..Health Care & Social Assistance	550679	210	130430 00:0	25	374.43	3744.78	4101 TORRANCE BLVD	TORRANCE	CA	90503	4698	310	5407876		BLAIR	CONTRATTO	4	8	0	0
146909	PROV HLTH SYS/LITTLE CO MARY MED CTR TOR	A	8062	GENERAL MED/SURGICAL HOSPITALS	622110	..Health Care & Social Assistance	550680	210	130430 00:0	25	374.43	3744.78	4101 TORRANCE BLVD	TORRANCE	CA	90503	4698	310	5407876		BLAIR	CONTRATTO	4	8	0	0
148236	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	A	2813	INDUSTRIAL GASES	325120	..Chemical Manufacturing	544646	32	121108 00:0	74	368.86	3753.6	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3635	713	6248775		MUKESH	BHATT	153	142	34	121
150973	RREEF AMERICA REIT III CORP GG2	A			999990	Unclassified	547729	32	130227 00:0	25	375.91	3741.85	3100 W LOMITA BLVD	TORRANCE	CA	90505		310	5176811		JANIS	RODRIGUEZ	16	24	0	0
151346	CALIFORNIA PORTLAND CEMENT CO	A	3273	READY-MIXED CONCRETE	327320	..Nonmetallic Mineral Product mfg.	543658	31	121009 00:0	63	373.16	3755.55	5299 W 111TH ST	LOS ANGELES	CA	90045	6249	310	3489876		BRIAN	POWER	0	0	0	7.24
153985	ARENA PAINTING CONTRACTORS, INC	A	9999	UNKNOWN	238320	Construction	546917	31	130129 00:0	10	382.85	3750.05	VARIOUS LOCATIONS IN SCAQMD	GARDENA	CA	90248	2903	310	8560120		GUY	GRANT	4	12	0	6

Active SCAQMD Facilities Located in Provided Redondo Beach ZIP Code Areas

Facility ID	Facility Name	Facility Status	SIC Code	SIC Code Description	NAICS Code	NAICS Descripltion	Appl Nbr	Appl Status	Appl Date	Appl Type	UTM East	UTM North	Street Address	City	State	Zip Code	ZIP4	Area Code	Phone Nbr	Phone Ext.	Rep First Name	Rep Last Name	Fac CO (tons yrly)	Fac NOx (tons yrly)	Fac Sox (tons yrly)	Fac PM10 (tons yrly)
153985	ARENA PAINTING CONTRACTORS, INC	A	9999	UNKNOWN	238320	Construction	546918	31	130129 00:0	10	382.85	3750.05	VARIOUS LOCATIONS IN SCAQMD	GARDENA	CA	90248	2903	310	8560120		GUY	GRANT	4	12	0	6
155532	TRIZAC 6080 HHC, LLC	A			531210	Real Estate and Rental Leasing	547201	32	130207 00:0	25	371.3	3760.4	6080 CENTER	LOS ANGELES	CA	90045		310	9252481		ROBERTQ	BERUBE	5	4	0	0
163088	ARKEMA INC.	A	2821	PLASTICS MATERIALS AND RESINS	325180	..Chemical Manufacturing	542097	31	120822 00:0	50	374.78	3746.93	19206 HAWTHORNE BLVD	TORRANCE	CA	90503	1590	310	2145336		RON	WEBER	24	19	0	5
165192	TRIUMPH AEROSTRUCTURES, LLC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	547855	21	130301 00:0	80	377.5	3754	3901 W JACK NORTHROP AVE	HAWTHORNE	CA	90250	3277	310	3316891		SAAD	ASKANDER	0	14	0	58
165192	TRIUMPH AEROSTRUCTURES, LLC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	547856	20	130301 00:0	50	377.5	3754	3901 W JACK NORTHROP AVE	HAWTHORNE	CA	90250	3277	310	3316891		SAAD	ASKANDER	0	14	0	58
165192	TRIUMPH AEROSTRUCTURES, LLC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	548424	20	130313 00:0	50	377.5	3754	3901 W JACK NORTHROP AVE	HAWTHORNE	CA	90250	3277	310	3316891		SAAD	ASKANDER	0	14	0	58
165192	TRIUMPH AEROSTRUCTURES, LLC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	548425	20	130313 00:0	50	377.5	3754	3901 W JACK NORTHROP AVE	HAWTHORNE	CA	90250	3277	310	3316891		SAAD	ASKANDER	0	14	0	58
165192	TRIUMPH AEROSTRUCTURES, LLC	A	3721	AIRCRAFT	336411	..Motor Vehicle & Trans. Equipment Mfg.	548426	21	130313 00:0	80	377.5	3754	3901 W JACK NORTHROP AVE	HAWTHORNE	CA	90250	3277	310	3316891		SAAD	ASKANDER	0	14	0	58
167598	SPACE EXPLORATION TECHNOLOGIES	A			336414	..Motor Vehicle & Trans. Equipment Mfg.	547514	21	130219 00:0	30	0	0	1 ROCKET RD	HAWTHORNE	CA	90250		310	3636645		BILL	WOOLLEY	8	8	0	2
169736	MOBILE MINI	A			999990	Unclassified	550312	230	130423 00:0	50	382.81	3751.06	15100 S SAN PEDRO ST	GARDENA	CA	90248		909	7707266		DAVID	LOPEZ	0	0	0	22
169736	MOBILE MINI	A			999990	Unclassified	550313	230	130423 00:0	50	382.81	3751.06	15100 S SAN PEDRO ST	GARDENA	CA	90248		909	7707266		DAVID	LOPEZ	0	0	0	22
169736	MOBILE MINI	A			999990	Unclassified	550314	230	130423 00:0	50	382.81	3751.06	15100 S SAN PEDRO ST	GARDENA	CA	90248		909	7707266		DAVID	LOPEZ	0	0	0	22
800003	HONEYWELL INTERNATIONAL INC	A	3764	SPACE PROPULSION UNITS & PARTS	336412	..Motor Vehicle & Trans. Equipment Mfg.	546963	21	130130 00:0	85	377.769	3747.048	2525 W 190TH ST DEPT 62 T 19	TORRANCE	CA	90504	6061	310	5122539		EDWARD T	BALLO	-13.32	18.56	-1	-2.96
800003	HONEYWELL INTERNATIONAL INC	A	3764	SPACE PROPULSION UNITS & PARTS	336412	..Motor Vehicle & Trans. Equipment Mfg.	549188	21	130402 00:0	63	377.769	3747.048	2525 W 190TH ST DEPT 62 T 19	TORRANCE	CA	90504	6061	310	5122539		EDWARD T	BALLO	-13.32	18.56	-1	-2.96
800003	HONEYWELL INTERNATIONAL INC	A	3764	SPACE PROPULSION UNITS & PARTS	336412	..Motor Vehicle & Trans. Equipment Mfg.	549189	21	130402 00:0	63	377.769	3747.048	2525 W 190TH ST DEPT 62 T 19	TORRANCE	CA	90504	6061	310	5122539		EDWARD T	BALLO	-13.32	18.56	-1	-2.96
800003	HONEYWELL INTERNATIONAL INC	A	3764	SPACE PROPULSION UNITS & PARTS	336412	..Motor Vehicle & Trans. Equipment Mfg.	549192	21	130402 00:0	63	377.769	3747.048	2525 W 190TH ST DEPT 62 T 19	TORRANCE	CA	90504	6061	310	5122539		EDWARD T	BALLO	-13.32	18.56	-1	-2.96
800003	HONEYWELL INTERNATIONAL INC	A	3764	SPACE PROPULSION UNITS & PARTS	336412	..Motor Vehicle & Trans. Equipment Mfg.	549193	21	130402 00:0	63	377.769	3747.048	2525 W 190TH ST DEPT 62 T 19	TORRANCE	CA	90504	6061	310	5122539		EDWARD T	BALLO	-13.32	18.56	-1	-2.96
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542304	31	120828 00:0	60	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542305	32	120828 00:0	85	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542538	31	120905 00:0	50	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542539	31	120905 00:0	50	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542540	32	120905 00:0	86	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	543096	31	120927 00:0	50	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	543097	32	120927 00:0	86	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	543179	210	120920 00:0	50	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	543180	210	120920 00:0	76	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	547155	21	130206 00:0	63	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	547157	20	130206 00:0	50	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800030	CHEVRON PRODUCTS CO.	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	547158	21	130206 00:0	85	368.842	3753.601	324 W EL SEGUNDO BLVD	EL SEGUNDO	CA	90245	3680	310	6155267		PAT	KITTIKUL	13008	9326	3256	2095
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543271	31	120920 00:0	63	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543277	32	120920 00:0	80	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	543279	31	120920 00:0	63	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	547209	32	130207 00:0	80	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	547210	31	130207 00:0	60	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	550008	21	130418 00:0	80	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	550011	20	130418 00:0	60	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	550012	20	130418 00:0	60	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800067	THE BOEING COMPANY	A	3761	GUIDED MISSILES AND SPACE VEH	334220	..Computer and Electronic Product Mfg.	550013	21	130418 00:0	63	371.51	3755.06	IMPERIAL, MAPLE, NASH & SELBY	EL SEGUNDO	CA	90245		310	4165627		KIMBERLY	BALCERZAK	14	4	0	2
800075	LA CITY, DWP SCATTERGOOD GENERATING STN	A	4911	ELECTRIC SERVICES	221112	Utilities	547004	21	130201 00:0	74	367.961	3753.733	12700 VISTA DEL MAR	PLAYA DEL REY	CA	90293	8599	213	3673772		BRUCE	MOORE	8310	270	-4124	-120
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542760	31	120914 00:0	50	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542761	31	120914 00:0	50	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542762	31	120914 00:0	50	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542763	31	120914 00:0	50	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	542764	32	120914 00:0	86	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	545899	32	121220 00:0	86	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	548726	230	130314 00:0	25	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	549899	210	130314 00:0	25	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800089	EXXONMOBIL OIL CORPORATION	A	2911	PETROLEUM REFINING	324110	..Petroleum and Coal Products Mfg.	550316	210	130423 00:0	25	376.311	3747.046	3700 W 190TH ST	TORRANCE	CA	90504	5790	310	2121884		CRAIG	SAKAMOTO	22568	11227	9320	2382
800214	LA CITY, SANITATION BUREAU (HTP)	A	9631	REG, ADMIN OF UTILITIES	221320	Utilities	542209	31	120824 00:0	10	367.641	3754.506	12000 VISTA DEL MAR	PLAYA DEL REY	CA	90293		310	6485510		RAMA V	KORAND	132	124	-15	5.72
800214	LA CITY, SANITATION BUREAU (HTP)	A	9631	REG, ADMIN OF UTILITIES	221320	Utilities	542210	32	120824 00:0	56	367.641	3754.506	12000 VISTA DEL MAR	PLAYA DEL REY	CA	90293		310	6485510		RAMA V	KORAND	132	124	-15	5.72
800335	LA CITY, DEPT OF AIRPORTS	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488111	Transportation & Warehousing	543029	32	120926 00:0	86	370.67	3756.68	275 CENTER WAY	LOS ANGELES	CA	90045	5834	424	6466481		LIN	WANG	534.982	838.988	135.999	154.991
800335	LA CITY, DEPT OF AIRPORTS	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488111	Transportation & Warehousing	543031	26	120926 00:0	50	370.67	3756.68	275 CENTER WAY	LOS ANGELES	CA	90045	5834	424	6466481		LIN	WANG	534.982	838.988	135.999	154.991
800335	LA CITY, DEPT OF AIRPORTS	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488111	Transportation & Warehousing	543032	26	120926 00:0	50	370.67	3756.68	275 CENTER WAY	LOS ANGELES	CA	90045	5834	424	6466481		LIN	WANG	534.982	838.988	135.999	154.991
800335	LA CITY, DEPT OF AIRPORTS	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488111	Transportation & Warehousing	548253	21	130313 00:0	87	370.67	3756.68	275 CENTER WAY	LOS ANGELES	CA	90045	5834	424	6466481		LIN	WANG	534.982	838.988	135.999	154.991
800335	LA CITY, DEPT OF AIRPORTS	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488111	Transportation & Warehousing	548254	20	130308 00:0	10	370.67	3756.68	275 CENTER WAY	LOS ANGELES	CA	90045	5834	424	6466481		LIN	WANG	534.982	838.988	135.999	154.991
800335	LA CITY, DEPT OF AIRPORTS	A	4581	AIRPORTS/FLYING FIELDS/SVCS	488111	Transportation & Warehousing	549179	20	130402 00:0	10	370.67	3756.68	275 CENTER WAY	LOS ANGELES	CA	90045	5834	424	6466481		LIN	WANG	534.982	838.988	135.999	154.991
800367	IPS CORPORATION	A	2891	ADHESIVES AND SEALANTS	325520	..Chemical Manufacturing	549205	21	130402 00:0	74	382.03	3748.99	17109 S MAIN ST	GARDENA	CA	90248		310	8983353		PRATAP N.	PADALKAR	2	5	0	0
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544392	21	121113 00:0	86	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544394	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544396	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544397	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544398	215	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544399	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544401	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544402	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544403	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544405	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544406	215	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544407	20	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544408	215	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544409	215	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544410	215	121113 00:0	10	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544411	215	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	544412	215	121113 00:0	50	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	548680	21	130321 00:0	86	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800408	NORTHROP GRUMMAN SYSTEMS	A	3679	ELECTRONIC COMPONENTS, NEC	336411	..Motor Vehicle & Trans. Equipment Mfg.	548681	20	130321 00:0	10	372.507	3751.801	3301 AVIATION & ROSECRANS 1700	MANHATTAN BEACH	CA	90266		310	8148576		ANTONIO	LU	48	27	0	2.24
800409	NORTHROP GRUMMAN SYSTEMS CORPORATION	A	3679	ELECTRONIC COMPONENTS, NEC	336419	..Motor Vehicle & Trans. Equipment Mfg.	544049	21	121018 00:0	86	372.534	3750.74	1 SPACE PARK BLDGS. D1,3,4,M3,R	REDONDO BEACH	CA	90278		310	8134806		JAMES	HEUMANN	38	29	0	3
800409	NORTHROP GRUMMAN SYSTEMS CORPORATION	A	3679	ELECTRONIC COMPONENTS, NEC	336419	..Motor Vehicle & Trans. Equipment Mfg.	544050	21	121018 00:0	20	372.534	3750.74	1 SPACE PARK BLDGS. D1,3,4,M3,R	REDONDO BEACH	CA	90278		310	8134806		JAMES	HEUMANN	38	29	0	3
800409	NORTHROP GRUMMAN SYSTEMS CORPORATION	A	3679	ELECTRONIC COMPONENTS, NEC	336419	..Motor Vehicle & Trans. Equipment Mfg.	544052	21	121018 00:0	20	372.534	3750.74	1 SPACE PARK BLDGS. D1,3,4,M3,R	REDONDO BEACH	CA	90278		310	8134806		JAMES	HEUMANN	38	29	0	3
800409	NORTHROP GRUMMAN SYSTEMS CORPORATION	A	3679	ELECTRONIC COMPONENTS, NEC	336419	..Motor Vehicle & Trans. Equipment Mfg.	544053	21	121018 00:0	20	372.534	3750.74	1 SPACE PARK BLDGS. D1,3,4,M3,R	REDONDO BEACH	CA	90278		310	8134806		JAMES	HEUMANN	38	29	0	3
800409	NORTHROP GRUMMAN SYSTEMS CORPORATION	A	3679	ELECTRONIC COMPONENTS, NEC	336419	..Motor Vehicle & Trans. Equipment Mfg.	544054	21	121018 00:0	20	372.534	3750.74	1 SPACE PARK BLDGS. D1,3,4,M3,R	REDONDO BEACH	CA	90278		310	8134806		JAMES	HEUMANN	38	29	0	3
800409	NORTHROP GRUMMAN SYSTEMS CORPORATION	A	3679	ELECTRONIC COMPONENTS, NEC	336419	..Motor Vehicle & Trans. Equipment Mfg.	549003	230	130326 00:0	76	372.534	3750.74	1 SPACE PARK BLDGS. D1,3,4,M3,R	REDONDO BEACH	CA	90278		310	8134806		JAMES	HEUMANN	38	29	0	3

Attachment DR12-1
Source List for Cumulative Air Quality Impact Analysis

South Coast
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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Torrance Memorial Medical Center		
FACILITY ADDRESS: 3330 Lomita Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90505
FACILITY I.D. NO. (if known): 9243	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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☐ I would like copies of the requested records and I hereby agree to reimburse the SCAQMD for the direct cost of duplication in accordance with Gov. Code Sec. 6253(b).

Signature of Requestor

TORRANCE MEMORIAL MEDICAL CENTER - Facility 9243 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
539788	G19716	8/7/2012	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	6/26/2012	PERMIT TO OPERATE GRANTED
539790	G19719	8/7/2012	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	6/26/2012	PERMIT TO OPERATE GRANTED
527373				Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	9/16/2011	APPLICATION CHANGED FROM CLASS I - III
527374				Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	9/16/2011	APPLICATION CHANGED FROM CLASS I - III
527423	G15128	9/28/2011	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/16/2011	PERMIT TO OPERATE GRANTED
527424	G15129	9/28/2011	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/16/2011	PERMIT TO OPERATE GRANTED
527425	G15130	9/28/2011	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/16/2011	PERMIT TO OPERATE GRANTED
526161	G14972	9/14/2011	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	8/3/2011	PERMIT TO OPERATE GRANTED
471542	F92488	9/19/2007	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	7/3/2007	PERMIT TO OPERATE GRANTED

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COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: LA City, Hyperion Treatment Plant		
FACILITY ADDRESS: 12000 Vista Del Mar		
CITY: Playa Del Rey	STATE: CA	ZIP CODE: 90293
FACILITY I.D. NO. (if known): 10991	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

LA CITY, HYPERION TREATMENT PLANT - Facility 10991 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
454045	F80905	2/28/2006	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	2/28/2006	PERMIT TO OPERATE GRANTED

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Boeing Satellite Systems Inc.		
FACILITY ADDRESS: 2240 E. Imperial Hwy.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 115241	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

BOEING SATELLITE SYSTEMS INC - Facility 115241 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
520013	ACTIVE	Basic	BOILER (	3/17/2011	PERMIT TO OPERATE GRANTED
520014	ACTIVE	Basic	BOILER (	3/17/2011	PERMIT TO OPERATE GRANTED
520015	ACTIVE	Basic	BOILER (	3/17/2011	PERMIT TO OPERATE GRANTED
509519	ACTIVE	Basic	BOILER (	3/31/2010	PERMIT TO OPERATE GRANTED
509509	ACTIVE	Basic	I C E (50-500 HP) EM FIRE FGHT-DIESEL	3/31/2010	PERMIT TO OPERATE GRANTED
509511	ACTIVE	Basic	I C E (50-500 HP) EM FIRE FGHT-DIESEL	3/31/2010	PERMIT TO OPERATE GRANTED
509505	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	3/31/2010	PERMIT TO OPERATE GRANTED
509514	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	3/31/2010	PERMIT TO OPERATE GRANTED
509512	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN- NG & LPG	3/31/2010	PERMIT TO OPERATE GRANTED
509513	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN- NG & LPG	3/31/2010	PERMIT TO OPERATE GRANTED
509506	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN-NAT GAS	3/31/2010	PERMIT TO OPERATE GRANTED
509507	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN-NAT GAS	3/31/2010	PERMIT TO OPERATE GRANTED
509504	ACTIVE	Basic	OVEN, DRYING	3/31/2010	PERMIT TO OPERATE GRANTED
488080	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488081	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488082	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488083	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488084	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488085	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488086	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488087	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488088	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488089	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488090	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488091	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488092	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488093	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488094	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED
488095	ACTIVE	Basic	BOILER (	9/9/2008	PERMIT TO OPERATE GRANTED

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COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: El Segundo Power, LLC.		
FACILITY ADDRESS: 301 Vista Del Mar		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 115663	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

EL SEGUNDO POWER, LLC - Facility 115663 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
548593		Basic	BOILER (>20-50 MMBTU/HR) NAT GAS ONLY	3/19/2013	APPLICATION ON HOLD
548589		Basic	TURBINE ENGINE (>50 MW) OTHER FUEL	3/19/2013	APPLICATION ON HOLD
548590		Basic	TURBINE ENGINE (>50 MW) OTHER FUEL	3/19/2013	APPLICATION ON HOLD
548594		Basic	TURBINE ENGINE (>50 MW) OTHER FUEL	3/19/2013	APPLICATION ON HOLD
528832		Basic	BOILER UTILITY (>50 MW)NAT.GAS/RESID.OIL	11/1/2011	ASSIGNED TO ENGINEER - CLASS I
528833		Basic	BOILER UTILITY (>50 MW)NAT.GAS/RESID.OIL	11/1/2011	ASSIGNED TO ENGINEER - CLASS I
470652		Basic	TURBINE ENGINE (>50 MW) OTHER FUEL	6/21/2007	APPLICATION CHANGED FROM CLASS I - III
470656		Basic	TURBINE ENGINE (>50 MW) OTHER FUEL	6/21/2007	APPLICATION CHANGED FROM CLASS I - III

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: ALCOA Global Fasteners, Inc. South Bay		
FACILITY ADDRESS: 3000 W. Lomita Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90505
FACILITY I.D. NO. (if known): 134943	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

ALCOA GLOBAL FASTENERS, INC. SOUTH BAY - Facility 134943 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
531359	G16715	2/8/2012	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	1/20/2012	PERMIT TO OPERATE GRANTED
498395	G3970	7/31/2009	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	5/5/2009	PERMIT TO OPERATE GRANTED
498398	G3972	7/31/2009	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	5/5/2009	PERMIT TO OPERATE GRANTED
498400	G3974	7/31/2009	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	5/5/2009	PERMIT TO OPERATE GRANTED
492523	G22852	2/6/2013	ACTIVE	Control	Afterburner (	11/19/2008	PERMIT TO OPERATE GRANTED
451085	F80907	3/1/2006	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	12/7/2005	PERMIT TO OPERATE GRANTED
451086	F80908	3/1/2006	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	12/7/2005	PERMIT TO OPERATE GRANTED

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Sweet Ovations		
FACILITY ADDRESS: 16911 S. Normandie Ave.		
CITY: Gardena	STATE: CA	ZIP CODE: 90247
FACILITY I.D. NO. (if known): 145389	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

SWEET OVATIONS - Facility 145389 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
517994	G20140	8/24/2012	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	1/7/2011	PERMIT TO OPERATE GRANTED

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Toyota Motor Eng. & Mfg. North America		
FACILITY ADDRESS: 1630 W. 186th St.		
CITY: Gardena	STATE: CA	ZIP CODE: 90248
FACILITY I.D. NO. (if known): 148060	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

TOYOTA MOTOR ENG & MFG NORTH AMERICA - Facility 148060 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
498177	G4174	8/25/2009	ACTIVE	Basic	ICE TEST CELL - ANY FUEL/HP	4/28/2009	PERMIT TO OPERATE GRANTED
498178	G4175	8/25/2009	ACTIVE	Basic	ICE TEST CELL - ANY FUEL/HP	4/28/2009	PERMIT TO OPERATE GRANTED
498179	G4176	8/25/2009	ACTIVE	Basic	ICE TEST CELL - ANY FUEL/HP	4/28/2009	PERMIT TO OPERATE GRANTED

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: US Govt., AF. Dept., L.A. A.F.B. Area B		
FACILITY ADDRESS: 483 N. Aviation Blvd.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 15509	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

US GOVT, AF DEPT, L.A. A.F.B. AREA B - Facility 15509 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
464619	F87631	2/14/2007	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	1/9/2007	PERMIT TO OPERATE GRANTED
458673	F83220	7/18/2006	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	7/18/2006	PERMIT TO OPERATE GRANTED
461939	F85738	11/21/2006	ACTIVE	Basic	CHARBROILER - NATURAL GAS	7/11/2006	PERMIT TO OPERATE GRANTED
456779	F82019	5/10/2006	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	5/10/2006	PERMIT TO OPERATE GRANTED
454858	F81281	3/28/2006	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	3/17/2006	PERMIT TO OPERATE GRANTED

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Americas Styrenics LLC.		
FACILITY ADDRESS: 305 Crenshaw Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90503
FACILITY I.D. NO. (if known): 156049	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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AMERICAS STYRENICS LLC - Facility 156049 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
518012				Basic	HEATER/FURNACE (5-20 MMBTU/HR) OIL	1/7/2011	ASSIGNED TO ENGINEER - CLASS III
518014				Basic	HEATER/FURNACE (5-20 MMBTU/HR) OIL	1/7/2011	ASSIGNED TO ENGINEER - CLASS III
508678	G7993	4/7/2010	ACTIVE	Basic	I C E (50-500 HP) EM FIRE FGHT-DIESEL	3/4/2010	PERMIT TO OPERATE GRANTED
508700	G7992	4/7/2010	ACTIVE	Basic	I C E (50-500 HP) EMERG OTHER, NG ONLY	3/4/2010	PERMIT TO OPERATE GRANTED
484614	F99971	11/25/2008	ACTIVE	Basic	COOLING TOWER OR POND	7/18/2008	PERMIT TO OPERATE GRANTED
484629	F99978	11/25/2008	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) OIL	7/18/2008	PERMIT TO OPERATE GRANTED
484630	F99979	11/25/2008	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) OIL	7/18/2008	PERMIT TO OPERATE GRANTED
484621	F99985	11/25/2008	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	7/18/2008	PERMIT TO OPERATE GRANTED
484620	F99974	11/25/2008	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	7/18/2008	PERMIT TO OPERATE GRANTED

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Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Nissin Foods (USA) Co., Inc.		
FACILITY ADDRESS: 2001 W. Rosecrans Ave.		
CITY: Gardena	STATE: CA	ZIP CODE: 90249
FACILITY I.D. NO. (if known): 15794	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

NISSIN FOODS (USA) CO., INC. - Facility 15794 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
530045				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2011	APPLICATION CHANGED FROM CLASS I - III
530046				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2011	APPLICATION CHANGED FROM CLASS I - III
530048				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2011	APPLICATION CHANGED FROM CLASS I - III
530049				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2011	APPLICATION CHANGED FROM CLASS I - III
530050				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2011	APPLICATION CHANGED FROM CLASS I - III
530051				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2011	APPLICATION CHANGED FROM CLASS I - III
516939				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/9/2010	APPLICATION CHANGED FROM CLASS I - III
516940				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/9/2010	APPLICATION CHANGED FROM CLASS I - III
516943				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/9/2010	APPLICATION CHANGED FROM CLASS I - III
516944				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/9/2010	APPLICATION CHANGED FROM CLASS I - III

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Triumph Aerostructures, LLC		
FACILITY ADDRESS: 3901 W. Jack Northrop Ave.		
CITY: Hawthorne	STATE: CA	ZIP CODE: 90250
FACILITY I.D. NO. (if known): 165192	APPL. AND/OR PERMIT NO. (if known):	

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Signature of Requestor

TRIUMPH AEROSTRUCTURES, LLC - Facility 165192 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
548424		Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	3/13/2013	ASSIGNED TO ENGINEER - CLASS I
548425		Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	3/13/2013	ASSIGNED TO ENGINEER - CLASS I
521537	ACTIVE	Basic	I C E (50-500 HP) EM FIRE FGHT-DIESEL	4/21/2011	PERMIT TO OPERATE GRANTED
519660	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	3/9/2011	PERMIT TO OPERATE GRANTED
515695	ACTIVE	Basic	CHARBROILER - NATURAL GAS	10/22/2010	PERMIT TO OPERATE GRANTED
514005	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	8/25/2010	PERMIT TO OPERATE GRANTED
513985	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	8/25/2010	PERMIT TO OPERATE GRANTED
513987	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	8/25/2010	PERMIT TO OPERATE GRANTED
513995	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	8/25/2010	PERMIT TO OPERATE GRANTED
514008	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) COMB GAS-DISTILL	8/25/2010	PERMIT TO OPERATE GRANTED
513992	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) METHANOL	8/25/2010	PERMIT TO OPERATE GRANTED
513991	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) NAT GAS	8/25/2010	PERMIT TO OPERATE GRANTED
514007	ACTIVE	Basic	OVEN, COOKING OR CURING	8/25/2010	PERMIT TO OPERATE GRANTED
514004	ACTIVE	Basic	OVEN, CURING (RULE 1401 TOXICS)	8/25/2010	PERMIT TO OPERATE GRANTED
513989	ACTIVE	Basic	OVEN, DRYING	8/25/2010	PERMIT TO OPERATE GRANTED

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: T5@ Los Angeles, LLC.		
FACILITY ADDRESS: 444 N. Nash St.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 169168	APPL. AND/OR PERMIT NO. (if known):	

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Signature of Requestor

T5@ LOS ANGELES, LLC - Facility 169168 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
527571				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	APPLICATION CHANGED FROM CLASS I - III
527572				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	APPLICATION CHANGED FROM CLASS I - III
527574				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	APPLICATION CHANGED FROM CLASS I - III
527575				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	APPLICATION CHANGED FROM CLASS I - III
527577				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	APPLICATION CHANGED FROM CLASS I - III
527568	G22492	1/22/2013	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	PERMIT TO OPERATE GRANTED
527569	G22493	1/22/2013	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	PERMIT TO OPERATE GRANTED
527570	G22494	1/22/2013	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	PERMIT TO OPERATE GRANTED
527576	G22495	1/22/2013	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/23/2011	PERMIT TO OPERATE GRANTED

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☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: LA CNTY. Sanitation District-Palos Verdes		
FACILITY ADDRESS: 26301 S. Crenshaw B & 25704, 06 Hawt		
CITY: Rolling Hills Estates	STATE: CA	ZIP CODE: 90274
FACILITY I.D. NO. (if known): 24520	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

✔ I wish to inspect the requested records, where applicable, or receive the requested records electronically at no charge. I do not want copies produced at this time.

☐ I request that the SCAQMD contact me prior to copying the requested records if the cost exceeds $20.00.

☐ I would like copies of the requested records and I hereby agree to reimburse the SCAQMD for the direct cost of duplication in accordance with Gov. Code Sec. 6253(b).

Signature of Requestor

LA CNTY SANITATION DISTRICT-PALOS VERDES - Facility 24520 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
545653				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/11/2012	ASSIGNED TO ENGINEER - CLASS I
526209				Control	FLARE, ENCLOSED LANDFILL/DIGESTER GAS	8/19/2011	ASSIGNED TO ENGINEER - CLASS I
483623				Control	FLARE, ENCLOSED LANDFILL/DIGESTER GAS	6/5/2008	APPLICATION CHANGED FROM CLASS I - III
440825	F82158	5/17/2006	ACTIVE	Control	FLARE, ENCLOSED LANDFILL/DIGESTER GAS	2/17/2005	PERMIT TO OPERATE GRANTED

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Information Management
Public Records Unit

Direct Dial: (909) 396-3700
FAX: (909) 396-3330

PUBLIC RECORDS REQUEST FORM

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CONTROL NUMBER

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Farmer Bros Co		
FACILITY ADDRESS: 20333 S. Normandie Ave.		
CITY: Torrance	STATE: CA	ZIP CODE: 90502
FACILITY I.D. NO. (if known): 24812	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

FARMER BROS CO - Facility 24812 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
517624	G11862	2/11/2011	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/28/2010	PERMIT TO OPERATE GRANTED
494339	G20130	8/24/2012	ACTIVE	Basic	COFFEE ROASTING, >= 100 LBS. CAPACITY	12/24/2008	PERMIT TO OPERATE GRANTED
494342	G20131	8/24/2012	ACTIVE	Control	AFTERBURNER,/OXIDIZER, CATALYTIC	12/24/2008	PERMIT TO OPERATE GRANTED
494343				Basic	COFFEE ROASTING, >= 100 LBS. CAPACITY	12/24/2008	APPLICATION CHANGED FROM CLASS I - III
494344				Control	AFTERBURNER,/OXIDIZER, CATALYTIC	12/24/2008	APPLICATION CHANGED FROM CLASS I - III
494345				Control	AFTERBURNER,/OXIDIZER, CATALYTIC	12/24/2008	APPLICATION CHANGED FROM CLASS I - III

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Chevron Products Company		
FACILITY ADDRESS: 324 W. El Segundo Blvd.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 53611	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

CHEVRON PRODUCTS COMPANY - Facility 53611 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
410837	G10493	10/26/2010	ACTIVE	Basic	TURBINE ENGINE (<=50 MW) NAT & PROC GAS	1/15/2003	PERMIT TO OPERATE GRANTED

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Chevron Products Co.		
FACILITY ADDRESS: 324 W. El Segundo Blvd.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 800030	APPL. AND/OR PERMIT NO. (if known):	

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Signature of Requestor

CHEVRON PRODUCTS CO. - Facility 800030 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
547157		Control	FLARE SYSTEM, REFINERY	2/6/2013	ASSIGNED TO ENGINEER - CLASS I
542304	ACTIVE	Basic	BOILER (>50 MMBTU/HR) PROCESS GAS	8/28/2012	PERMIT TO OPERATE GRANTED
541582	ACTIVE	Basic	TURBINE ENGINE (<=50 MW) NAT & PROC GAS	8/10/2012	PERMIT TO OPERATE GRANTED
530646		Control	FLARE SYSTEM, REFINERY	1/4/2012	ASSIGNED TO ENGINEER - CLASS I
527112	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR) PROC GAS	9/14/2011	PERMIT TO OPERATE GRANTED
526607		Basic	TURBINE ENGINE (<=50 MW) NAT & PROC GAS	9/1/2011	APPLICATION CHANGED FROM CLASS I - III
526609		Control	FLARE SYSTEM, REFINERY	9/1/2011	APPLICATION CHANGED FROM CLASS I - III
523950	ACTIVE	Basic	HYDROGEN PRODUCTION PLANT	6/21/2011	PERMIT TO OPERATE GRANTED
521770		Control	FLARE SYSTEM, REFINERY	4/21/2011	APPLICATION CHANGED FROM CLASS I - III
508902		Control	FLARE SYSTEM, REFINERY	3/11/2010	APPLICATION CHANGED FROM CLASS I - III
502780		Control	FLARE SYSTEM, REFINERY	10/1/2009	ASSIGNED TO ENGINEER - CLASS I
502781		Control	FLARE SYSTEM, REFINERY	10/1/2009	ASSIGNED TO ENGINEER - CLASS I
502782		Control	FLARE SYSTEM, REFINERY	10/1/2009	ASSIGNED TO ENGINEER - CLASS I
502783		Control	FLARE SYSTEM, REFINERY	10/1/2009	ASSIGNED TO ENGINEER - CLASS I
498632		Control	FLARE SYSTEM, REFINERY	5/12/2009	ASSIGNED TO ENGINEER - CLASS I
497662	ACTIVE	Basic	CHARBROILER - WOOD	4/8/2009	PERMIT TO OPERATE GRANTED
493746		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	12/9/2008	ASSIGNED TO ENGINEER - CLASS I
493748		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	12/9/2008	ASSIGNED TO ENGINEER - CLASS I
493750		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	12/9/2008	ASSIGNED TO ENGINEER - CLASS I
493753		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	12/9/2008	ASSIGNED TO ENGINEER - CLASS I
485807		Control	FLARE SYSTEM, REFINERY	7/31/2008	APPLICATION CANCELLED
482505		Control	FLARE SYSTEM, REFINERY	5/7/2008	APPLICATION CHANGED FROM CLASS I - III
480558		Control	TAIL GAS INCINERATOR	4/1/2008	APPLICATION CHANGED FROM CLASS I - III
474709	ACTIVE	Basic	TURBINE ENGINE (<=50 MW) NAT & PROC GAS	10/18/2007	PERMIT TO OPERATE GRANTED
471356	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR) OTHER FUEL	6/27/2007	PERMIT TO OPERATE GRANTED
470782		Basic	TURBINE ENGINE (<=50 MW) NAT & PROC GAS	6/13/2007	APPLICATION CHANGED FROM CLASS I - III
465015		Control	FLARE SYSTEM, REFINERY	1/30/2007	ASSIGNED TO ENGINEER - CLASS I
464817		Basic	GAS OIL CRACKING UNIT	1/23/2007	APPLICATION CHANGED FROM CLASS I - III
464818		Control	FLARE SYSTEM, REFINERY	1/23/2007	APPLICATION CHANGED FROM CLASS I - III
459113	ACTIVE	Basic	Treating, Petroleum Distillates	7/19/2006	PERMIT TO OPERATE GRANTED
457255		Control	FLARE SYSTEM, REFINERY	5/23/2006	APPLICATION CHANGED FROM CLASS I - III
454964		Control	FLARE SYSTEM, REFINERY	3/21/2006	APPLICATION CHANGED FROM CLASS I - III

CHEVRON PRODUCTS CO. - Facility 800030 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
454408		Control	FLARE SYSTEM, REFINERY	3/8/2006	APPLICATION CHANGED FROM CLASS I - III
453090		Basic	PETROLEUM COKE CONVEYING	2/3/2006	APPLICATION CHANGED FROM CLASS I - III
452976		Control	FLARE SYSTEM, REFINERY	2/1/2006	APPLICATION CHANGED FROM CLASS I - III

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COMPANY: CH2M Hill		
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CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
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✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: ExxonMobil Oil Corporation		
FACILITY ADDRESS: 3700 W. 190th St.		
CITY: Torrance	STATE: CA	ZIP CODE: 90504
FACILITY I.D. NO. (if known): 800089	APPL. AND/OR PERMIT NO. (if known):	

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Signature of Requestor

EXXONMOBIL OIL CORPORATION - Facility 800089 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
533847		Basic	BOILER (>50 MMBTU/HR) OTHER FUEL	3/14/2012	ASSIGNED TO ENGINEER - CLASS I
519368	ACTIVE	Basic	I C E (50-500 HP) EMERG OTHER, DIESEL	3/1/2011	PERMIT TO OPERATE GRANTED
515123	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR) PROC GAS	9/23/2010	PERMIT TO OPERATE GRANTED
511914		Basic	BOILER (>50 MMBTU/HR) PROCESS GAS	6/17/2010	ASSIGNED TO ENGINEER - CLASS I
511170		Control	FLARE SYSTEM, REFINERY	5/25/2010	ASSIGNED TO ENGINEER - CLASS I
511167		Control	FLARE SYSTEM, REFINERY	5/25/2010	ASSIGNED TO ENGINEER - CLASS I
511171		Control	FLARE SYSTEM, REFINERY	5/25/2010	ASSIGNED TO ENGINEER - CLASS I
510397	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	4/30/2010	PERMIT TO OPERATE GRANTED
510396	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	4/30/2010	PERMIT TO OPERATE GRANTED
487728		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	9/3/2008	ASSIGNED TO ENGINEER - CLASS III
483878	ACTIVE	Control	WASTE GAS INCINERATION UNIT	6/17/2008	PERMIT TO OPERATE GRANTED
483739		Basic	TURBINE ENGINE (<=50 MW) OTHER FUEL	6/10/2008	APPLICATION CHANGED FROM CLASS I - III
483736	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	6/10/2008	PERMIT TO OPERATE GRANTED
477482		Control	AFTERBURNER, DIRECT FLAME	1/24/2008	ASSIGNED TO ENGINEER - CLASS I
477483		Control	AFTERBURNER, DIRECT FLAME	1/24/2008	ASSIGNED TO ENGINEER - CLASS I
475235		Control	WASTE GAS INCINERATION UNIT	11/6/2007	ASSIGNED TO ENGINEER - CLASS I
473143		Basic	BOILER OTH REFINERY GAS	8/24/2007	ASSIGNED TO ENGINEER - CLASS III
473142		Basic	BOILER OTH REFINERY GAS	8/24/2007	ASSIGNED TO ENGINEER - CLASS III
471344	ACTIVE	Control	FLARE SYSTEM, REFINERY	6/28/2007	PERMIT TO OPERATE GRANTED
466743		Control	AFTERBURNER, DIRECT FLAME	3/22/2007	ASSIGNED TO ENGINEER - CLASS I
466742	ACTIVE	Control	FLARE SYSTEM, REFINERY	3/22/2007	PERMIT TO OPERATE GRANTED
458744	ACTIVE	Control	CO BOILER	6/30/2006	PERMIT TO OPERATE GRANTED
455153		Basic	BOILER (>50 MMBTU/HR) PROCESS GAS	3/24/2006	ASSIGNED TO ENGINEER - CLASS III
455132		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	ASSIGNED TO ENGINEER - CLASS III
455136	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) PROC GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455159	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) PROC GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455141	ACTIVE	Basic	HEATER/FURNACE (>20-50 MMBTU/HR)PROC GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455106	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455091	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455098	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455109	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455113	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED

EXXONMOBIL OIL CORPORATION - Facility 800089 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
455120	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455144	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455094	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455130		Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	ASSIGNED TO ENGINEER - CLASS III
455137	ACTIVE	Basic	HEATER/FURNACE (5-20 MMBTU/HR) PROC GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455118	ACTIVE	Basic	HEATER/FURNACE (>20-50 MMBTU/HR)PROC GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455146	ACTIVE	Basic	HEATER/FURNACE (>20-50 MMBTU/HR)PROC GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455133	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455092	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455103	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455111	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455116	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455142	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED
455102	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	3/24/2006	PERMIT TO OPERATE GRANTED

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MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: American Airlines Inc. (EIS USE)		
FACILITY ADDRESS: 7260 World Way West		
CITY: Los Angeles	STATE: CA	ZIP CODE: 90045
FACILITY I.D. NO. (if known): 800196	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

✔ I wish to inspect the requested records, where applicable, or receive the requested records electronically at no charge. I do not want copies produced at this time.

☐ I request that the SCAQMD contact me prior to copying the requested records if the cost exceeds $20.00.

☐ I would like copies of the requested records and I hereby agree to reimburse the SCAQMD for the direct cost of duplication in accordance with Gov. Code Sec. 6253(b).

Signature of Requestor

AMERICAN AIRLINES INC (EIS USE) - Facility 800196 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
539710	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/29/2012	PERMIT TO OPERATE GRANTED
514237	ACTIVE	Basic	I C E (50-500 HP) EM FIRE FGHT-DIESEL	8/31/2010	PERMIT TO OPERATE GRANTED
463994	ACTIVE	Basic	TURBINE ENGINE (	12/19/2006	PERMIT TO OPERATE GRANTED
463995	ACTIVE	Basic	TURBINE ENGINE (	12/19/2006	PERMIT TO OPERATE GRANTED
463997	ACTIVE	Basic	TURBINE ENGINE (	12/19/2006	PERMIT TO OPERATE GRANTED

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Information Management
Public Records Unit

Direct Dial: (909) 396-3700
FAX: (909) 396-3330

PUBLIC RECORDS REQUEST FORM

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ATTENTION REQUESTOR: To expedite your request for District records, please fill out this form completely, and identify specifically the type of records you are requesting. Please limit your request to one facility or one site address for each request form filed, and three requested items per form. Additional forms or pages can be used if requesting information for more than one facility or for records not identified on this form. Requests should reasonably describe identifiable records prepared, owned, used, or retained by the District. Public Records Unit staff is available to assist you in identifying those records in the District's possession. The District is not required by law to create a new record or list from an existing record.

REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: LA City, Sanitation Bureau (HTP)		
FACILITY ADDRESS: 12000 Vista Del Mar		
CITY: Playa Del Rey	STATE: CA	ZIP CODE: 90293
FACILITY I.D. NO. (if known): 800214	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

✔ I wish to inspect the requested records, where applicable, or receive the requested records electronically at no charge. I do not want copies produced at this time.

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Signature of Requestor

LA CITY, SANITATION BUREAU (HTP) - Facility 800214 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
522846				Basic	BOILER (>10 MMBTU/HR) NAT & DGSTR GAS	5/20/2011	ASSIGNED TO ENGINEER - CLASS I
522847				Basic	BOILER (>10 MMBTU/HR) NAT & DGSTR GAS	5/20/2011	ASSIGNED TO ENGINEER - CLASS I
519527				Basic	TURBINE ENGINE (<=50 MW)NAT GAS-DGST GAS	3/8/2011	ASSIGNED TO ENGINEER - CLASS I
519528				Basic	TURBINE ENGINE (<=50 MW)NAT GAS-DGST GAS	3/8/2011	ASSIGNED TO ENGINEER - CLASS I
519532				Basic	TURBINE ENGINE (<=50 MW)NAT GAS-DGST GAS	3/8/2011	ASSIGNED TO ENGINEER - CLASS I
488129				Basic	I C E (>500 HP) EM ELEC GEN DIESEL	9/25/2009	ASSIGNED TO ENGINEER - CLASS I

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: LA CO Harbor-UCLA Medical Center		
FACILITY ADDRESS: 1000 W. Carson St.		
CITY: Torrance	STATE: CA	ZIP CODE: 90502
FACILITY I.D. NO. (if known): 800312	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

LA CO HARBOR-UCLA MEDICAL CENTER - Facility 800312 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
530237				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY P/P	12/9/2011	APPLICATION CHANGED FROM CLASS I - III
530238				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY P/P	12/9/2011	APPLICATION CHANGED FROM CLASS I - III
530239				Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY P/P	12/9/2011	APPLICATION CHANGED FROM CLASS I - III
517831	G22449	1/17/2013	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	1/4/2011	PERMIT TO OPERATE GRANTED
517832	G22450	1/17/2013	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	1/4/2011	PERMIT TO OPERATE GRANTED

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REQUESTED RECORDS (*3 items per form*)

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: LA City, Dept. of Airports		
FACILITY ADDRESS: 275 Center Way		
CITY: Los Angeles	STATE: CA	ZIP CODE: 90045
FACILITY I.D. NO. (if known): 800335	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

LA CITY, DEPT OF AIRPORTS - Facility 800335 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
548254		Basic	I C E (>500 HP) EM ELEC GEN DIESEL	3/8/2013	ASSIGNED TO ENGINEER - CLASS I
543031		Basic	BOILER (>20-50 MMBTU/HR) NAT GAS ONLY	9/26/2012	APPLICATION CHANGED FROM CLASS I - III
543032		Basic	BOILER (>20-50 MMBTU/HR) NAT GAS ONLY	9/26/2012	APPLICATION CHANGED FROM CLASS I - III
525468	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	7/27/2011	PERMIT TO OPERATE GRANTED
525469	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	7/27/2011	PERMIT TO OPERATE GRANTED
525470	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	7/27/2011	PERMIT TO OPERATE GRANTED
525471	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	7/27/2011	PERMIT TO OPERATE GRANTED
516417	ACTIVE	Basic	AGGREGATE PRODUCTN/CRUSHING (	11/24/2010	PERMIT TO OPERATE GRANTED
516415	ACTIVE	Basic	CONCRETE BATCH EQUIPMENT	11/24/2010	PERMIT TO OPERATE GRANTED
516416	ACTIVE	Basic	CONCRETE BATCH EQUIPMENT	11/24/2010	PERMIT TO OPERATE GRANTED
512301	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/30/2010	PERMIT TO OPERATE GRANTED
511274	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	5/27/2010	PERMIT TO OPERATE GRANTED
504875	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/31/2009	PERMIT TO OPERATE GRANTED
504547		Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
504548		Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
504542		Basic	BOILER (>20-50 MMBTU/HR) NAT GAS ONLY	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
504544		Basic	BOILER (>20-50 MMBTU/HR) NAT GAS ONLY	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
504551		Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
504545		Basic	TURBINE ENGINE (<=50 MW) NAT GAS ONLY	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
504546		Basic	TURBINE ENGINE (<=50 MW) NAT GAS ONLY	12/16/2009	APPLICATION CHANGED FROM CLASS I - III
497760	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	4/10/2009	PERMIT TO OPERATE GRANTED
475955	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	11/29/2007	PERMIT TO OPERATE GRANTED
475957	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	11/29/2007	PERMIT TO OPERATE GRANTED
475959	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	11/29/2007	PERMIT TO OPERATE GRANTED
475958	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	11/29/2007	PERMIT TO OPERATE GRANTED
475663	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	11/21/2007	PERMIT TO OPERATE GRANTED
475664	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	11/21/2007	PERMIT TO OPERATE GRANTED

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
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☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Northrop Grumman Systems		
FACILITY ADDRESS: 3301 Aviation & Rosecrans 1700		
CITY: Manhattan Beach	STATE: CA	ZIP CODE: 90266
FACILITY I.D. NO. (if known): 800408	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

NORTHROP GRUMMAN SYSTEMS - Facility 800408 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
548681		Basic	SOLDERING MACHINE	3/21/2013	ASSIGNED TO ENGINEER - CLASS I
544402		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT	11/13/2012	APPLICATION ON HOLD
544399		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/13/2012	APPLICATION ON HOLD
544401		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/13/2012	APPLICATION ON HOLD
544406		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/13/2012	APPLICATION ON HOLD
544409		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/13/2012	APPLICATION ON HOLD
544411		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/13/2012	APPLICATION ON HOLD
544412		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/13/2012	APPLICATION ON HOLD
544403		Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	11/13/2012	APPLICATION ON HOLD
544410		Control	Afterburner (	11/13/2012	APPLICATION ON HOLD
544397		Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	11/13/2012	APPLICATION ON HOLD
544398		Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	11/13/2012	APPLICATION ON HOLD
537112		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	5/22/2012	APPLICATION CHANGED FROM CLASS I - III
537099		Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	5/22/2012	APPLICATION CHANGED FROM CLASS I - III
537105		Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	5/22/2012	APPLICATION CHANGED FROM CLASS I - III
523834	ACTIVE	Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	6/16/2011	PERMIT TO OPERATE GRANTED
523835	ACTIVE	Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	6/16/2011	PERMIT TO OPERATE GRANTED
516958		Basic	BOILER (	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516982		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516972		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516973		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516984		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516986		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516987		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
517013		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516965		Basic	SEMICONDUCTOR, PHOTORESIST (	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516966		Basic	SEMICONDUCTOR, PHOTORESIST (	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516951		Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
517012		Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	12/9/2010	ASSIGNED TO ENGINEER - CLASS III
516977	ACTIVE	Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	12/9/2010	PERMIT TO OPERATE GRANTED
516969	ACTIVE	Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	12/9/2010	PERMIT TO OPERATE GRANTED
516979	ACTIVE	Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	12/9/2010	PERMIT TO OPERATE GRANTED

NORTHROP GRUMMAN SYSTEMS - Facility 800408 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
516978	ACTIVE	Basic	SEMICONDUCTOR, PHOTORESIST (>=5 PIECES)	12/9/2010	PERMIT TO OPERATE GRANTED
516955	ACTIVE	Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	12/9/2010	PERMIT TO OPERATE GRANTED
516124		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/9/2010	APPLICATION CHANGED FROM CLASS I - III
516129	ACTIVE	Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	11/9/2010	PERMIT TO OPERATE GRANTED
515056	ACTIVE	Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT	9/28/2010	PERMIT TO OPERATE GRANTED
504844	ACTIVE	Basic	CHARBROILER - NATURAL GAS	12/24/2009	PERMIT TO OPERATE GRANTED
502644		Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT	9/24/2009	ASSIGNED TO ENGINEER - CLASS III
502643	ACTIVE	Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT	9/24/2009	PERMIT TO OPERATE GRANTED
499348	ACTIVE	Basic	OVEN, DRYING	6/3/2009	PERMIT TO OPERATE GRANTED
499350	ACTIVE	Basic	SEMICONDUCTOR, INTEGRATED CIRCUIT >=5 PC	6/3/2009	PERMIT TO OPERATE GRANTED
484855	ACTIVE	Basic	SOLDER LEVELING	6/27/2008	PERMIT TO OPERATE GRANTED
476326	ACTIVE	Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	12/11/2007	PERMIT TO OPERATE GRANTED
474064	INACTIVE	Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	9/26/2007	PERMIT TO OPERATE GRANTED
464106	ACTIVE	Basic	BOILER (	12/21/2006	PERMIT TO OPERATE GRANTED
460766	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	10/3/2006	PERMIT TO OPERATE GRANTED
455305	ACTIVE	Control	REGENERATIVE/RECUPERATIVE OXIDIZER-CERAMIC/HOT ROCK	3/30/2006	PERMIT TO OPERATE GRANTED
412586	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	2/21/2003	PERMIT TO OPERATE GRANTED

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Northrop Grumman Systems Corporation		
FACILITY ADDRESS: 1 Space Park Bldgs. D1, 3, 4, M3, R1		
CITY: Redondo Beach	STATE: CA	ZIP CODE: 90278
FACILITY I.D. NO. (if known): 800409	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

NORTHROP GRUMMAN SYSTEMS CORPORATION - Facility 800409 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
544050		Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	10/18/2012	ASSIGNED TO ENGINEER - CLASS III
544052		Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	10/18/2012	ASSIGNED TO ENGINEER - CLASS III
544053		Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	10/18/2012	ASSIGNED TO ENGINEER - CLASS III
542010		Basic	MISCELLANEOUS MACHINING	8/14/2012	ASSIGNED TO ENGINEER - CLASS III
521845		Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	4/27/2011	APPLICATION CHANGED FROM CLASS I - III
484387		Basic	MISCELLANEOUS MACHINING	6/24/2008	ASSIGNED TO ENGINEER - CLASS III
484388		Basic	MISCELLANEOUS MACHINING	6/24/2008	ASSIGNED TO ENGINEER - CLASS III
484389		Basic	MISCELLANEOUS MACHINING	6/24/2008	ASSIGNED TO ENGINEER - CLASS III
484390		Basic	MISCELLANEOUS MACHINING	6/24/2008	ASSIGNED TO ENGINEER - CLASS III
484391		Basic	MISCELLANEOUS MACHINING	6/24/2008	ASSIGNED TO ENGINEER - CLASS III
474467	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	10/11/2007	PERMIT TO OPERATE GRANTED
470067	ACTIVE	Basic	I C E (50-500 HP) EMERG OTHER, DIESEL	6/8/2007	PERMIT TO OPERATE GRANTED
468746	ACTIVE	Basic	OVEN, OTHER	5/3/2007	PERMIT TO OPERATE GRANTED
468748	ACTIVE	Basic	OVEN, OTHER	5/3/2007	PERMIT TO OPERATE GRANTED

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 02 May 2013
COMPANY: CH2M Hill		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
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Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: To:

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Brea Canon Oil Company Inc.		
FACILITY ADDRESS: 23903 S. Normandie		
CITY: Harbor City	STATE: CA	ZIP CODE: 90710
FACILITY I.D. NO. (if known): 82513	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

BREA CANON OIL COMPANY INC - Facility 82513 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
433441	F93956	11/27/2007	ACTIVE	Basic	I C E (50-500 HP) N-EM OTHER FUEL	8/11/2004	PERMIT TO OPERATE GRANTED
433442	F93957	11/27/2007	ACTIVE	Basic	I C E (50-500 HP) N-EM OTHER FUEL	8/11/2004	PERMIT TO OPERATE GRANTED
433443	F93958	11/27/2007	ACTIVE	Basic	I C E (50-500 HP) N-EM OTHER FUEL	8/11/2004	PERMIT TO OPERATE GRANTED
433444	F93959	11/27/2007	ACTIVE	Basic	I C E (50-500 HP) N-EM OTHER FUEL	8/11/2004	PERMIT TO OPERATE GRANTED
433445	F93961	11/27/2007	ACTIVE	Basic	I C E (50-500 HP) N-EM OTHER FUEL	8/11/2004	PERMIT TO OPERATE GRANTED
433446	F93962	11/27/2007	ACTIVE	Basic	I C E (50-500 HP) N-EM OTHER FUEL	8/11/2004	PERMIT TO OPERATE GRANTED

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: United Airlines Inc.		
FACILITY ADDRESS: 6010 & 6020 Avion Dr.		
CITY: Los Angeles	STATE: CA	ZIP CODE: 90045
FACILITY I.D. NO. (if known): 9755	APPL. AND/OR PERMIT NO. (if known):	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

UNITED AIRLINES INC - Facility 9755 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
522810	ACTIVE	Basic	I C E (50-500 HP) N-EM PORT N-RENT DIESE	5/19/2011	PERMIT TO OPERATE GRANTED
520593	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	3/30/2011	PERMIT TO OPERATE GRANTED
520595	ACTIVE	Basic	I C E (50-500 HP) EM FIRE FGHT-DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED
520589	ACTIVE	Basic	I C E (50-500 HP) N-EM PORT N-RENT DIESE	3/30/2011	PERMIT TO OPERATE GRANTED
520591	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED
520600	ACTIVE	Basic	I C E (>500 HP) EM FIRE FGHT-DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED
520603	ACTIVE	Basic	I C E (>500 HP) EM FIRE FGHT-DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED
520605	ACTIVE	Basic	I C E (>500 HP) EM FIRE FGHT-DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED
520607	ACTIVE	Basic	I C E (>500 HP) EM FIRE FGHT-DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED
520609	ACTIVE	Basic	I C E (>500 HP) EM FIRE FGHT-DIESEL	3/30/2011	PERMIT TO OPERATE GRANTED

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MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Northrup Grumman Corp, Aircraft Div.		
FACILITY ADDRESS: One Hornet Way		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 18294	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

NORTHROP GRUMMAN CORP, AIRCRAFT DIV - Facility 18294 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
549032		Basic	BOILER (	3/20/2013	ASSIGNED TO ENGINEER - CLASS III
526639	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	8/23/2011	PERMIT TO OPERATE GRANTED
513511	ACTIVE	Basic	BOILER (	8/10/2010	PERMIT TO OPERATE GRANTED
512519	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	7/13/2010	PERMIT TO OPERATE GRANTED
512520	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	7/13/2010	PERMIT TO OPERATE GRANTED
504172	ACTIVE	Basic	AUTOCLAVE	12/4/2009	PERMIT TO OPERATE GRANTED

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Robinson Helicopter Co. Inc.		
FACILITY ADDRESS: 2901-31 Airport Dr.		
CITY: Torrance	STATE: CA	ZIP CODE: 90505
FACILITY I.D. NO. (if known): 100806	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

ROBINSON HELICOPTER CO INC - Facility 100806 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
546546				Basic	OVEN, DRYING	1/16/2013	PERMIT TO CONSTRUCT GRANTED
542860				Basic	OVEN, DRYING	9/18/2012	APPLICATION CHANGED FROM CLASS I - III
534347				Basic	OVEN, DRYING	3/27/2012	APPLICATION CHANGED FROM CLASS I - III
534349				Basic	OVEN, DRYING	3/27/2012	APPLICATION CHANGED FROM CLASS I - III
534352				Basic	OVEN, DRYING	3/27/2012	APPLICATION CHANGED FROM CLASS I - III
534346				Control	AFTERBURNER, DIRECT FLAME	3/27/2012	APPLICATION CHANGED FROM CLASS I - III
525095				Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	7/1/2011	APPLICATION CHANGED FROM CLASS I - III
523886				Basic	OVEN, DRYING	6/15/2011	APPLICATION CHANGED FROM CLASS I - III
523891				Control	AFTERBURNER, DIRECT FLAME	6/15/2011	APPLICATION CHANGED FROM CLASS I - III
479022	G11849	2/10/2011	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	3/6/2008	PERMIT TO OPERATE GRANTED
454420	F82293	5/25/2006	ACTIVE	Basic	ABRASIVE BLASTING (CABINET/MACHINE/ROOM)	3/8/2006	PERMIT TO OPERATE GRANTED
437241	F84119	9/15/2006	ACTIVE	Basic	OVEN, DRYING	11/18/2004	PERMIT TO OPERATE GRANTED
437244	F84121	9/15/2006	ACTIVE	Basic	OVEN, DRYING	11/18/2004	PERMIT TO OPERATE GRANTED

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Moog, Inc.		
FACILITY ADDRESS: 20263 S. Western Ave.		
CITY: Torrance	STATE: CA	ZIP CODE: 90501
FACILITY I.D. NO. (if known): 102334	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

MOOG, INC - Facility 102334 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
526613	G22020	12/13/2012	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	8/25/2011	PERMIT TO OPERATE GRANTED

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Raytheon Company		
FACILITY ADDRESS: 1970 E. Imperial Hwy.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 114997	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

RAYTHEON COMPANY - Facility 114997 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
535632	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	3/30/2012	PERMIT TO OPERATE GRANTED
535633	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	3/30/2012	PERMIT TO OPERATE GRANTED
501986		Basic	OVEN, CURING (RULE 1401 TOXICS)	9/8/2009	APPLICATION CHANGED FROM CLASS I - III

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 30 May 2013
COMPANY: CH2M HILL		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
☐ Equipment List Report (EQL)	☐ Emissions Summary	☐ Facility Positive Balance (NSR)
☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Raytheon Company		
FACILITY ADDRESS: 2000 E. El Segundo Blvd.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 115172	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

RAYTHEON COMPANY - Facility 115172 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
526591		Basic	SOLDER LEVELING	8/23/2011	ASSIGNED TO ENGINEER - CLASS III
526592		Basic	SOLDER LEVELING	8/23/2011	ASSIGNED TO ENGINEER - CLASS III
516648	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	11/30/2010	PERMIT TO OPERATE GRANTED
511772	ACTIVE	Basic	I C E (50-500 HP) EMERG OTHER, DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
511773	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
511774	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
511776	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
511777	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
511778	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
511779	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	6/16/2010	PERMIT TO OPERATE GRANTED
469577	ACTIVE	Basic	OVEN, DRYING	5/23/2007	PERMIT TO OPERATE GRANTED

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 30 May 2013
COMPANY: CH2M HILL		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

✔ Applications (APPLS)	☐ Complaints	☐ Asbestos Notifications/Records
✔ Permits to Operate (P/O)	☐ Site Inspection Reports (I/R)	☐ Facility Potential to Emit (PTE)
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Please send electronic copies of the permits, applications, and source test reports for the list of sources attached.

TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: AES Redondo Beach, LLC		
FACILITY ADDRESS: 1100 N. Harbor Dr.		
CITY: Redondo Beach	STATE: CA	ZIP CODE: 90277
FACILITY I.D. NO. (if known): 115536	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

AES REDONDO BEACH, LLC - Facility 115536 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
511883	ACTIVE	Basic	BOILER (< 2 mmBTU/HR) OIL FIRED	6/18/2010	PERMIT TO OPERATE GRANTED

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MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Prov. Hlth. Sys/Little Co. Mary Med. Ctr. Tor.		
FACILITY ADDRESS: 4101 Torrance Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90503
FACILITY I.D. NO. (if known): 146909	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

PROV HLTH SYS/LITTLE CO MARY MED CTR TOR - Facility 146909 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
452253	F82009	5/10/2006	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/2/2005	PERMIT TO OPERATE GRANTED
452258	F82010	5/10/2006	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/2/2005	PERMIT TO OPERATE GRANTED
452259	F82011	5/10/2006	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/2/2005	PERMIT TO OPERATE GRANTED
452263	F82012	5/10/2006	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	12/2/2005	PERMIT TO OPERATE GRANTED

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Air Liquide Large Industries U.S., LP		
FACILITY ADDRESS: 324 W. El Segundo Blvd.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 148236	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

AIR LIQUIDE LARGE INDUSTRIES U.S., LP - Facility 148236 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
457785	ACTIVE	Basic	HEATER/FURNACE (>50 MMBTU/HR)PROCESS GAS	6/2/2006	PERMIT TO OPERATE GRANTED
457657	ACTIVE	Basic	HYDROGEN PRODUCTION PLANT	6/2/2006	PERMIT TO OPERATE GRANTED
457788	ACTIVE	Control	FLARE SYSTEM, REFINERY	6/2/2006	PERMIT TO OPERATE GRANTED

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CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

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☐ Notices of Violation (NOV)	✔ Source Test Reports (S/T RPTS)	☐ Toxic-Health Risk Assessment (HRA)
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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Rreef America Reit III Corp. GG2		
FACILITY ADDRESS: 3100 W. Lomita Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90505
FACILITY I.D. NO. (if known): 150973	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

RREEF AMERICA REIT III CORP GG2 - Facility 150973 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
522744	G17313	3/22/2012	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	5/18/2011	PERMIT TO OPERATE GRANTED
522746	G17314	3/22/2012	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	5/18/2011	PERMIT TO OPERATE GRANTED
522747	G17315	3/22/2012	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	5/18/2011	PERMIT TO OPERATE GRANTED
522748	G17316	3/22/2012	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	5/18/2011	PERMIT TO OPERATE GRANTED

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: California Portland Cement Co.		
FACILITY ADDRESS: 5299 W. 111th St.		
CITY: Los Angeles	STATE: CA	ZIP CODE: 90045
FACILITY I.D. NO. (if known): 151346	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

CALIFORNIA PORTLAND CEMENT CO - Facility 151346 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Descripti	Appl_Date	Appl_Status
529699	G17334	3/23/2012	ACTIVE	Basic	CONCRETE BATCH EQUIPMENT	11/29/2011	PERMIT TO OPERATE GRANTED
466700	F92329	9/12/2007	ACTIVE	Basic	AGGREGATE CONVEYING	3/21/2007	PERMIT TO OPERATE GRANTED

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Arkema Inc.		
FACILITY ADDRESS: 19206 Hawthorne Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90503
FACILITY I.D. NO. (if known): 163088	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

ARKEMA INC. - Facility 163088 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Statu	Eq_Type	Equip_Description	Appl_Date	Appl_Status
516818	G17037	3/6/2012	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	12/7/2010	PERMIT TO OPERATE GRANTED
509285	G15124	9/28/2011	ACTIVE	Control	AFTERBURNER,/OXIDIZER, CATALYTIC	3/23/2010	PERMIT TO OPERATE GRANTED
506976	G7492	3/3/2010	ACTIVE	Basic	BOILER (	2/10/2010	PERMIT TO OPERATE GRANTED

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REQUESTOR INFORMATION

NAME: Jeff Shapiro		DATE: 30 May 2013
COMPANY: CH2M HILL		
MAILING ADDRESS: 150 Spear Street, Suite 750		
CITY: San Francisco	STATE: CA	ZIP CODE: 94105
PHONE NUMBER: 415.728.0664	FAX NUMBER: 415.728.0651	
EMAIL ADDRESS: Jeff.Shapiro@ch2m.com		

REQUESTED RECORDS (*3 items per form*)

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Verizon California Inc.		
FACILITY ADDRESS: 5431 Torrance Blvd.		
CITY: Torrance	STATE: CA	ZIP CODE: 90503
FACILITY I.D. NO. (if known): 52191	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

VERIZON CALIFORNIA INC - Facility 52191 Sources							
Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
542450	G20899	10/9/2012	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN DIESEL	8/30/2012	PERMIT TO OPERATE GRANTED

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☐ Notices to Comply (N/C)	☐ Air Monitoring Data	☐ Other (describe below or on additional pages):

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: California Portland Cement Co.		
FACILITY ADDRESS: 339 S. Aviation Blvd.		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 62649	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

***Direct cost of duplication**: $.15 per page for paper copies (first 10 pages free) and $5.00 per copied audio tape. No charge for copied Diskettes or CDs. Transfer of gathered electronic records onto CD or Diskette typically costs $10.00 each, but costs will vary (see Instructions for Requesting Records).*

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Signature of Requestor

CALIFORNIA PORTLAND CEMENT CO - Facility 62649 Sources				
Appl_Nbr	Eq_Type	Equip_Description	Appl_Date	Appl_Status
546944	Basic	CONCRETE BATCH EQUIPMENT	1/30/2013	ASSIGNED TO ENGINEER - CLASS I

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TIME PERIOD OF DOCUMENTS REQUESTED From: N/A To: N/A

REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: Honeywell International Inc.		
FACILITY ADDRESS: 2525 W. 190th St.		
CITY: Torrance	STATE: CA	ZIP CODE: 90504
FACILITY I.D. NO. (if known): 800003	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

HONEYWELL INTERNATIONAL INC - Facility 800003 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
501171	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	8/7/2009	PERMIT TO OPERATE GRANTED
498864	ACTIVE	Basic	BOILER (5-20 MMBTU/HR) NAT GAS ONLY	5/19/2009	PERMIT TO OPERATE GRANTED
498343		Basic	LASER CUTTER	4/30/2009	ASSIGNED TO ENGINEER - CLASS III
498344		Basic	LASER CUTTER	4/30/2009	ASSIGNED TO ENGINEER - CLASS III
498345		Basic	LASER CUTTER	4/30/2009	ASSIGNED TO ENGINEER - CLASS III
498346		Basic	LASER CUTTER	4/30/2009	ASSIGNED TO ENGINEER - CLASS III
498348		Basic	OVEN, DRYING	4/30/2009	ASSIGNED TO ENGINEER - CLASS III
486026		Basic	FACILITY PERMIT AMEND-RECLAIM/TITLE V	7/31/2008	ASSIGNED TO ENGINEER - CLASS III
475875		Basic	FURNACE OTHER MET OPS MISC METALS	11/20/2007	ASSIGNED TO ENGINEER - CLASS III
476239		Basic	FURNACE OTHER MET OPS MISC METALS	11/20/2007	ASSIGNED TO ENGINEER - CLASS III
475882		Basic	JET ENGINE TEST FACILITY OTHER FUEL	11/20/2007	APPLICATION CHANGED FROM CLASS I - III
475895		Basic	JET ENGINE TEST FACILITY OTHER FUEL	11/20/2007	APPLICATION CHANGED FROM CLASS I - III
475896		Basic	JET ENGINE TEST FACILITY OTHER FUEL	11/20/2007	APPLICATION CHANGED FROM CLASS I - III
475898		Basic	JET ENGINE TEST FACILITY OTHER FUEL	11/20/2007	APPLICATION CHANGED FROM CLASS I - III
476237		Basic	JET ENGINE TEST FACILITY OTHER FUEL	11/20/2007	APPLICATION CHANGED FROM CLASS I - III
475879		Basic	PLASMA ARC CUTTING	11/20/2007	APPLICATION CHANGED FROM CLASS I - III
475881		Basic	PLASMA ARC CUTTING	11/20/2007	APPLICATION CHANGED FROM CLASS I - III

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: The Boeing Company		
FACILITY ADDRESS: Imperial, Maple, Nash & Selby		
CITY: El Segundo	STATE: CA	ZIP CODE: 90245
FACILITY I.D. NO. (if known): 800067	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

THE BOEING COMPANY - Facility 800067 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
516670	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-DIESEL	11/30/2010	PERMIT TO OPERATE GRANTED
504037	ACTIVE	Basic	BOILER (	12/1/2009	PERMIT TO OPERATE GRANTED
504039	ACTIVE	Basic	BOILER (	12/1/2009	PERMIT TO OPERATE GRANTED
502324	ACTIVE	Basic	BOILER (	9/9/2009	PERMIT TO OPERATE GRANTED
502328	ACTIVE	Basic	BOILER (	9/9/2009	PERMIT TO OPERATE GRANTED
502323	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-NG & LPG	9/9/2009	PERMIT TO OPERATE GRANTED
495137	ACTIVE	Basic	I C E (50-500 HP) EM ELEC GEN-NG & LPG	1/8/2009	PERMIT TO OPERATE GRANTED
482769	ACTIVE	Basic	I C E (>500 HP) EM ELEC GEN-NG & LPG	5/20/2008	PERMIT TO OPERATE GRANTED

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REQUESTED FACILITY INFORMATION (If Applicable)

FACILITY NAME: LA City, DWP Scattergood Generating Stn.		
FACILITY ADDRESS: 12700 Vista Del Mar		
CITY: Playa Del Rey	STATE: CA	ZIP CODE: 90293
FACILITY I.D. NO. (if known): 800075	APPL. AND/OR PERMIT NO. (if known): See attached list of sources.	

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Signature of Requestor

LA CITY, DWP SCATTERGOOD GENERATING STN - Facility 800075 Sources					
Appl_Nbr	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
538662		Basic	BOILER UTILITY (>50 MW)NAT.GAS/RESID.OIL	6/15/2012	PERMIT TO CONSTRUCT GRANTED
536801		Basic	I C E (>500 HP) EM ELEC-GEN OTH FUEL	5/16/2012	PERMIT TO CONSTRUCT GRANTED
536783		Basic	TURBINE ENGINE (>50 MW) NAT GAS/DISTILL	5/16/2012	PERMIT TO CONSTRUCT GRANTED
536803		Basic	TURBINE ENGINE (>50 MW) NAT GAS/DISTILL	5/16/2012	PERMIT TO CONSTRUCT GRANTED
536805		Basic	TURBINE ENGINE (>50 MW) NAT GAS/DISTILL	5/16/2012	PERMIT TO CONSTRUCT GRANTED
534825	ACTIVE	Basic	BOILER UTILITY (>50 MW)NAT.GAS/RESID.OIL	4/5/2012	PERMIT TO OPERATE GRANTED
534826	ACTIVE	Basic	BOILER UTILITY (>50 MW)NAT.GAS/RESID.OIL	4/5/2012	PERMIT TO OPERATE GRANTED

Attachment DR14-1
SCAQMD Final Determination of Equivalency

BOARD MEETING DATE: September 6, 2013 AGENDA NO. 32

REPORT: Status Report on Regulation XIII – New Source Review

SYNOPSIS: This report presents the federal final determination of equivalency for January 2011 through December 2011. As such, it provides information regarding the status of Regulation XIII – New Source Review in meeting federal NSR requirements and shows that SCAQMD's NSR program is in final compliance with applicable federal requirements from January 2011 through December 2011.

COMMITTEE: Stationary Source, August 16, 2013, Reviewed

RECOMMENDED ACTION:
Receive and file the attached report.

Barry R. Wallerstein, D.Env.
Executive Officer

MN:WCT:GT:GEI

SUMMARY

SCAQMD's NSR Rules and Regulations are designed to comply with federal and state Clean Air Act requirements and to ensure that emission increases from new and modified sources do not interfere with efforts to attain and maintain the federal and state air quality standards, while economic growth in the South Coast region is not unnecessarily impeded. Regulation XIII - New Source Review regulates and accounts for all emission changes (both increases and decreases) from the permitting of new, modified, and relocated stationary sources within SCAQMD, excluding NOx and SOx sources that are subject to Regulation XX – Regional Clean Air Incentives Market (RECLAIM)[1].

[1] While the RECLAIM program is different than command and control rules for NOx and SOx and it provides greater regulatory flexibility to businesses, its NSR requirements, as specified in Rule 2005, are designed to comply with the governing principles of NSR contained in the federal Clean Air Act (CAA) and the California State Health and Safety Code.

Rule 1315 – Federal New Source Review Tracking System, was most recently adopted by the Governing Board on February 4, 2011 to maintain SCAQMD's ability to issue permits to major sources that require offsets, but obtain offset credits from the SCAQMD's Priority Reserve under Rule 1309.1, and/or that are exempt from offsets under SCAQMD Rule 1304. In addition, Rule 1315 requires that, commencing with calendar year 2010, and for each calendar year thereafter, the Executive Officer prepare a Preliminary Determination of Equivalency (PDE) and Final Determination of Equivalency (FDE) which cover NSR activities for twelve-month periods. The calendar year 2011 FDE is required to be reported to the SCAQMD Governing Board at the September 2013 Governing Board meeting. In addition, Rule 1315 requires the Executive Officer to aggregate and track offsets debited from and deposited to SCAQMD's offset accounts for specified periods between October 1, 1990 and December 31, 2005 and each calendar year from 2006 through 2030 for purpose of making periodic determinations of compliance. The last annual report submitted to the SCAQMD Governing Board on February 1, 2013 presented the PDE for calendar year 2011 and demonstrated that SCAQMD's NSR program continues to meet the federal offset requirements for calendar year 2011. Rule 1315 also requires that, commencing with calendar year 2011, and for each calendar year thereafter, the Executive Officer include in each FDE the cumulative net emission increase of each nonattainment air contaminant that occurred at major and minor facilities from February 4, 2011, the date of adoption of Rule 1315, through the end of the calendar year 2011 reporting period and through the end of each subsequent reporting period.

This report, which presents the FDE covering the calendar year 2011 reporting period, and includes the cumulative net emission increase of each nonattainment air contaminant, demonstrates compliance with federal NSR requirements by establishing aggregate equivalence with federal offset requirements for sources that were not exempt from federal offset requirements, but were either exempt from offsets under Rule 1304 or obtained their offsets from SCAQMD pursuant to Rule 1309.1 of Regulation XIII.

The FDE for calendar year 2011 is summarized in Table 1. Additionally, the projections of SCAQMD's federal offset account balances for January 2012 through December 2012 and January 2013 through December 2013, as specified and required pursuant to Rule 1315(e), are presented in Table 2. These results demonstrate that there were, and project that there will be, adequate offsets available to mitigate all applicable emission increases during these reporting periods. This report, therefore, demonstrates that, for calendar years 2011 through 2013, SCAQMD's NSR program continues to meet and is projected to meet federal offset requirements and is equivalent to those requirements on an aggregate basis[2]. Although U.S. EPA designated the SCAQMD as attainment with the federal CO standard effective June 11, 2007, SCAQMD will

[2] SCAQMD's NSR program is deemed to be equivalent to federal and state offset requirements because SCAQMD's ending offset account balances remained positive, indicating there were adequate offsets during this reporting period.

continue to track and report CO accumulated credits and account balances for informational purposes only.

This report also presents in Table 3 the cumulative net emission increase of each nonattainment air contaminant that occurred at major and minor facilities that were issued permits pursuant to Rule 1304 exemptions or Rule 1309.1 Priority Reserve from February 4, 2011, the date of adoption of Rule 1315, through the end of the calendar year 2011 reporting period, as required under Rule 1315(g). These results demonstrate that the cumulative net emission increase of each nonattainment air contaminant remained below the thresholds identified in Table B of Rule 1315(g)(4), and therefore the Executive Officer can continue to issue permits to construct and permits to operate that rely on further use of Rule 1304 exemptions or Rule 1309.1 Priority Reserve offsets to major and minor sources.

Table 1
Federal Offset Accounts FDE for January 2011 through December 2011

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2010 Actual Ending Balance[a] (ton/day)	**80.02**	**25.90**	**2.98**	**21.92**	**13.50**
2011 Discount of Credits for Surplus Adjustment[b] (ton/day)	0.00	0.00	0.00	0.00	0.00
Corrections to previous Credits/Debits[c] (ton/day)	-0.51	0.02	-0.30	-6.07	-1.25
Corrected 2011 Starting Balance (ton/day)	**79.51**	**25.92**	**2.68**	**15.85**	**12.25**
2011 Actual Total Credits[d] (lb/day)	9,633	1,915	398	3,772	1,815
2011 Actual Total Debits[d] (lb/day)	-529	-151	0	0	-432
Sum of Actual Credits/Debits[d] (lb/day)	9,104	1,764	398	3,772	1,383
Sum of Actual Credits/Debits[d] (ton/day)	4.55	0.88	0.20	1.89	0.69
2011 Ending Balance[e] (ton/day)	**84.06**	**26.80**	**2.88**	**17.74**	**12.94**

[a] "2010 Actual Ending Balance" is from Table 1 of the 2011 PDE Report dated February 1, 2013.

[b] This adjustment is surplus at the time of use discount, which is also discussed in Rule 1315(c)(4).

[c] Corrections include credits for minor source creditable ERC use for 2009/2010 and pre-2011 Rule 1304 debits that were incorrectly identified previously.

[d] For an explanation of the sources of credits and debits please refer to pages 8 and 9 of this report, as well as Rule 1315(c) and the February 4, 2011 Rule 1315 staff report. Credits are shown as positive and debits as negative, while sum of credits/debits are shown as positive or negative, as appropriate.

[e] "2011 Ending Balance" equals the "2010 Actual Ending Balance" plus any surplus adjustments, corrections, and the sum of actual credits and actual debits.

Table 2
Projections of SCAQMD's Federal Offset Account Balances for January 2012 through December 2012, and January 2013 through December 2013

DESCRIPTION	VOC	NOx	SOx	CO	PM10
2011 Ending Balance[a] (ton/day)	**84.06**	**26.80**	**2.88**	**17.74**	**12.94**
2012 Projected Discount of Credits for Surplus Adjustment[b] (ton/day)	-2.91	-1.03	0.00	-0.03	-0.09
2012 Projected Starting Balance (ton/day)	**81.15**	**25.77**	**2.88**	**17.71**	**12.85**
2012 Total Projected Credits[c] (lb/day)	12,260	3,940	440	4,480	1,560
2012 Total Projected Debits[c] (lb/day)	-580	-540	-20	-1200	-400
2012 Sum of Projected Credits/Debits[c] (lb/day)	**11,680**	**3,400**	**420**	**3,280**	**1,160**
2012 Sum of Projected Credits/Debits[c] (ton/day)	**5.84**	**1.70**	**0.21**	**1.64**	**0.58**
2012 Projected Ending Balance[d] (ton/day)	**86.99**	**27.47**	**3.09**	**19.35**	**13.43**
2013 Projected Discount of Credits for Surplus Adjustment[b] (ton/day)	-3.01	-1.05	0.00	-0.03	-0.10
2013 Projected Starting Balance (ton/day)	**83.98**	**26.42**	**3.09**	**19.32**	**13.33**
2013 Total Projected Credits[c] (lb/day)	12,260	3,940	440	4,480	1,560
2013 Total Projected Debits[c] (lb/day)	-580	-540	-20	-1200	-400
2013 Sum of Projected Credits/Debits[c] (lb/day)	**11,680**	**3,400**	**420**	**3,280**	**1,160**
2013 Sum of Projected Credits/Debits[c] (ton/day)	**5.84**	**1.70**	**0.21**	**1.64**	**0.58**
2013 Projected Ending Balance[e] (ton/day)	**89.82**	**28.12**	**3.30**	**20.96**	**13.91**

[a] "2011 Ending Balance" is as shown in Table 1.

[b] This adjustment is surplus at the time of use discount, which is also discussed in Rule 1315(c)(4).

[c] For an explanation of the sources of credits and debits please refer to pages 8 and 9 of this report, as well as Rule 1315(c) and the Rule 1315 staff report. Credits are shown as positive and debits as negative, while sum of credits/debits are shown as positive or negative, as appropriate.

[d] "2012 Projected Ending Balance" equals the "2011 Ending Balance" plus any projected surplus adjustments and the sum of projected credits and projected debits.

[e] "2013 Projected Ending Balance" equals the "2012 Projected Ending Balance" plus any projected surplus adjustments and the sum of projected credits and projected debits.

Table 3
Cumulative Net Emission Increase
(February 4, 2011 – December 31, 2011)

DESCRIPTION	VOC	NOx	SOx	CO	PM10
Increases in Potential to Emit[a] (ton/day)	3.38	1.06	0.18	NA	1.18
Decreases in Potential to Emit[b] (ton/day)	-5.14	-1.00	-0.15	NA	-1.01
Cumulative Net Emission Increase[c] (ton/day)	**-1.76**	**0.06**	**0.03**	**NA**	**0.17**
Rule 1315(g) Table B Threshold[d] (through December of 2011 - ton/day)	1.68	0.15	0.04	NA	0.24

[a] Increases in potential to emit that occur at major and minor facilities pursuant to Rule 1304 or Rule 1309.1.

[b] Decreases in potential to emit that occur at major and minor facilities pursuant to Rule 1304 or Rule 1309.1.

[c] "Cumulative Net Emission Increase" is the sum of the increases and decreases in the potential to emit that occur at major and minor facilities pursuant to Rule 1304 exemptions or Rule 1309.1 Priority Reserve.

BACKGROUND

SCAQMD originally adopted its New Source Review Rules and Regulations (NSR program) in 1976. U.S. EPA approved SCAQMD's NSR program into California's State Implementation Plan (SIP) initially on January 21, 1981 (46FR5965) and again on December 4, 1996 (61FR64291). Most recently, U.S. EPA approved SCAQMD's May 3, 2002 Rule 1309.1 amendments into the SIP on June 19, 2006. The original program has evolved into the current version of the Regulation XIII rules in response to federal and state legal requirements and the changing needs of the local environment and economy. Specific amendments to the NSR rules were adopted by SCAQMD's Governing Board on December 6, 2002 to facilitate and provide additional options for credit generation and use. Rule 1315 was adopted and re-adopted on September 8, 2006 and August 3, 2007, respectively. Rule 1309.1 was amended and replaced on September 8, 2006 and August 3, 2007, respectively. On November 3, 2008, in response to a law suit filed by a group of environmental organizations, a California State Superior Court Judge in the County of Los Angeles invalidated the August 3, 2007 adopted Rule 1315 and amendments to Rule 1309.1, and prohibited SCAQMD from taking any action to implement Rule 1315 or the amendments to Rule 1309.1 until it had prepared a new environmental assessment under the California Environmental Quality Act (CEQA). On February 4, 2011 SCAQMD adopted a revised and enhanced version of Rule 1315, which included a new CEQA assessment. The Governing Board decided not to readopt the Rule 1309.1 amendments allowing power plants to access credits from the Priority Reserve.

One element of SCAQMD's NSR program design is to offset emission increases in a manner at least equivalent to federal and state statutory NSR requirements. To this end, SCAQMD's NSR program implements the federal and state statutory requirements for NSR and ensures that construction and operation of new, relocated and modified stationary sources does not interfere with progress towards attainment of the National and State Ambient Air Quality Standards. SCAQMD's computerized emission tracking system is utilized to demonstrate equivalence with federal and state offset requirements on an aggregate basis. Specific NSR requirements of federal law are presented below.

Federal Law

The NSR requirements of federal law vary with respect to the area's attainment status and classification. Based on their classification, the South Coast Air Basin (SOCAB) and Salton Sea Air Basin (SSAB) must comply with the requirements for extreme and severe non-attainment areas, respectively, for ozone precursors (*i.e.*, VOC and NOx). Both the SOCAB and the SSAB must at this time comply with the requirements for serious non-attainment areas for PM10 and its precursors (*i.e.*, VOC, NOx, and SOx). SSAB is considered attainment for CO. Although effective June 11, 2007, U.S. EPA designated the SOCAB as attainment with federal CO standards, SCAQMD will continue to track and report CO accumulated credits and account balances for informational purposes only. Both SOCAB and SSAB are considered attainment for SO_2 and NO_2; however, SOx and NOx are precursors to pollutants for which both SOCAB and SSAB are designated as non-attainment[3]. The Mojave Desert Air Basin (MDAB) is currently classified as moderate non-attainment for ozone precursors (*i.e.*, VOC and NOx) and as attainment for NOx, SOx, and CO. Federal law requires the use of LAER and offsets for emissions of nonattainment pollutants (or their precursors) for new, modified, and relocated stationary sources, when the source is considered a major stationary source[4] for the nonattainment pollutants (or their precursors). Federal law requires the use of Lowest Achievable Emission Rate (LAER) and offsets for new, modified, and relocated major stationary sources. This report demonstrates compliance with the federal NSR offsets requirements.

OVERVIEW OF ANALYSIS METHODOLOGY

The two most important elements of federal non-attainment NSR requirements are LAER and emission offsetting for major sources. As set forth in SCAQMD's *Best*

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[3] SOx is a precursor to PM10 and NOx is a precursor to both PM10 and ozone.

[4] The major source thresholds for SOCAB, SSAB and MDAB, based on their attainment status during the calendar year 2007 through 2010 reporting periods are summarized below:

Pollutant	SOCAB	SSAB	MDAB
VOC	10 tons/year	25 tons/year	100 tons/year
NOx	10 tons/year	25 tons/year	100 tons/year
SOx	100 tons/year	100 tons/year	100 tons/year
PM10	70 tons/year	70 tons/year	100 tons/year
CO	50 tons/year	100 tons/year	100 tons/year

Available Control Technology (BACT) Guidelines, SCAQMD's BACT requirements are at least as stringent as federal LAER for major sources. Furthermore, the NSR emission offset requirements that SCAQMD implements through its permitting process ensure that sources provide emission reduction credits (ERCs) to offset their emission increases in compliance with federal requirements. As a result, these sources each comply with federal offset requirements by providing their own ERCs. However, certain sources are exempt from SCAQMD's offset requirements pursuant to Rule 1304 or qualify for offsets from SCAQMD's Community Bank (applications received between October 1, 1990 and February 1, 1996 only) or Priority Reserve, both pursuant to Rule 1309.1. SCAQMD has determined that providing offset exemptions and the Priority Reserve (as well as the previously-administered Community Bank) is important to the NSR program and the local economy while encouraging installation of BACT. Therefore, SCAQMD has assumed the responsibility of providing the necessary offsets for exempt sources, the Priority Reserve, and the Community Bank. This report examines deposits to and withdrawals from SCAQMD's emission offset accounts during calendar year 2011 and demonstrates programmatic equivalence on an aggregate basis with federal emission offset requirements for the sources exempt from providing offsets and the sources that receive offsets from the Priority Reserve or the Community Bank.

SCAQMD's Offset Accounts

For the purposes of this report, federal debit and credit accounting for SCAQMD's offset accounts was conducted pursuant to the same procedures previously agreed to by U.S. EPA and as delineated in Rule 1315 and described in the staff report. Each of the pollutants subject to offset requirements has its own federal offset account. SCAQMD's NSR program is considered to provide equivalent or greater offsets of emissions as required by federal requirements for each subject pollutant provided the balance of offsets left in SCAQMD's federal offset account for each pollutant remains positive, indicating that there were adequate offsets available.

Debit Accounting

SCAQMD tracks all emission increases that are offset through the Priority Reserve or the Community Bank, as well as all increases that are exempt from offset requirements pursuant to Rule 1304 – Exemptions. These increases are all debited from SCAQMD's federal offset accounts when they occur at federal major sources. For federal equivalency demonstrations, SCAQMD uses an offset ratio of 1.2-to-1.0 for extreme non-attainment pollutants (ozone and ozone precursors, *i.e.*, VOC and NOx) and uses 1.0-to-1.0 for all other non-attainment pollutants (non-ozone precursors, *i.e.*, SOx, CO, and PM10) to offset any such increases. That is, 1.2 pounds are deducted from SCAQMD's offset accounts for each pound of maximum allowable permitted potential to emit VOC or NOx increase at a federal source and 1.0 pound is deducted for each pound of maximum allowable permitted potential to emit SOx, CO, or PM10 at a federal source. A more detailed description of federal debit accounting is provided in the Rule 1315 staff report and Rule 1315(c)(2).

Credit Accounting

When emissions from a permitted source are permanently reduced (*e.g.*, installation of control equipment, removal of the source) and the emission reduction is not required by rule or law and is not called for by an AQMP control measure that has been assigned a target implementation date[5], the permit holder may apply for ERCs for the pollutants reduced. If the permit holder for the source generating the emission reduction had previously received offsets from SCAQMD or has a "positive NSR balance" (*i.e.*, pre-1990 net emission increase), the quantity of SCAQMD offsets used or the amount of the positive NSR balance is subtracted from the reduction and "paid back" to SCAQMD's accounts prior to issuance of an ERC pursuant to Rule 1306. In certain other cases, permit holders do not always submit applications to claim ERCs or do not qualify to obtain ERCs for their equipment shutdowns or other eligible emission reductions. These unclaimed reductions are referred to as "orphan shutdowns" and are deposited in SCAQMD's offset accounts. ERCs provided as offsets by major sources in excess of the applicable federally-required offset ratio and all ERCs provided as offsets by minor sources not subject to federal offset requirements are also deposited in SCAQMD's federal offset accounts. A more detailed description of federal credit accounting is provided in Rule 1315(c)(3)(A) and its staff report.

DETERMINATION OF EQUIVALENCY WITH FEDERAL OFFSET REQUIREMENTS

The federal offset requirements FDE for calendar year 2011 and the projections for calendar years 2012 and 2013 are summarized in Tables 1 and 2, respectively. The detailed listing of actual final withdrawals, deposits and sum of withdrawals and deposits are shown in Attachment I to this letter. Table A of Attachment I presents the final total emission increases withdrawn from SCAQMD's offset accounts from January 2011 through December 2011. Final deposits to SCAQMD's offset accounts during the same period are further summarized in Table B. The sums of final withdrawal and deposit activities are subsequently presented in Table C. Tables A through C present the results of the federal FDE for the calendar year 2011 reporting period.

These account balances, shown in Tables A through C reflect the tracking sequence described under Rule 1315(c)(5).

CALIFORNIA ENVIRONMENTAL QUALITY ACT CUMULATIVE NET EMISSION INCREASES

Pursuant to Rule 1315(g), cumulative net emission increases of nonattainment air contaminants at major and minor facilities are based on the sum of increases and decreases in potential to emit at major and minor facilities pursuant to Rule 1304 exemptions or Rule 1309.1 Priority Reserve.

[5] Refer to Rule 1309(b) for a complete explanation of eligibility requirements.

Increases in potential to emit for major and minor sources include potential to emit increases from the Priority Reserve or Community Bank pursuant to Rule 1309.1 and exemptions from the offset requirements of Rule 1303 – Requirements pursuant to Rule 1304 – Exemptions.

Decreases to potential to emit for major and minor sources include, but are not limited to, potential to emit reductions as a result of orphan shutdowns and/or orphan reductions.

Net emission increases must remain below the thresholds shown in Table B of Rule 1315 in order for the Executive Officer to be able to continue to issue permits to exempt sources pursuant to Rule 1304 or subject to Rule 1309.1 Priority Reserve.

CONCLUSIONS

The analysis presented in this report demonstrates the following:

- For calendar year 2011, SCAQMD's NSR program provides equivalent offsets to those required by federal NSR requirements and is at least equivalent to the federal requirements on an aggregate basis. This conclusion is based on the fact that the final ending offset account balances for this calendar year reporting period, as shown in Table 1, remained positive for all pollutants.
- SCAQMD's final offset account balances for 2012 and 2013 are projected to remain positive. This means that the sum of actual deposits to and actual withdrawals from SCAQMD's offset accounts during the 2011 reporting period was positive and, therefore, it demonstrates that SCAQMD's NSR program is equivalent to federal NSR requirements.
- From the date of adoption of Rule 1315 (February 4, 2011) to the end of calendar year 2011, the cumulative net emission increase of each nonattainment air contaminant at major and minor facilities remained below the thresholds identified in Table B of Rule 1315, and therefore the Executive Officer can continue to issue permits to construct and permits to operate that rely on further use of Rule 1304 exemptions or Rule 1309.1 Priority Reserve offsets to major and minor sources.

ATTACHMENTS

Attachment I – Detailed listing of actual final debits and credits, and sum of debits and credits

ATTACHMENT I

Detailed listing of actual final debits and credits, and sum of debits and credits

Table A
Total Actual Debits from SCAQMD's Federal Offset Accounts
(January 2011 through December 2011)

SCAQMD OFFSETS USED	VOC	NOx	SOx	CO	PM10
Priority Reserve (lb/day)	-16	-16	0	0	0
Community Bank (lb/day)	0	0	0	0	0
Rule 1304 Exemptions (lb/day)	-425	-110	0	0	-432
Sum Total of SCAQMD Offsets (lb/day)	-441	-126	0	0	-432
1.2-to-1.0 Offset Ratio (lb/day)	-88	-25	N/A	N/A	N/A
Total Actual Debits to SCAQMD Account (lb/day)	**-529**	**-151**	**0**	**0**	**-432**
Total Actual Debits to SCAQMD Account (ton/day)	**-0.26**	**-0.08**	**0**	**0**	**-0.22**

Table B
Total Actual Credits to SCAQMD's Federal Offset Accounts
(January 2011 through December 2011)

CREDITS RECEIVED	VOC	NOx	SOx	CO	PM10
Major Source Orphan Credits (lb/day)	1,209	470	0	777	32
Minor Source Orphan Credits (lb/day)	10,211	1,921	320	3,936	2,153
Total Orphan Credits (lb/day)	11,420	2,391	320	4,713	2,185
Adjustment to Actual Emissions* (lb/day)	-2,284	-478	-64	-943	-437
Discount of ERCs** (lb/day)	1	1	0	2	2
Creditable Minor Source ERC Use (lb/day)	496	1	142	0	65
Creditable Major Source ERC Use (lb/day)	0	0	0	0	0
Total Actual Credits to SCAQMD Account (lb/day)	9,633	1,915	398	3,772	1,815
Total Actual Credits to SCAQMD Account (ton/day)	**4.82**	**0.96**	**0.20**	**1.89**	**0.91**

* Adjustment of orphan shutdown and orphan reduction offset credits deposited in SCAQMD offset accounts to correct from potential emissions to actual emissions as discussed in Rule 1315(c)(3)(B)(i).

** Prior to issuance of ERCs, they are discounted for NSR "Payback," which includes payback of NSR balance, Community Bank and Priority Reserve allocations, and offset exemptions, as discussed in Rule 1315(c)(3)(A)(v) and Rule 1306(c).

Table C
Sum of Final Credits/Debits Activities in SCAQMD's Federal Offset Accounts
(January 2011 through December 2011)

	VOC	NOx	SOx	CO	PM10
Total Actual Debits* (lb/day)	-529	-151	0	0	-432
Total Actual Credits* (lb/day)	9,633	1,915	398	3,772	1,815
Sum of Actual Debits(-)/Credits(+)* (lb/day)	**9,104**	**1,764**	**398**	**3,772**	**1,383**
Sum of Actual Debits(-)/Credits(+)* (ton/day)	**4.55**	**0.88**	**0.20**	**1.89**	**0.69**

* Debits are shown as negative and Credits as positive, while their sum is shown as negative or positive, as appropriate.

Greenhouse Gas Emissions (16–19)

Confirmation of Heat Input and Operating Profile: Background

The Project Description in AFC Section 2.7, Thermal Efficiency, identifies a maximum fuel consumption (heat input) rate of 3,948 MMBtu/hr, although much higher heat input rates (5,996 MMBtu/hr) appear in the AFC Air Quality section (Table 5.1-16). Additionally, the SCAQMD will need to determine under the Prevention of Significant Deterioration (PSD) program whether the thermal efficiency achieves the Best Available Control Technology (BACT) for greenhouse gas emissions (GHG). The determination may also need to address compliance with New Source Performance Standards for Electric Utility Generating Units (revised proposal on September 20, 2013). These determinations will be based on SCAQMD's review of the proposed carbon dioxide (CO2) emissions rate and comparisons to similar power plants. Although RBEP would be a combined-cycle power plant and the project could be operated at base load (AFC Section 2.4), the applicant requests that since RBEP is designed for peak and intermediate loads it should be compared "with simple cycle or peaking units instead of combined-cycle or more base-loaded units" (GHG BACT analysis in Section 3 of AFC Appendix 5.1D).

DATA REQUEST

16. Please confirm the maximum heat input rates for the units, and describe what caused the apparent discrepancies in fuel consumption values in AFC Section 2.7 and AFC Air Quality Table 5.1-16.

Response: The maximum heat input rates presented in AFC Table 5.1-16 are accurate. The first difference between the heat input rate of 3,948 million British thermal units per hour (MMBtu/hr) in AFC Section 2.7 and that in AFC Table 5.1-16 is that they are presented on a different basis. The heat input rate in AFC Section 2.7 is on a lower heating value basis whereas the heat input rates in AFC Table 5.1-16 are presented on a higher heating value basis[1]. Secondly, the heat input rate in AFC Section 2.7 does not include any duct burner firing, as the RBEP steam cycle is not designed to accommodate the extra heat input of the duct burners when all three gas turbines are operating at maximum load (at base load operation). Whereas, the heat input rate in AFC Table 5.1-16 conservatively assumes all three heat recovery steam generators' duct burners are operating at the maximum firing rate. Duct burners are not used for power augmentation as is traditionally seen in CCGT applications, but only to bridge the generation capacity gap between each state of combined cycle operation, from a one-on-one operating stage to two-on-one operating stage.

DATA REQUEST

17. Please describe whether the applicant would be willing to accept a limit on facility-wide annual electrical output (megawatt hours per year) or CO2 emissions (metric tons per year), if necessary, for example, to avoid classification as a base-loaded facility for purposes of determining BACT for GHG emissions.

Response: The Applicant expects the SCAQMD to include CO_2-based emission limits in RBEP's Prevention of Significant Deterioration (PSD) permit. Based on recent PSD permits issued in California, the CO_2 emission limits take the form of a mass emission limit (pounds or tons of CO_2 per rolling 12-month average) and a GHG efficiency limit (in pounds per megawatt-hour for electrical generating facilities).

[1] Engineers typically present heat inputs on a lower heating value basis, whereas the air quality regulations require heat inputs be presented on a higher heating value basis.

DATA REQUEST

18. Under what condition would the RBEP need to limit operation to avoid the limit imposed by the data request above?

Response: The Applicant does not expect to need to limit RBEP operation to comply with applicable emission limits.

DATA REQUEST

19. How would RBEP comply with the (currently proposed) September 20, 2013 federal New Source Performance Standards for Electric Utility Generating Units (Proposed Rule at 40 CFR 60 Subpart TTTT)?

Response: As noted, the New Source Performance Standard for Electric Utility Generating Units (Title 40 of the Code of Federal Regulations [CFR], Part 60, Subpart TTTT) is proposed, not a final regulation. When Subpart TTTT is finalized, the Applicant will determine how RBEP will comply.

Biological Resources (20–25)

Nitrogen Deposition: Background

Impacts of excessive nitrogen deposition to plant communities include direct toxicity and changes in species composition among native species such as enhancement of nonnative invasive species. The increased dominance and growth of invasive annual grasses is especially prevalent in low-bio-mass vegetation communities that are naturally nitrogen limited. Although the Redondo Beach Energy Project (RBEP) site does not contain suitable habitat for listed species, there is critical habitat for western snowy plover, federally listed as threatened and a state Special Species of Concern, within 1 mile north of the project site and at the Madrona Marsh Nature Preserve, which is approximately 3.4 miles southeast. The Madrona Marsh Nature Preserve has federally listed fairy shrimp and vernal marsh, back dune, and vernal pool habitats that are sensitive to increased nitrogen levels. Although air emissions including nitrogen oxides (NOx) were discussed in the AFC, no model or data to determine the total nitrogen deposition rate as well as the extent of the plume from the proposed project site were provided. Energy Commission staff believes that nitrogen deposition resulting from emission of nitrogen oxides (NOx) and ammonia (NH3) during operation of the proposed project could have negative impacts on biological resources nearby if the nitrogen deposition plume covers these areas.

DATA REQUEST

20. Please quantify the existing baseline total nitrogen deposition rate, in the vicinity of the RBEP, in kilograms per hectare per year (kg/ha/yr). The geographical extent of the nitrogen deposition mapping should be directed by the results, i.e. extend geographically to where the deposition is considered below any stated threshold of significance for vegetation communities. Thresholds for nitrogen deposition by vegetation type are available within the March 2007 California Energy Commission report, titled “Assessment of Nitrogen Deposition: Modeling and Habitat Assessment, “ available at: http://www.energy.ca.gov/2006publications/CEC-500- 2006-032/CEC-500-2006-032.PDF, and the May 2007 California Energy Commission PIER report, titled “Impacts of Nitrogen Deposition on California Ecosystems and Biodiversity, available at: http://www.enerqv.ca.00v/2005publications/CEC-500-2005-165/CEC-500-2005- 165.PDF. Please include references and guidelines used in your baseline analyses.

Response: The nitrogen deposition analysis will be provided by December 6, 2013.

DATA REQUEST

21. Please use AERMOD or an equivalent model to provide an analysis of impacts due to total nitrogen deposition from operation of the RBEP. The analysis should specify the amount of total nitrogen deposition in kg/ha/yr at the designated critical habitat for western snowy plover (Charadrius nivosus nivosus), Madrona Marsh Nature Preserve, and any other sensitive vegetation communities or habitats that occur in the project area for wet and dry deposition. Please provide complete citation for references used in determining this number.

Response: An analysis of potential impacts due to nitrogen deposition from operation of the RBEP will be provided by December 6, 2013.

DATA REQUEST

22. Please provide an isopleths graphic over the most recent aerial photographs (or equally detailed maps) of the direct nitrogen deposition rates caused by the RBEP. This will be a graphical depiction of the project's nitrogen deposition.

Response: An isopleths graphic over recent aerial photographs will be provided by December 6, 2013.

DATA REQUEST

23. Please provide a comprehensive cumulative impact analysis for the nitrogen deposition in kg/ha/yr caused by RBEP in combination with other reasonably foreseeable projects and provide an isopleths graphic over the most recent aerial photographs of the nitrogen deposition values.

Response: A comprehensive cumulative impact analysis for nitrogen deposition caused by RBEP in combination with other foreseeable projects will be provided by December 6, 2013.

El Segundo Blue Butterfly

Habitat for the El Segundo blue butterfly (federally endangered) occurs along the southeastern shores of Santa Monica Bay. It has been the target of major restoration efforts by numerous government agencies, including the city of Redondo Beach. No impact analysis for this species was provided in the AFC. This species has been observed at the Esplanade Bluff Cliffs south of the project site (Aaron Jones pers. comm.).

DATA REQUEST

24. Please provide an impact (direct and indirect) analysis and proposed mitigation measures for any significant impacts to the El Segundo Blue Butterfly.

Response: The project will have no direct impacts on the federally endangered El Segundo blue butterfly (*Euphilotes battoides allyni)* because there is no suitable habitat for this species within the project site or in the immediate surrounding area. The RBEP site is within the historical range of the El Segundo blue butterfly, but the project site does not contain the necessary habitat or food source necessary for the El Segundo blue butterfly. The El Segundo blue butterfly is dependent on the coast buckwheat (*Erioginum parvifolium*) as a food source (USFWS, 1998) and for reproduction. The coast buckwheat does not occur within the RBEP site or in the immediate surrounding area. Currently, there are three extant populations within Los Angeles County that include the Los Angeles International Airport (LAX) dunes, Chevron butterfly preserve, and Malaga Cove (CBD, 2013). According to the Center for Biological Diversity (CBD, 2013), a single male was reported within Ballona Wetlands in 1985. According to Redondo Beach Planning Staff (in communication with Staff), this species has been observed at the Esplanade Bluff Cliffs, approximately 0.6 mile south of the RBEP.

The only potential indirect impact on this species from the operation of the RBEP is associated with nitrogen deposition. A discussion of potential nitrogen deposition impacts, if any, will be provided by December 6, 2013.

Given the project design, the use of natural gas, and the implementation of control technologies, among other factors, no additional mitigation measures are required for potential direct impacts, because there will be no direct impacts to the species and there is no suitable habitat for this species within the project site. Mitigation measures for potential significant indirect impacts from nitrogen deposition, if any, will be discussed in the response to be provided by December 6, 2013.

<u>References:</u>

Center for Biological Diversity (CBD). 2013. El Segundo blue. Available online at: http://www.biologicaldiversity.org/campaigns/esa_works/profile_pages/ElSegundoBlueButterfly.html

United States Fish and Wildlife Service (USFWS). 1998. Recovery Plan for the El Segundo blue butterfly blue (*Euphilotes battoides allyni*). Portland, Oregon, 67 pp.

Western Burrowing Owl

The AES Redondo Application Data Adequacy Assessment (TN 69046) submitted by Building a Better Redondo, NoPowerPlant.com, and Redondo City Councilman Bill Brand mentions an observation of burrowing owl (State Species of Special Concern and protected under the Migratory Bird Treaty Act) in the Southern California Edison right-of-way east of the project site. A reconnaissance survey was conducted on September 29, 2011, which is too late to detect species that may utilize the area for nesting or foraging. Although the project site provides no habitat for the species, any existence of potential suitable foraging habitat near the project site should be analyzed.

DATA REQUEST

25. Please provide an impact (direct and indirect) analysis for burrowing owl and proposed mitigation measures for any significant impacts.

Response: An impact analysis for burrowing owl (*Athene cunicularia*) was not included in the AFC because there is no suitable habitat for this species on the RBEP site or the immediate surrounding area. In addition, there are no California Natural Diversity Database (CNDDB) occurrences recorded within 1 mile of the RBEP. A CNDDB search was also conducted to provide information on special-status species, including burrowing owl, that occur within a 10-mile radius of the RBEP site. The nearest documented occurrence of burrowing owl was thirty-two years ago in 1981, approximately 8 miles northwest of RBEP within the Ballona Wetlands(CDFG, 2012). Because there is no suitable habitat for burrowing owl on the RBEP site, and no burrowing owls were or have been observed or documented on the RBEP site for decades, no direct impacts to burrowing owl are expected. Because there will be no significant impacts, no additional mitigation measures (beyond the project site selection and design) are proposed.

Staff states that the reconnaissance survey conducted on September 29, 2011, was “too late to detect species that may utilize the area for nesting or foraging.” However, the purpose of the reconnaissance survey was to assess the site and surrounding area for suitable habitat (similar to a Phase I survey), which can be conducted anytime during the year. A Phase III: Burrowing Owl Survey need only be conducted during the breeding season if the Phase I: Habitat Assessment and Phase II: Burrow Survey yield positive results (CBOC, 1993). The project site and the immediate surrounding area does not contain suitable habitat for burrowing owl. There is offsite marginal habitat in an unaffected industrial area (the Southern California Edison right-of-way located to the northeast from the project boundary identified by Building a Better Redondo, Building a Better Redondo, NoPowerPlant.com, and Redondo Beach city Councilman Bill Brand). However, this unaffected off-site area is located outside of the burrowing owl’s current breeding range (Shuford and Gardali, 2008). This off-site area is also separated from the project by intervening land uses and activities. There are, among other structures, facilities, infrastructure and uses, a mini-storage facility and two major roads (Herondo Street and North Francisca Avenue) between this unaffected area and the project site. Significantly, no project demolition or construction activities will occur in this off-site area and the storage facility and roads act as a buffer between the RBEP and this off-site area. Therefore, the RBEP is not expected to affect burrowing owls.

References:

California Burrowing Owl Consortium (CBOC). 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. April.

California Department of Fish and Game (CDFG). 2012. California Natural Diversity Database and RareFind Database – search within 10 miles of RBEP. Available online at: http://www.dfg.ca.gov/biogeodata/cnddb/

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. *Studies of Western Birds 1*. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Noise and Vibration (26–30)

BACKGROUND

AFC § 5.7 and Appendix 5.7A provide existing ambient noise measurements and analysis of project noise impacts at only two receptor locations, one to the south and another to the west of the project site, designated M1 and M2 (respectively) in AFC Figure 5.7-1. No noise measurements or analysis for the residential communities northwest, northeast, and southeast of the site have been provided in the AFC. For staff to adequately evaluate project noise impacts at all of the project's noise-sensitive receptors within both Redondo Beach and Hermosa Beach, staff needs the following data.

DATA REQUEST

26. Please perform 25-hour continuous ambient noise measurements at or near the residential areas in Hermosa Beach north of Herondo Street and northwest of the project site, particularly at the single-family residences on Herondo Street bounded by Hermosa Avenue, Lyndon Street, and Monterey Blvd (AFC Figure 2.1-1) and provide the results in terms of Leq, L10, L50, L901 Lmin and Lmax. Using these measurements, calculate the average Lgo for the four quietest consecutive hours during the nighttime period of 10 p.m. — 7 a.m. and the average Leq for the daytime period of 7 a.m. —10 p.m.

Response: A notice of objection to Data Requests 26 through 28 was filed on November 4, 2013.

DATA REQUEST

27. Please perform 25-hour continuous ambient noise measurements at or near the residential areas in Hermosa Beach north of Herondo Street and northeast of the project site, particularly at the multifamily residences bounded by 1st and 2nd Streets, Valley Drive and Ardmore Avenue (AFC Figure 5.7-3) and provide the results in terms of Leq, L10, L50, L90, Lmin and Lmax. Using these measurements, calculate the average Lgo for the four quietest consecutive hours during the nighttime period of 10 p.m. — 7 a.m. and the average Leg for the daytime period of 7 a.m. —10 p.m.

Response: A notice of objection to Data Requests 26 through 28 was filed on November 4, 2013.

DATA REQUEST

28. Please perform 25-hour continuous ambient measurements at or near the residential areas in Redondo Beach east of North Catalina Avenue bounded by Beryl Street, North Elena Avenue, and North Broadway (AFC Figure 2.1-1) and provide the results in terms of Leq, L10, L50, L90, Lmin and Lm.. Using these measurements, calculate the average Lgo for the four quietest consecutive hours during the nighttime period of 10 p.m. — 7 a.m. and the average Leg for the daytime period of 7 a.m. — 10 p.m.

Response: A notice of objection to Data Requests 26 through 28 was filed on November 4, 2013.

DATA REQUEST

29. Provide the expected project operational noise levels at the locations described in Data Requests 26 and 27 above and compare these noise levels with the applicable city of Hermosa Beach noise limitations given in AFC Table 5.7-14 and Figure 5.7-3.

Response: The project is located in Redondo Beach. Prior to the start of construction, the Project Owner's engineering contractor will determine the necessary acoustical design treatments to ensure that the applicable City of Redondo Beach noise standards are satisfied. The project is not located in Hermosa Beach and is not subject to Hermosa Beach noise limitations; nevertheless, the expected project operational noise level at residential uses in Hermosa Beach is anticipated to be 50 dBA as shown in Figure 5.7-3 of the AFC.

DATA REQUEST

30. Provide the expected project operational noise level at the location described in Data Request 28 above and compare this noise level with the applicable city of Redondo Beach noise limitations given in AFC Tables 5.7-12 and 5.7-13 and Figure 5.7-2.

Response: Prior to the start of construction, the Project Owner's engineering contractor will determine the necessary acoustical design treatments to ensure that the City of Redondo Beach noise standards are satisfied. The expected project operational noise level at the closest residence on N. Elena Avenue is less than 55 dBA. A project level of 55 dBA complies with the applicable City of Redondo Beach noise limitations at this location.

Socioeconomics (31–33)

Background: Construction Workforce

Table 5.10-B from Appendix 5.10-B of the AFC presents the RBEP craft construction workforce by month and by trade type (e.g. boilermakers, carpenters, plumbers). This information is helpful for staff to match up workforce needs with labor supply, as reported by the California Employment Development Department's Projections of Employment by Industry and Occupation. Table 5.10-B does not specify the supervisors by trade type or standard occupation classification code (SOC). So that staff can more accurately match project workforce with labor supply, please provide information on the supervisor workforce as described below.

DATA REQUEST

31. Please identify the types of occupations associated with the supervisor labor estimates provided in Table 5.10-B of the AFC. This should include a description of the work conducted by each type of supervisor and the identification of an associated SOC code, where applicable.

Response: Attachment DR31-1 identifies the construction workforce by craft. The difference between Table 5.10-B, which was submitted with the AFC, and Attachment DR31-1 is that Attachment DR31-1 shows the breakdown of the supervisory category by types of occupations.

Background: Housing

The region of influence for socioeconomics impacts associated with the RBEP is identified on page 5.10-1 of the AFC as the city of Redondo Beach and Los Angeles County. Housing data has been provided for the region of influence, specifically the number of housing units by type (e.g. single-family, multi-family, mobile homes) and vacancy rate. The housing impacts discussion on page 5.10-9 of the AFC notes there are numerous hotels/motels in Los Angeles County and other neighboring counties to accommodate workers who may choose to commute to the project site on a workweek basis. The AFC also notes there are a few recreational vehicle (RV) parks within driving distance of Redondo Beach.

So staff can analyze the potential project impacts related to the adequate supply of housing and lodging, additional information is needed, as identified below.

DATA REQUEST

32. Please provide hotel/motel lodging availability in the project area (the cities in and adjacent to the project area six mile buffer), including the number of hotels/motels and lodging rooms in the project area and average occupancy rate.

Response: Los Angeles County[2] has a total of 1,150 hotel/motel properties. From October 2012 to September 2013, there were, on average, about 96,900 hotel/motel rooms with average occupancy rates of 76.4 percent. The average daily room rate, during this period, was about $134 (STR, 2013).

In addition, there are approximately 1,383 hotel/motel rooms within Redondo Beach as of October 2013, as identified in Table DR32-1. Average monthly occupancy rates between October 2012 and September 2013

[2] To obtain data for each individual city within a 6 mile radius (approximately 10 cities, plus unincorporated county areas) is cost prohibitive due to the highly populated area, therefore only data from Los Angeles County and the City of Redondo Beach has been provided.

for all the hotels/motels shown in the table was 79.1 percent while the average daily room rate during the same period was approximately $112.

TABLE DR32-1
Hotels/Motels in Redondo Beach, California

Name of Establishment	Class	No. of Rooms
Ramada Limited Redondo Beach	Midscale	40
Redondo Pier Lodge	Economy	37
Crowne Plaza Redondo Beach & Marina	Upscale	342
Moonlite Inn	Economy	23
Redondo Inn & Suites	Economy	36
Pacific Coast Inn	Economy	20
Palos Verdes Inn	Midscale	107
Best Western Plus Sunrise Hotel @ Redondo Beach Marina	Upper Midscale	111
Best Western Plus Redondo Beach Inn	Upper Midscale	108
Portofino Hotel	Upper Upscale	161
Closed Vagabond Inn Redondo Beach	Midscale	0
Hilton Garden Inn Los Angeles Redondo Beach	Upscale	147
Residence Inn Los Angeles Redondo Beach	Upscale	172
Seaside Motel	Economy	28
Best Western Redondo Beach Galleria Inn	Midscale	51
Total		**1,383**

Source: Smith Travel Research (STR). 2013. *Trend Reports for City of Redondo Beach and Los Angeles County*.

DATA REQUEST

33. Please provide the names and number of spaces at campgrounds and RV parks available for use by the project's workforce.

Response: Table DR33-1 lists the names and number of spaces of campgrounds and RV parks within 6 miles of the project site.

TABLE DR33-1
RV Parks and Campgrounds within 6 miles of RBEP

Name	Housing Type	Address	Distance from RBEP	Contact Information/Source	Number of Spaces	Availability/Notes
B & D Development	RV Park	1820 S Elena Ave Redondo Beach, CA 90277-5700	2.5 miles	Angie, (310) 373-8955	19 spaces	Long-term facility, no vacancies right now. They don't have openings very often, but there is a waiting list.
Dockweiler RV Park	RV Park	12001 Vista del Mar, Playa del Rey, CA 90293	6 miles	Susanna, (310) 322-4951; marinadelrey.lacounty.gov/BandH/Beaches/DockweilerRVPark.htm	117 spaces (4 of which are disabled spaces)	• Very busy during the summer months of May –mid October. Slower during the winter months, especially during February through April. • Closed in January • Allowed to stay in a space for up to 21 days in a 60 day period • Take reservations up to 24 hours in advance, but no more than 90 days in advance.
Cresta Mobile Home Park	Mobile Home Park with some RV spaces	2345 190th St # 31, Redondo Beach, CA 90278	1.7 miles	Joe, (310) 376-5793	10 spaces	• Mainly a mobile home park, with 10 RV spaces • Long-term facility, so availability depends. Currently have two spaces available. • Must be 55 years of age or older • Must have a model year 2000 RV or newer
Royal Western Mobile Home Park	Mobile Home Park with some RV spaces	17705 S Western Ave, Gardena, CA 90248	5 miles	Carmen, (310) 323-6703	Varies	Mainly a mobile home park, but if they have an area that is vacant of a mobile home, they will rent it out to RVs. Availability varies, for example, there is currently one RV onsite. Month-to-month rentals.
Hopkins Wilderness Park	Campground	1102 Camino Real Redondo Beach, CA 90277	2 miles	(310) 318-0668; http://www.redondo.org/depts/public_works/parks/hopkins.asp	90 person capacity	Only open for overnight camping on Friday and Saturday nights. No RV spaces.

Attachment DR31-1
Construction and Demolition Personnel by Month

Attachment DR 31
Construction and Demolition
Personnel by Month

DEMOLITION UNITS 1-4	2016												2017												2018										
	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV
Month After Commencement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Carpenters	14	18	28	30	34	40	40	40	40	30	28	24																							
Laborers	10	10	16	16	16	16	16	14	14	12	12	10																							
Teamsters	0	0	0	0	0	0	0	0	0	0	0	0																							
Electricians	3	3	5	6	6	6	6	6	5	5	5	3																							
Iron Workers	3	3	3	6	6	6	6	6	6	3	3	3																							
Millwrights	4	4	4	8	8	8	8	8	8	4	4	4																							
Boilermakers	0	0	0	0	0	0	0	0	0	0	0	0																							
Plumbers	0	0	0	0	0	0	0	0	0	0	0	0																							
Piling Crew	2	2	2	2	2	2	0	0	0	0	0	0																							
Insulation Workers	5	5	6	6	6	6	6	6	6	6	5	5																							
Operating Engineers	2	2	4	4	4	4	4	4	4	4	4	4																							
Oilers / Mechanics	0		0	0	0	0	0	0	0	0	0	0																							
Cement Finishers	0	0	0	0	0	0	0	0	0	0	0	0																							
Roofers	0	0	0	0	0	0	0	0	0	0	0	0																							
Sheetmetal Workers	0	0	0	0	0	0	0	0	0	0	0	0																							
Sprinkler Fitters	0	0	0	0	0	0	0	0	0	0	0	0																							
Painters	0	0	0	0	0	0	0	0	0	0	0	0																							
TOTAL CRAFT LABOR	**43**	**47**	**68**	**78**	**82**	**88**	**86**	**84**	**83**	**64**	**61**	**53**																							
Construction Managers	1	1	1	1	1	1	1	1	1	1	1	1																							
Engineering Managers																																			
Engineers	1	1	1	1	1	1	1	1	1	1	1	1																							
Civil Engineers																																			
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	1	1	1	1	1	1	1	1	1	1	1	1																							
Carpenters Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
Electricians Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
Insulation Workers, Mechanical - Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
Structural Iron and Steel Workers Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
Millwrights Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
Construction Laborers Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
Operating Engineers and Other Construction Equipment Operators - Supervisor	1	1	1	1	1	1	1	1	1	1	1	1																							
TOTAL SUPERVISION	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**																							
TOTAL MANPOWER	**53**	**57**	**78**	**88**	**92**	**98**	**96**	**94**	**93**	**74**	**71**	**63**																							

Attachment DR 31
Construction and Demolition
Personnel by Month

Power Block Construction	2016												2017												2018										
	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV
Month After RBEP Commencement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Piling Crew																10	10	10	10																
Carpenters															4	4	8	8	12	12	12	12	12	12	12	20	25	25	25	25	30	30	30	30	30
Laborers															4	4	6	10	15	15	15	15	15	15	15	25	30	30	30	30	35	35	35	35	35
Teamsters															4	4	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Electricians															6	6	8	8	8	12	12	12	12	12	12	12	25	25	25	25	25	25	25	25	25
Ironworkers															6	6	10	10	10	10	4	4	4	4	6	6	12	12	12	12	42	42	42	42	42
Millwrights																						4	4	4	6	6	6	6	6	6	6	6	6	6	6
Boilermakers																						10	10	10	10	10	15	15	15	15	15	15	15	15	15
Plumbers															4	4	6	6	10	10	10	10	10	10	10	10	14	14	14	14	14	14	14	14	14
Pipefitters																			6	6	6	6	8	8	8	8	12	12	12	12	12	12	12	12	12
Insulation workers																						4	4	4	4	6	8	8	8	8	13	13	13	13	13
Operating Enginneers															2	2	4	4	8	8	8	12	12	12	12	15	15	15	15	15	15	15	15	15	15
Oilers / Mechanics															2	2	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Cement Finishers															3	3	4	8	8	10	10	10	10	10	10	10	12	12	12	12	17	17	17	17	17
Roofers																											8	8	8	8	8	8	8	8	8
Sheetmetal Workers																								8	8	8	8	8	8	8	13	13	13	13	13
Sprinkler Fitters																				6	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8
Painters																																6	6	6	6
TOTAL CRAFT LABOR															**35**	**45**	**65**	**73**	**99**	**101**	**95**	**117**	**119**	**127**	**131**	**156**	**210**	**210**	**210**	**210**	**265**	**271**	**271**	**271**	**271**
Construction Managers															1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1
Engineering Managers																1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1
Engineers																			1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Civil Engineers																		1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors															1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mechanical Engineers																		1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Boilermakers																					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carpenters Supervisor																1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Electricians Supervisor																					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Insulation Workers, Mechanical - Supervisor																					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Plumbers, Pipefitters, and Steamfitters																					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Structural Iron and Steel Workers Supervisor																			1	1	1	1	1	1	1	2	2	2	2	2	3	2	2	1	1
Millwrights Supervisor																					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Construction Laborers Supervisor																			1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1
Operating Engineers and Other Construction Equipment Operators - Supervisor																			1	1	1	1	1	1	1	2	2	2	2	2	3	2	2	1	1
TOTAL SUPERVISION															**2**	**4**	**4**	**6**	**10**	**10**	**15**	**15**	**15**	**15**	**15**	**20**	**20**	**20**	**20**	**20**	**25**	**20**	**20**	**15**	**15**
TOTAL MANPOWER															**37**	**49**	**69**	**79**	**109**	**111**	**110**	**132**	**134**	**142**	**146**	**176**	**230**	**230**	**230**	**230**	**290**	**291**	**291**	**286**	**286**

Attachment DR 31
Construction and Demolition
Personnel by Month

DEMOLITION EXISTING UNITS 7&8 and 5&6	2016												2017												2018										
	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV
Month After RBEP Commencement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Carpenters																																			
Laborers																																			
Teamsters																																			
Electricians																																			
Iron Workers																																			
Millwrights																																			
Boilermakers																																			
Plumbers																																			
Pipe Fitters																																			
Insulation Workers																																			
Operating Engineers																																			
Oilers / Mechanics																																			
Cement Finishers																																			
Roofers																																			
Sheetmetal Workers																																			
Sprinkler Fitters																																			
Painters																																			
TOTAL CRAFT LABOR																																			
Construction Managers																																			
Engineers																																			
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors																																			
Construction Laborers Supervisor																																			
Operating Engineers and Other Construction Equipment Operators - Supervisor																																			
TOTAL SUPERVISION																																			
TOTAL MANPOWER																																			

Attachment DR 31
Construction and Demolition
Personnel by Month

CONSTRUCT CONTROL/ADMIN BLDG., WATER TREATMENT BLDG. AND SOUND WALL	2016												2017												2018										
	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV
Month After RBEP Commencement																																			**35**
Piling Crew																																			0
Carpenters																																			4
Laborers																																			5
Teamsters																																			2
Electricians																																			2
Ironworkers																																			2
Millwrights																																			0
Boilermakers																																			0
Plumbers																																			3
Pipefitters																																			0
Insulation workers																																			0
Operating Enginneers																																			2
Oilers / Mechanics																																			1
Cement Finishers																																			2
Masons																																			0
Sheetrockers																																			0
Roofers																																			0
Sheetmetal Workers																																			0
Sprinkler Fitters																																			0
Painters																																			0
I & C - Control Room																																			0
TOTAL CRAFT LABOR																																			**23**
Construction Managers																																			1
Engineering Managers																																			1
Civil Engineers																																			
Electrical Engineers																																			
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors																																			1
Mechanical Engineers																																			
TOTAL SUPERVISION																																			**3**
TOTAL MANPOWER																																			**26**

TOTAL	**53**	**57**	**78**	**88**	**92**	**98**	**96**	**94**	**93**	**74**	**71**	**63**	**0**	**0**	**37**	**49**	**69**	**79**	**109**	**111**	**110**	**132**	**134**	**142**	**146**	**176**	**230**	**230**	**230**	**230**	**290**	**291**	**291**	**286**	**312**
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

Attachment DR 31
Construction and Demolition
Personnel by Month

DEMOLITION UNITS 1-4		2019												2020												MAN MONTHS	DAYS / MO.	MAN DAYS	HRS / DAY	MAN HOURS
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC					
Month After Commencement	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60					
Carpenters																										366	23	8418	10	84180
Laborers																										162	23	3726	10	37260
Teamsters																										0	23	0	10	0
Electricians																										59	23	1357	10	13570
Iron Workers																										54	23	1242	10	12420
Millwrights																										72	23	1656	10	16560
Boilermakers																										0	23	0	10	0
Plumbers																										0	23	0	10	0
Piling Crew																										12	23	276	10	2760
Insulation Workers																										68	23	1564	10	15640
Operating Engineers																										44	23	1012	10	10120
Oilers / Mechanics																										0	23	0	10	0
Cement Finishers																										0				0
Roofers																										0				0
Sheetmetal Workers																										0				0
Sprinkler Fitters																										0				0
Painters																										0				0
TOTAL CRAFT LABOR																										**837**	**23**	**19251**	**10**	**192510**
Construction Managers																										12	23	276	10	2760
Engineering Managers																										0	23	0	10	0
Engineers																										12	23	276	10	2760
Civil Engineers																										0	23	0	10	0
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors																										12	23	276	10	2760
Carpenters Supervisor																										12	23	276	10	2760
Electricians Supervisor																										12	23	276	10	2760
Insulation Workers, Mechanical - Supervisor																										12	23	276	10	2760
Structural Iron and Steel Workers Supervisor																										12	23	276	10	2760
Millwrights Supervisor																										12	23	276	10	2760
Construction Laborers Supervisor																										12	23	276	10	2760
Operating Engineers and Other Construction Equipment Operators - Supervisor																										12	23	276	10	2760
TOTAL SUPERVISION																										**120**	**23**	**2760**	**10**	**27600**
TOTAL MANPOWER																										**957**	**23**	**22011**	**10**	**220110**

Attachment DR 31
Construction and Demolition
Personnel by Month

Power Block Construction		2019												2020												MAN MONTHS	DAYS / MO.	MAN DAYS	HRS / DAY	MAN HOURS
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC					
Month After RBEP Commencement	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60					
Piling Crew				10	10	10																				70	23	1610	10	16100
Carpenters	30	30	20	10	4	4	4																			480	23	11040	10	110400
Laborers	35	35	25	15	8	4	4																			575	23	13225	10	132250
Teamsters	8	8	8	8	4	4	4																			200	23	4600	10	46000
Electricians	25	25	20	16	8	8																				447	23	10281	10	102810
Ironworkers	42	42	40	35	31	25	25																			578	23	13294	10	132940
Millwrights	6	6	6	6	4	4																				110	23	2530	10	25300
Boilermakers	15	15	10	10	4	4																				243	23	5589	10	55890
Plumbers	14	14	10	11	11	5	5																			296	23	6808	10	68080
Pipefitters	12	12	10	10	4	4																				216	23	4968	10	49680
Insulation workers	13	13	9	9	9	9	9																			190	23	4370	10	43700
Operating Enginneers	15	15	12	4	4	4																				288	23	6624	10	66240
Oilers / Mechanics	4	4	3	2	2	2																				95	23	2185	10	21850
Cement Finishers	17	17	17	11	7	7	4																			309	23	7107	10	71070
Roofers	8	8	6	11	11	11	4																			131	23	3013	10	30130
Sheetmetal Workers	13	13	13	13	13	13																				199	23	4577	10	45770
Sprinkler Fitters	8	8			5	5	5																			147	23	3381	10	33810
Painters	6	6	6	6	6	6	6																			66	23	1518	10	15180
TOTAL CRAFT LABOR	**271**	**271**	**215**	**187**	**145**	**129**	**70**																			**4640**	**23**	**106720**	**10**	**1067200**
Construction Managers	1	1	1	1	1	1	1																			36	23	828	10	8280
Engineering Managers	1	1	1	1	1	1	1																			35	23	805	10	8050
Engineers	1	1	1	1	1	1	1																			25	23	575	10	5750
Civil Engineers	1	1	1	1	1	1	1																			26	23	598	10	5980
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	1	1	1	1	1	1	1																			28	23	644	10	6440
Mechanical Engineers	1	1	1	1	1	1	1																			26	23	598	10	5980
Boilermakers	1	1	1																							18	23	414	10	4140
Carpenters Supervisor	1	1	1	1	1	1	1																			27	23	621	10	6210
Electricians Supervisor	1	1	1																							18	23	414	10	4140
Insulation Workers, Mechanical - Supervisor	1	1	1																							18	23	414	10	4140
Plumbers, Pipefitters, and Steamfitters	1	1	1																							18	23	414	10	4140
Structural Iron and Steel Workers Supervisor	1	1	1	1	1	1	1																			33	23	759	10	7590
Millwrights Supervisor	1	1	1																							18	23	414	10	4140
Construction Laborers Supervisor	1	1	1	1	1	1	1																			32	23	736	10	7360
Operating Engineers and Other Construction Equipment Operators - Supervisor	1	1	1	1	1	1	1																			33	23	759	10	7590
TOTAL SUPERVISION	**15**	**15**	**15**	**10**	**10**	**10**	**10**																			**391**	**23**	**8993**	**10**	**89930**
TOTAL MANPOWER	**286**	**286**	**230**	**197**	**155**	**139**	**80**																			**5031**	**46**	**115713**	**20**	**1157130**

Attachment DR 31
Construction and Demolition
Personnel by Month

DEMOLITION EXISTING UNITS 7&8 and 5&6		2019												2020												MAN MONTHS	DAYS / MO.	MAN DAYS	HRS / DAY	MAN HOURS
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC					
Month After RBEP Commencement	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60					
Carpenters		8	20	20	20	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	20	20	16	16	780	23	17940	10	179400
Laborers		4	8	8	8	14	14	18	18	18	18	18	18	18	18	18	18	18	18	14	14	8	8	8	8	332	23	7636	10	76360
Teamsters		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	10	0
Electricians		0	4	4	4	4	4	8	8	8	8	8	8	8	8	8	8	8	8	4	4	4	4	4	0	136	23	3128	10	31280
Iron Workers		0	4	4	4	4	4	8	8	8	8	8	8	8	8	8	8	8	8	4	4	4	4	0	0	132	23	3036	10	30360
Millwrights		0	0	0	0	6	6	10	10	10	10	10	10	10	10	10	10	10	10	6	6	0	0	0	0	144	23	3312	10	33120
Boilermakers		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0		0
Plumbers		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0		0
Pipe Fitters		0	0	0	0	0	0	6	6	6	6	6	6	6	6	6	6	6	6	0	0	0	0	0	0	72	23	1656	10	16560
Insulation Workers		2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	4	4	136	23	3128	10	31280
Operating Engineers			4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	92	23	2116	10	21160
Oilers / Mechanics																												0		0
Cement Finishers																														0
Roofers																														0
Sheetmetal Workers																														0
Sprinkler Fitters																														0
Painters																														0
TOTAL CRAFT LABOR		**14**	**46**	**46**	**46**	**78**	**78**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**78**	**78**	**46**	**46**	**36**	**32**	**1824**	**23**	**41952**	**10**	**419520**
Construction Managers		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	23	552	10	5520
Engineers								1	1	1	1	1	1	1	1	1	1	1	1							12	23	276	10	2760
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	23	552	10	5520
Construction Laborers Supervisor								1	1	1	1	1	1	1	1	1	1	1	1							12	23	276	10	2760
Operating Engineers and Other Construction Equipment Operators - Supervisor		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	23	552	10	5520
TOTAL SUPERVISION		**3**	**3**	**3**	**3**	**3**	**3**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**3**	**3**	**3**	**3**	**3**	**3**	**96**	**23**	**2208**	**10**	**22080**
TOTAL MANPOWER		**17**	**49**	**49**	**49**	**81**	**81**	**105**	**105**	**105**	**105**	**105**	**105**	**105**	**105**	**105**	**105**	**105**	**105**	**81**	**81**	**49**	**49**	**39**	**35**	**1920**	**23**	**44160**	**10**	**441600**

Attachment DR 31
Construction and Demolition
Personnel by Month

CONSTRUCT CONTROL/ADMIN BLDG., WATER TREATMENT BLDG. AND SOUND WALL		2019												2020												MAN MONTHS	DAYS / MO.	MAN DAYS	HRS / DAY	MAN HOURS
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC					
Month After RBEP Commencement	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60					
Piling Crew	0	0	0	10	10	0	0	0	0	0	0	0	0													20	23	460	10	4,600
Carpenters	4	4	4	4	10	10	10	10	10	10	10	10	6													106	23	2,438	10	24,380
Laborers	5	5	5	5	15	15	15	15	15	15	15	15	10													155	23	3,565	10	35,650
Teamsters	2	4	4	4	6	6	6	6	6	6	6	6	1													65	23	1,495	10	14,950
Electricians	2	2	4	4	4	4	4	4	4	4	4	4	0													46	23	1,058	10	10,580
Ironworkers	2	4	4	4	14	14	14	14	14	14	10	10	4													124	23	2,852	10	28,520
Millwrights	0	0	0	0	0	0	0	0	0	0	0	0	0													0				0
Boilermakers	0	0	0	0	0	0	0	0	0	0	0	0	0													0				0
Plumbers	3	3	3	3	2	2	2	4	4	4	0	0	0													33	23	759	10	7,590
Pipefitters	0	0	0	2	2	2	2	2	2	0	0	0	0													12	23	276	10	2,760
Insulation workers	0	0	0	0	5	5	5	7	7	7	7	7	3													53	23	1,219	10	12,190
Operating Enginneers	4	4	4	4	6	5	5	5	4	4	4	4	1													56	23	1,288	10	12,880
Oilers / Mechanics	2	2	2	2	3	3	3	3	3	3	3	3	1													34	23	782	10	7,820
Cement Finishers	2	2	2	2	7	7	7	7	7	7	5	5	5													67	23	1,541	10	15,410
Masons	0	0	2	2	7	7	7	7	7	7	5	5	5													61	23	1,403	10	14,030
Sheetrockers	0	0	0	0	0	0	0	0	0	0	0	0	0													0		0		0
Roofers	0	0	0	0	0	0	3	3	3	3	3	3	0													18	23	414	10	4,140
Sheetmetal Workers	2	2	2	2	4	4	4	4	4	4	4	4	1													41	23	943	10	9,430
Sprinkler Fitters	0	0	0	0	0	0	4	4	4	4	4	0	0													20	23	460	10	4,600
Painters	0	0	0	0	0	0	3	3	3	3	3	3	0													18	23	414	10	4,140
I & C - Control Room	0	0	0	0	4	4	4	4	4	4	4	4	0													32	23	736	10	7,360
TOTAL CRAFT LABOR	**28**	**32**	**36**	**48**	**99**	**88**	**98**	**102**	**101**	**99**	**87**	**83**	**37**													**961**	**23**	**22,103**	**10**	**221,030**
Construction Managers	1	1	1	1	1	1	1	1	1	1	1	1	1													14	23	322	10	3,220
Engineering Managers	1	1	1	1	1	1	1	1	1	1	1	1	1													14	23	322	10	3,220
Civil Engineers				1	1	1	1	1	1	1	1	1														9	23	207	10	2,070
Electrical Engineers				1	1	1	1	1	1	1	1	1														9	23	207	10	2,070
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	1	1	1	1	1	1	1	1	1	1	1	1	1													14	23	322	10	3,220
Mechanical Engineers				1	1	1	1	1	1	1	1	1														9	23	207	10	2,070
TOTAL SUPERVISION	**3**	**3**	**3**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**3**													**69**	**23**	**1,587**	**10**	**15,870**
TOTAL MANPOWER	**31**	**35**	**39**	**54**	**105**	**94**	**104**	**108**	**107**	**105**	**93**	**89**	**40**													**1,030**	**23**	**23,690**	**10**	**236,900**

TOTAL	**317**	**338**	**318**	**300**	**309**	**314**	**265**	**213**	**212**	**210**	**198**	**194**	**145**	**105**	**105**	**105**	**105**	**105**	**105**	**81**	**81**	**49**	**49**	**39**	**35**	**8938**				
MONTH	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60					

Traffic and Transportation (34–40)

BACKGROUND

AFC Figure 5.12-3 depicts the heavy/oversize truck route that would be used to deliver heavy and large project components to the site from the Port of Long Beach.

Staff has identified several schools and child care facilities on Torrance Boulevard, 223rd Street, and Aviation Boulevard along the proposed heavy/oversize haul route, including but not limited to, Bishop Montgomery High School, St. Abraam Child Care, Meyler Street Elementary, Carson High School, Dolores Street Elementary, Delores Children Center, Meyler Street Elementary School, Wilmington Christian School and Broad Avenue Elementary.

Often schools have events and activities in the evenings that spectators, parents and students may attend. Although the AFC states that the heavy and oversized loads would be permitted for late night deliveries, it is not clear when those deliveries would occur and there is no discussion of this in the Environmental Analysis section.

DATA REQUEST

34. Please provide the time frame that the heavy/oversize components would be transported to the project site.

Response: Heavy/oversize components would typically be transported between the hours of 10:00 p.m. and 4:00 a.m., when traffic volumes are lowest. Late night transport of heavy/oversize loads is common practice to minimize conflicts with general traffic.

DATA REQUEST

35. Please provide a discussion of the feasibility of an alternate heavy/oversize haul route(s) that would avoid schools and residential areas to the greatest possible extent.

Response: As discussed in Data Request #34, the heavy/oversize components would typically be transported between the hours of 10:00 p.m. and 4:00 a.m. There would be no school-related traffic on the route at this time. Furthermore, the number of heavy vehicle trips would be minimal, with a maximum of three deliveries per month for six months.

A Heavy Haul Transportation Study was conducted by Intermountain Rigging and HeavyHaul (IRH) to identify the safest and most efficient heavy haul route while taking into consideration permitting requirements for weight, length, width, and height. The preferred route was selected based on existing designated truck routes. The final route or routes will be determined when the heavy/oversize load permits are submitted to the appropriate jurisdictions. The IRH study, the common practice of late night deliveries, and the local heavy/oversize load permitting process will help to ensure the safest route to and from the project site for all residents, workers, and drivers in the affected jurisdictions.

BACKGROUND

In addition to the heavy/oversize haul route, AFC Section 5.12.1.4 (Truck Routes) identifies several potential routes for project-related trucks (construction, demolition, and operations). It appears that a portion of Aviation Boulevard used for the project truck traffic may lie within the city of Hermosa Beach and the city of Lawndale. In addition, there is reference to the use of Compton Boulevard within the city of Redondo Beach.

The AFC does not include a figure identifying the potential truck routes within the project vicinity and although staff has reviewed the potential routes, it appears that Compton Boulevard is not within the city of Redondo Beach limits. In addition, the cities of Hermosa Beach and Lawndale are not included in the list of jurisdictions having permit authority. It is unclear as to which jurisdictions will be impacted by the truck routes.

DATA REQUEST

36. Please provide a map identifying the potential truck routes that may be utilized during the construction, demolition and operations of the proposed project as discussed in AFC Section 5.12.1.4.

Response: Figure DR36-1 identifies the truck routes in the study area which may be used by trucks delivering material to the project, including those located in the cities of Manhattan Beach, Hermosa Beach, Redondo Beach, Torrance, and Lawndale. The truck routes shown on Figure DR36-1 provide direct access to Pacific Coast Highway, State Route 107 and Interstate 405.

All of the designated truck routes within the City of Redondo Beach were listed in the AFC for reference; however, not all of these streets may be used. The City of Redondo Beach Municipal Code, Title 3 (Public Safety), Chapter 7 (Traffic) Article 9 (Truck Routes) identifies Compton Boulevard (within the City limits) as a designated truck route, even though it is outside of the City limits. Compton Boulevard is also outside of the project study area and is not anticipated to be used by the project related trucks.

DATA REQUEST

37. Please identify on the map the jurisdictional boundaries that the truck routes cross, and provide an analysis of how the project would comply with truck route requirements for each jurisdiction.

Response: The jurisdictional boundaries within the project study area are identified on Figure DR36-1 and include the cities of Manhattan Beach, Hermosa Beach, Redondo Beach, Torrance, and Lawndale. The Los Angeles County Department of Public Works issues transportation permits on behalf of the City of Lawndale. Additional permits would be required from Caltrans (for state highways), the City of Long Beach, and for additional roads accessed under the jurisdiction of Los Angeles County. Required permits will be obtained prior to deliveries being scheduled.. Each agency is responsible for issuance and compliance with their permits.

BACKGROUND

As identified in the Section 5.12.2.2.1 (Construction Trip Generation), the applicant proposes to use a passenger car equivalent (PCE) ratio of 1.5 passenger cars for each truck and refers to the 2000 Highway Capacity Manual (HCM) guidelines.

The most recent Transportation Research Board HCM was updated for 2010 and recent project staff assessments have used higher PCE ratios for local road impact analysis. Staff has confirmed that the PCE ratio used in the AFC is appropriate for the city of Redondo Beach. However, as indicated above, it is unclear as to what routes may be utilized and the corresponding jurisdictions.

DATA REQUEST

38. Please explain why the 2000 HCM was used for the traffic analysis instead of the recently updated 2010 HCM.

Response: The traffic analysis for the AFC was conducted according to the general methodologies and procedures outlined in the2000 HCM (e.g. LOS analysis, application of PCEs, etc.). However, the criteria applicable to RBEP is the same in both HCM 2000 and HCM 2010.

An additional review of the analysis conducted in the AFC confirms that the methodologies used in the RBEP AFC traffic analysis are consistent with the 2010 HCM methodologies and procedures. Therefore there would be no change in the analysis or findings of the traffic analysis if the 2010 HCM was used.

DATA REQUEST

39. Please provide updated tables that identify all the agencies that would have permitting authority, associated applicable LORS, and contact information.

Response: Figure DR36-1 identifies designated truck routes located in two additional jurisdictions (City of Manhattan Beach and City of Hermosa Beach). Tables 5.12-13R through 5.12-15R, have been updated to include the additional jurisdictions. Updates to each table are **bolded** and <u>underlined</u>. The vehicles used to transport heavy equipment and construction materials will require transportation permits when they exceed the size, weight, width, or length thresholds set forth in Section 35780 of the CVC, Sections 117 and 660–711 of the California State Highway Code, and Sections 1411.1 to 1411.6 of the CCRs.

BACKGROUND

As identified in the Section 5.12.1.1.3 (Existing Intersection LOS), the applicant identifies that only the PM peak hour was analyzed because this “provides the most conservative traffic operations analysis.” It is unclear why analysis of only the PM peak hour is most conservative.

DATA REQUEST

40. Please explain why analysis of only the PM peak hour and why both the AM and PM peak hour was not considered for the most conservative analysis of traffic operations.

Response: The *Traffic Study for the Harbor and Pier Zoning Amendments* (Fehr and Peers, 2010) contains AM and PM peak hour turning movement counts and LOS calculations for a number of intersections in the study area, including the four study intersections. The traffic data were reviewed for all of the study intersections. In each case, traffic volumes were highest during the PM peak hour. Also, the LOS is the same or worse in the PM peak hour at every intersection. Therefore, the RBEP analysis conservatively focused on the PM peak hour and is representative of peak traffic conditions in both the AM and PM.

TABLE 5.12-13**R**
Laws, Ordinances, Regulations, and Standards for Traffic and Transportation

LORS	Requirements/Applicability	Administering Agency	AFC Sections Explaining Conformance
Federal			
49 CFR, Section 172, 173 and 179	Requires proper handling and storage of hazardous materials during transportation.	U.S. Department of Transportation and Caltrans	Project and transportation will comply with all standards for the transportation of hazardous materials. (Section 5.12.2.4, 5.12.2.5 and 5.12.7)
14 CFR, Section 77.13(2)(i), 77.17, 77.21, 77.23, and 77.25	Requires an applicant to notify the FAA of the construction or alterations of structures within certain distance from an airport, in order to avoid air navigation conflicts.	U.S. Department of Transportation and Federal Aviation Administration	No airports are within 20,000 feet of the project site; However as part of the analysis for the RBEP, a FAA Notice Criteria Tool has been used to determine whether RBEP meets Federal Aviation Regulation 77.13 (FAR §77.13) requirements regarding the need to notify FAA of RBEP construction. The notice criteria tool results are provided in Appendix 3B. Although all structures are well under 200 feet in height, the FAA criteria tool indicates that the RBEP stacks are located within the proximity to a navigation facility and may affect the assurance of navigation signal reception. Based on the results of this evaluation, an FAA Form 7460-1, Notice of Proposed Construction or Alteration has been filed with the FAA and is provided in Appendix 3C. (Section 5.12.2.6)
State			
CVC §13369, 15275, and 15278	Addresses the licensing of drivers and classifications of licenses required for the operation of particular types of vehicles.	Caltrans	The project will conform to these sections in the CVC. (Section 5.12.2.4, 5.12.2.5, and 5.12.7)
CVC §32100.5	Addresses the safe transport of hazardous materials.	Caltrans	The project will conform to these sections in the CVC. (Section 5.12.2.4, 5.12.2.5, and 5.12.7)
S&HC §660, 670, 1450, 1460 et seq., 1470, and 1480	Regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.	Caltrans	The project will conform to these sections in the S&HC. (Section 5.12.1.2 and 5.12.7)
S&HC §117, 660–711	Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	Caltrans	Encroachment permits will be obtained by transporters, as required. (Section 5.12.1.2 and 5.12.7)
CVC §35780; S&HC §660–711	Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Caltrans	Transportation permits will be obtained by transporters for all overloads, as required. (Section 5.12.1.2 and 5.12.7)
CVC §35550–35559	Regulates weight and load limitations.	Caltrans	The project will conform to these sections in the CVC. (Section5.12.1.2 and 5.12.7)
California State Planning Law, Government Code Section 65302	Project must be consistent with the General Plan.	City of Redondo Beach	Project will comply with the City of Redondo Beach's General Plan. (Section 5.12.2 and 5.12.4)

TABLE 5.12-13**R**
Laws, Ordinances, Regulations, and Standards for Traffic and Transportation

LORS	Requirements/Applicability	Administering Agency	AFC Sections Explaining Conformance
CVC, 13 CCR 1160, et seq.	Provides the CHP with authority to adopt regulations for the transportation of hazardous materials in California. The CHP can issue permits and specify the route for hazardous material delivery.	California Highway Patrol	The project will conform to these sections in the CVC. (Section 5.12.2.4, 5.12.2.5 and 5.12.7)
Local			
Los Angeles County Code; Chapter 16.22 MOVING PERMITS	Requires a permit for vehicles or vehicle combinations exceeding statutory limitations (as to size, weight, and loading of vehicles) on County roadways, and roads on some local jurisdictions	Los Angeles County	The project will conform to these sections in the County code. (Section 5.12.1.2 and 5.12.7)
City of Long Beach Municipal Code	Requires a special permit for overweight vehicles (greater than 80,000 pounds, but no more than 95,000 pounds).	City of Long Beach	The project will conform to these sections in the municipal code. (Section 5.12.1.2 and 5.12.7)
City of Los Angeles Municipal Code	Requires an overload permit for vehicles or vehicle combinations exceeding statutory limitations (as to size, weight, and loading of vehicles) on City roadways.	City of Los Angeles	The project will conform to these sections in the municipal code. (Section 5.12.1.2 and 5.12.7)
Circulation Element of the City of Redondo Beach General Plan	Specifies long-term transportation planning goals and policies in the City of Redondo Beach.	City of Redondo Beach	The project will have no significant impact on the City's traffic and transportation infrastructure. (Section 5.12.2 and 5.12.4)
City of Redondo Beach Municipal Code	Title 3, Chapter 7, Article 9 of Municipal Code requires a transportation permit for haul route and oversized loads. Exceptions to designated route are allowed if trucks are going directly to a business for deliveries/pickups.	City of Redondo Beach	The project will conform to these sections in the municipal code. (Section 5.12.1.2 and 5.12.7)
City of Torrance Municipal Code	Requires a street use permit for vehicles or vehicle combinations exceeding statutory limitations (as to size, weight, and loading of vehicles) on City roadways.	City of Torrance	The project will conform to these sections in the municipal code. (Section 5.12.1.2 and 5.12.7)
City of Hermosa Beach	**Chapter 10.24 of the Municipal Code designates truck routes and truck travel on designated routes.**	**City of Hermosa Beach**	**The project will conform to these sections in the municipal code. (Section 5.12.1.2 and 5.12.7)**
City of Manhattan Beach Municipal Code	**Title 14, Chapter 14.64 of the Municipal Code requires a street use permit for haul route and oversized loads.**	**City of Manhattan Beach**	**The project will conform to these sections in the municipal code. (Section 5.12.1.2 and 5.12.7)**

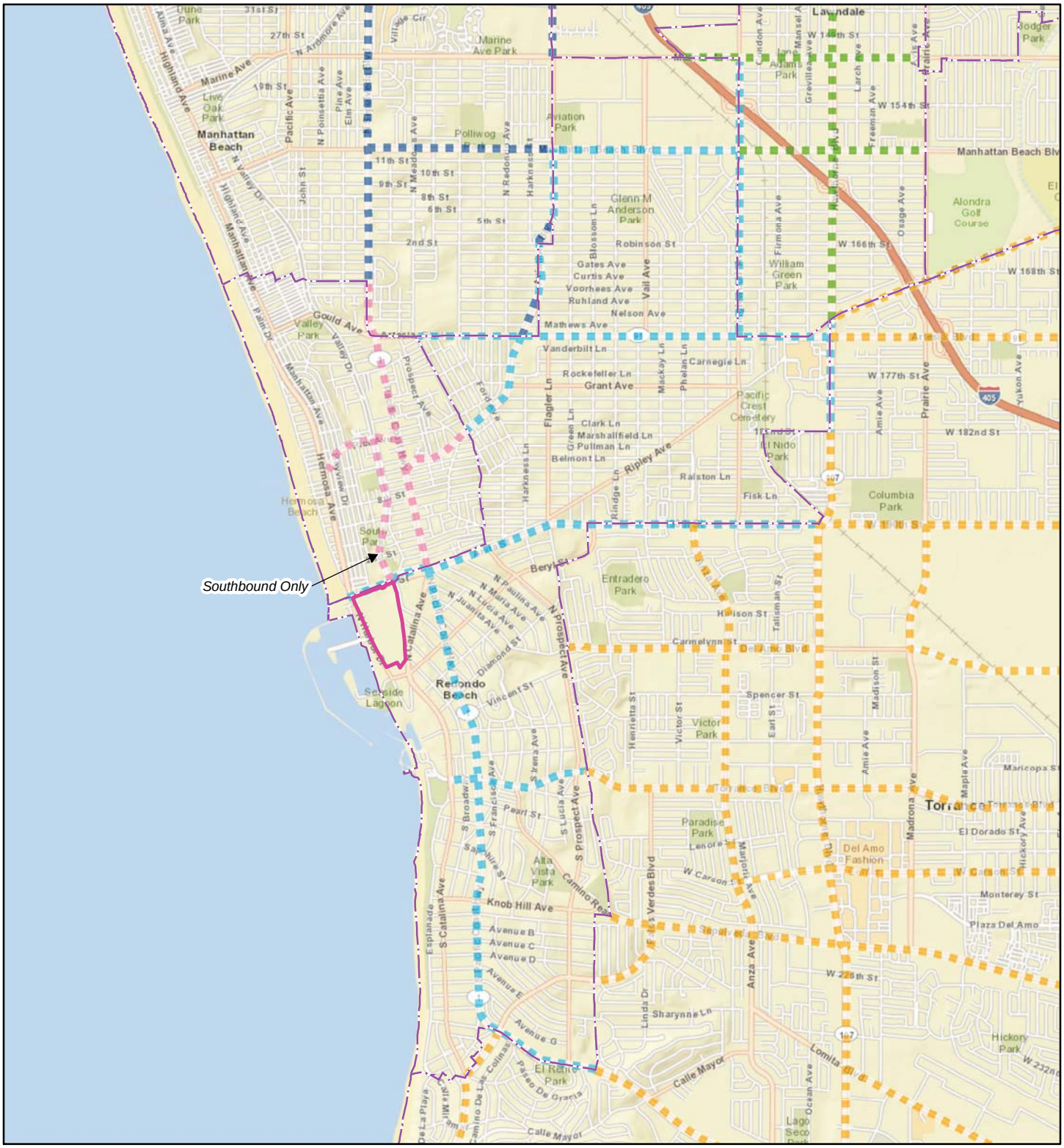
S&HC = California Streets and Highways Code

TABLE 5.12-14**R**
Agency Contacts for Traffic and Transportation

Issue	Agency	Persons Contacted
Transportation Permit for Oversized Loads	Caltrans	Eric Gunn Caltrans Transportation Permit Transportation Permits Office 1823 14th Street Sacramento, CA 95811 (916) 322-4116
Hazardous Material Transportation License	California Highway Patrol	Liz Silva California Highway Patrol Hazardous Material Licensing Program (916) 843-3445
Transportation Permit for Oversized or Overweight Loads	Los Angeles County	Los Angeles County Department of Public Works Transportation Permitting Desk 900 South Fremont Avenue, 8th Floor Alhambra, CA 91803 (626) 458-3126
Overload Permit	City of Los Angeles	City of Los Angeles Department of Public Works Bureau of Street Services Investigation & Enforcement Division 1149 South Broadway Street, 3rd Floor Los Angeles, CA 90015 (213) 847-6000
Overweight Vehicle Special Permit	City of Long Beach	Wing Ma City of Long Beach Department of Public Works, Traffic and Transportation Bureau 333 West Ocean Boulevard, 10th floor Long Beach, CA 90802 (562) 570-6676
Transportation Permit for Haul Route and Oversized Loads	City of Redondo Beach	John Mate, Transportation Engineer City of Redondo Beach, Engineering Division Redondo Beach City Hall 415 Diamond Street, Door Redondo Beach, CA 90277 (310) 318-0661 John.Mate@redondo.org
Street Use Permit	City of Torrance	City of Torrance Community Development Permits and Mapping Division Torrance City Hall 3031 Torrance Blvd. Torrance, CA 90503 (310) 618-2550 CDDInfo@TorranceCA.Gov
Transportation Permit	**City of Hermosa Beach**	**City of Hermosa Beach** **1315 Valley Drive** **Hermosa Beach, CA 90254** **(310) 318-0239**
Street Use Permit	**City of Manhattan Beach**	**City of Manhattan Beach** **1400 Highland Avenue** **Manhattan Beach, CA 90266** **(310) 802-5353**

TABLE 5.12-15**R**
Permits and Permit Schedule for Traffic and Transportation

Permit	Agency Contact	Schedule
Single/annual-trip transportation permit for oversized loads and oversized vehicles	Eric Gunn Caltrans Transportation Permit Transportation Permits Office 1823 14th Street Sacramento, CA 95811 (916) 322-4116	Obtain when necessary, 2 day processing time (single trip) to 2 weeks (annual trip).
Hazardous materials transportation license	Liz Silva California Highway Patrol Hazardous Material Licensing Program (916) 843-3445	Obtain when necessary, approximately 2-week processing time.
Transportation Permit	Los Angeles County Public Works Transportation Permitting Desk (626) 458-3126	Obtain when necessary, approximately 2-week processing time.
Overload Permit	City of Los Angeles Department of Public Works (213) 847-6000	Obtain when necessary, approximately 2-week processing time.
Oversize Vehicle and Haul Route Permits	Wing Ma City of Long Beach Department of Public Works, Traffic and Transportation Bureau 333 West Ocean Boulevard, 10th floor Long Beach, CA 90802 (562) 570-6676	Obtain when necessary, approximately 1-week processing time.
Haul Route and Oversized Vehicle Permit	City of Redondo Beach Engineering Division Tel: (310) 318-0661	Obtain when necessary, approximately 1-week processing time.
Street Use Permit	City of Torrance Community Development Department (310) 618-5990	Obtain when necessary, approximately 1-week processing time. Permit must be signed by the City of Torrance Police Department,
Transportation Permit	**City of Hermosa Beach Public Works Department (310) 318-0239**	**Obtain when necessary, approximately 1 week processing time.**
Street Use Permit	**City of Manhattan Beach Public Works Department Traffic and Engineering Division (310) 802-5353**	**Obtain when necessary, approximately 1 week processing time.**


Southbound Only
Manhattan Beach
Hermosa Beach
Redondo Beach
Torrance
Lawndale
Marine Ave Park
Live Oak Park
Valley Park
Polliwog Park
Aviation Park
Glenn M Anderson Park
William Green Park
Pacific Crest Cemetery
El Nido Park
Columbia Park
Entradero Park
Seaside Lagoon
Victor Park
Paradise Park
Alta Vista Park
Del Amo Fashion
Alondra Golf Course
Hickory Park
Lago Seco
Manhattan Beach Blvd
Gould Ave
Artesia
Marmion Way
Prospect Ave
Flagler Ln
Harkness St
Vail Ave
Grant Ave
Ripley Ave
Ralston Ln
Fisk Ln
Carnegie Ln
Mathews Ave
Robinson St
Nelson Ave
Vanderbilt Ln
Rockefeller Ln
Clark Ln
Marshallfield Ln
Pullman Ln
Belmont Ln
Berry St
Harison St
Carmelynn St
Del Amo Blvd
Spencer St
Pacific Coast Hwy
Torrance Blvd
Maricopa St
El Dorado St
Monterey St
Plaza Del Amo
W Carson St
W 226th St
Sharynne Ln
Calle Mayor
Lomita Blvd
Paseo De Gracia
Camino De Las Colinas
Knob Hill Avenue
Avenue B
Avenue C
Avenue D
Avenue E
Avenue G
Pearl St
Diamond St
Vincent St
Esplanade
S Catalina Ave
N Catalina Ave
S Broadway
S Francisca Ave
S Irena Ave
S Lucia Ave
S Prospect Ave
N Paulina Ave
N Maria Ave
N Lucia Ave
N Juanita Ave
Camino Real
Palos Verdes Blvd
Anza Ave
Madrona Ave
Amie Ave
Prairie Ave
Yukon Ave
Osage Ave
Freeman Ave
Larch Ave
Hawthorne Blvd
Ocean Ave
Hermosa Ave
Manhattan Ave
Highland Ave
Pacific Ave
Marine Ave
Valley Dr
Palm Dr
Pier Ave
Aviation Blvd
Inglewood Ave
Hindry Ave
Ford Ave
Green Ln
Rindge Ln
Mackay Ln
Phelan Ln
Blossom Ln
Firmona Ave
Hawthorne Blvd
Larch Ave
Freeman Ave
Prairie Ave
Amie Ave
Yukon Ave
Osage Ave
Madrona Ave
Maple Ave
Hickory Ave
Madison St
Victor St
Henrietta St
Earl St
Talisman St
Linda Dr
Ocean Ave
Lomita Blvd
Calle Mayor
Paseo De Gracia
Camino De Las Colinas
Esplanade
S Catalina Ave
S Broadway
S Francisca Ave
S Irena Ave
S Lucia Ave
S Prospect Ave
N Paulina Ave
N Maria Ave
N Lucia Ave
N Juanita Ave
Diamond St
Vincent St
Pearl St
Knob Hill Ave
Avenue B
Avenue C
Avenue D
Avenue E
Avenue G
Sapphire St
Camino Real
Palos Verdes Blvd
Anza Ave
Madrona Ave
Amie Ave
Prairie Ave
Yukon Ave
Osage Ave
Freeman Ave
Larch Ave
Hawthorne Blvd

Transmission System Engineering (41–42)

BACKGROUND

Staff requires the complete Phase I and Phase II Interconnection Studies to identify potential downstream transmission facilities required to reliably interconnect the RBEP to the California ISO grid and to determine if the interconnection would comply with the NERC/WSCC, and/or Utility planning standards and reliability criteria.

DATA REQUEST

41. Please submit complete Phase I and Phase II Interconnection Studies prepared by Southern California Edison (SCE) and /or California ISO for interconnection of the net output of 496 MW RBEP.

    The study should include a power flow, short circuit and transient stability analyses with a mitigation plan for any identified reliability criteria violations. In the report, list all major assumptions in the base cases including major path flows, major generations including queue generation, and loads in the area systems.

Response: The Cluster 5 Phase I Interconnection Study revised report for the interconnection of the proposed Redondo Beach Energy Project to the CAISO-controlled grid is provided as Attachment DR41-1. The Queue Cluster 5 Phase II Interconnection Study Report is anticipated to be completed in March 2014, and will be provided to CEC Staff when it is available.

DATA REQUEST

42. Identify the reliability and planning criteria utilized to determine the reliability criteria violations.

Response: The reliability and planning criteria used to determine the reliability criteria violations are provided in Attachment DR41-1.

Attachment DR41-1
Cluster 5 Phase I Interconnection Study

August 12, 2013

Mr. John Kistle
AES North America Development, LLC
690 N. Studebaker Road
Long Beach, CA 90803

Re: Redondo Beach Energy Project
Q #: 941 – CAISO Cluster 5 Phase 1 Interconnection Study

Dear Mr. Kistle:

Attached is the Cluster 5 Phase 1 Interconnection Study revised Report for the interconnection of the proposed Redondo Beach Energy Project to the CAISO Controlled Grid. The CAISO and SCE performed the Phase 1 Interconnection Study in accordance with the CAISO's Generation Interconnection and Deliverability Allocation Procedures (GIDAP) tariff. Since the issuance of the Appendix A report dated January 31, 2013, it was learned that the existing Facilities of the Project had an existing "Facilities Study Agreement" (FSA) that impact the classification of the upgrades identified in the QC5 Phase I report provided to the IC. In addition, it was also identified that facilities beyond those identified in the QC5 Phase I report are needed for the interconnection and operation of the Project. The IC also changed their design from two generation tie lines to one generation tie line into the SCE Redondo Substation. As a result, the Appendix A report is being reissued to rectify the classification of the facilities and address the additional facilities required to interconnect the Project. This reissue of the Appendix A report for Q941 is effective upon its issuance date and supersedes the previously issued Appendix A report.

Please review the report and prepare comments and questions for the Results meeting. The Phase 1 Interconnection Study Results meeting will be coordinated and scheduled within 30 calendar days following receipt of this Phase 1 Interconnection Study report.

Sincerely,

Robert Sparks
Manager, Regional Transmission – South

Attachment(s)

Via e-mail

John Kistle (john.kistle@aes.com)

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CAISO:

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Linda Wright (Lwright@caiso.com)
Robert Emmert (Remmert@caiso.com)
RegionalTransmission-South@caiso.com

Queue Cluster 5 Phase I Interconnection Study Report

Group Report in SCE's Metro System

Final Report

January 31, 2013

This study has been completed in coordination with SCE per CAISO Tariff Appendix DD Generator Interconnection and Deliverability Allocation Procedures (GIDAP)

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Definitions

ADNU	Area Delivery Network Upgrade
CAISO	California Independent System Operator Corporation
COD	Commercial Operation Date
Deliverability Assessment	CAISO's Deliverability Assessment
EO	Energy Only Deliverability Status
FC	Full Capacity Deliverability Status
FERC	Federal Energy Regulatory Commission
GIP	Generator Interconnection Procedures
IC	Interconnection Customer
IID	Imperial Irrigation District
LADWP	Los Angeles Department of Water and Power
LDNU	Local Delivery Network Upgrade
LFBs	Local Furnishing Bonds
LGIA	Large Generator Interconnection Agreement
PMax	Maximum generation output
NERC	North American Electric Reliability Corporation
NQC	Net Qualifying Capacity as modeled in the Deliverability Assessment:
PG&E	Pacific Gas and Electric Company
Phase I Study	QC5 Phase I Study
Phase II Study	QC5 Phase II Study
PTO	Participating Transmission Owner
RAS	Remedial Action Scheme (also known as SPS)
POI	Point of Interconnection
POS	Plan of Service
QC5	Queue Cluster 5
RNU	Reliability Network Upgrade
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SPS	Special Protection System (also known as RAS)
SVC	Static VAr Compensator
TPP	CAISO's Transmission Planning Process
TP Deliverability	Deliverability supported by the CAISO's Transmission Plan
TWRA	Tehachapi Wind Resource Area
TRTP	Tehachapi Renewable Transmission Project
WECC	Western Electricity Coordinating Council

A. Executive Summary

In accordance with the Federal Energy Regulatory Commission (FERC) approved Generator Interconnection and Deliverability Allocation Procedures (GIDAP) (CAISO Tariff Appendix DD), this Queue Cluster 5 Phase I (QC5) study was initiated to determine the combined impact of all the QC5 projects on the CAISO Controlled Grid.

There are forty-five (45) generation projects in QC5 in SCE's service territory modeled in the Phase I Study. Five general study areas[1] are formed based on the electrical impact among the generation projects: Northern System, Eastern System, East of Pisgah System, North of Lugo System and Metro System. This study report provides the following:

1. Transmission system impacts caused by the addition of QC5 projects requesting interconnection in the Metro System,

2. System reinforcements necessary to mitigate the adverse impacts under various system conditions of the two (2) QC5 projects requesting interconnection in the Metro System,

3. A list of required facilities and maximum cost responsibility for Reliability Network Upgrades (RNUs) and Local Delivery Network Upgrades (LDNUs) assigned to each Interconnection Request

4. A cost estimate of Area Delivery Network Upgrades (ADNUs) for each Interconnection Request

5. A good faith estimate of the Interconnection Facilities cost

6. A good faith estimate of time to construct the Network Upgrades and Interconnection Facilities for each Interconnection Request.

To determine the system impacts caused by QC5 projects, the following studies were performed:

- Steady State Power Flow Analyses
- Short Circuit Duty Analyses
- Transient Stability Analyses
- Reactive Power Deficiency Analyses
- Deliverability Assessment

The results of above studies indicate that QC5 projects are responsible for the overloading of transmission facilities and overstressing of circuit breakers in SCE's service territory. Network Upgrades[2] and Distribution Upgrades to mitigate identified problems corresponding to the QC5 projects requesting interconnection in the Metro System have been proposed in this report. The following tables show a summary of the proposed Network Upgrades along with an estimated cost.

[1] Precise electrical groupings were created during the deliverability study for Delivery Network cost allocation purposes.

[2] The additions, modification, and upgrades to the CAISO Controlled Grid required at or beyond the Point of Interconnection to accommodate the interconnection of the Generating Facility to the CAISO Controlled Grid. Network Upgrades shall consist of Delivery Network Upgrades and Reliability Network Upgrades. Network Upgrades do not include Distr bution Upgrades.

Table A – Plan of Service Reliability Network Upgrades ($ 1,000)[3]

1	Various (see individual Appendix A reports)	
	TOTAL	[redacted]

Table B – Reliability Network Upgrades ($ 1,000)[3]

1	None	[redacted]
	TOTAL	[redacted]

Table C – Local Delivery Network Upgrades ($ 1,000)[4]

1	None	[redacted]
	TOTAL	[redacted]

Table D – Area Delivery Network Upgrades ($ 1,000)[5]

1	None	[redacted]
	TOTAL	[redacted]

Table E – Distribution Upgrades ($ 1,000) [6,7]

1	None	[redacted]
	TOTAL	[redacted]

The upgrades in the Tables above do not include Interconnection Facilities and Non-Network Non-CAISO Transmission Upgrades, which are the obligation of each Interconnection Customer to finance. The interconnection facilities relating to each individual project are discussed in the corresponding Appendix A Individual Project Reports.

Given the magnitude of the above upgrades, a non-binding estimate to engineer, license, procure, and construct the facilities identified in the above Tables could be up to 44 months from execution of the Generator Interconnection Agreement, receipt of: all required information, funding, and written authorization to proceed from the IC as will be specified in the Generator Interconnection Agreement to commence the work.

The Phase II Study for QC5 will evaluate potential operational constraints associated with the network upgrades required for the Serial Group and/or clusters queue-ahead and not allocated to QC5 but which either help support or are required to interconnect the QC5 projects. These Serial Group and/or cluster upgrades may impact the individual generation requested In-Service Dates.

[3] The SCE transmission facili ies, other than Interconnection Facilities, at or beyond the point of interconnection necessary to physically and electrically interconnect the Project, needed to maintain system integrity and reliability.

[4] The SCE transmission facili ies, other than Interconnection Facilities, at or beyond the point of interconnec ion necessary to physically and electrically interconnect the Project , which are specific to the loca ion of an individual generation project or a small group of genera ion projects located very close together electrically, and needed to support Full Capacity Deliverability Status, if requested.

[5] The SCE transmission facili ies, other than Interconnection Facilities, at or beyond the point of interconnec ion necessary to physically and electrically interconnect the Project , which provide deliverability to load from a specified quantity of new generation in an electrical area of the grid, and needed to support Full Capacity Deliverability Status, if requested. These upgrades are not capped.

[6] For distribu ion cost associated to upgrades in the Lugo Hub Subarea area (below 115 kV), Antelope-Bailey distribution system (below 66 kV), and Eastern distribu ion system (below 115 kV) please see WDAT Appendix A reports.

[7] These upgrades are not part of the CAISO Controlled Grid, and are not reimbursable, and subject to Income Tax Component of Contribution (ITCC). The ITCC included is this cost estimate was computed using a 35% rate.

Facility In-Service Dates will be further evaluated as part of the QC5 Phase II Study in order to evaluate potential options for interconnection prior to the required Delivery Network Upgrades.

B. QC5 Interconnection Information

A total of two (2) generation projects make up the QC5 Metro Area Cluster.

There are two (2) generation projects totaling a maximum output of 1414.3 MW that are included in the QC5 Metro System. Table B.1 lists all the new generator projects in the Metro System with essential data obtained from the CAISO Generation Queue.

Table B.1: SCE QC5 Projects (Metro System)

CAISO Queue	Point of Interconnection	Full Capacity Energy Only	Fuel	Max MW	Proposed COD (as filed with IR)
893	Huntington Beach 220 kV Substation	FC	CC	938.612	6/01/2020
941	Redondo Beach 220 kV Substation	FC	CC	475.72	12/31/2018
Total QC5 Generation (Metro System)				**1414.329**	

C. Study Objectives

This QC5 Interconnection study was performed in accordance with Section 6.2 of Appendix DD of the CAISO tariff, which states:

The Phase I Interconnection Study shall:

(i) evaluate the impact of all Interconnection Requests received during the Cluster Application Window for a particular year on the CAISO Controlled Grid,

(ii) preliminarily identify all LDNU and RNU needed to address the impacts on the CAISO Controlled Grid of the Interconnection Requests,

(iii) preliminarily identify for each Interconnection Request required Interconnection Facilities,

(iv) assess the Point of Interconnection selected by each Interconnection Customer and potential alternatives to evaluate potential efficiencies in overall transmission upgrades costs,

(v) establish the maximum cost responsibility for LDNUs and RNUs assigned to each Interconnection Request, until the issuance of the Phase II Interconnection Study report,

(vi) provide a good faith estimate of the cost of Interconnection Facilities for each Interconnection Request, and

(vii) provide a cost estimate of ADNUs for each Generating Facility in a Queue Cluster Group Study.

In order to achieve the above objectives, this same Section 6.2 explains what specific studies need to be done:

"The Phase I Interconnection Study will consist of a short circuit analysis, a stability analysis to the extent the CAISO and applicable Participating TO(s) reasonably expect transient or voltage stability concerns, a power flow analysis, including Off-Peak analysis, and an On-Peak Deliverability Assessment (and Off-Peak Deliverability Assessment which will be for informational purposes only) for the purpose of identifying LDNUs and estimating the cost of ADNUs, as applicable.

The Phase I Interconnection Study will state for each Group Study or Interconnection Request studied individually (i) the assumptions upon which it is based, (ii) the results of the analyses, and (iii) the requirements or potential impediments to providing the requested Interconnection Service to all Interconnection Requests in a Group Study or to the Interconnection Request studied individually.

The Phase I Interconnection Study will provide, without regard to the requested Commercial Operation Dates of the Interconnection Requests, a list of RNUs and LDNUs to the CAISO Controlled Grid that are preliminarily identified as required as a result of the Interconnection Requests in a Group Study or as a result of any Interconnection Request studied individually and Participating TO's Interconnection Facilities associated with each Interconnection Request, the estimated costs of ADNUs, if applicable and an estimate of any other financial impacts (i.e., on Local Furnishing Bonds).

The Phase I Study analysis was performed to identify the conceptual Interconnection Facilities, Plan of Service Reliability Network Upgrades, Reliability Network Upgrades, Local Delivery Network Upgrades, incremental Area Delivery Network Upgrades, and Distribution Upgrades necessary to safely and reliably interconnect the QC5 projects. An estimated cost and construction schedule for these facilities is provided in this report.

D. Study Assumptions

D.1 Power flow base cases

The QC5 Study base cases were developed from the WECC base case and PTO's transmission expansion base case series representing Peak and Off-Peak load conditions. The QC5 studies were based on a 2016 load forecast. These base cases included all CAISO approved transmission projects, as well as earlier queued Serial Group and cluster generation projects with associated Network Upgrades and Special Protection Systems.

D.2 Load and Import

The Deliverability Assessment On-Peak case modeled a 24,862 MW load (1-in-5 load forecast) in the SCE system with an import target as shown in Table 4.2. The Off-Peak case modeled a 16364 MW load in the SCE system.

Table D.2.1: On-Peak Deliverability Assessment Import Target

Branch Group Name	Direction	Net Import MW	Import Unused ETC & TOR MW
Lugo-Victorville-BG	N-S	1432	141
COI_BG	N-S	3770	548
BLYTHE_BG	E-W	45	0
CASCADE_BG	N-S	36	0
CFE_BG	S-N	-119	0
ELDORADO MSL	E-W	1213	0
IID-SCE_BG	E-W	1000	0
IID-SDGE_BG	E-W	500	0
LAUGHLIN_BG	E-W	-38	0
MCCULLGH MSL	E-W	7	316
MEAD_MSL	E-W	938	455
NGILABK4 BG	E-W	-131	168
NOB_BG	N-S	1208	0
PALOVRDE_MSL	E-W	2872	168
PARKER_BG	E-W	126	28
SILVERPK_BG	E-W	0	0
SUMMIT_BG	E-W	6	0
SYLMAR-AC MSL	E-W	-164	368
Total		12599	2192

The Metro System Reliability Assessment Peak case modeled a 26,429 MW load (1-in-10 load forecast). The Off-Peak load case represented about 60% of Peak load.

While it is impractical to study all combinations of system load and generation levels during all seasons and at all times of the day, the base cases were developed to represent stressed scenarios of loading and generation conditions for the study group area.

D.3 Generation Dispatch Assumptions

Generation assumptions for SCE's Metro System are shown in Table D.3.1 (Existing Generation), Table D.3.2 (Active Queued Ahead Serial), Table D.3.3 (Transition Cluster), Table D.3.4 Pre Queue Cluster 1 and 2 Phase II SGIP projects (Pre QC1&2 Phase II SGIPs), Table D.3.5 QC1&2 Phase II projects (QC1&2 Phase II), Table D.3.6 Pre QC3&4 Phase II projects (Pre QC3&4 Phase II SGIPs), Table D.3.7 Queue Cluster 3 and 4 Phase II projects (QC3&4 Phase II), and Table D.3.8 summarizes the Rule 21 projects in the area . Generation dispatch assumptions in Deliverability Assessment can be found at http://www.caiso.com/Documents/Deliverability assessment methodologies. In the Peak Deliverability Assessment, the Peak Qualified Capacity (QC) for proposed Full Capacity generation projects is set to 64% of the requested PMax for wind generation and 100% of the requested PMax for solar generation initially. The Peak QC may be adjusted to 40% of the

requested PMax for wind generation and 85% for solar generation if a mix of different fuel type generations is identified in the Deliverability Assessment as the 5% DFAX group for a transmission limitation. In the Off-Peak Deliverability Assessment, the proposed Full Capacity wind generation is dispatched at its maximum nameplate output and solar generation at 85% of its nameplate output.

In the Reliability Assessment, the generation is initially dispatched at maximum nameplate output as listed in Tables D.3.1, D.3.2, D.3.3, D.3.4, D.3.5, D.3.6, D.3.7, and D.3.8. Additional generation dispatch assumptions in the reliability assessment are discussed in the power flow results section of this report.

Table D.3.1: Existing Generation

Generation unit	Type	Size (MW)
Agua Mansa	Simple Cycle -GT	47
Alamitos	Steam	1950
Anaheim	Simple Cycle-GT	50
Barre Peaker	Simple Cycle-GT	47
Broadway	Steam	65
Center Peaker	Simple cycle-GT	47
Century	Simple Cycle-GT	47
Clearwater	Combined Cycle	32
Chevmain	Other	76
Drews	Simple Cycle-GT	47
El Segundo	Steam	670
Etiwanda	Steam	640
Etiwanda Peaker	Simple Cycle-GT	47
Harbor Cogen	Other	110
Huntington Beach	Steam	870
Indigo Peaker	Simple Cycle-GT	182
Inland Empire Energy Center	Combined Cycle	810
Long Beach	Simple Cycle-GT	283
Malburg	Combined Cycle	136
MiraLoma Peaker	Simple Cycle-GT	50
Redondo	Steam	1280
Riverside 1 &2	Simple Cycle-GT	96
San Onofre	Nuclear	2150
Springs	Other	44
	Total (Existing)	9,776

Table D.3.2: Active Queued Ahead Serial Group Interconnection Requests

CAISO Queue Position	Type	Size (MW)
CAISO Queue #7	Combined Cycle	560
CAISO Queue #66	Gas Turbines	500.5
CAISO Queue #252	Gas Turbines	12.7
SCE WDAT #086	Combined Cycle	8
SCE WDAT #229	Gas	47.1
SCE WDAT #236	Gas	47.9
SCE WDAT #240	Landfill Gas	25
SCE WDAT #268	Landfill Gas	9
	Total	**1,210.2**

Table D.3.3: Transition Cluster Interconnection Requests

CAISO Queue Position	Type	Size (MW)
CAISO Queue #383	Combined Cycle	85
	Total	**85**

Table D.3.4: Pre QC1&2 Phase II SGIPs Interconnection Request

CAISO Queue Position	Type	Size (MW)
SCE WDAT #327	Solar	1
SCE WDAT #356	Solar	1
SCE WDAT #358	Solar	2
SCE WDAT #359	Solar	2
SCE WDAT #364	Solar	0.5
SCE WDAT #426	Solar	2
SCE WDAT #427	Solar	0.75
SCE WDAT #428	Solar	1.5
SCE WDAT #429	Solar	1.5
	Total	**12.25**

Table D.3.5: QC1&2 Phase II Interconnection Request

CAISO Queue Position	Type	Size (MW)
CAISO Queue #494	Nuclear	48
	Total	**48**

Table D.3.6: Pre QC3&4 Phase II SGIPs Interconnection Request

CAISO Queue Position	Type	Size (MW)
SCE WDAT #444	Solar	1.6
SCE WDAT #450	Solar	1
SCE WDAT #451	Solar	1
SCE WDAT #463	Solar	1
SCE WDAT #464	Solar	0.5
SCE WDAT #466	Solar	0.5
SCE WDAT #467	Solar	0.75
SCE WDAT #471	Solar	0.75
SCE WDAT #473	Solar	1.75
SCE WDAT #474	Solar	1
SCE WDAT #475	Solar	0.75
SCE WDAT #476	Solar	1.25
SCE WDAT #478	Solar	0.5
SCE WDAT #479	Solar	0.5
SCE WDAT #480	Solar	1.16
SCE WDAT #481	Solar	1.25
SCE WDAT #482	Solar	1.33
SCE WDAT #483	Solar	1.25
SCE WDAT #484	Solar	1.5
SCE WDAT #485	Solar	1
SCE WDAT #486	Solar	1.75
SCE WDAT #487	Solar	1.25
SCE WDAT #489	Solar	2
SCE WDAT #525	Solar	1
SCE WDAT #589	Solar	1
SCE WDAT #766	Solar	1
SCE WDAT #621	Solar	0.5
	Total	**28.84**

Table D.3.7: QC3&4 Phase II Interconnection Request

CAISO Queue Position	Type	Size (MW)
CAISO Queue #702	Combine Cycle	435
	Total	**435**

Table D.3.8: Rule 21 Interconnection Request

CAISO Queue Position	Type	Size (MW)
GFID 2819	Natural Gas	0.75
GFID 5277	Solar	1.5
GFID 5468	Solar	1.5
GFID 5475	Solar	0.25
GFID4203	Combustion Turbine	0.35
GFID2849		0.003
GFID7188		0.8
GFID5827	Solar	3.31
GFID2848	Diesel	21.88
GFID5858	Solar PV	1.5
GFID7194	Combustion Turbine	1.45
GFID2732		0.06
GFID2861	Natural Gas	7.5
GFID5948	Solar	1.5
GFID7143	Solar	0.66
GFID5142	Solar	0.37
GFID7197	Fuel Cell	0.1
GFID2875	Natural Gas	2.3
GFID2721		13.38
GFID2851	Diesel	1.2
GFID2858	Diesel	6.25
GFID2860	Combustion Turbine	3.1
GFID7153	Combustion Turbine	2.81
GFID7195	Micro Turbine	1
GFID2857	Solar	0.07
GFID4215	Hydro	0.2
GFID2844	Combustion Turbine	0.15
	Total	**73.943**

D.4 New Transmission Projects

This QC5 study included the modeling of all CAISO-approved transmission projects in the Metro System base cases. In addition, a number of transmission upgrades that are needed to support queued ahead Serial Group and cluster generation projects in the Metro System were modeled in order to determine if additional facilities would be needed to support the QC5 projects.

D.4.1 Previously Triggered Area SPS

The interconnection of a higher queued project required the implementation of a SPS to protect for thermal overload on the El Nido-La Cienega 220 kV line for the N-2 outage of the El Nido-La Fresa 3 & 4 220 kV lines.

D.4.2 Del Amo-Ellis Loop-in Project

Loop-in the Del Amo-Ellis 220 kV transmission line into Barre 220 kV Substation in order to prevent long term outage of Santiago Substation with the shutdown of Huntington Beach 3 & 4 generation units.

D.5 Other SPSs and Operator Actions

Existing System Operating Bulletins (SOB), Operating Procedures (OP), and Special Protection Systems (SPS) may be relevant for QC5 Study analysis in the SCE Metro System. These include, but are not limited to, the following:

- SOB-013 (Critical System Voltage)
- SOB-017 (System Voltage Control)
- SOB-292 (Santiago N-2 Remedial Action Scheme)
- SOB-293 (El Nido N-2 Remedial Action Scheme)

D.5.1 Other Operating Procedures

Operating procedures, which may include curtailing the output of the QC5 projects during planned or extended forced outages may be required for reliable operation of the transmission system. These procedures, if needed, will be developed before the projects' Commercial Operation Date.

D.6 Transmission Upgrades outside the CAISO Controlled Grid

No transmission upgrades outside the CAISO controlled grid were identified as in the previous generation interconnection studies for the SCE Eastern system. However, neighboring utilities may identify need for physical upgrades within their system not identified in the studies.

E. Study Criteria and Methodology

E.1 Reliability Standards and Criteria

The generator interconnection studies will be conducted to ensure the CAISO Controlled Grid is in compliance with the North American Electric Reliability Corporation (NERC) reliability standards, WECC regional criteria, and the CAISO planning standards.

E.1.1 NERC Reliability Standards

The CAISO will analyze the need for transmission upgrades and additions in accordance with NERC reliability standards, which set forth criteria for system performance requirements that must be met under a varied but specific set of operating conditions. The following NERC reliability standards are applicable to the CAISO, as a registered NERC planning authority, and the PTOs, as Transmission Planners, and are the primary standards for the interconnection of new facilities and system performance[8]:

- FAC-001: Facility Connection Requirements[9]
- FAC-002: Coordination of Plans for New Facilities

[8] http://www.nerc.com/page.php?cid=2%7C20
[9] http://www.nerc.com/files/FAC-001-1.pdf; FAC-001 is applicable to PTOs, but not to the ISO

- TPL-001: System Performance Under Normal Conditions (category A);
- TPL-002: System Performance Following Loss of a Single Bulk Electric System (BES) Element (category B)
- TPL-003: System Performance Following Loss of Two or More BES Elements (category C)

E.1.2 WECC Regional Criteria

The WECC TPL system performance criteria are applicable to the CAISO as a planning authority and set forth additional requirements that must be met under a varied but specific set of operating conditions.[10]

E.1.3 California ISO Planning Standards

The California ISO Planning Standards specify the grid planning criteria to be used in the planning of CAISO transmission facilities.[11] These standards cover the following:

- address specifics not covered in the NERC reliability standards and WECC regional criteria;
- provide interpretations of the NERC reliability standards and WECC regional criteria specific to the CAISO Controlled Grid; and
- identify whether specific criteria should be adopted that are more stringent than the NERC standards or WECC regional criteria.

E.1.4 Contingencies

The system performance with the addition of the generation projects will be evaluated under normal conditions and following loss of single or multiple BES elements as defined by the applicable reliability standards and criteria.

Table E.1.4.1 summarizes the contingencies per NERC Reliability Standards WECC Regional Criteria and CAISO Planning Standards.

[10] http://compliance.wecc.biz/application/ContentPageView.aspx?ContentId=71
[11] http://www.caiso.com/Documents/TransmissionPlanningStandards.pdf

Table E.1.4.1: Contingencies

Contingencies	Description
NERC TPL-001 NERC Category A (No contingency)	All facilities in service – Normal Conditions
NERC TPL-002 Category B	B1 – SLG or 3Φ Fault, with Normal Clearing: single generator outage B2 – SLG or 3Φ Fault, with Normal Clearing: single transmission circuit outage B3 – SLG or 3Φ Fault, with Normal Clearing: single transformer outage B4 – Single Pole Block, with Normal Clearing: single pole (dc) line outage
CAISO Planning Standard Category B	II.2. – Selected overlapping single generator and transmission circuit outages II.5. – Loss of combined cycle power plant module
NERC TPL-003 Category C	C1 – SLG Fault, with Normal Clearing: Bus outages C2 – SLG Fault, with Normal Clearing: Breaker failures C3 – SLG or 3Φ Fault, Combination of any two-generator/transmission line/transformer outages except these in CAISO Category B C4 – Bipolar Block, with Normal Clearing: Bipolar (dc) Line C5 – Outages of double circuit tower lines C6 – SLG Fault, with Delayed Clearing: Generator C7 – SLG Fault, with Delayed Clearing: Transformer C8 – SLG Fault, with Delayed Clearing: Transmission Circuit C9 – SLG Fault, with Delayed Clearing: Bus Section
WECC Regional Criteria TPL-001-WECC-CRT-2 Category C	R1.1 – SLG Fault, with Normal Clearing: two adjacent transmission circuits (greater than 300 kV) on separate towers

In the Phase I Study, all Categories B, C4 C5, WECC R1.1, as well as the worst Categories C1 ~ C3 and C6 ~ C9 outages, in the electrical vicinity of the general study area are analyzed. The worst Category C contingencies are selected by taking into account the following factors:

- Amount of generation lost immediately following the outage
- Normal condition loading of a transmission facility
- Bus outages and breaker failures that cause disconnection of the entire bus during the transient period

E.2 Steady State Study Criteria

E.2.1 Normal Overloads

Normal overloads are those that exceed 100 percent of normal facility rating under NERC Category A conditions (no contingency). Normal overloads are identified in Deliverability Assessment and Reliability Study power flow analyses in accordance with Reliability Standard TPL-001. It is required that loading of all transmission system facilities be within their normal ratings under the Category A conditions.

E.2.2 Emergency Overloads

Emergency overloads are those that exceed 100 percent of emergency ratings under NERC/WECC/ CAISO Category B and Category C contingency conditions. Emergency overloads are identified in the Deliverability Assessment and Reliability Study power flow analyses in accordance with Reliability Standards TPL-002 and TPL-003. It is required that loading of all transmission system facilities be within their emergency ratings under the Category B and Category C contingency conditions.

E.2.3 Voltage Violations

All buses within the CAISO controlled grid that cannot meet the requirement in Table E.2.3.1 will be further investigated.

Table E.2.3.1: Voltage Criteria

(Voltages are relative to the nominal voltage of the system studied)

Voltage level	Normal Conditions (TPL-001)		Contingency Conditions (TPL-002 & TPL-003)		Voltage Deviation	
	Vmin (pu)	Vmax (pu)	Vmin (pu)	Vmax (pu)	TPL-002	TPL-003
≤ 200 kV	0.95	1.05	0.90	1.1	≤5%	≤10%
≥ 200 kV	0.95	1.05	0.90	1.1	≤5%	≤10%
≥ 500 kV	1.0	1.05*	0.90	1.1	≤5%	≤10%

*Most of the 500 kV buses have specific requirements.

E.3 Transient Stability Criteria

Transient stability analysis is a time-domain simulation that assesses the performance of the power system during (and shortly following) a system disturbance. A transient stability study is performed to ensure system stability following critical disturbances on the system.

The system is considered stable if the following conditions are met:

1. All machines in the WECC interconnected system must remain in synchronism as demonstrated by relative rotor angles (unless modeling problems are identified and concurrence is reached that a problem does not really exist);

2. A stability simulation will be deemed to exhibit positive damping if a line defined by the peaks of the machine relative rotor angle swing curves tends to intersect a second line connecting the valleys of the curves with the passing of time;

3. Corresponding lines on bus voltage swing curves will likewise tend to intersect. A stability simulation, which satisfies these conditions, will be defined as stable;

4. Duration of a stability simulation run will be ten seconds unless a longer time is required to ascertain damping;

5. The transient performance analysis will start immediately after the fault clearing and conclude at the end of the simulation and;

6. A case will be defined as marginally stable if it appears to have zero percent damping and the voltage dips are within (or at) the WECC Reliability Criteria limits.

Performance of the transmission system is measured against the NERC Reliability Standards and WECC Regional Criteria. NERC TPL-001, TPL-002 and TPL-003 require no loss of demand or curtailed firm transfers under Category A and Category B conditions, and planned/controlled loss of demand or curtailed firm transfers under Category C contingencies. Category A, B and C contingencies should not result in cascading outages.

Table E.3.1 illustrates the WECC reliability criteria. The reliability and performance criteria are applied to the entire WECC transmission system.

Table E.3.1: WECC Disturbance-Performance Table of Allowable Effects on Other Systems
(in addition to NERC requirements)

NERC and WECC Categories	Outage Frequency Associated with the Performance Category (Outage/Year)	Transient Voltage Dip Standard	Minimum Transient Frequency Standard	Post-Transient Voltage Deviation Standard (See Note 1)
A	Not Applicable	Nothing in Addition to NERC		
B	≥ 0.33	Not to exceed **25%** at load buses or **30%** at non-load buses. Not to exceed **20% for more than 20 cycles** at load buses.	Not below **59.6 Hz** for 6 cycles or more at a load bus	Not to exceed **5%** at any bus
C	0.033 – 0.33	Not to exceed 30% at any bus. Not to exceed **20% for more than 40 cycles** at load buses.	Not below **59.0 Hz** for 6 cycles or more at a load bus	Not to exceed **10%** at any bus
D	< 0.033	Nothing in Addition to NERC		

Note 1: As an example in applying the WECC Disturbance-Performance Table, Category B disturbance in one system shall not cause a transient voltage dip in another system that is greater than 20% for more than 20 cycles at load buses, or exceed 25% at load buses or 30% at non-load buses at any time other than during the fault.

E.4 Post-Transient Voltage Stability Criteria

The last column of the above Table E.3.1 illustrates the post-transient voltage stability criteria. The governor power flow is utilized to test for the post-transient voltage deviation criteria.

E.5 Reactive Margin Criteria

Table E.5.1 summarizes the voltage support and reactive power criteria of requirement R3 of the WECC Regional Criterion TPL-001-WECC-CRT-2. The system performance will be evaluated accordingly.

Table E.5.1: Reactive Margin Analysis Criteria Summary

Contingency Category	Reactive Power Criteria
B	Voltage stability is required at 105% of load level or transfer path rating
C	Voltage stability is required at 102.5% of load level or transfer path rating

E.6 Power Factor Criteria

Table E.6.1 summarizes the power factor criteria per the CAISO tariff for the projects.

Table E.6.1: CAISO Tariff Power Factor Analysis Criteria Summary

Generation Type	Power Factor Criteria
Asynchronous Generator	0.95 lagging to 0.95 leading at the POI if identified in the study
Synchronous Generator	0.90 lagging to 0.95 leading at generator terminals

E.7 Short Circuit Criteria

The short circuit analysis will be performed by simulating single-line-to-ground (1LG) and three-phase (3LG) bus faults as the worst case in a study area, which represents the worst-case conditions to determine the maximum available fault current. Criteria to determine if circuit breakers are overstressed are specific to each study area and will be outlined in the final Interconnection Study reports.

F. Deliverability Assessment

This assessment is comprised of Peak and Off-Peak deliverability assessments for the QC5 projects in the Northern Bulk System. Both SCE and PG&E bulk systems were monitored for any adverse impacts.

F.1 On-Peak Deliverability Assessment Methodology

The assessment was performed following the Peak Deliverability Assessment methodology (http://www.caiso.com/Documents/On-PeakDeliverabilityAssessmentMethodology.pdf). The main steps of the Peak deliverability assessment are described below.

Master Deliverability Assessment Base Case

A master base case was developed for the Cluster 3 Peak deliverability assessment which modeled all the queued generation projects up to Cluster 3. The resources in the master base case are dispatched as follows:

- Existing capacity resources are dispatched at 80% of Peak net qualified capacity (NQC).
- Proposed full capacity resources are dispatched to balance load and maintain expected imports, but not exceeding 80% of Peak NQC.
- Energy Only resources are set off-line.
- Imports are at the maximum Peak simultaneous historical level by branch group as shown in Table D.2.1.
- Non-pump load is at the 1 in 5 Peak load level for CAISO.
- Pump load is dispatched within expected range for Peak load hours.

Northern Bulk Group Deliverability Assessment Base Case

The Northern Bulk group deliverability assessment base case was developed from the master base case by dispatching all proposed full capacity resources in the Northern Bulk System to 80% of the NQC.

Screening for Potential Deliverability Problems Using DC Power Flow Tool

A DC transfer capability/contingency analysis tool was used to identify potential deliverability problems. For each analyzed facility, an electrical circle was drawn which includes all generating units including unused Existing Transmission Contract (ETC) injections that have a 5% or greater

- Distribution factor (DFAX) = Δ flow on the analyzed facility / Δ output of the generating unit *100%

  or

- Flow impact = DFAX * NQC / Applicable rating of the analyzed facility *100%.

Load flow simulations were performed, which study the worst-case combination of generator output within each 5% Circle.

Verifying and Refining the Analysis Using AC Power Flow Tool

The outputs of capacity units in the 5% Circle were increased starting with units with the largest impact on the transmission facility. No more than twenty units were increased to their maximum output. In addition, no more than 1500 MW of generation was increased. All remaining generation within the Control Area was proportionally displaced, to maintain a load and resource balance.

When the 20 units with the highest impact on the facility can be increased more than 1500 MW, the impact of the remaining amount of generation to be increased was considered using a Facility Loading Adder. The Facility Loading Adder was calculated by taking the remaining MW amount available from the 20 units with the highest impact times the DFAX for each unit. An equivalent MW amount of generation with negative DFAXs was also included in the Facility Loading Adder, up to 20 units. If the net impact from the Facility Loading Adders was negative, the impact was set to zero and the flow on the analyzed facility without applying Facility Loading Adders was reported.

F.2 Local Deliverability Constraints and Area Deliverability Constraints

In the Phase I Study, the CAISO performed two rounds of deliverability assessments to, first, identify any transmission system operating limits that constrain the deliverability of the modeled generators, and second, determine LDNUs and ADNUs to relieve those constraints. The first round of the deliverability assessment modeled all the generation projects requesting Full Capacity or Partial Capacity Deliverability Status in accordance with the On-Peak Deliverability Assessment Methodology. The transmission system operating limits identified during the assessment are divided into two categories: local deliverability constraints and area deliverability constraints.

Local deliverability constraints tend to have the following attributes:

- The generators whose deliverability they constrain (generators inside the 5% DFAX circle) are all located on a few buses electrically close to each other.
- Relieving these constraints does not trigger high cost upgrades.

Area Deliverability Constraints tend to have the following attributes:

- The generators whose deliverability they constrain (generators inside the 5% DFAX circle) are spread over at least one and possibly more grid study areas or resource areas identified in a resource portfolio used in the TPP.
- In the first round of the Phase I deliverability assessment, relieving these constraints may trigger high cost upgrades, driven by excessively large MW amounts of new generation behind the area deliverability constraint.
- In some potential situations the ISO may classify as an area deliverability constraint a constraint that constrains the deliverability of generators electrically close to each other and is triggered by an exceptionally large volume of generation. This could occur, for example, when there is an exceptionally large volume of Interconnection Requests in a relatively smaller local sub-area within one of the resource development areas identified in the TPP portfolios and relieving the constraint requires expensive upgrades. This

potential situation was raised as a concern by some stakeholders, and we determined that in such cases, if they occur, the appropriate remedy would be to reclassify the constraint as an area deliverability constraint based on the recognition that it would serve a substantial volume of generation projects within the study area.

The categorization of ADNU vs. LDNU is based on the deliverability constraint that triggers the need of the DNU. With the exception of SPS mitigating deliverability constraints, ADNUs are transmission upgrades or additions to relieve Area Deliverability Constraints and LDNUs are to relieve Local Deliverability Constraints.

F.3 Identification of Area Delivery Network Upgrades

The CAISO performed the second round of the deliverability assessment to identify facilities necessary to provide the incremental deliverability between the level of TP Deliverability and additional amount necessary for the MW capacity amount of generation targeted in the Phase I Study. The additional amount is referred as Phase I Incremental MW in the report.

For each Area Deliverability Constraint, a base case was developed such that the TP Deliverability is fully utilized. Then the Phase I Incremental MW was added. The ADNUs were then identified to support the deliverability of the Phase I Incremental MW.

F.4 On-Peak Deliverability Assessment Results

F.4.1 Deliverability Constraints to be Mitigated by SPS

None

F.4.2 Local Deliverability Constraints and LDNUs

None

F.4.3 Area Deliverability Constraints and ADNUs

None

G. Steady State Assessment

This assessment is comprised of Power Flow Analysis and Reactive Power Deficiency Analysis.

Power flow analysis was performed to ensure that CAISO Controlled Grid remains in full compliance with North American Reliability Corporation (NERC) reliability standards TPL-001, 002, 003 and 004 with the proposed interconnection. The results of these power flow analyses will serve as documentation that an evaluation of the reliability impact of new facilities and their connections on interconnected transmission systems is performed.

The study results for this interconnection will be communicated to neighboring entities that may be impacted, for coordination and incorporation of its transmission assessments. Input from neighboring entities are solicited to ensure coordination of transmission systems.

While it is impractical to study all combinations of system load and generation levels during all seasons and at all times of the day, the base cases were developed to represent stressed scenarios of loading and generation conditions for the study group area. The CAISO and SCE cannot guarantee that QC5 projects can operate at maximum rated output 24 hours a day, year round,

without adverse system impacts, nor can the CAISO and SCE guarantee that these projects would not have adverse system impacts during the times and seasons not studied in the QC5 study.

The following power flow base cases were used for the analysis in the QC5 Study:

- **Peak Full Loop Base Case:**

  Power flow analyses were performed using SCE's peak full loop base case (in General Electric Power Flow format). This base case was developed from WECC base cases and SCE's transmission expansion base cases. It has a 1-in-10 year adverse weather load level for the SCE service territory.

- **Off-Peak Loop Base Case:**

  Power flow analyses were also performed using the Off-Peak full loop base case in order to evaluate system performance due to the addition of QC5 generation projects during light load conditions. The Off-Peak load was modeled at about 65% of the peak load.

The base cases modeled all CAISO approved SCE transmission projects. The base cases also modeled all proposed generation projects that were higher than the QC5 projects in the CAISO generation queue. These generation projects were modeled along with their identified transmission upgrades necessary for their interconnection and/or delivery.

The power flow study included a preliminary power flow study, which modeled all QC5 projects in the Metro System with plans of service as originally requested. This preliminary study served as a "screening analysis" to identify potential reliability issues in the original plans of service requested by the developers in QC5. The power flow study also included a modified power flow study, which reflected system changes based on the findings of the preliminary study.

G.1 Bulk System Steady State Study

G.1.1 Preliminary Power Flow Study Assumptions

The preliminary study modeled all Metro System QC5 projects with the customer requested plans of service and no system upgrades. All generating units in the Metro System are dispatched at PMax in the preliminary study. This preliminary study was intended to find whether plan of service issues with QC5 projects would require changes to the customer requested plans of service or points of interconnection.

G.1.2 Preliminary Power Flow Study Results

(a) Preliminary Voltage and VAR Study Results

There were no voltage and VAR issues identified with the addition of the QC5 projects in the Metro System.

(b) Preliminary Power Flow Study Results (Category "A", "B" and "C")

Based on the assumptions listed above, the power flow analysis results for Peak and Off-Peak conditions are shown in Table G.1.3.1 and Table G.1.3.2 below.

Table G.1.3.1: Peak Conditions Power Flow Overloads

Over Loaded Component	Rating (Amps)	Pre-Project Loading (Amps / %Rating)	Post-Project Loading (Amps / %Rating)	% Change from Pre-Project Loading	Comment
Category A (N-0) Overloads – Peak					
None					
Category B (N-1) Overloads – Peak					
None					
Category C (N-2) Overloads – Peak					
None					

Table G.1.3.2: Off-Peak Conditions Power Flow Overloads

Over Loaded Component	Rating (Amps)	Pre-Project Loading (Amps / %Rating)	Post-Project Loading (Amps / %Rating)	% Change from Pre-Project Loading	Comment
Category A (N-0) Overloads – Off-Peak					
None					
Category B (N-1) Overloads – Off-Peak					
None					
Category C (N-2) Overloads – Off-Peak					
None					

G.1.3 Bulk System Steady State Study Conclusions

Based on the findings of the steady state study, the following conclusions were reached

(a) Reactive Power Deficiency
There were no reactive power deficiencies identified with the addition of the QC5 Phase I projects in the Metro System.

(b) Voltage Performance
There were no voltage violations identified with the addition of the QC5 Phase I projects in the Metro System.

H. Short Circuit Duty Assessment

H.1 Short Circuit Duty Analysis Results

Application Queue Short circuit studies were performed to determine the impact on circuit breakers with the interconnection of QC5 projects to the transmission system. The fault duties were calculated before and after QC5 projects to identify any equipment overstress conditions. Three-phase (3PH) and single line-to-ground (SLG) faults were simulated without the QC5 projects and with the QC5 projects including the identified Reliability and Delivery Network Upgrades from the power flow analysis.

All bus locations where the QC5 projects increases the short-circuit duty by 0.1 kA or more and where duty is in excess of 60% of the minimum breaker nameplate rating are listed in Appendix H. These values have been used to determine if any equipment is overstressed as a result of the QC5 interconnections and corresponding network upgrades.

(a) Application Queue with RNUs Analysis Results

Fault duties were calculated with the inclusion of the QC5 projects and the identified RNUs to identify the incremental impacts associated with these facilities. The QC5 breaker evaluations identified the following overstressed circuit breakers:

- Twenty-one (21) 50 kA, 220 kV CBs at Vista Substation

To mitigate these identified overstressed circuit breakers, the following upgrades are recommended:

- Replace/Upgrade twenty-one (21) 220 kV CBs at Vista Substation

(b) Application Queue with RNUs and LDNUs Analysis Results

Fault duties were re-calculated to include the QC5 projects and the identified RNUs and LDNU's from the power flow and stability analysis to identify the incremental impacts associated with these facilities. The QC5 breaker evaluation did not identify any additional overstressed circuit breakers on top of what was identified in Application Queue with RNUs analysis.

(c) Application Queue with RNUs, LDNUs, & ADNUs Analysis Results

A preliminary SCD run was performed include the QC5 projects and the identified RNUs, LDNUs, and ADNUs to identify the incremental impacts associated with these ADNU Facilities. The preliminary results identified the following overstressed circuit breakers on top of what has been identified above in application Queue with RNUs and LDNUs analysis:

- Twenty-four (24) 63 kA, 220 kV CBs at Mira Loma (W) Substation
- Eight (8) 40 kA, 115 kV CBs at Valley A Substation
- Six (6) 40 kA, 115 kV CBs at Valley B Substation

To mitigate these identified overstressed circuit breakers, the following upgrades are recommended in addition to what has been identified above in application Queue with RNUs and LDNUs analysis:

- Reconfigure the Mira Loma – Vista No.1 and No.2 and Mira Loma – Rancho Vista No.1 and No.2 220 kV lines at Mira Loma Substation to lower 220 kV short-circuit duty at Mira Loma.
- Upgrade eight (8) 115 kV circuit breakers due to increased duty at Valley A Substation.
- Upgrade six (6) 115 kV circuit breakers due to increased duty at Valley B Substation.

The responsibility to finance short circuit RNUs identified through a Group Study shall be assigned to all Interconnection Requests in that Group Study pro rata on the basis of short-circuit duty contribution of each Generating Facility. In addition, the SCD impact of the associated LDNUs was allocated to each Generating Facility using the same percentage assigned for the triggered LDNUs. The pro rata contribution corresponding to each QC5 project to the circuit breaker upgrades listed above is provided in each individual report (Appendix A). The short circuit upgrades associated with ADNUs are ADNUs, which will be further evaluated in the Phase II Interconnection study. The cost of the short circuit ADNUs are not included in the Phase I study and not assigned to QC5 projects.

H.2 Application Queue: Ground Grid Analysis

It should be noted that the Phase II Study will utilize the results of the application queue SCD studies of the Phase II cluster study to identify any SCE substations (CAISO-controlled) that may have duty problems on the existing substation ground grid due to the inclusion of the QC5 Phase II projects.

I. Transient Stability Analysis

Transient stability analysis was conducted using both the Peak and Off-Peak base cases to ensure that the transmission system remains stable with the addition of QC5 generation projects. The generator dynamic data used for the study is confidential in nature and is provided with each individual project report.

I.1 Bulk System Steady State Study

I.1.1 Transient Stability Study Scenarios

Disturbance simulations were performed for a study period of 10 seconds to determine whether the QC5 projects will create any system instability during a variety of line and generator outages. For SCE's Metro System, selected line and generator outages within the Metro System were evaluated. The outages were consistent with Category B and Category C requirements (single element and multiple element outages).

In the analysis, power flow cases from the preliminary power flow assessment were used, and VARS required for power flow base-case convergence were converted to equivalent load impedances for dynamic simulation purposes.

I.1.2 Transient Stability Results

The transient stability study concluded that with the addition of the QC5 Phase I projects and proposed system upgrades in place, the transient stability performance of the system is acceptable.

J. Post-Transient Voltage Stability Analysis

A post-transient voltage stability analysis was performed for this QC5 Phase I Study. The post-transient analysis focused on evaluating the system after the inclusion of all transmission upgrades and the use of the identified SPS, assuming all new generation projects meeting the power factor requirements. Under such conditions, the post-transient study showed acceptable system performance.

K. Mitigation of QC5 Project Impacts

The mitigation requirements triggered by QC5 projects, based on the results described in Sections F-J above, are as follows.

K.1 Plan of Service Reliability Network Upgrades

Plan of Service Reliability Network Upgrades for QC5 projects in the Metro System are discussed in detail in each individual project report (Appendix A).

K.2 Reliability Network Upgrades

The Reliability Network Upgrades for the Metro System QC5 Phase I projects are identified in the individual Appendix A reports.

K.3 Local Delivery Network Upgrades

No Local Delivery Network Upgrades were identified as part of this QC5 Phase I Study for the Metro area.

K.4 Area Delivery Network Upgrades

No Area Delivery Network Upgrades were identified as part of this QC5 Phase I Study for the Metro area.

K.5 Distribution Upgrades

No Distribution Upgrades were identified.

L. Environmental Evaluation / Permitting

L.1 CPUC General Order 131-D

The California Public Utilities Commission's (CPUC) General Order 131-D (GO 131-D) sets forth the permitting requirements for certain electrical and generation facilities. GO 131-D was established by the CPUC to be responsive to: the requirements of the California Environmental Quality Act (CEQA); the need for public notice and the opportunity for affected parties to be heard by the CPUC; and the obligations of the utilities to serve their customers in a timely and efficient manner.

Electric power line facilities between 50 and 200 kV and new or upgraded substations with a high side voltage exceeding 50 kV are subject to the CPUC's Permit to Construct (PTC) review specified in GO 131-D, Section III.B. For facilities subject to PTC review, or for over 200 kV electric transmission line facilities subject to Certificate of Public Convenience and Necessity (CPCN) requirements specified in GO 131-D, Section III.A, the CPUC reviews utility PTC or CPCN applications pursuant to CEQA and serves as Lead Agency under CEQA. Section IX of GO 131-D discusses the requirements for PTC and CPCN applications.

Generally, SCE takes approximately a minimum of 18-24 months to assemble a CPCN or PTC application, the majority of which time is attributed to developing a required Proponent's Environmental Assessment (PEA). The CPUC review of such applications may take anywhere from 18 – 48 months depending on the specific issues.

For more details, please see General Order 131-D. This document can be found in the CPUC's web page at the CPUC's web page:
http://www.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/589.htm

L.2 CPUC General Order 131-D – Permit to Construct/Exemptions

GO 131-D provides for certain exemptions from the CPUC PTC requirements for electric power line facilities between 50 and 200 kV and new or upgraded substations with a high side voltage exceeding 50 kV. For example, Exemption f of GO 131-D (Section III.B.1.f) exempts from CPUC PTC permitting requirements power lines or substations to be constructed or relocated that have undergone environmental review pursuant to CEQA as part of a larger project, and for which the final CEQA document (Environmental Impact Report or Negative Declaration) finds no significant unavoidable environmental impacts caused by the proposed line or substation. Note, GO 131-D, Section III.B.2, discusses the conditions under which PTC exemptions shall not apply (consistent with CEQA Guidelines).

After lead agency approval of the final CEQA document which confirms there are no significant environmental impacts associated with the SCE scope of work, SCE may be eligible to use Exemption f, and in doing so would follow certain limited public noticing requirements, including filing an informational Advice Letter at the CPUC, posting the project site/route, providing notice to the local jurisdiction(s) planning director and the executive director of the California Energy Commission (CEC), and advertising the project notice, for once a week for two weeks successively in a local newspaper. As part of an agreement with the CPUC Energy Division, SCE informally provides a copy of the final CEQA document to the CPUC Energy Division for reference when the Advice Letter is pending before the CPUC.

Note, the CPUC rules for Advice Letters consider an Advice Letter to be in effect on 30th calendar day after the date filed, and GO 131-D specifies a minimum period of 45 days between advertising the notice for the project and when construction can occur.
Typically, SCE may proceed with construction 45 days after it has filed its Advice Letter and has posted and advertised the project notice unless a protest is filed and/or CPUC staffs suspend the Advice Letter. If protests are filed, they must address whether SCE has properly claimed the exemption. SCE has 5 business days to respond to the protest and the CPUC will typically take a minimum of 30 days to review the protest and SCE's response, and either dismiss the protests or require SCE to file for a Permit to Construct. SCE has no control over the time it takes the CPUC to respond when issues arise. If the protest is granted, SCE may then need to apply for a formal permit to construct the project (i.e., Permit to Construct).
If SCE facilities are not included in the larger project's CEQA review, or if the project does not qualify for the exemption due to significant, unavoidable environmental impacts, or if the exemption is subject to the "override" provision in GO 131-D, Section III.B.2, SCE may need to seek approval from the CPUC (i.e., Permit to Construct) taking as much as 18 months or more since the CPUC would need to conduct its own environmental evaluation (i.e., Mitigated Negative Declaration or Environmental Impact Report).

Note, for projects undergoing no CEQA review but instead only undergoing a review under the National Environmental Policy Act (NEPA) due to the lead agency being a federal agency (such as the BLM), GO 131-D technically does not allow for the use of Exemption f when the environmental review is conducted only pursuant to NEPA and does not have a CEQA component. As such, SCE would need to review such projects on a case-by-case basis with the CPUC to determine if the CPUC would allow the project to proceed under Exemption f or instead allow SCE to proceed under an "expedited" PTC application by attaching the NEPA document in lieu of a PEA.

For projects that are not eligible for Exemption f, but have already undergone CEQA or NEPA review, SCE may be able to file an "expedited" PTC application, which typically takes the CPUC approximately 6-9 months to process.

L.3 CPUC General Order 131-D – Certificate of Public Convenience & Necessity (CPCN) Exceptions

When SCE's T/Ls are designed for immediate or eventual operation at 200 kV or more, GO 131-D requires SCE to obtain a Certificate of Pubic Convenience and Necessity (CPCN) from the CPUC unless one of the following exceptions applies: the replacement of existing power line facilities or supporting structures with equivalent facilities or structures, the minor relocation of existing facilities, the conversion of existing overhead lines (greater than 200 kV) to underground, or the placing of new or additional conductors, insulators, or their accessories on or replacement of supporting structures already built.

Unlike Exemption f relating to the exemptions allowed from a Permit to Construct for electric facilities between 50 – and 200 kV, no such exemption exists for electric facilities over 200 kV T/Ls that have undergone environmental review pursuant to CEQA as part of a larger project, and for which the final CEQA document finds no significant unavoidable environmental impacts caused by the proposed line or substation. Accordingly, SCE would need to consult on a case-by-case basis with the CPUC for such projects CPUC would allow to proceed "exempt" or instead allow SCE to proceed under an "expedited" CPCN application by attaching the final CEQA document in lieu of a SCE Proponent's Environmental Assessment. Such an expedited CPCN with the environmental review already completed by the lead agency that permitted the Interconnection Customer's

generator project, typically may take from only 6-9 months for the CPUC to process.

L.4 CPUC General Order 131-D – General Comments Relating to Environmental Review of SCE Scope of Work as Part of the Larger Generator Project

For the benefits and reasons stated above, it is recommended that the Interconnection Customer includes SCE's Interconnection Facilities, Distribution, and Plan of Service Network Upgrades work scope (including facilities to be constructed by others and deeded to SCE) in the Interconnection Customer's environmental reports and applications for project approval submitted to the lead agency permitting the Interconnection Customer's larger generator project (e.g., California Energy Commission, Bureau of Land Management, city, county, or other applicable local, state or federal permitting agency). It is also recommended that such agencies review the potential environmental impacts associated with SCE's work scope in any environmental document issued. This may enable SCE to proceed "exempt" from CPUC permitting requirements or under an "expedited" PTC or CPCN. However, depending on certain circumstances, the CPUC may still require SCE to undergo a standard PTC or CPCN for the generator tie line and Network Upgrades work associated with the Interconnection Customer's Project. SCE may also be required to obtain other authorizations for its interconnection facilities and network upgrades. Hence, SCE's facilities needed for the project interconnection could require an additional two years, or more, to license and permit.

L.5 CPUC Section 851

Since SCE is subject to the jurisdiction of the CPUC, it must also comply with Public Utilities Code Section 851. Among other things, this code provision requires SCE to obtain CPUC approval of leases and licenses to use SCE property, including rights-of-way granted to third parties for Interconnection Facilities. Obtaining CPUC approval for a Section 851 application can take several months, and requires compliance with the California Environmental Quality Act (CEQA). SCE recommends that Section 851 issues be identified as early as possible so that the necessary application can be prepared and processed. As with GO 131-D compliance, SCE recommends that the project proponent include any facilities that may be affected by Section 851 in the lead agency CEQA review so that the CPUC does not need to undertake additional CEQA review in connection with its Section 851 approval.

L.6 SCE scope of work NOT subject to CPUC General Order 131-D

Certain SCE facilities and scope of work may not be subject to CPUC's G.O. 131-D. In such instances, SCE must ensure that requirements of all applicable environmental laws and regulations are addressed, necessary environmental surveys and studies are performed, and all required State and federal environmental permits are applied for and secured from various resource agencies (e.g., those permits resulting from State or federal application of the Endangered Species Act, Clean Water Act, Section 106 of the National Historic Preservation Act, etc.) before commencement of construction activities.

Resource agencies are required to comply with CEQA and/or NEPA (as applicable) when issuing their permits; however, the necessity for environmental permits is oftentimes unknown during the initial stages of project development. Therefore, it is recommended that the Interconnection Customer identifies all project components, including SCE's

Interconnection Facilities and Plan of Service Network Upgrades supporting the interconnection of the Project, in environmental reports and applications for project approval submitted to the agencies permitting the Interconnection Customer's larger generator project (e.g., California Energy Commission, Bureau of Land Management, Department of Energy, city, county, or other applicable local, state or federal permitting agencies). It is also recommended that the agencies review the potential environmental impacts associated with SCE's work scope in any environmental document issued. In the event that permits are required from resource agencies, the CEQA/NEPA documents issued by the lead agency(ies) may potentially be utilized to show compliance with CEQA/NEPA requirements, reducing delays to the project schedule. Please note applications for permits from resource agencies (i.e. Streambed Alteration Agreements or Incidental Take Permits) shall be submitted by SCE for all SCE project components. It is SCE's experience that securing such permits may take from 6 to 12 months, depending on the permit type, from the time complete permit applications are submitted by SCE to the resource agencies for agencies to process. More complex permitting such as ESA Section 10 Habitat Conservation Plans and Bald and Golden Eagle Protection Act permitting are more laborious and may require more than a year (in some cases, multiple years) to perform surveys and plan preparation to adequately address agency requirements.

M. Upgrades, Cost and Time to Construct Estimates

The cost estimates are based on the published unit costs, when applicable. Customized costs were developed when the unit costs did not reflect the unique circumstances of a project. The customized costs may include: anticipated purchase of land rights, licensing, environmental mitigation, looping lines into substations, new switchyards, substation upgrades not included in unit costs, and SCE's Interconnection Facilities.

Regardless of the requested Commercial Operating Date, the actual Commercial Operation Dates of the generation projects in QC5 are dependent on the completed construction and energizing of the identified Network Upgrades. Without these upgrades, the new generators may be subject to CAISO's congestion management, including generation tripping. Based on the needed time for permitting, design, and construction, it may not be feasible to complete all the upgrades needed for this cluster before the requested Commercial Operation Dates.

Costs for each generation project are confidential and are not published in the main body of this report. Each IC is receiving a separate Appendix A report, specific only to that generation project, containing the details of the IC's cost responsibilities.

The estimated cost of Reliability Network Upgrades identified in this Group Study is assigned to all Interconnection Requests in that Group Study according to the following rules: (a) short circuit related Reliability Network Upgrades will be assigned pro rata on the basis of the short circuit duty contribution of each Generating Facility and associated proposed Network Upgrades, (b) for all other Reliability Network Upgrades, the cost will be assigned pro rata on the basis of the maximum megawatt electrical output of each proposed new Generating Facility or the amount of megawatt increase in the generating capacity of each existing Generating Facility as listed by the Interconnection Customer in its Interconnection Request. Plan of Service Reliability Upgrades are 100% allocated to the particular IC and are detailed in each IC's Appendix A report.

The estimated cost of all Local Delivery Network Upgrades identified in the Deliverability Assessment are assigned to all Interconnection Requests selecting Full or Partial Capacity

Deliverability Status based on the flow impact of each such Generating Facility on the Delivery Network Upgrades as determined by the generation distribution factor methodology.

The estimated cost of an Area Delivery Network Upgrade divided by the Phase I Incremental MW for the Area Deliverability Constraint establishes the ADNU cost rate for the QC5 projects whose deliverability are constrained by the Area Deliverability Constraint.

The estimated cost of all Interconnection Facilities is assigned to each Interconnection Request individually. The cost estimates for the Interconnection Facilities are all site specific and details are provided in each individual project report.

The estimated cost of Distribution Upgrades and Non-Network Non-CAISO Transmission Upgrades are developed by SCE and are not mandated by the ISO Tariff. These costs are not reimbursable.

Table M.1 Upgrades, Estimated Costs, and Estimated Time To Construct Time Summary

Type of Upgrade	Upgrade	Description	Estimated Cost x 1,000 (Note 4)	Estimated Cost x 1,000 Constant Dollar (OD Year) (Note 4)	Estimated Time to Construct in Months (Note 1) (Note 3)
Plan of Service Reliability Network Upgrades	Plan of Service Reliability Network Upgrades for QC1 projects in the North of Lugo Bulk System are discussed in detail in each individual project report (Appendix A).		**See Appendix A**		
Reliability Network Upgrades	No Reliability Network Upgrades were identified for the Metro System in the QC5 Phase I study				
Local Delivery Network Upgrades	No Local Delivery Network Upgrades were identified for the Metro System in the QC5 Phase I study				
Distribution Upgrades (Note 2)	No Distribution Upgrades were identified for the Metro System in the QC5 Phase I study				
Total			NA	NA	**NA**

Note1: The estimated licensing cost and durations applied to this project are based on the project scope details presented in this study. These estimates are subject to change as project environmental and real estate elements are further defined. Upon execution of the Interconnection Agreement, additional evaluation including but not limited to preliminary engineering, environmental surveys, and property right checks may enable licensing cost and/or duration updates to be provided.
Note 2: These upgrades are not identified in the ISO tariff, and are not reimbursable. Allocated costs may change if all projects respons ble for these upgrades do not execute Interconnection Agreements.
Note 3: Each Upgrade category may contain multiple scope durations. The longest duration is shown under the Estimated Time to Construct.
Note 4: SCE's Phase I cost estimating is done in 'constant' dollars 2012 and then escalated to the estimated O.D..year. For the Phase I Study, the estimated O.D. is derived by assuming the duration of the work element will begin in March 2014, which is the CAISO tariff scheduled completion date of the QC5 Phase II study plus 90 days for the Interconnection Agreement signing period. For instance, if a work element is estimated to take a total of 24 months (permitting, design, procurement, and construction), then the estimated O.D. would be March 2016. If an IC's requested O.D.(in- service) is beyond the estimated O.D. of a work element, the IC's requested O.D. is used. However, should the Generator Interconnection Agreement not be executed, or the necessary information, funding, and written authorization to proceed is not provided by the IC, in time for the Participating TO to perform the work within these time frames, the information provided in Table D.1 may be subject to change.

Table M.2 ADNU Cost Rate

Upgrade	Total Cost	Phase I Incremental MW	ADNU Cost Rate (O.D. Year)	Estimated Time to Construct in Months
NA	NA	NA	NA	NA

N. Coordination with Affected Systems

ISO GIP tariff Appendix Y Section 3.7 requires coordinating with any affected systems that have any potential impact of QC5 projects.

Revised Appendix A – Q941

AES North America Development, LLC

Redondo Beach Energy Project

Queue Cluster 5 Phase I Report

August 12, 2013

This study has been completed in coordination with Southern California Edison per CAISO Tariff Appendix DD Generator Interconnection and Deliverability Allocation Procedures (GIDAP)

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Attachments:

1. Not used
2. Escalated Cost and Time to Construct for PTO Interconnection Facilities, Reliability Network Upgrades, Interconnection Customer Interconnection Facilities, Delivery Network Upgrades, and Distribution Upgrades
3. Interconnection Handbook
4. Short Circuit Calculation Study Results (see Appendix H of the group report)
5. Not Used
6. Generator Dynamic Data

A. Executive Summary

AES North America Development, LLC ,the Interconnection Customer (IC), received a Queue Cluster 5 Phase I Study (Phase I) Appendix A report dated January 31, 2013for their Interconnection Request (IR) to the California Independent System Operator Corporation (CAISO) for their proposed Redondo Beach Energy Project (Project), Q941.

Since the issuance of the Appendix A report dated January 31, 2013, it was learned that the existing Facilities of the Project had an existing "Facilities Study Agreement" (FSA) that impact the classification of the upgrades identified in the QC5 Phase I report provided to the IC. In addition, it was also identified that facilities beyond those identified in the QC5 Phase I report are needed for the interconnection and operation of the Project. The IC also changed their design from two generation tie lines to one generation tie line into the SCE Redondo Substation. As a result, the Appendix A report is being reissued to rectify the classification of the facilities and address the additional facilities required to interconnect the Project. This reissue of the Appendix A report for Q941 is effective upon its issuance date and supersedes the previously issued Appendix A report. For additional information on the changes, refer to Section E.

For the purposes of this report, prior to the repower of the Interconnection Customer's Redondo Beach Generating Facility, the Participating TO owned Redondo Beach 220kV Substation consisted of a breaker and a half 220kV Substation, whereby the Redondo Beach Generating Facilities units 5, 6, 7 and 8 were connected to the Redondo Beach 220kV Substation via a breaker and a half position. As a result of the proposed re-powering of the Redondo Beach Generating Facility and as pursuant to the Participating TO's interconnection standards for new and repowered generating facilities, any and all new or repowered generating facilities must include the following:

1. High side circuit breakers and disconnects at the generating facility capable of isolating the generating facility from the Participating TO's electrical system and the CAISO grid.

2. All generating tie lines interconnecting into the Participating TO's substation must be terminated with circuit breakers and disconnects.

3. All generating tie lines interconnecting into the Participating TO's substation must terminate using either breaker and a half, breaker and a half or other configuration as determined by the ISO and Participating TO.

The Project is a Full Capacity Deliverability Status, Combined Cycle Plant with a total rated output of 475.72 MW to the proposed Point of Interconnection (POI) at Southern California Edison Company's (SCE) Redondo 220[1] kV Bus in Orange County, California. The customer has requested a proposed In-Service Date of January 1, 2017 and a proposed Commercial Operation Date of January 1, 2019.

In accordance with Federal Energy Regulatory Commission (FERC) approved Generator Interconnection and Deliverability Allocation Procedures (GIDAP) (CAISO Tariff Appendix DD), the Project was grouped with Queue Cluster 5 Phase I (QC5) study projects to determine the impacts of the group as well as impacts of the Project on the CAISO Controlled Grid.

The group report has been prepared separately identifying the combined impacts of all projects in the group on the CAISO Controlled Grid. This report focuses only on the impacts of this Project.

The report provides the following:

[1] Identification of facility voltages (220 kV or 500 kV) in this Phase I Study are shown consistent with SCE System Operating Bulletin 123. However, all studies were predicated on the base voltages reflected in the Western Electricity Coordinating Council (WECC) base cases. For the SCE bulk power system, the WECC base cases reflect 230 kV and 500 kV base voltages; consequently, all per-unit calculations presented were based on 230 kV and 500 kV voltages.

1. Transmission system impacts caused by the Project;

2. System reinforcements necessary to mitigate the adverse impacts caused by the Project under various system conditions;

3. A list of required facilities and a good faith estimate of the Project's cost responsibility and time required to construct and bring these facilities into service.

The QC5 study has determined that the Project contributes to various reliability and/or deliverability problems for which mitigation plans have been proposed. These mitigation plans are detailed in Section C of this report. The cost responsibility and estimated time to construct[2] the facilities required for the Project are summarized below.

The good faith cost estimates (in 2012 constant dollars) of the PTO and Interconnection Customer Interconnection Facilities[3] (IF) and Distribution Upgrades[4] to interconnect the Project are:

PTO Interconnection Facilities	[redacted]
ITCC for PTO Interconnection Facilities	[redacted]
Interconnection Customer Interconnection Facilities	[redacted]
ITCC for Interconnection Customer Interconnection Facilities	[redacted]
Distribution Upgrades	[redacted]
ITCC for Distribution Upgrades	[redacted]

The non-binding cost estimate of PTO Interconnection Facilities (IF) and Distribution Upgrades to interconnect the Project is approximately [redacted] including ITCC[5]. Similarly, the good faith cost estimate for the allocated Interconnection Customer Interconnection Facilities necessary to interconnect the project is [redacted]

The good faith cost estimate for the allocated Reliability Network Upgrades[6] (RNUs) necessary to interconnect the project is [redacted]

There were no Distribution Upgrades, Local Delivery Network Upgrades[7] (LDNUs) or Area Delivery Network Upgrades[8,9] identified or allocated in this Phase I study in order to provide the Full Capacity Deliverability Status requested in the Interconnection Request.

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[2] Construction is only part of the duration of months specified in the study, includes final engineering, licensing, etc, and other activities required to bring such facilities into service.

[3] The transmission facilities identified between the generation facility and the point of interconnection necessary to physically and electrically interconnect the Project to the CAISO-Controlled Grid.

[4] These upgrades are not part of the CAISO Controlled Grid, and are not reimbursable.

[5] Income Tax Component of Contribution. The ITCC included in this cost estimate was computed using a 35% rate.

[6] The SCE transmission facilities, other than Interconnection Facilities, at or beyond the point of interconnection necessary to physically and electrically interconnect the Project, needed to maintain system integrity and reliability.

[7] The SCE transmission facilities, other than Interconnection Facilities, at or beyond the point of interconnection necessary to physically and electrically interconnect the Project, and are network upgrades built to address local deliverability constraints for projects that request Full or Partial Capacity Deliverability Status..

[8] The SCE transmission facilities, other than Interconnection Facilities, at or beyond the point of interconnection necessary to physically and electrically interconnect the Project, and are network upgrades built to address area deliverability constraints for projects that request Full or Partial Capacity Deliverability Status.

9 The CAISO developed the $/MW cost rate for incremental Area Delivery Network Upgrades. The cost rate multiplied by the requested deliverable MW capacity provides the cost estimate for the Area Delivery Network Upgrades.

The non-binding estimated time to interconnect the project and construct the facilities corresponding with the mitigation plans associated to the Project is as follows:

Facility Type	**Duration (Months)**[10]
PTO Interconnection Facilities	44
Interconnection Customer Interconnection Facilities	44
Reliability Network Upgrades	44
Local Delivery Network Upgrades	NA
Area Delivery Network Upgrades	NA
Distribution Upgrades	NA

These durations are from the execution of the Generator Interconnection Agreement, receipt of: all required information, funding, and written authorization to proceed from the IC as will be specified in the Generator Interconnection Agreement to commence the work.

B. Project and Interconnection Information

The Project's general information, as stated in the IR provided by the IC, and Interconnection Facilities are illustrated below in Table B.1, Figure B.1 provides the map for the Project and the transmission facilities in the vicinity, and Figure B.2 shows the conceptual single line diagram of the Project as modeled in the study.

Table B.1: Project General Information

Project Location	1100 Harbor Dr. Redondo Beach, CA Los Angeles County
Participating TO's Planning Area	SCE Metro Area
Number and Type of Generators	One Combine Cycle (3X115.962 MW Gas Turbine & 1X145.568 MW Steam Turbine)
Interconnection Voltage	220 kV
Maximum Generator Output	493.0337 MW
Generator Auxiliary Load	17.317 MW
Maximum Net Output to Grid	475.72 MW
Power Factor Range	Lead 0.95 / Lag 0.90

[10] The duration specified reflects the approximate estimated time of completion for these facilities and is different than the duration amount specified for these facilities in Attachment #2 due to the fact that the duration amounts in Attachment #2 are pushed out to synch with the requested OD for the Project.

Step-up Transformer(s)	**Combine Cycle Gas Turbine Transformer:** 220/13.8 kV (YG -D), 75/99/123 MVA H-X Impedance Value: 10 % @ 75 MVA **Combine Cycle Steam Turbine Transformer:** 220/13.8 (YG -D), 94/124/154 MVA H-X Impedance Value: 10 % @ 94 MVA
Point of Interconnection	Participating TO's Redondo 220 kV Substation
Interconnection Customer Requested Commercial Operation Date	January 1, 2019

Figure B.1: Map of the Project

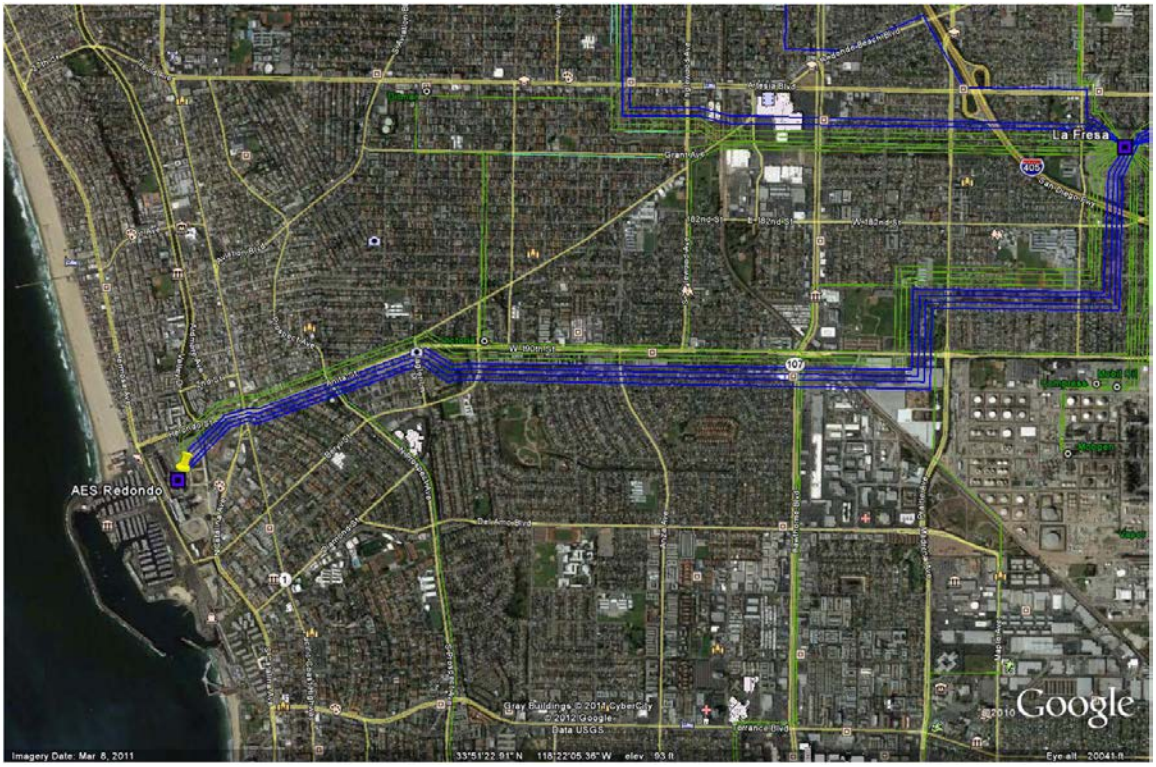


Figure B.2: Proposed Single Line Diagram

Redondo Beach Energy Project (Q941)
475.72 MW Full Capacity

PROJECT DATA

Project Rated Output:	493.454 MW
Auxiliary Load:	17.737 MW
Project Net Capacity:	475.717 MW
Generator Type:	Combine Cycle
POI:	Redondo Beach 230 kV Bus
In-Service:	01/01/2017

Gen-Tie Line Data (assumed negligible):
Distance: 520 feet, 1033.5 ACSR

GENERATOR DATA (1 unit)

Type of Generator:	**Steam Turbine**
Individual generator output:	145.568 MW
MVA Rating:	153.229 MVA
Voltage Rating:	13.8 kV
PF:	0.95
X''_d:	0.14 pu
X_2:	0.183 pu
X_0:	0.091 pu
Gen GND R:	614.66 p.u. @100MVA
Gen GND X:	249.95 p.u. @100MVA

INDIVIDUAL GENERATOR DATA (3 units)

Type of Generator:	**Gas Turbine**
Individual generator output:	115.962 MW
MVA Rating:	122.065 MVA
Voltage Rating:	13.80 kV
PF:	0.95
X''_d:	0.123 pu
X_2:	0.153 pu
X_0:	0.084 pu
Gen GND R:	614.66 p.u. @100MVA
Gen GND X:	249.95 p.u. @100MVA

INDIVIDUAL STEP UP TRANSFORMER DATA (x4)

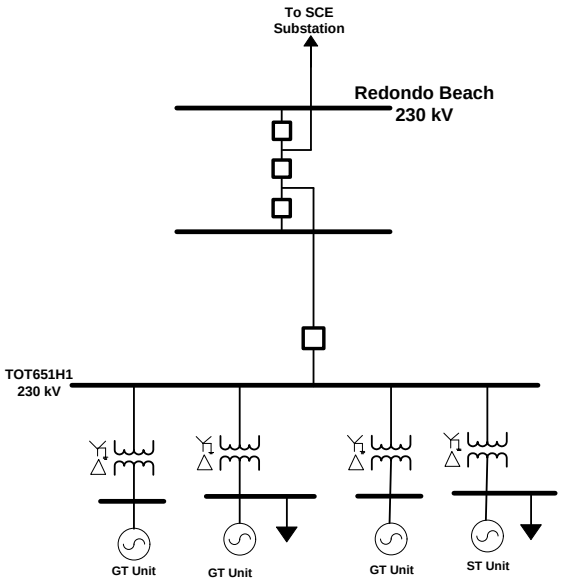
Rated Voltage:	230/13.80 kV
Rated MVA:	94/124/154 MVA
Impedance:	10% @ 95 MVA
H Winding:	Wye Gnd
X Winding:	Delta

*** Steam Turbine generators only**

INDIVIDUAL STEP UP TRANSFORMER DATA (3 units)

Rated Voltage:	230/13.8 kV
Rated MVA:	75/99/123 MVA
Impedance:	10% @ 75 MVA
H Winding:	Wye Gnd
X Winding:	Delta

*** Gas Turbine generators only**



C. PTO Interconnection Facilities, Network Upgrades, and Interconnection Customer Interconnection Facilities

To determine the cost responsibility of each generation project in QC5, the CAISO developed cost allocation factors (Attachment 1) for Reliability Network Upgrades and Local Delivery Network Upgrades. The CAISO developed the $/MW cost rate for incremental Area Delivery Network Upgrades. The cost rate multiplied by the requested deliverable MW capacity provides the cost estimate for the Area Delivery Network Upgrades. The Interconnection Facilities are the sole cost responsibility of the Project. The Interconnection Facilities and Network Upgrades are listed below:

PTO'S INTERCONNECTION FACILITIES

1. **Transmission**
   Q941 220 kV Generation Tie Line
   Install one span of conductor and OPGW between the last generator owned structure and the substation dead-end rack at the 220 kV switchyard.

2. **Substation**
   Redondo Substation: The Participating TO owned 220kV Substation configured in a breaker and a half configuration.

   Install the following interconnection facility components for a 220 kV line position to terminate the 220 kV generation tie line.

   - Three (3) 220 kV coupling capacitor voltage transformers
   - One (1) dead-end structure.
   - Two (2) line current differential protection relays with dedicated, diverse digital communication channels:
     (1) One G.E. L90 current differential relay, or its equivalent successor, with dual dedicated digital communication channels to the generation tie line main breaker.
     (2) One SEL 311L current differential relay, or its equivalent successor, with dual dedicated digital communication channels to the generation tie line main breaker.

3. **Telecommunications**
   Extend the fiber optic (FO) and OPGW provided by the customer to the Redondo Substation communications room to meet the diverse routing requirements for the 220 kV generation tie line protections.

   Also install all required lightwave, channel and related terminal equipment at each end of both FO paths to interface with the required Line Protection Relays and RTU.

4. **Metering Services Organization**
   Install revenue meter required to meter the retail load at the generating facility.

   The customer will provide the required metering equipment (voltage and current transformers and metering cabinet).

5. **Power System Controls**
   Install one RTU at the generating facility to monitor typical generation elements such as MW, MVAR, terminal voltage and circuit breaker status of each generating unit and the plant auxiliary load and transmit this information to the SCE grid control center.

6. **Real Properties, Transmission Project Licensing, and Corporate Environmental Services**
   Obtain licensing, permits, easements and perform all required environmental activities for the installation of the following project elements if applicable:
   - Segment of 220 kV generation tie line within the Redondo Substation property
   - Segments of FO and OPGW within the Redondo Substation property
   - Access Easements

INTERCONNECTION CUSTOMER INTERCONNECTION FACILITIES

Redondo Substation

The PTO shall remove the following equipment at the 220 kV switchyard:

- Remove four (4) 220 kV circuit breakers (CB no. 612, 622, 632, & 642) with associated foundations
- Remove eight (8) three pole group operated disconnect switch with associated foundations
- Remove approximately 1200' of 2156 KCMIL AAC conductor for the existing positions (pos. 1-4)
- Remove any associated relays and wiring.
- Remove the twelve (12) coupling capacitor potential devices with associated foundations.

The PTO shall remove the following equipment at the 66 kV switchyard:

- Remove two (2) 66 kV three pole group operated disconnect switches with associated foundations (one (1) set of disconnect switches at pos. 5 & one (1) set of disconnect switches at pos. 14).
- Remove the dead end for pos. 14
- Remove 240' of 2156 KCMIL AAC conductor for pos. 5 and pos. 14.

PLAN OF SERVICE RELIABILITY NETWORK UPGRADES

Redondo Substation
The equipment at the 220 kV switchyard:

1. **Substation**
   - Install MEER building with communication room - the construction of this MEER building will house all relays for Redondo Substation when the demolition of the existing MEER at the customer site takes place.
   - Install one (1) circuit breaker and two 2) disconnect switches for one(1) existing position.
   - Install approximately 1200' of 2(2156) conductor (existing 3 positions).

2. **Telecommunications**
   - Install two (2) diverse FO cables into a new communications room in the new MEER from existing communications room.
   - Construct DACS, light wave, channel & associated equipment in new communications room.
   - Construct new communications room with DC power system and common equipment.

3. **Power System Controls**
   Add points to existing RTU at Redondo Substation.

4. **Real Properties, Transmission Project Licensing, and Corporate Environmental Services**
   Perform all work to support the 220 kV plan of service network upgrade.

RELIABILITY NETWORK UPGRADES (RNU)

No Reliability Network Upgrades (non-Plan of Service) were identified as part of this QC5 Phase I study for Project.

LOCAL DELIVERY NETWORK UPGRADES (LDNU)

No Local Delivery Network Upgrades were identified as part of this QC5 Phase I study for Project.

AREA DELIVERY NETWORK UPGRADES (ADNU) USED TO DERIVE DOLLAR-PER-MW VALUE

No Area Delivery Network Upgrades were identified as part of this QC5 Phase I study for Project.

DISTRIBUTION UPGRADES

No Distribution Upgrades identified as part of this QC5 Phase I study for Project.

D. Cost and Construction Duration Estimates

To determine the cost responsibility of each generation project in QC5, the CAISO developed cost allocation factors (Attachment 1) for Reliability Network Upgrades and Local Delivery Network Upgrades. The CAISO developed the $/MW cost rate for incremental Area Delivery Network Upgrades. The cost rate multiplied by the requested deliverable MW capacity provides the cost estimate for the Area Delivery Network Upgrades. Attachment 2 provides the 'constant' 2012 dollars and their escalation to the estimated operating date year for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades which the Project was allocated cost. For the QC5 study, the estimated O.D. is derived by assuming the duration of the work element will begin in March 2014, which is the CAISO tariff scheduled completion date of the QC5 Phase II study plus 90 days for the interconnection agreement signing period.

E. Study Assumptions and Additional Scope Discussion

I. Study Assumptions

For detailed assumptions, please refer to the group report. The following assumptions are only specific to the Project:

1. For the purposes of this report, prior to the repower of the Interconnection Customer's Redondo Beach Generating Facility, the Participating TO owned Redondo Beach 220kV Substation consisted of a breaker and a half 220kV Substation, whereby the Redondo Beach Generating Facilities units 5, 6, 7 and 8 were connected to the Redondo Beach 220kV Substation via a breaker and a half position. As a result of the proposed re-powering of the Redondo Beach Generating Facility and as pursuant to the Participating TO's interconnection standards for new and repowered generating facilities, any and all new or repowered generating facilities must include the following:

   a) High side circuit breakers and disconnects at the generating facility capable of isolating the generating facility from the Participating TO's electrical system and the CAISO grid.

   b) All generating tie lines interconnecting into the Participating TO's substation must be terminated with circuit breakers and disconnects.

   c) All generating tie lines interconnecting into the Participating TO's substation must terminate using either double bus double breaker, breaker and a half or other configuration as determined by the ISO and Participating TO.

2. **All new SCE substation and transmission facilities for interconnection of the one existing gen tie will be installed on existing SCE property and is included in this Phase I Study:**
   - The segment of the 220 kV generation tie line from customer last structure into and within Redondo Substation property line.
   - The segments of the telecommunication paths inside Redondo Substation property line.
   - The required remote terminal unit (RTU) to be installed at the generating facility will be installed by SCE.
   - The required retail load meters.
     NOTE: SCE installation <u>does not</u> include metering voltage and current transformers. The SCE meters will be connected to the generator – owned voltage and current transformers to be installed for their CAISO metering.

3. **The following facilities are to be installed by the Interconnection Customer and are not included in this Phase I Study:**
   - The 220 kV generation tie line from the Generating Facility to the last structure outside the Redondo Substation property line.
   - The 220 kV generation tie line optical ground wire (OPGW) and an additional fiber optic path to provide two diverse telecommunication paths required for the line protection relays.
   - High side circuit breaker(s) at the customer's facility in accordance with SCE's Interconnection Handbook.
   - The customer will demolish and remove all existing facilities including the buildings and 66 kV substation. This assumes that all of the relays and associated equipment in the existing control room will be relocated into the new MEER at Redondo Substation This work will be completed under the existing FSA and no relocation costs are included in this study.
   - This study did not take into account phasing of the project.
   - The required CAISO metering equipment (voltage and current transformers, and CAISO meters).
   - The metering cabinet to house the required SCE retail meters.

NOTE: Based on a single CAISO resource metering point for an entire block, the metering voltage and current transformers installed for the CAISO metering will also be used for the SCE owned retail meters. (PT's and CT's to meet SCE specifications.) In the event that a single CAISO resource meter point is not provided, interconnection customer will provide block level single point dedicated retail metering voltage and current transformers, associated disconnects and dedicated enclosure in accordance with SCE standards.

- The following line protection relays to be installed at the Generating Facility end of the 220 kV generation tie line:
    - One G.E. L90 current differential relay, or its equivalent successor, with dual dedicated digital communication channels to Redondo Substation.
    - One SEL 311L current differential relay, or its equivalent successor, with dual dedicated digital communication channels to Redondo Substation.

I. Additional Scope Discussion

As previously mentioned, and demonstrated in Section C in this Revised Appendix A report, there are additional facilities required for interconnection of the Project beyond those identified in the original QC5 Phase I report dated January 31, 2013. Specifically the facilities are:

- Removal of the 66 kV disconnect switches
- Removal of an additional two 220 kV circuit breaker and 220 kV disconnect switches.
- Revision to Interconnection Facilities to take into account the IC request to only have one generation line into Redondo Substation instead of the two originally studied.

The new generators will provide auxiliary power eliminating the need for the existing 66 kV feeds and the need to remove the 66 kV disconnect switches within SCE's substation.

It was determined that the 220 kV breakers and disconnect switches that SCE will remove to support the removal of the two generation lines into Redondo Substation are under the existing FSA. An additional breaker and two sets of disconnect switches were added to the removal list based on the IC's request to only have one generation line into Redondo Substation. The final FSA breaker and two sets of disconnect switches was added to the removal list because Customer owned assets currently under FSA in the SCE switchyard abandon as a result of the repower will be removed, including a breaker and two sets of disconnects which were missed in the original report and hence added/included with this update. The new breaker and disconnect switches needed to replace the FSA breaker and disconnect switches is classified as Plan of Service Reliability Network Upgrades.

The Interconnection Facilities section was updated to include the scope of work needed for one generation line per the IC's request.

F. Deliverability Assessment

See Section F in the group report.

G. Power Flow Analysis

The QC5 study indicated that the Project contributes to the following transmission facility overloads or non-convergence problems. The details of the analysis and overload levels are provided in the group report.

(a) Overloaded Transmission Facilities

Category "A"

- None

Category "B"

- None

Category "C"

- None

(b) Power Flow Non-Convergence

There were no non-convergence issues identified by the addition of this project.

(c) Voltage Performance

There were no voltage issues identified by the addition of this project.

(d) Required Mitigations

With the modeling of all CAISO-approved transmission projects and a number of transmission upgrades needed to support queued ahead Serial Group and Cluster projects in the Metro System, the study identified that the Metro System has sufficient transmission capability to accommodate the QC5 Phase I projects without any additional upgrades.

- **Allocated SCD Mitigation(s) – Refer to Section H below.**

See the group report for additional details.

H. Short Circuit Analysis

Short circuit studies were performed to determine the fault duty impact of adding the QC5 projects to the Participating TO system and to ensure system coordination. The fault duties were calculated with and without the projects to identify any equipment overstress conditions. Once overstressed circuit breakers are identified, the fault current contribution from each individual project in QC5 is determined. Each project in QC5 will be responsible for its share of the upgrade cost based on the rules set forth in CAISO Tariff Appendix DD.

II. Short Circuit Study Input Data

The following input data provided by the Interconnection Customer and was used in this study:

<u>Combined Cycle Steam Turbine Units:</u>

- X"1 – positive sequence subtransient reactance: 0.140 PU
- X2 – negative sequence subtransient reactance: 0.183 PU
- X0 – zero sequence subtransient reactance: 0.091 PU

<u>Individual Combined Cycle Gas Turbine Units (x3):</u>

- X"1 – positive sequence subtransient reactance: 0.123 PU
- X2 – negative sequence subtransient reactance: 0.153 PU
- X0 – zero sequence subtransient reactance: 0.084 PU

<u>Combine cycle Steam Turbine Transformer</u>

Each transformer is a three-phase, 220/13.8 kV (YG-D), 94//124/154 MVA with the following impedance information:

- H-X: 10% @ 94 MVA

Individual Combine cycle Gas Turbine Transformer (x3)
Each transformer is a three-phase, 220/13.8 kV (YG-D), 75/99/123 MVA with the following impedance information:

- H-X: 10% @ 75 MVA

Generation Tie Line

The generation tie line was assumed to be negligible.

III. Short Circuit Duty Study Results

All bus locations where the QC5 projects increase the short-circuit duty by 0.1 kA or more and where duty is in excess of 60% of the minimum breaker nameplate rating are listed in the group report Appendix H. These values have been used to determine if any equipment is overstressed as a result of the QC5 interconnections and corresponding network upgrades, if any.

The responsibility to finance short circuit related upgrades identified through a group study shall be assigned to all Interconnection Requests in that group study pro-rata on the basis of short circuit duty contribution of each Generating Facility. In addition, the SCD impact of the associated proposed Network Upgrades was allocated to each Generating Facility using the same percentage assigned for the triggered Network Upgrade.

(a) Application Queue with RNUs and LDNUs Analysis Results

Fault duties were calculated with the inclusion of the QC5 projects and the identified RNUs and LDNUs to identify the incremental impacts associated with these Facilities. As discussed in Section H of the group report, under this scenario the QC5 study breaker evaluation identified overstressed circuit breakers. The following is the pro-rata cost allocation for this project, based on SCD contribution at each location.

SCD Mitigation - Table of Network Breaker Replacements (RNU)

NA

(b) Application Queue with RNUs, LDNUs, & ADNUs Analysis Results

Fault duties were re-calculated to include the QC5 projects and the identified RNUs, LDNUs, and ADNUs from the power flow and stability analysis to identify the incremental impacts associated with these Facilities. As discussed in Section H of the group report, under this scenario the QC5 study breaker evaluation identified overstressed circuit breakers at Mira Loma and Valley. As part of this Phase I cost estimates for mitigation of short circuit duty impacts under this scenario are not included. As part of Phase II if this mitigation is identified to still be required, cost estimates and corresponding pro-rata cost allocation will be determined.

(c) Application Queue Distribution Analysis Results

Fault duties were calculated for the QC5 projects on the distribution system. Under this scenario the QC5 study breaker evaluation identified overstressed circuit breakers at the following distribution substations. The following is the pro-rata cost allocation for this project, based on SCD contribution at each location.

SCD Mitigation -Table of Distribution Breaker Replacements

NA

IV. Preliminary Protection Requirements

Protection requirements are designed and intended to protect SCE's system only. The preliminary protection requirements were based upon the interconnection plan as shown in Figure B.2.

The applicant is responsible for the protection of its own system and equipment and must meet the requirements in the SCE Interconnection Handbook which is provided in Attachment 3.

I. Project Power Factor Requirements

This Project consist of synchronous generators and are required to operate within a 0.95 leading to 0.90 lagging power factor as measured at the generator terminals

J. Transient Stability Evaluation

Limited transient stability studies were conducted using full loop base cases to ensure that the Participating TO system remains in operating equilibrium, as well as operating in a coordinated fashion; through abnormal operating conditions after the QC5 projects begin operation. The generator dynamic data used in the study for the Project is shown in (Attachment 6).

(a) Transient Stability Study Scenarios

Disturbance simulations were performed for a study period of 10 seconds to determine whether the QC5 projects will create any system instability during a variety of line and generator outages. The most critical single contingency and double contingency outage conditions in the Metro System were evaluated.

For the list of specific line and generator outages evaluated, see the group report.

(b) Transient Stability Study Results

Limited stability analysis was performed for the Eastern Bulk system to identify "relative" as opposed to "absolute" conclusions regarding the stability impacts of the QC5 queued generation projects. In the limited stability analysis performed there were no transient stability problems identified with the addition of the QC5 Phase I projects in the Metro System. Stability plots are shown in Appendix F of the group report.

K. Environmental Evaluation/Permitting

Please see Section L of the QC5 group report.

L. Items not covered in this study

1. Conceptual Plan of Service

The results provided in this study are based on conceptual engineering and a preliminary plan of service and are not sufficient for permitting of facilities. The Plan of Service is subject to change as part of the Phase II Interconnection Study.

2. Customer's Technical Data

Additional technical data related to the Interconnection Customer's project may be required as part of the Phase II study. The study accuracy and results for the QC5 Phase I Study are

contingent upon the accuracy of the technical data provided by the Interconnection Customer. Any changes from the data provided could void the Study results.

3. Study Impacts on Neighboring Utilities

Results or consequences of this QC5 Phase I Study and/or to-be-performed Phase II Interconnection Study may require additional studies, facility additions, and/or operating procedures to address impacts to neighboring utilities and/or regional forums. For example, impacts may include but are not limited to WECC Path Ratings, short circuit duties outside of the CAISO Controlled Grid, and sub-synchronous resonance (SSR).

4. Use of Participating TO Facilities

The Interconnection Customer is responsible for acquiring all property rights necessary for the Interconnection Customer's Interconnection Facilities, including those required to cross Participating TO facilities and property. This Interconnection Study does not include the method or estimated cost to the Interconnection Customer of Participating TO mitigation measures that may be required to accommodate any proposed crossing of Participating TO facilities. The crossing of Participating TO property rights shall only be permitted upon written agreement between Participating TO and the Interconnection Customer at Participating TO's sole determination. Any proposed crossing of Participating TO property rights will require a separate study and/or evaluation, at the Interconnection Customer's expense, to determine whether such use may be accommodated.

5. Participating TO Interconnection Handbook

The Interconnection Customer shall be required to adhere to all applicable requirements in the Participating TO Interconnection Handbook. These include, but are not limited to, all applicable protection, voltage regulation, VAR correction, harmonics, switching and tagging, and metering requirements.

6. Western Electricity Coordinating Council (WECC) Policies

The Interconnection Customer shall be required to adhere to all applicable WECC policies including, but not limited to, the WECC Generating Unit Model Validation Policy.

7. System Protection Coordination

Adequate Protection coordination will be required between Participating TO-owned protection and Interconnection Customer-owned protection. If adequate protection coordination cannot be achieved, then modifications to the Interconnection Customer-owned facilities (i.e., Generation-tie or Substation modifications) may be required to allow for ample protection coordination.

8. Standby Power and Temporary Construction Power

The QC5 Phase I Study does not address any requirements for standby power or temporary construction power that the Project may require prior to the In-Service Date of the Interconnection Facilities. Should the Project require standby power or temporary construction power from Participating TO prior to the In-Service Date of the Interconnection Facilities, the IC is responsible to make appropriate arrangements with Participating TO to receive and pay for such retail.

9. Licensing Cost and Duration Estimate (Estimated Construction Schedule)

The estimated licensing cost and durations applied to this project are based on the project scope details presented in this study. These estimates are subject to change as project environmental and real estate elements are further defined. Upon execution of the Interconnection Agreement, additional evaluation including but not limited to preliminary engineering, environmental surveys, and property right checks may enable licensing cost and/or duration updates to be provided.

10. Network/Non-Network Classification of Telecommunication Facilities

The cost for telecommunication facilities that were identified as part of the IC's Interconnection Facilities was based on an assumption that these facilities would be sited, licensed, and constructed by the IC. The IC will own, operate, maintain, and construct diverse telecommunication paths associated with the IC's gen tie, excluding terminal equipment at both ends. In addition, the telecommunication requirements for SPS were assumed based on tripping of the generator breaker as opposed to tripping the circuit breakers at the Participating TO substation. Due to uncertainties related to telecommunication upgrades for the numerous projects in queue ahead of QC5 Phase I, telecommunication upgrades for higher queued projects were not considered in this study. Depending on the outcome of interconnection studies for higher queued projects, the telecommunication upgrades identified for QC5 Phase I may be reduced. Any changes in these assumptions may affect the cost and schedule for the identified telecommunication facilities.

11. Applicability

This document has been prepared to identify the impact(s) contributions of the Project on the SCE electrical system; as well as establish the technical requirements to interconnect the Project to the Point of Interconnection that was evaluated in the QC5 Phase I Study for the Project. Nothing in this report is intended to supersede or establish terms/conditions specified in interconnection agreements agreed to by SCE, CAISO and the Interconnection Customer.

12. Cost Responsibility Declaration

The interconnection customer is hereby placed on notice that attainment of Full Capacity Deliverability status, or Partial Capacity Deliverability status, as such terms are defined in the CAISO GIDAP, for the proposed generating facility may be dependent upon certain network upgrades which are currently the cost responsibility of projects ahead of the proposed generating facility in the interconnection application queue. According to Appendix DD, Section 14.2.2 of the CAISO GIDAP, if such upgrades required for queued-ahead projects are included in an executed GIA (or unexecuted GIA filed at FERC) at the time of withdrawal of the earlier queued generating facility, and the upgrades are determined to still be needed by later queued generating facilities, the financial responsibility for such upgrades falls to the Participating Transmission Owner. However, if the upgrades required by earlier queued generating facilities not subject to an executed GIA (or unexecuted GIA filed at FERC) the financial responsibility for such upgrades may fall to the interconnection customer. SCE encourages the interconnection customer to review Section 14.2.2 for the rules and processes under which the financial responsibility might be reapportioned to the interconnection customer. Section 14.2.2 also discusses how network upgrades required by interconnection customers selecting Option (B) might be required to be reapportioned among interconnection customers selecting Option (B) in the case of withdrawals of earlier queued generating facilities. This potential cost responsibility is not included in this Phase I study, nor is it subject to the maximum cost responsibility outlined in this Phase I study.

Attachment 1

Not used

Attachment 2

Escalated Cost and Time to Construct for PTO Interconnection Facilities, Interconnection Customer Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades

Please refer to separate document

Attachment 2: Escalated Cost and Time to Construct for Interconnection Facilities, Reliability Network Upgrades, Delivery Network Upgrades, and Distribution Upgrades

Element	Interconnection Facilities Costs x 1,000 Constant Dollar (2012)	Reliability Network Upgrades Costs x 1,000 Constant Dollar (2012)	Delivery Network Upgrades Costs x 1,000 Constant Dollar (2012)	Distribution Upgrades Costs x 1,000 Constant Dollar (2012)	One Time Costs x 1,000 Constant Dollar (2012)	Total Estimated Costs w/o ITCC x 1,000 Constant Dollar (2012)	Total Estimated Costs w/o ITCC x 1,000 Escalated Constant Dollars (OD Year)	"ITCC" x 1,000 Constant Dollar (2012)	Total Estimated Costs w ITCC x 1,000 Constant Dollar (2012)	Total Estimated Costs w ITCC x 1,000 Escalated Constant Dollar (OD Year)	Estimated Time to Construct (Months) (Note 3 & 4)
PTO's Interconnection Facilities (Note 1)											
Transmission/Subtransmission	[redacted]							[redacted]			
Substations	[redacted]							[redacted]			
Telecommunications/Edison Carrier Solutions	[redacted]							[redacted]			
Corporate Enviromental Services	[redacted]							[redacted]			
Licensing	[redacted]							[redacted]			
Real Properties	[redacted]							[redacted]			
Metering Services	[redacted]							[redacted]			
Power System Controls – Generating Facility	[redacted]							[redacted]			
Subtotal	[redacted]					[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	44
PTO's Reliability Network Upgrades											
Short Circuit Mitigation											
Plan of Service											44
Substation		[redacted]									
Transmission/Subtransmission											
Corporate Enviromental Services		[redacted]									
Licensing											
Real Properties											
Power System Controls					[redacted]						
Telecommunications											
Subtotal		[redacted]			[redacted]	[redacted]	[redacted]		[redacted]	[redacted]	44
PTO's Local Delivery Network Upgrades											
None											
Subtotal											
Distribution Upgrades (Note 2)											
None											
0											
Subtotal											
[redacted]											
Total	[redacted]	[redacted]	NA	NA	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	44
AREA DELIVERY NETWORK UPGRADES COST ALLOCATION											
PTO's Area Delivery Network Upgrades											
None											
[redacted]											
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Project Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Note 1: The Interconnection Customer (IC) is obligated to fund these upgrades, and the IC will not be reimbursed for these upgrade costs.

Note 2: The Interconnection Customer is obligated to fund these upgrades, and the IC will not be reimbursed for these upgrade costs. Allocated costs may change if all projects responsible for these upgrades do not execute Interconnection Agreements.

Note 3: The estimated licensing cost and construction durations applied to this project are based on the project scope details presented in this study. These estimates are subject to change after project environmental and real estate elements are further defined. After execution of the Interconnection Agreement, additional evaluation, including but not limited to, preliminary engineering, environmental surveys, and property right checks may result in licensing cost and/or construction duration updates which will be provided to the IC.

Note 4: SCE's Phase I cost estimating is done in 'constant' dollars 2012 and then escalated to the estimated O.D. year. For the Phase I Study, the estimated O.D. is derived by assuming the duration of the work element will begin in March 2014, which is the CAISO tariff scheduled completion date of the QC5 Phase II Study plus 90 calendar days for the Interconnection Agreement negotiations/execution. For instance, if a work element is estimated to take a total of 24 months for permitting, design, procurement, and construction, then the estimated O.D. would be March 2016. If an IC's requested O.D. (In-Service Date) is beyond the estimated O.D. of a work element, the IC's requested O.D. is used. However, should the Generator Interconnection Agreement not be executed, or if the necessary information, funding, and written authorization to proceed is not provided by the IC in time for the Participating TO to perform the work within these time frames, then the information provided in Table D.1 may be subject to change.

Attachment 3

Participating TO Interconnection Handbook

Preliminary Protection Requirements for Interconnection Facilities are outlined in the Participating TO Interconnection Handbook.

Attachment 4

Short Circuit Calculation Study Results

Please refer to the Appendix H of the group report.

Attachment 5

Not Used

Attachment 6 - Customer Provided Project Dynamic Data - CONFIDENTIAL

Appendix B – [Placeholder]

Appendix C – Contingency Lists for Outages

Metro Area Single Contingencies (N-1)

No.	Contingency Description
1.	SANLUSRY to S.ONOFRE 230.0 kV No.1
2.	SANLUSRY to S.ONOFRE 230.0 kV No.2
3.	SANLUSRY to S.ONOFRE 230.0 kV No.3
4.	TALEGA to S.ONOFRE 230.0 kV No.1
5.	TALEGA to S.ONOFRE 230.0 kV No.1B
6.	TALEGA to S.ONOFRE 230.0 kV No.2
7.	TALEGA to S.ONOFRE 230.0 kV No.2B
8.	ALMITOSE to BARRE 230.0 kV No.1
9.	ALMITOSE to CENTER S 230.0 kV No.1
10.	ALMITOSW to BARRE 230.0 kV No.2
11.	ALMITOSW to LITEHIPE 230.0 kV No.1
12.	ARCO SC to HINSON 230.0 kV No.1
13.	ARCO SC to HINSON 230.0 kV No.2
14.	BARRE to ELLIS 230.0 kV No.1
15.	BARRE to VILLA PK 230.0 kV No.1
16.	BARRE to LEWIS 230.0 kV No.1
17.	CAMINO to MEAD S 230.0 kV No.E
18.	CAMINO to MEAD S 230.0 kV No.W
19.	CAMINO to GENE 230.0 kV No.1
20.	CENTER S to MESA CAL 230.0 kV No.1
21.	CENTER S to OLINDA 230.0 kV No.1
22.	CHINO to MIRALOMW 230.0 kV No.1
23.	CHINO to MIRALOMW 230.0 kV No.2
24.	CHINO to SERRANO 230.0 kV No.1
25.	CHINO to MIRALOME 230.0 kV No.3
26.	DELAMO to CENTER S 230.0 kV No.1
27.	DELAMO to ELLIS 230.0 kV No.1
28.	DELAMO to LAGUBELL 230.0 kV No.1
29.	EAGLROCK to GOULD 230.0 kV No.1
30.	EAGLROCK to MESA CAL 230.0 kV No.1
31.	EAGLROCK to PARDEE 230.0 kV No.1
32.	EAGLROCK to SYLMAR S 230.0 kV No.1
33.	EL NIDO to LA FRESA 230.0 kV No.3
34.	EL NIDO to LA FRESA 230.0 kV No.4
35.	EL NIDO to LCIENEGA 230.0 kV No.1
36.	EL NIDO to CHEVMAIN 230.0 kV No.1
37.	ELLIS to HUNTGBCH 230.0 kV No.1

38.	ELLIS to HUNTGBCH 230.0 kV No.3
39.	ELLIS to JOHANNA 230.0 kV No.1
40.	ELLIS to SANTIAGO 230.0 kV No.1
41.	ELLIS to HUNTBCH1 230.0 kV No.2
42.	ELLIS to HUNTBCH1 230.0 kV No.4
43.	ELSEGNDO to EL NIDO 230.0 kV No.1
44.	ELSEGNDO to CHEVMAIN 230.0 kV No.1
45.	ETIWANDA to MIRALOME 230.0 kV No.1
46.	HARBOR to HINSON 230.0 kV No.1
47.	HARBOR to LBEACH 230.0 kV No.1
48.	HINSON to DELAMO 230.0 kV No.1
49.	JOHANNA to SANTIAGO 230.0 kV No.1
50.	LA FRESA to HINSON 230.0 kV No.1
51.	LA FRESA to LAGUBELL 230.0 kV No.1
52.	LA FRESA to REDONDO 230.0 kV No.1
53.	LA FRESA to REDONDO 230.0 kV No.2
54.	LAGUBELL to RIOHONDO 230.0 kV No.1
55.	LBEACH to LITEHIPE 230.0 kV No.1
56.	LCIENEGA to LA FRESA 230.0 kV No.1
57.	LITEHIPE to HINSON 230.0 kV No.1
58.	LITEHIPE to MESA CAL 230.0 kV No.1
59.	MESA CAL to REDONDO 230.0 kV No.1
60.	MESA CAL to RIOHONDO 230.0 kV No.1
61.	MESA CAL to VINCENT 230.0 kV No.2
62.	MESA CAL to WALNUT 230.0 kV No.1
63.	MIRALOMA to SERRANO 500.0 kV No.1
64.	MIRALOMA to SERRANO 500.0 kV No.2
65.	MIRALOMW to WALNUT 230.0 kV No.1
66.	MIRALOMW to VSTA 230.0 kV No.1
67.	MOORPARK to ORMOND 230.0 kV No.1
68.	MOORPARK to ORMOND 230.0 kV No.2
69.	MOORPARK to ORMOND 230.0 kV No.3
70.	MOORPARK to ORMOND 230.0 kV No.4
71.	OLINDA to WALNUT 230.0 kV No.1
72.	REDONDO to LITEHIPE 230.0 kV No.1
73.	RIOHONDO to VINCENT 230.0 kV No.2
74.	S.ONOFRE to SANTIAGO 230.0 kV No.1
75.	S.ONOFRE to SANTIAGO 230.0 kV No.2
76.	S.ONOFRE to SERRANO 230.0 kV No.1
77.	SERRANO to VILLA PK 230.0 kV No.1
78.	SERRANO to VILLA PK 230.0 kV No.2

79.	SERRANO to VALLEYSC 500.0 kV No.1
80.	SYLMAR S to GOULD 230.0 kV No.1
81.	VINCENT to MESA CAL 230.0 kV No.1
82.	VINCENT to RIOHONDO 230.0 kV No.1
83.	VINCENT to S.CLARA 230.0 kV No.1
84.	VINCENT to MIRALOMA 500.0 kV No.1
85.	VINCENT to VINCTSVC 500.0 kV No.1
86.	RANCHVST to SERRANO 500.0 kV No.1
87.	RANCHVST to MIRALOME 230.0 kV No.1
88.	RANCHVST to MIRALOME 230.0 kV No.2
89.	GOODRICH to GOULD 230.0 kV No.1
90.	GOODRICH to LAGUBELL 230.0 kV No.1
91.	LEWIS to SERRANO 230.0 kV No.1
92.	LEWIS to SERRANO 230.0 kV No.2
93.	LEWIS to VILLA PK 230.0 kV No.1
94.	VIEJOSC to CHINO 230.0 kV No.1
95.	VIEJOSC to S.ONOFRE 230.0 kV No.1
96.	MIRALOME to OLINDA 230.0 kV No.1
97.	MIRALOME to PADUA 230.0 kV No.1
98.	MIRALOME to VSTA 230.0 kV No.2
99.	SYLMAR1 to SYLMAR S 230.0 kV No.1
100.	SERRANO to ALBERHL5 500.0 kV No.1
101.	ALBERHL5 to VALLEYSC 500.0 kV No.1
102.	ALBERHL5 to LEAPS-MP 500.0 kV No.1

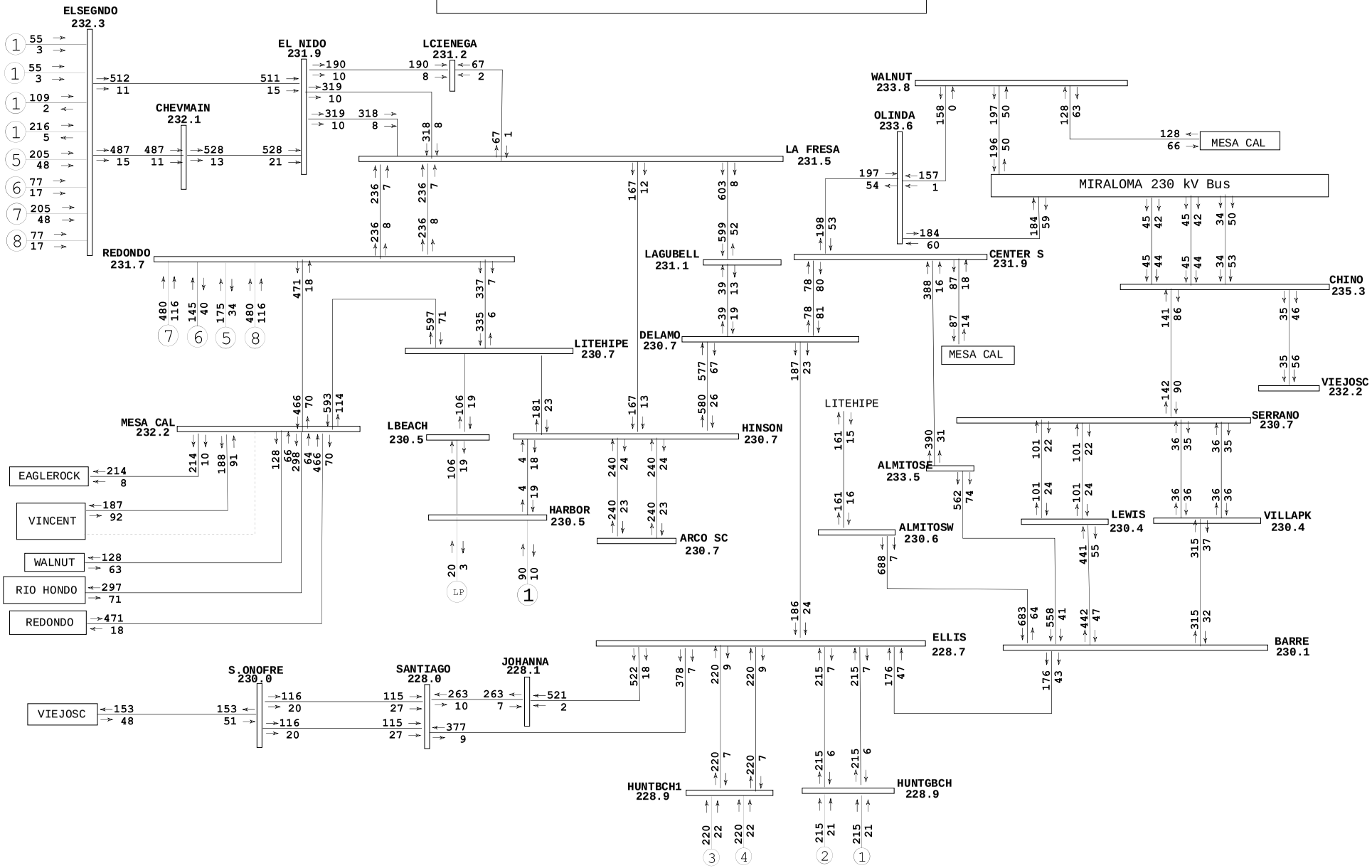
Metro Area Single Contingencies (N-2)

No.	Contingency Description
1.	ALMITOSE to BARRE 230.0 kV No.1 & ALMITOSW to BARRE 230.0 kV No.2
2.	ALMITOSE to CENTER S 230.0 kV No.1 & ALMITOSW to BARRE 230.0 kV No.2
3.	ALMITOSE to CENTER S 230.0 kV No.1 & ALMITOSW to LITEHIPE 230.0 kV No.1
4.	ALMITOSE to CENTER S 230.0 kV No.1 & DELAMO to CENTER S 230.0 kV No.1
5.	ALMITOSW to BARRE 230.0 kV No.2 & DELAMO to ELLIS 230.0 kV No.1
6.	ALMITOSW to LITEHIPE 230.0 kV No.1 & HINSON to DELAMO 230.0 kV No.1
7.	BARRE to ELLIS 230.0 kV No.1 & DELAMO to ELLIS 230.0 kV No.1
8.	BARRE to VILLA PK 230.0 kV No.1 & BARRE to LEWIS 230.0 kV No.1
9.	BARRE to VILLA PK 230.0 kV No.1 & LEWIS to VILLA PK 230.0 kV No.1
10.	CENTER S to MESA CAL 230.0 kV No.1 & CENTER S to OLINDA 230.0 kV No.1
11.	CENTER S to MESA CAL 230.0 kV No.1 & MESA CAL to WALNUT 230.0 kV No.1
12.	CENTER S to OLINDA 230.0 kV No.1 & MESA CAL to WALNUT 230.0 kV No.1
13.	CENTER S to OLINDA 230.0 kV No.1 & OLINDA to WALNUT 230.0 kV No.1
14.	CHINO to MIRALOMW 230.0 kV No.1 & CHINO to MIRALOMW 230.0 kV No.2
15.	CHINO to MIRALOMW 230.0 kV No.2 & CHINO to MIRALOME 230.0 kV No.3
16.	CHINO to SERRANO 230.0 kV No.1 & S.ONOFRE to SERRANO 230.0 kV No.1
17.	CHINO to SERRANO 230.0 kV No.1 & VIEJOSC to CHINO 230.0 kV No.1
18.	DELAMO to LAGUBELL 230.0 kV No.1 & HINSON to DELAMO 230.0 kV No.1
19.	DELAMO to LAGUBELL 230.0 kV No.1 & LITEHIPE to MESA CAL 230.0 kV No.1
20.	EL NIDO to LA FRESA 230.0 kV No.3 & EL NIDO to LA FRESA 230.0 kV No.4
21.	EL NIDO to LCIENEGA 230.0 kV No.1 & LCIENEGA to LA FRESA 230.0 kV No.1
22.	EL NIDO to CHEVMAIN 230.0 kV No.1 & ELSEGNDO to EL NIDO 230.0 kV No.1
23.	ELLIS to HUNTGBCH 230.0 kV No.1 & ELLIS to HUNTBCH1 230.0 kV No.2
24.	ELLIS to HUNTGBCH 230.0 kV No.3 & ELLIS to HUNTBCH1 230.0 kV No.2
25.	ELLIS to HUNTGBCH 230.0 kV No.3 & ELLIS to HUNTBCH1 230.0 kV No.4
26.	ELLIS to JOHANNA 230.0 kV No.1 & ELLIS to SANTIAGO 230.0 kV No.1
27.	ELLIS to SANTIAGO 230.0 kV No.1 & JOHANNA to SANTIAGO 230.0 kV No.1
28.	ELSEGNDO to EL NIDO 230.0 kV No.1 & ELSEGNDO to CHEVMAIN 230.0 kV No.1
29.	HARBOR to HINSON 230.0 kV No.1 & LBEACH to LITEHIPE 230.0 kV No.1
30.	HINSON to DELAMO 230.0 kV No.1 & LA FRESA to HINSON 230.0 kV No.1
31.	HINSON to DELAMO 230.0 kV No.1 & LITEHIPE to HINSON 230.0 kV No.1
32.	LA FRESA to HINSON 230.0 kV No.1 & LA FRESA to LAGUBELL 230.0 kV No.1
33.	LA FRESA to HINSON 230.0 kV No.1 & REDONDO to LITEHIPE 230.0 kV No.1
34.	LA FRESA to LAGUBELL 230.0 kV No.1 & LITEHIPE to MESA CAL 230.0 kV No.1
35.	LA FRESA to LAGUBELL 230.0 kV No.1 & MESA CAL to REDONDO 230.0 kV No.1
36.	LA FRESA to LAGUBELL 230.0 kV No.1 & REDONDO to LITEHIPE 230.0 kV No.1
37.	LA FRESA to REDONDO 230.0 kV No.1 & LA FRESA to REDONDO 230.0 kV No.2

38.	LA FRESA to REDONDO 230.0 kV No.2 & MESA CAL to REDONDO 230.0 kV No.1
39.	LAGUBELL to RIOHONDO 230.0 kV No.1 & LITEHIPE to MESA CAL 230.0 kV No.1
40.	LAGUBELL to RIOHONDO 230.0 kV No.1 & MESA CAL to RIOHONDO 230.0 kV No.1
41.	LBEACH to LITEHIPE 230.0 kV No.1 & LITEHIPE to HINSON 230.0 kV No.1
42.	LITEHIPE to MESA CAL 230.0 kV No.1 & GOODRICH to LAGUBELL 230.0 kV No.1
43.	MESA CAL to REDONDO 230.0 kV No.1 & REDONDO to LITEHIPE 230.0 kV No.1
44.	MESA CAL to REDONDO 230.0 kV No.1 & GOODRICH to LAGUBELL 230.0 kV No.1
45.	MESA CAL to RIOHONDO 230.0 kV No.1 & MESA CAL to WALNUT 230.0 kV No.1
46.	MESA CAL to WALNUT 230.0 kV No.1 & OLINDA to WALNUT 230.0 kV No.1
47.	MIRALOMA to SERRANO 500.0 kV No.1 & MIRALOMA to SERRANO 500.0 kV No.2
48.	MIRALOMA to SERRANO 500.0 kV No.1 & MIRALOME to OLINDA 230.0 kV No.1
49.	MIRALOMW to WALNUT 230.0 kV No.1 & OLINDA to WALNUT 230.0 kV No.1
50.	MIRALOMW to WALNUT 230.0 kV No.1 & MIRALOME to OLINDA 230.0 kV No.1
51.	MOORPARK to ORMOND 230.0 kV No.1 & MOORPARK to ORMOND 230.0 kV No.2
52.	MOORPARK to ORMOND 230.0 kV No.2 & MOORPARK to ORMOND 230.0 kV No.3
53.	MOORPARK to ORMOND 230.0 kV No.3 & MOORPARK to ORMOND 230.0 kV No.4
54.	OLINDA to WALNUT 230.0 kV No.1 & MIRALOME to OLINDA 230.0 kV No.1
55.	RIOHONDO to VINCENT 230.0 kV No.2 & VINCENT to RIOHONDO 230.0 kV No.1
56.	S.ONOFRE to SANTIAGO 230.0 kV No.1 & S.ONOFRE to SANTIAGO 230.0 kV No.2
57.	S.ONOFRE to SANTIAGO 230.0 kV No.2 & S.ONOFRE to SERRANO 230.0 kV No.1
58.	S.ONOFRE to SERRANO 230.0 kV No.1 & SERRANO to VALLEYSC 500.0 kV No.1
59.	S.ONOFRE to SERRANO 230.0 kV No.1 & VIEJOSC to CHINO 230.0 kV No.1
60.	S.ONOFRE to SERRANO 230.0 kV No.1 & VIEJOSC to S.ONOFRE 230.0 kV No.1
61.	SERRANO to VILLA PK 230.0 kV No.1 & SERRANO to VILLA PK 230.0 kV No.2
62.	SERRANO to VILLA PK 230.0 kV No.2 & LEWIS to SERRANO 230.0 kV No.2
63.	RANCHVST to MIRALOME 230.0 kV No.1 & RANCHVST to MIRALOME 230.0 kV No.2
64.	LEWIS to SERRANO 230.0 kV No.1 & LEWIS to SERRANO 230.0 kV No.2
65.	LEWIS to SERRANO 230.0 kV No.1 & LEWIS to VILLA PK 230.0 kV No.1

Appendix D – Steady State Power Flow Plots

SCE Metro Area 230 kV System



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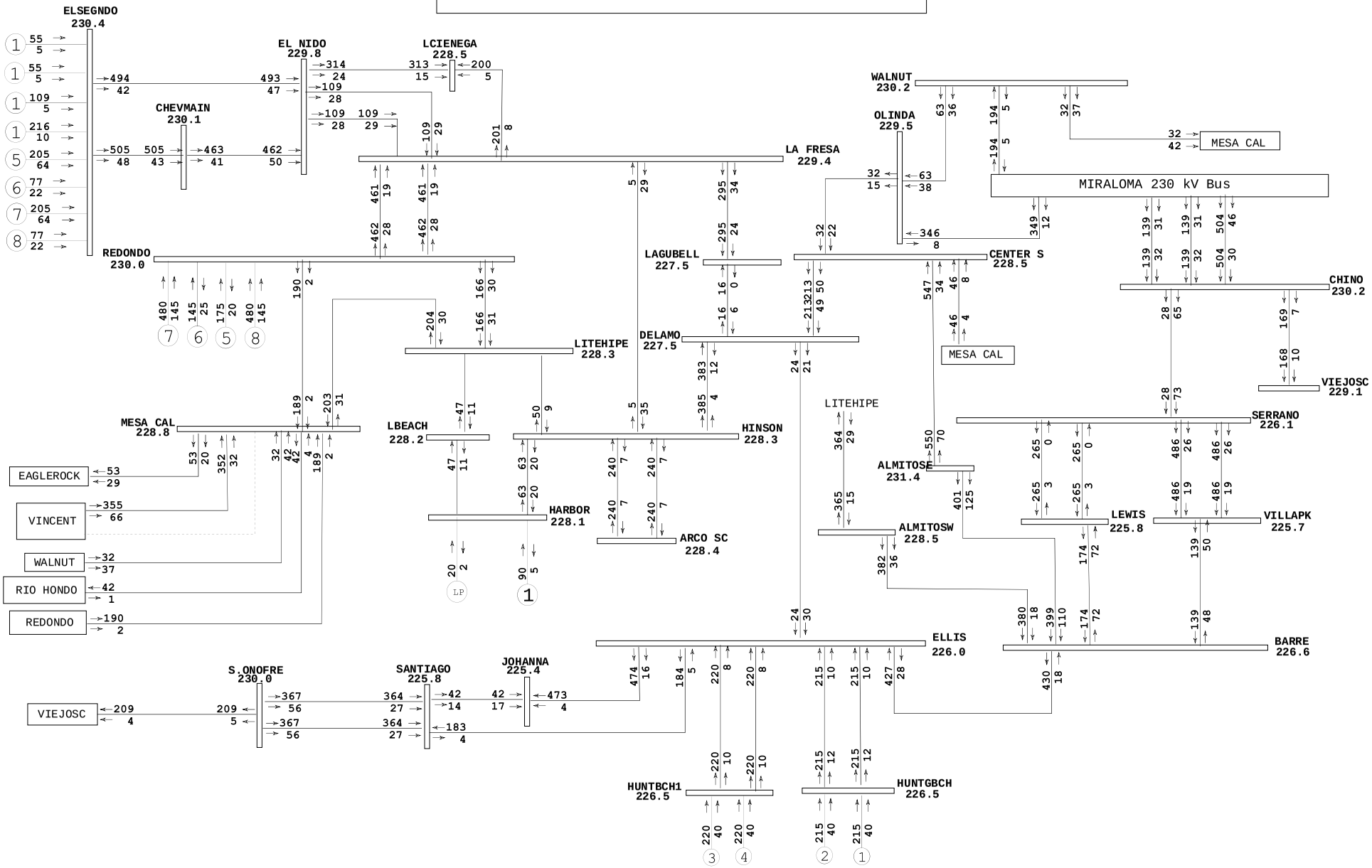
2016 Off Peak Base Case

SCE Metro Bulk System Study, Queue Cluster 5 Phase 1 Case

MW/MVAR

Rating = 1

SCE Metro Area 230 kV System



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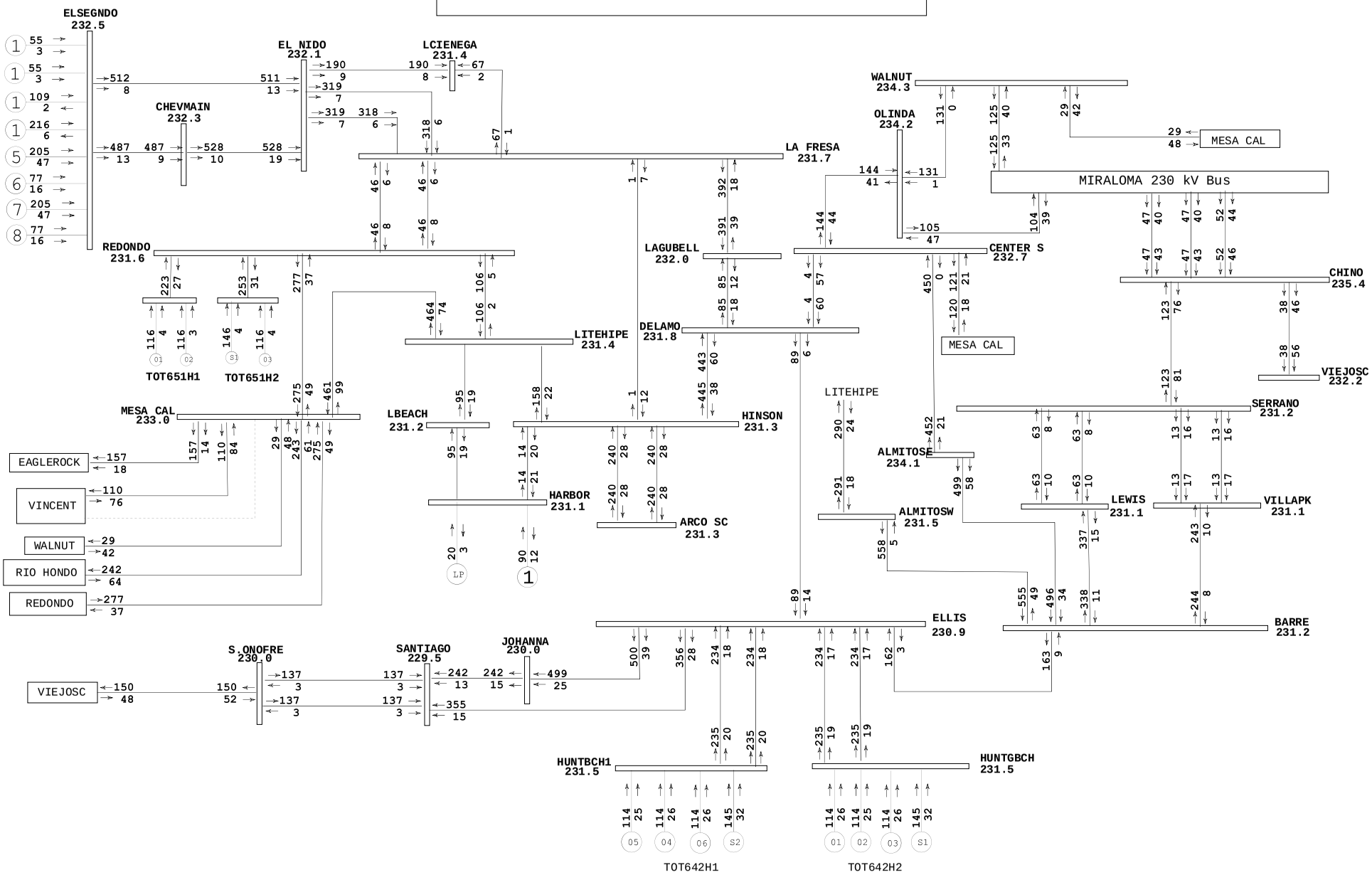
2016 Peak Base Case

SCE Metro Bulk System Study, Queue Cluster 5 Phase 1 Case

MW/MVAR

Rating = 1

SCE Metro Area 230 kV System



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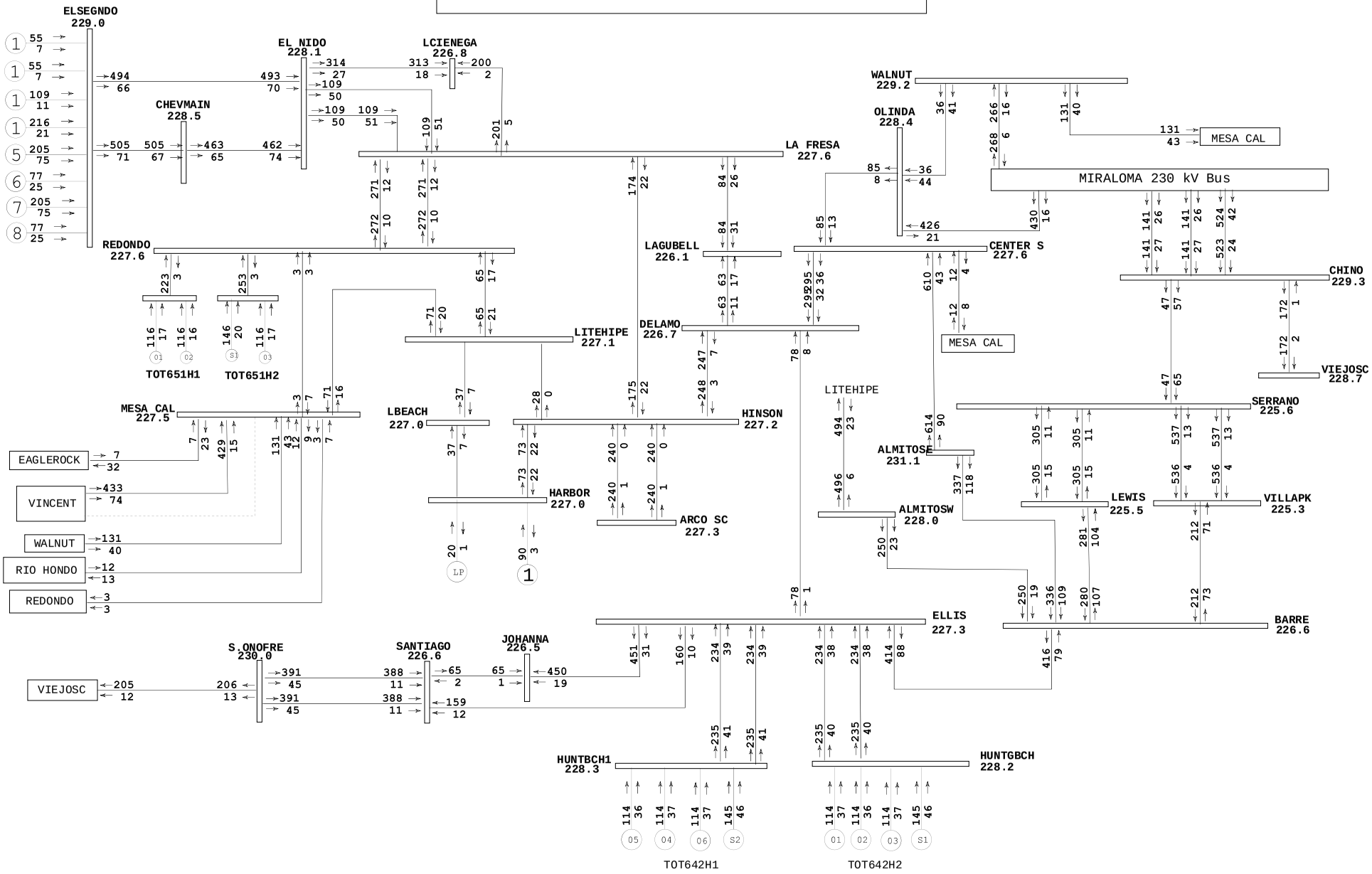
2016 Off Peak Base Case

SCE Metro Bulk System Study, Queue Cluster 5 Phase 1 Case

MW/MVAR

Rating = 1

SCE Metro Area 230 kV System



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2016 Peak Base Case

SCE Metro Bulk System Study, Queue Cluster 5 Phase 1 Case

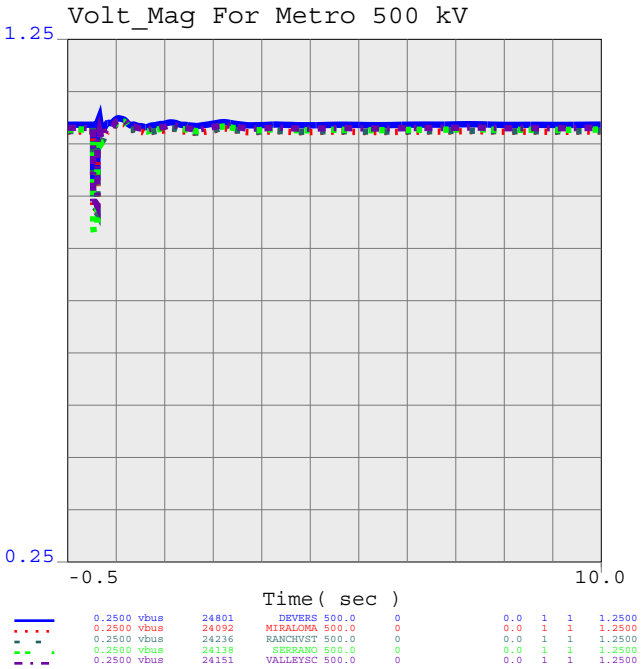
MW/MVAR

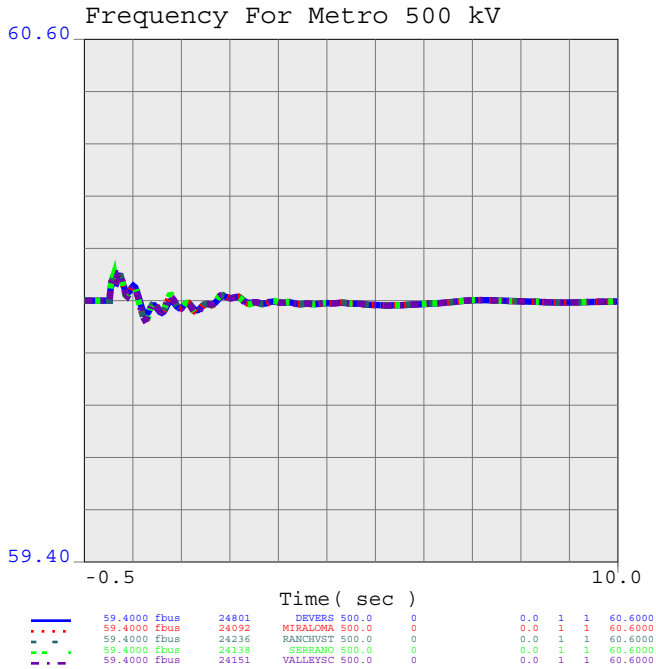
Rating = 1

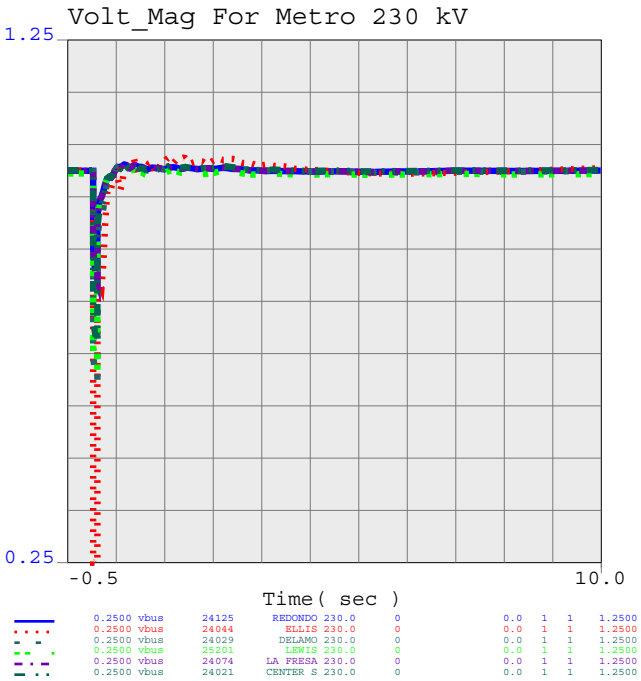
Appendix E – [Placeholder]

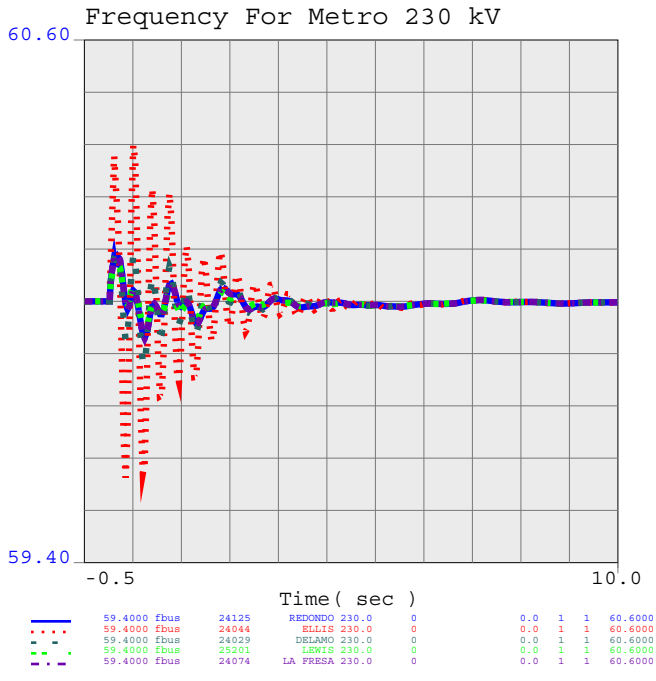
Appendix F – Dynamic Stability Plots

QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Barre-Ellis-slo.chf

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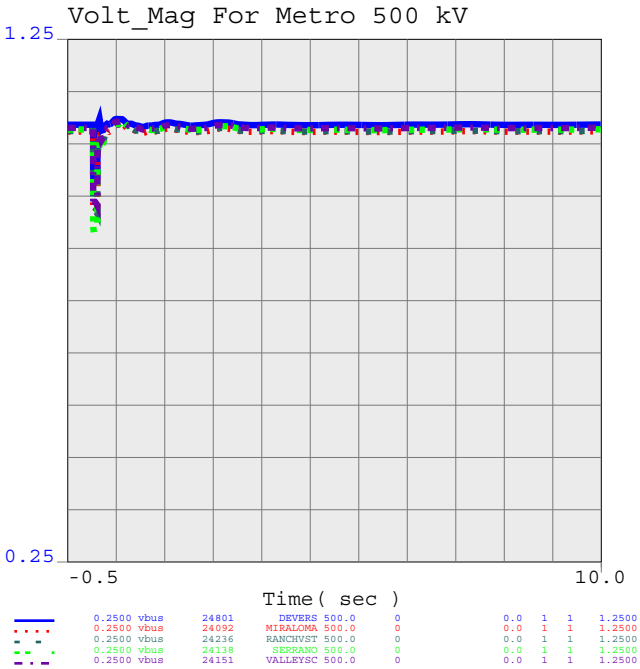
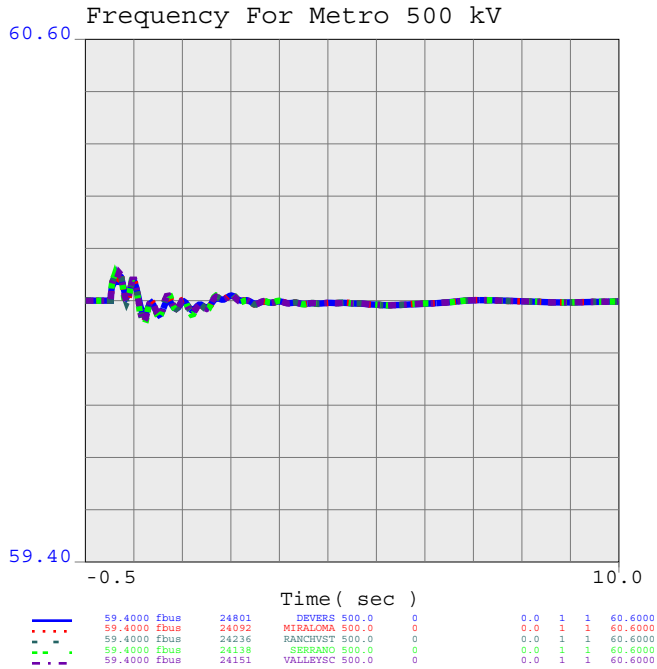
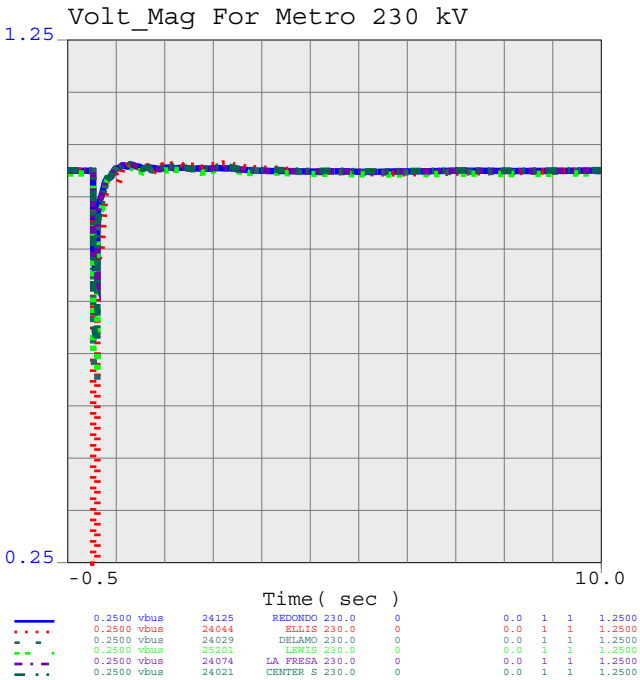
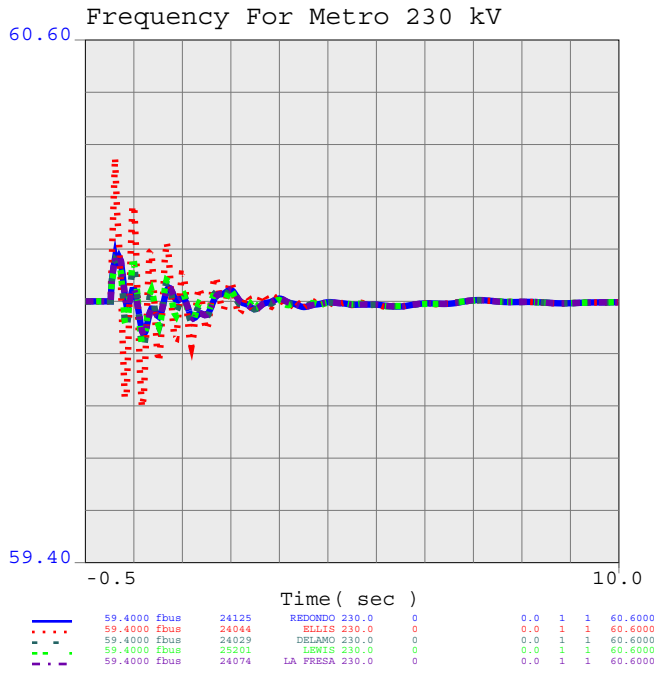
Thu Jan 17 11:05:13 2013

QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Ellis-Huntgbch-1.chf

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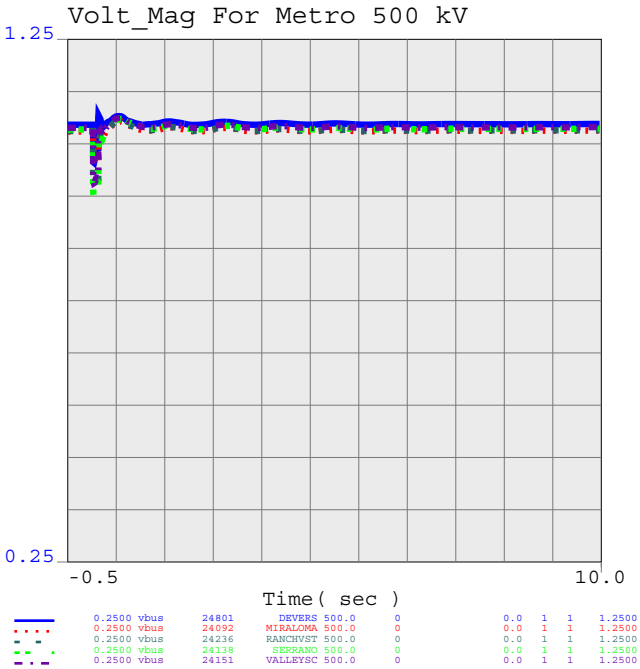
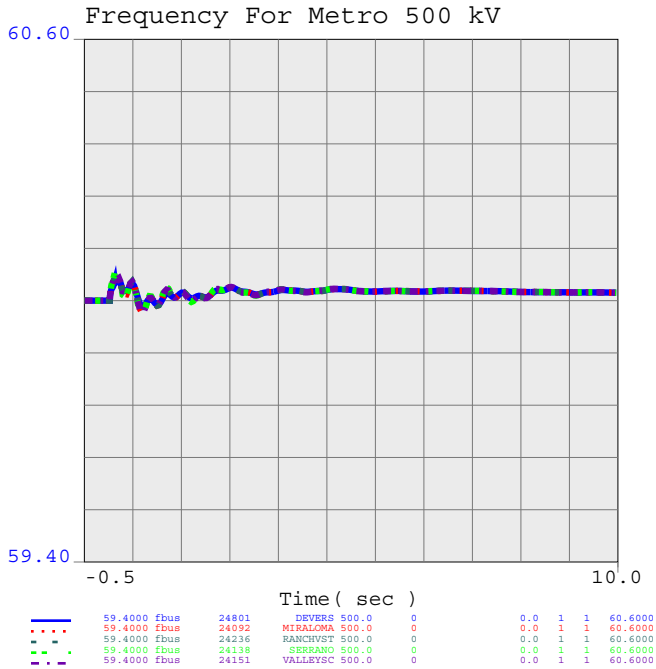
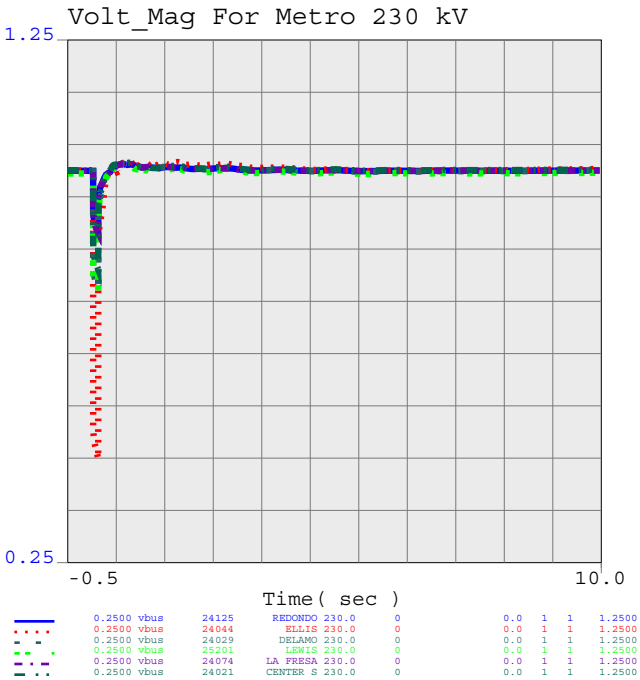
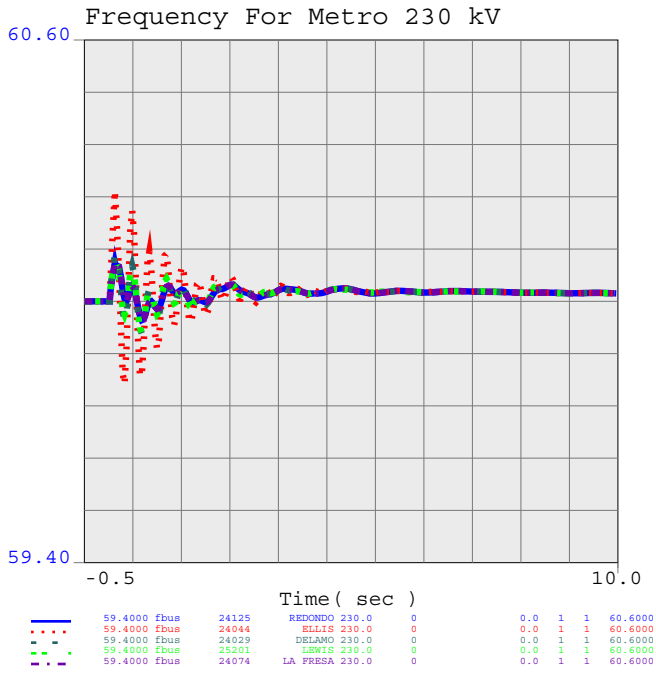
Thu Jan 17 10:54:24 2013

QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Ellis-Santiago-Johanna-dlo.chf

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Thu Jan 17 10:55:51 2013

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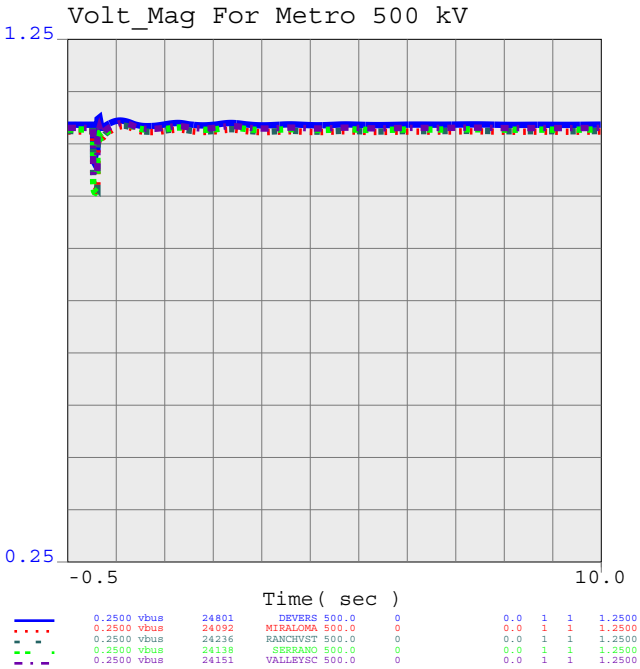

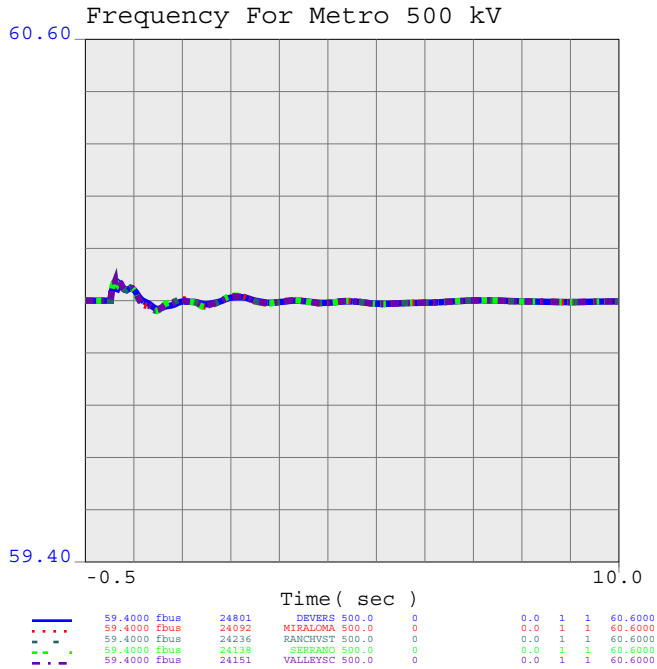

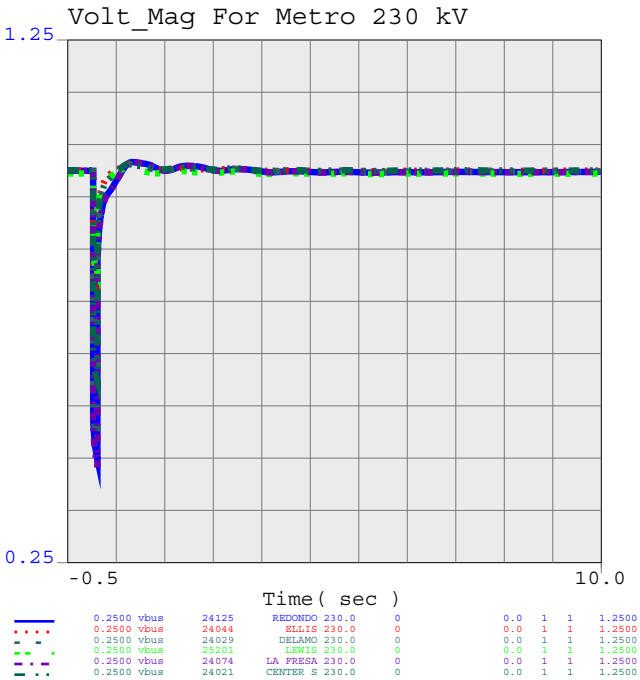

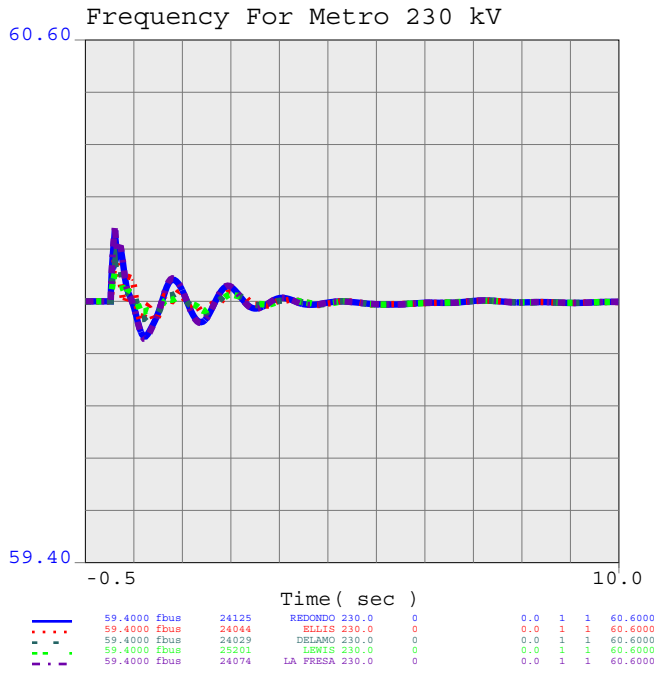

QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Hinson-Hinson-DelAmo-Litehipe-Hinson.chf

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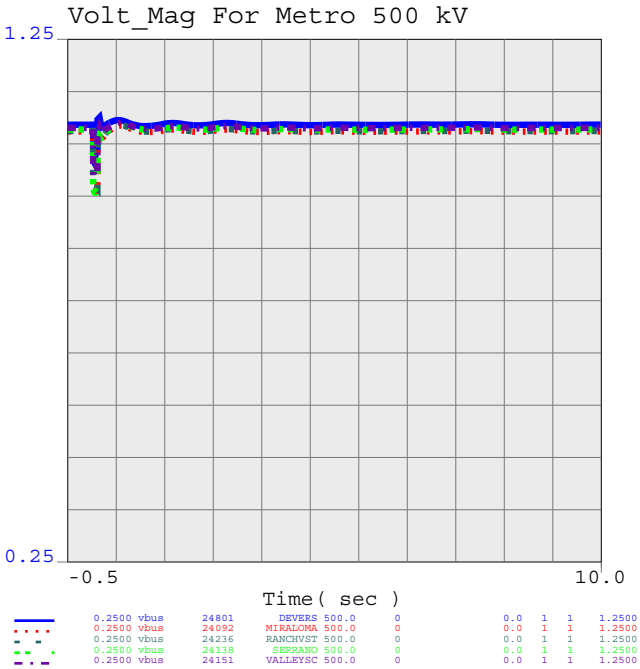
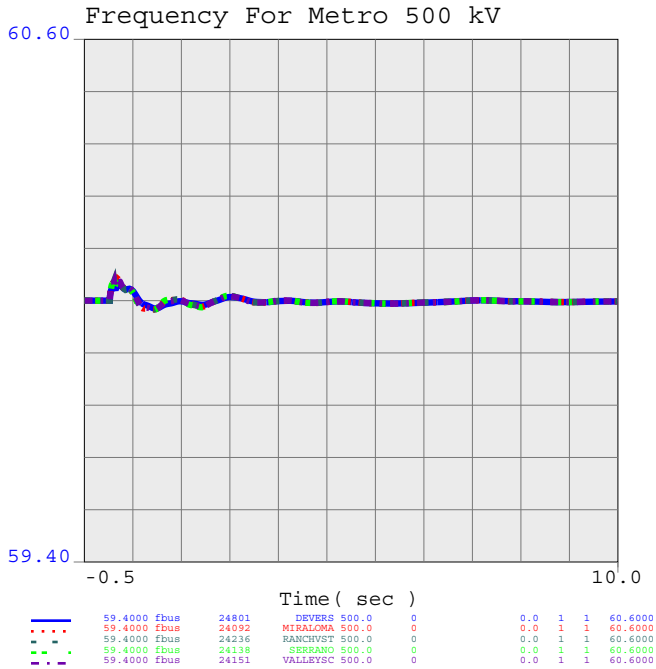
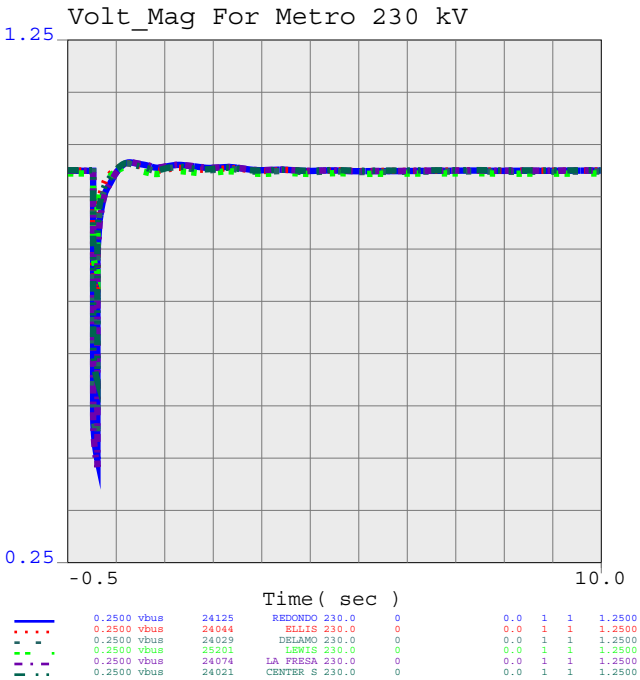
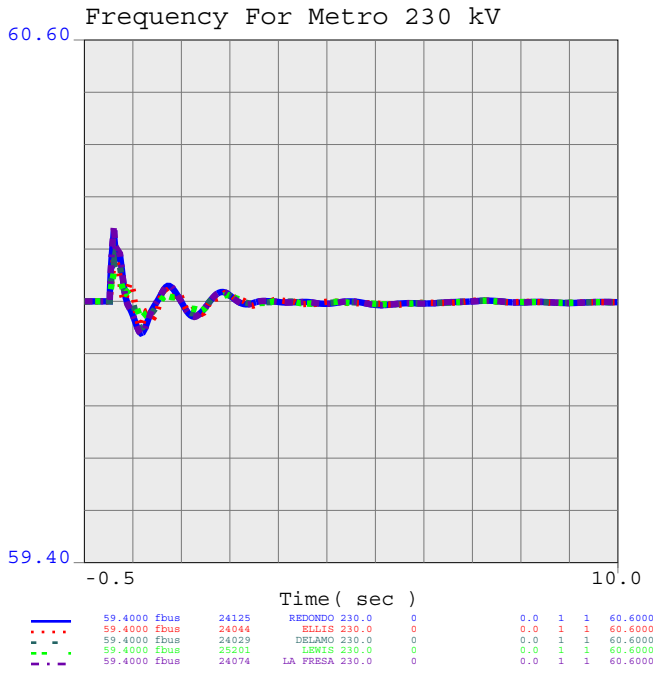
Thu Jan 17 10:57:14 2013

QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Hinson-LaFresa-Hinson-slo.chf

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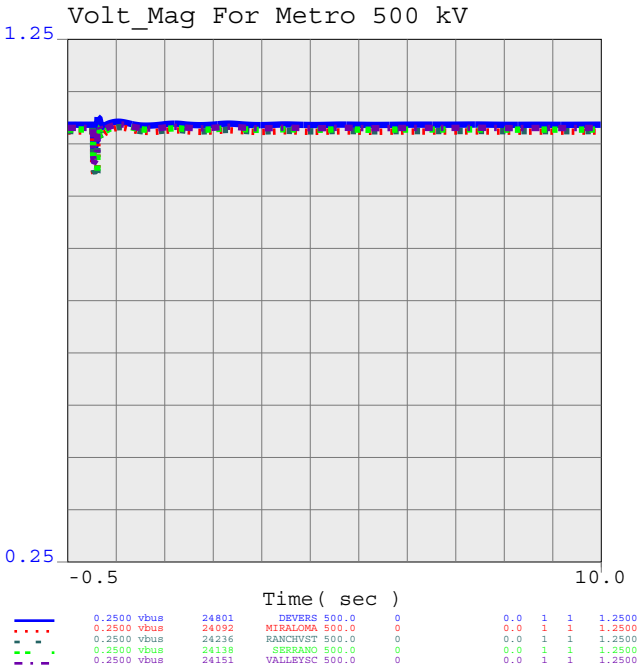
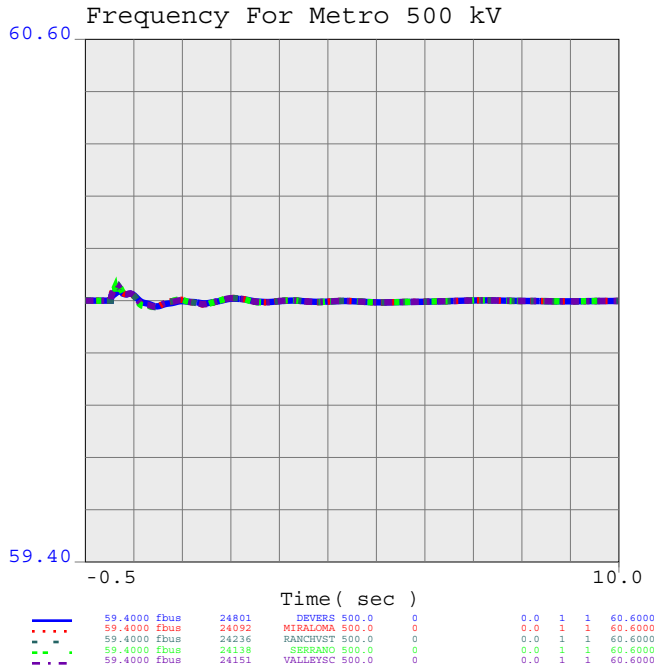
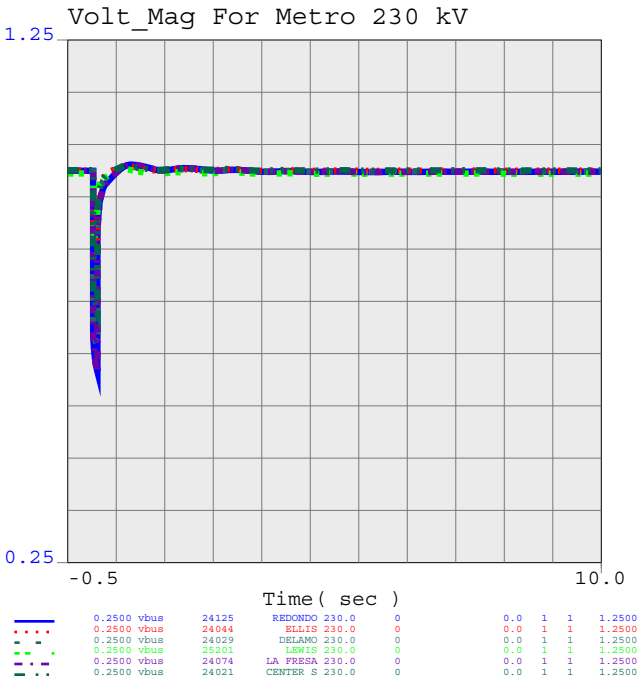
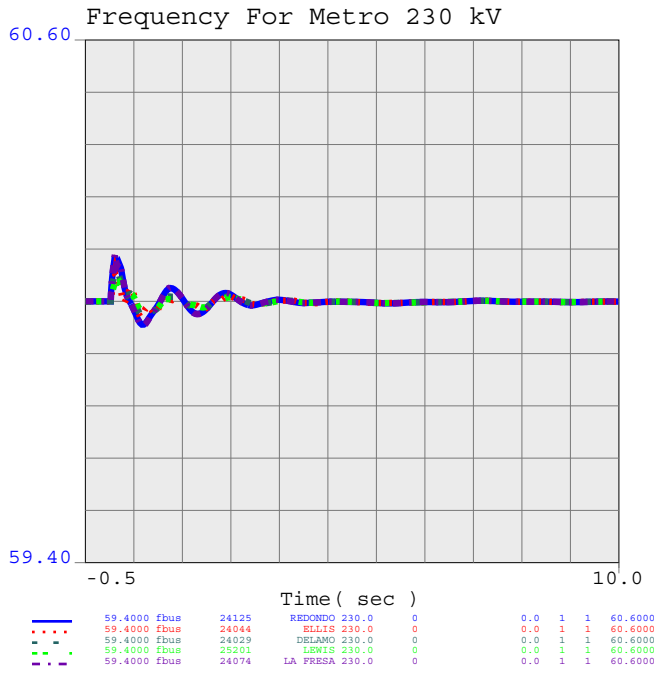
QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_LBeach-Hinson-DelAmo-Lbeach-Litehipe.chf

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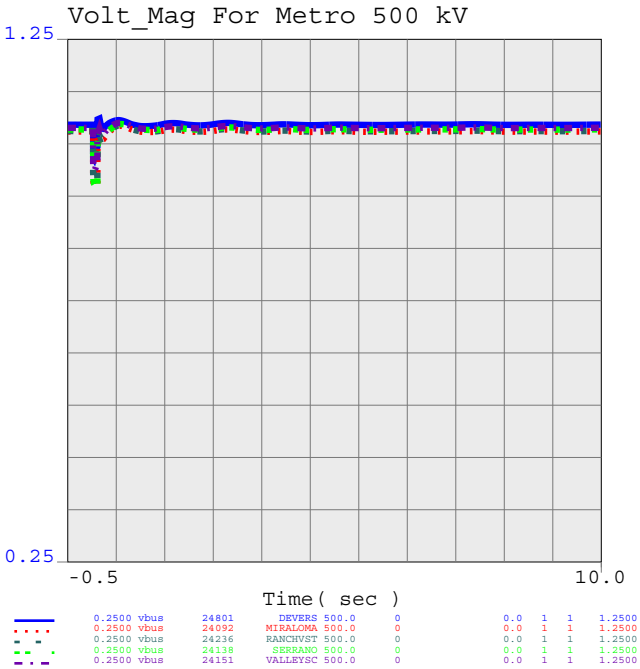
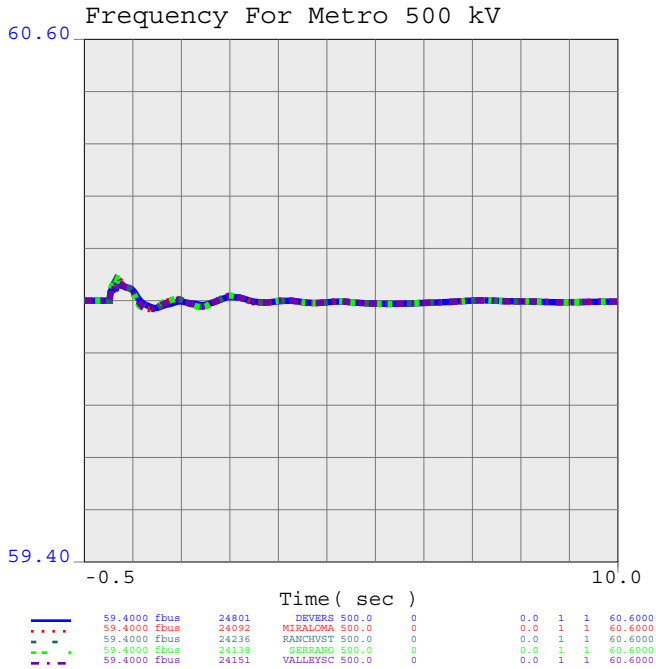
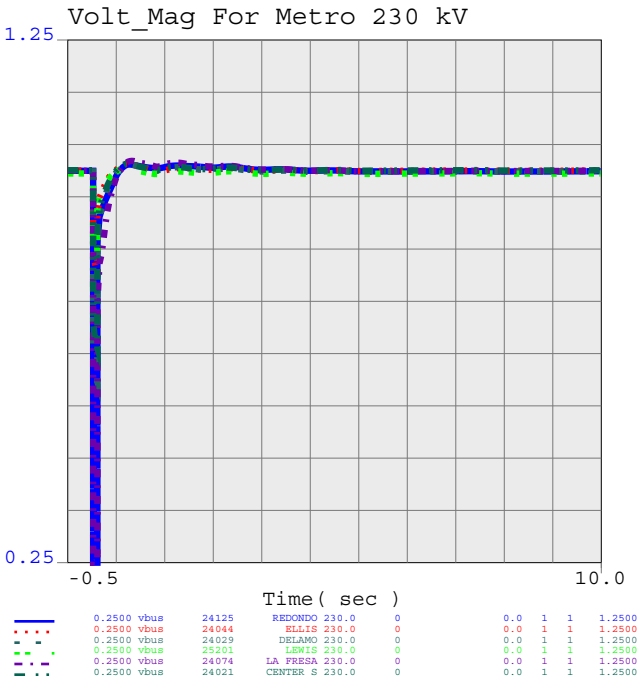
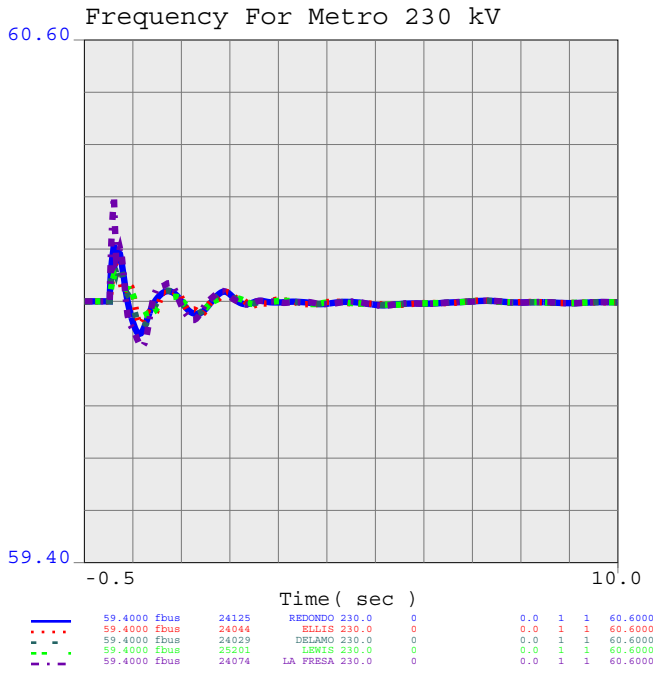
Thu Jan 17 11:00:00 2013

QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_LFesa-Redondo-dlo.chf

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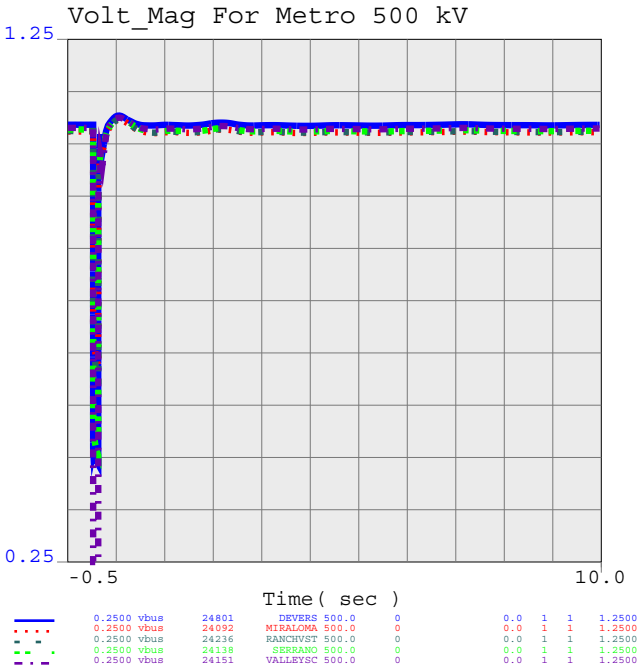
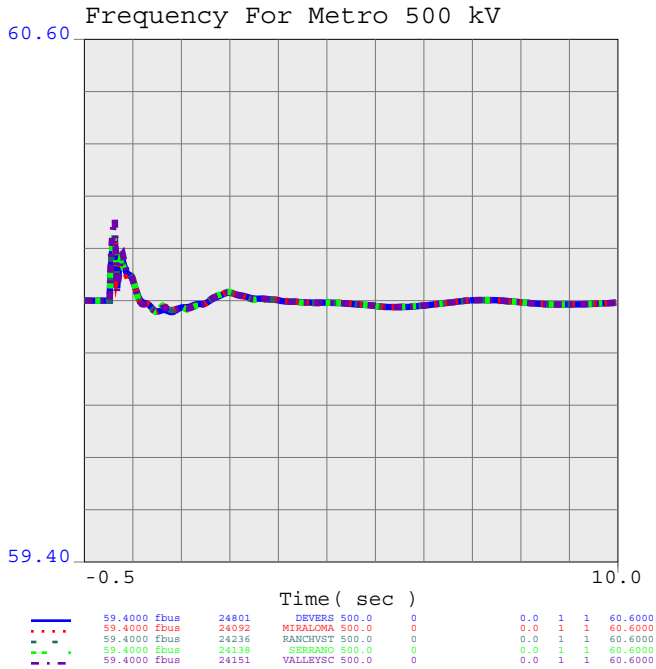
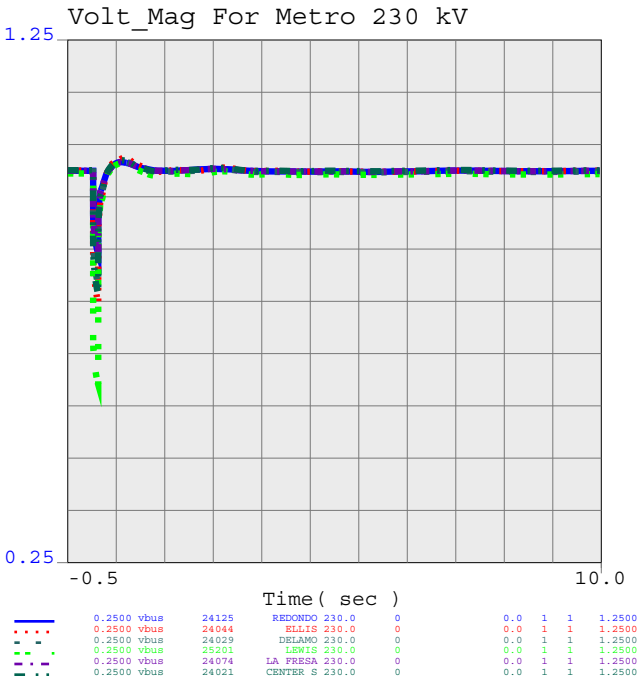
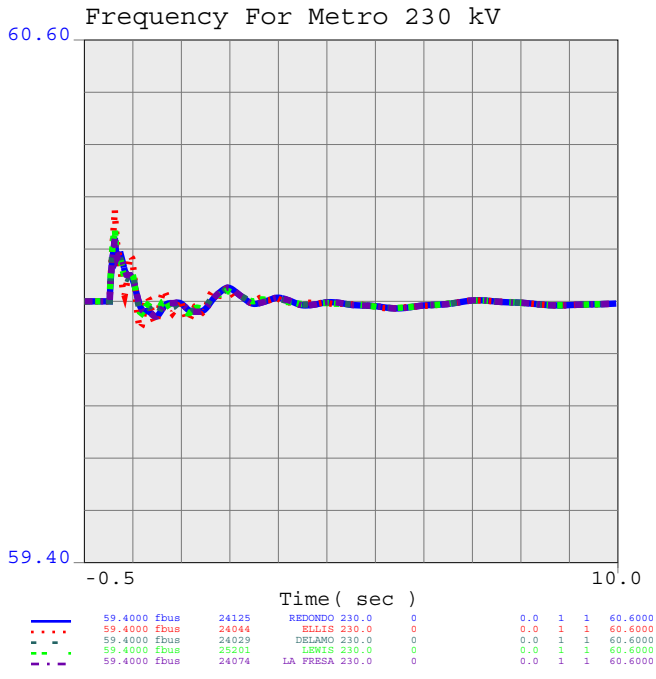
QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Valley-Serrano-slo.chf

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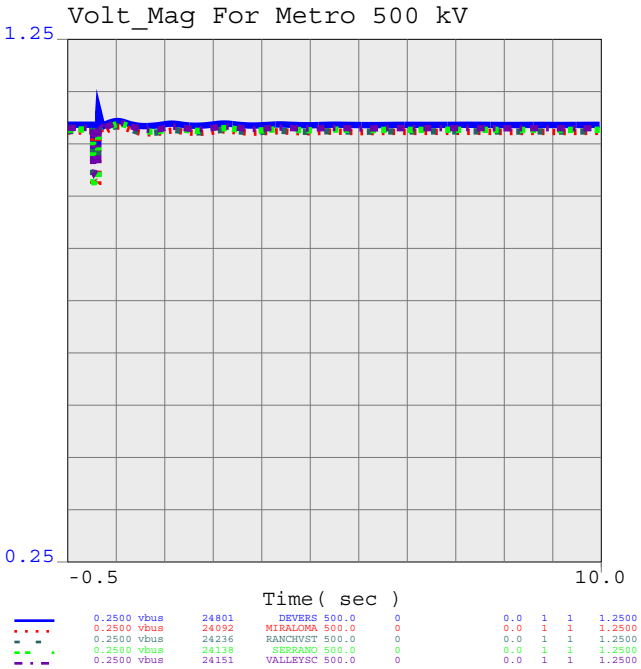
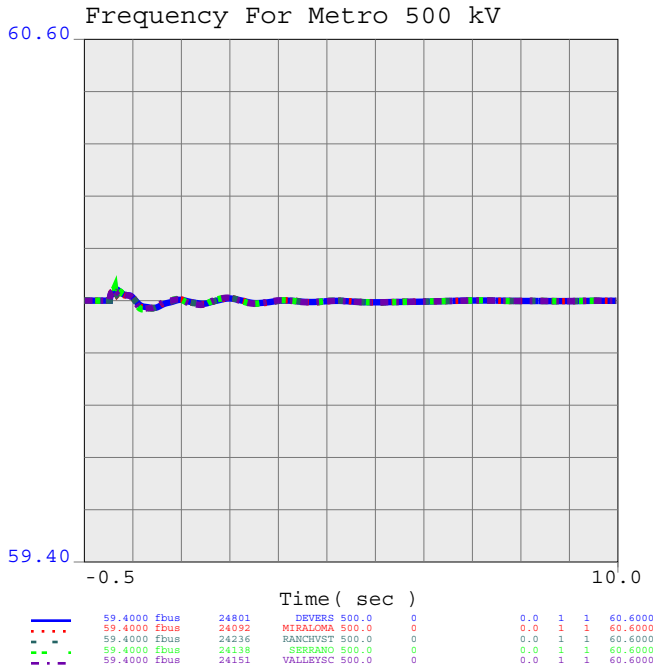
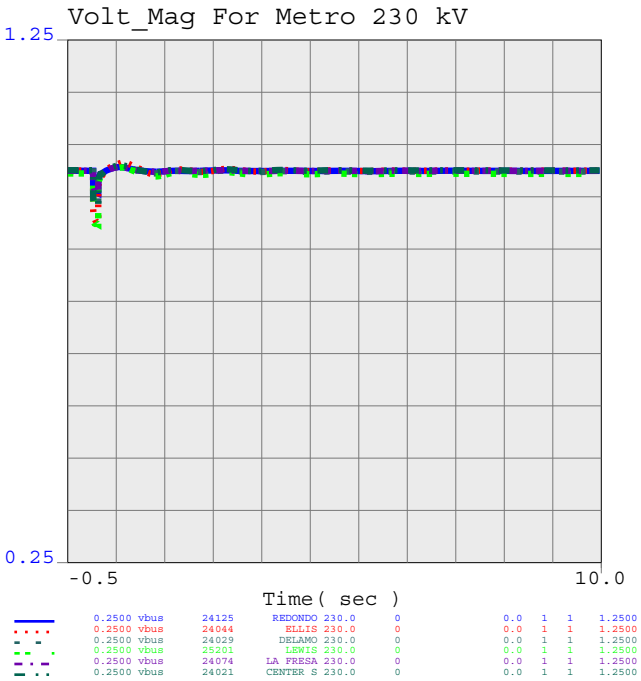
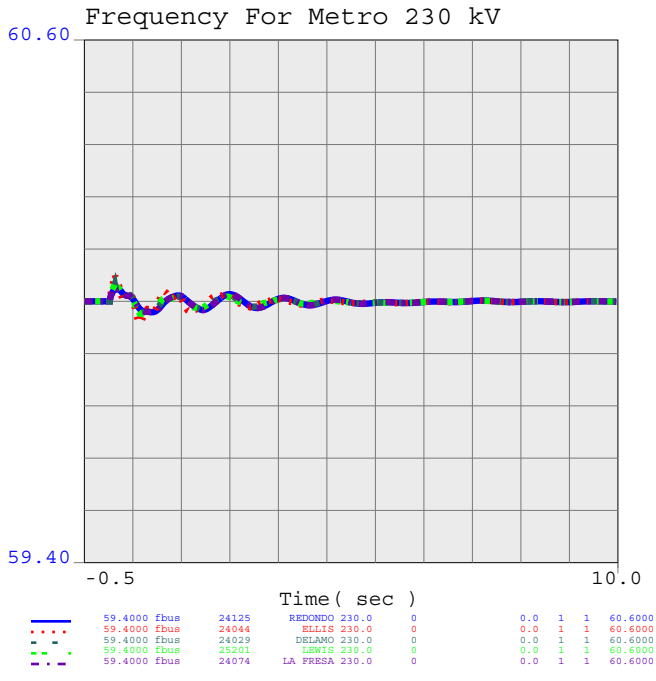
Thu Jan 17 11:02:38 2013

QUEUE CLUSTER 5 PHASE 1 TRANSIENT STABILITY









QC5 METRO AREA
Heavy Spring Conditions

QC5-hsp-pst-v4_Viejo-songs-slo.chf

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Appendix G – [Placeholder]

QC5 Phase I

Appendix H – Distribution Short Circuit Duty Results

Three-Phase-to-Ground Fault Analysis

Substation Name	Bus Voltage	Pre QC3&4 Phase II kA	Pre QC3&4 Phase II X/R	Post QC3&4 Phase II kA	Post QC3&4 Phase II X/R	Delta (kA)
Alerhill	115	19.8	68.6	20.4	72.3	0.6
AULD	115	17.7	11.7	17.8	11.6	0.2
Battle	115	15.1	10.5	15.2	10.4	0.1
BUNKER	115	11.6	8.6	11.7	8.5	0.1
Elsinore	115	9.1	8.7	9.2	8.6	0.1
Fogarty	115	10.4	10.4	10.6	10.3	0.2
Ivyglen	115	13.7	16.9	14.0	16.7	0.3
MWD Eastside	115	11.3	9.9	11.4	9.8	0.1
NELSON	115	11.0	9.3	11.1	9.3	0.1
Skylark	115	9.3	9.6	9.4	9.5	0.1
STETSON	115	11.0	9.2	11.2	9.1	0.1
SUNCITY	115	16.3	10.8	16.4	10.7	0.2
Valley_AB	115	22.1	70.9	22.7	72.0	0.6
Valley_C	115	11.0	77.9	11.2	78.6	0.2
Valley_D	115	32.5	78.3	33.1	79.2	0.6
ARROYO	66	11.4	12.1	11.7	12.2	0.3
Dairymans	66	4.9	3.9	6.5	4.6	1.6
Elcans	66	9.0	6.9	9.4	6.7	0.4
Etiwanda A	66	23.6	68.8	23.8	70.6	0.2
Etiwanda B	66	27.0	159.2	27.2	170.7	0.2
Goshen	66	9.3	6.5	9.9	6.3	0.6
GOULD	66	16.2	33.9	16.9	38.5	0.7
Grapeland	66	23.0	27.8	23.1	27.9	0.2
Haagen	66	6.3	4.6	8.0	5.4	1.8
Hanford	66	5.8	5.4	6.5	5.3	0.6
ISABELLA	66	2.4	5.5	2.6	5.9	0.2
KERN RIVER 3	66	4.2	4.9	4.4	5.0	0.2
KERNVILLE	66	4.1	4.7	4.2	4.8	0.1
LA CANADA	66	11.4	11.3	11.8	11.4	0.3
LAKEGEN	66	2.5	5.7	2.6	6.0	0.2
Laurel	66	6.7	3.3	7.0	3.2	0.4
Liberty	66	13.4	8.4	14.5	8.4	1.1
Lourich	66	4.4	2.4	4.6	2.3	0.2
Mascot	66	6.2	5.8	7.4	5.9	1.2
MiraLoma	66	38.2	59.2	38.4	61.2	0.2
Oakgrove	66	9.6	7.1	10.0	7.0	0.4
Octol	66	4.2	2.3	4.4	2.3	0.2
Padua	66	26.1	46.3	26.3	47.1	0.2
Pipe	66	21.7	18.1	21.8	18.1	0.1
Protein	66	5.3	4.0	7.1	5.1	1.9
Rector	66	21.5	11.8	22.9	11.5	1.4
Riverway	66	8.8	7.0	9.0	6.8	0.3
Rolling	66	16.8	12.6	16.9	12.6	0.1
San Bernardino	66	31.9	43.0	32.1	43.5	0.1

Strip	66	16.7	12.6	16.8	12.6	0.1
Tipton	66	4.5	2.6	4.8	2.5	0.2
Tulare	66	10.4	6.4	12.1	6.7	1.6
Venice_Hill	66	6.7	3.1	6.8	3.1	0.1
Venida	66	8.4	4.3	8.6	4.2	0.2
VESTAL	66	25.8	11.2	26.4	11.2	0.6
Villa Park	66	32.4	46.3	32.5	46.1	0.1
Visalia	66	12.9	6.5	13.4	6.3	0.5
WELDON	66	1.4	3.5	1.6	3.9	0.2
Bartsow East	34.5	5.6	7.7	6.0	8.1	0.4
CalNev	34.5	3.7	2.9	3.9	2.9	0.1
Coal Gas	34.5	5.7	6.0	6.1	6.2	0.4
Edwards	34.5	4.2	5.0	4.6	5.8	0.4
Gale	34.5	6.4	7.4	6.8	7.8	0.4
Garnet	34.5	13.8	14.5	14.0	14.3	0.2
Inyokern	34.5	10.7	15.1	11.0	16.3	0.3
Kerr Westend	34.5	6.4	6.1	6.7	6.6	0.3
Lime Rock	34.5	6.5	6.4	7.6	5.5	1.0
North Muroc	34.5	2.9	2.6	3.0	2.7	0.2
Pinnacles	34.5	7.0	8.8	7.3	10.0	0.3
Rancho	34.5	4.2	4.9	4.6	4.4	0.4
Searles	34.5	7.7	13.6	8.1	19.4	0.4
SEGS 1	34.5	4.4	6.6	4.6	6.7	0.2
Southbase	34.5	2.4	6.3	2.5	7.0	0.1
Tortilla	34.5	7.7	15.9	8.1	16.2	0.4
Victor	34.5	12.5	30.8	17.5	32.1	5.0
Victorville	34.5	7.1	6.7	8.3	5.8	1.2
Water Well	34.5	3.2	3.5	3.3	3.5	0.1
Barstow	12.47	4.1	9.1	5.3	11.5	1.2
Carodean	12.47	8.7	5.3	9.0	6.0	0.3
Dairymans	12.47	7.2	9.7	7.6	12.1	0.5
Goshen	12.47	10.8	31.4	11.0	32.3	0.1
Hanford_2	12.47	12.9	11.4	13.4	11.8	0.5
Hanford_3	12.47	12.1	8.4	12.6	8.5	0.5
Laurel	12.47	13.1	7.5	13.3	7.5	0.3
Liberty	12.47	15.6	17.5	15.8	17.7	0.3
Liberty	12.47	15.5	17.9	15.7	18.2	0.3
Marasch_1	12.47	15.2	20.8	15.7	21.5	0.5
Mascot12	12.47	12.5	11.2	13.3	11.9	0.8
Minneola	12.47	7.2	4.1	7.4	4.1	0.2
Oakgrove_1	12.47	14.2	11.4	14.4	11.4	0.2
Oakgrove_2	12.47	14.6	11.4	14.7	11.3	0.2
Octol_1	12.47	9.0	6.2	9.1	6.2	0.2
Pinnacles	12.47	15.3	35.6	15.4	42.0	0.2
Protein	12.47	7.4	15.8	7.9	24.9	0.5
Rancho	12.47	7.9	5.9	8.3	5.6	0.4
Rector	12.47	23.4	19.1	23.7	19.1	0.3

Riverway	12.47	13.9	23.4	14.1	23.5	0.1
Roadway	12.47	21.0	19.3	21.5	19.8	0.5
Savage	12.47	17.5	18.7	17.7	19.0	0.2
Tipton	12.47	8.7	6.1	8.9	6.2	0.2
Tortilla	12.47	14.3	15.6	14.4	15.8	0.1
Tulare_#1	12.47	14.6	16.0	15.1	17.5	0.5
Tulare_#2	12.47	16.6	26.3	17.2	30.9	0.6
Victorville	12.47	7.5	17.9	7.9	17.1	0.4
Visalia	12.47	15.9	17.7	16.0	17.7	0.1
WELDON	12.47	3.4	8.2	3.5	9.7	0.1
Yermo	12.47	5.2	3.9	5.3	3.9	0.1
Yucca	12.47	13.0	6.6	13.2	7.1	0.2
LAKEGEN	6.9	12.2	17.7	12.5	19.5	0.2
Haagen	4.16	9.9	10.2	10.1	10.7	0.2
Tulare	4.16	12.9	20.5	13.1	21.3	0.1
Victorville	4.16	9.5	18.9	9.7	18.5	0.2

Single-Phase-to-Ground Fault Analysis

Substation Name	Bus Voltage	Pre QC3&4 Phase II kA	Pre QC3&4 Phase II X/R	Post QC3&4 Phase II kA	Post QC3&4 Phase II X/R
Alerhill	115	24.9	52.5	25.6	54.5
AULD	115	17.9	12.5	18.1	12.4
Battle	115	12.8	9.9	12.8	9.9
BUNKER	115	11.1	8.7	11.2	8.6
Elsinore	115	9.5	9.7	9.6	9.6
Fogarty	115	9.9	9.6	10.0	9.5
Ivyglen	115	11.7	11.4	11.8	11.3
MWD Eastside	115	10.0	10.6	10.1	10.5
NELSON	115	11.3	10.5	11.4	10.4
Skylark	115	9.0	10.3	9.0	10.2
STETSON	115	10.6	9.8	10.7	9.7
SUNCITY	115	13.2	9.5	13.3	9.4
Valley_AB	115	28.0	53.6	28.7	54.4
Valley_C	115	13.6	63.3	13.8	64.0
Valley_D	115	40.2	59.9	40.9	60.6
ARROYO	66	8.0	12.9	8.1	13.0
Dairymans	66	2.7	5.0	4.6	5.6
Elcans	66	5.5	7.0	5.6	6.9
Etiwanda A	66	16.8	144.7	16.9	149.2
Etiwanda B	66	20.4	99.5	20.5	101.5
Goshen	66	5.6	6.7	5.9	6.5
GOULD	66	12.3	56.2	12.6	63.3
Grapeland	66	17.7	32.0	17.8	32.1
Haagen	66	3.5	5.7	5.6	6.2
Hanford	66	3.2	5.9	3.6	5.8
ISABELLA	66	2.2	5.5	2.3	8.3
KERN RIVER 3	66	4.1	4.9	4.2	6.9
KERNVILLE	66	3.9	4.7	4.0	6.5
LA CANADA	66	7.8	11.7	7.9	11.8
LAKEGEN	66	2.2	5.7	2.3	8.4
Laurel	66	4.2	3.9	4.4	3.8
Liberty	66	8.5	8.6	9.2	8.6
Lourich	66	3.1	2.8	3.3	2.8
Mascot	66	3.5	6.1	4.2	6.1
MiraLoma	66	29.2	57.5	29.2	58.5
Oakgrove	66	5.9	7.2	6.1	7.1
Octol	66	3.6	2.4	3.7	2.4
Padua	66	18.3	99.3	18.3	101.2
Pipe	66	16.2	19.9	16.3	19.9
Protein	66	2.9	5.2	5.3	6.1
Rector	66	20.0	15.4	21.1	15.1
Riverway	66	5.3	7.3	5.4	7.3
Rolling	66	10.7	12.8	10.7	12.7
San Bernardino	66	23.8	44.2	23.8	44.4

Strip	66	10.6	13.1	10.6	13.1
Tipton	66	3.1	3.0	3.3	3.0
Tulare	66	6.7	6.2	8.3	6.3
Venice_Hill	66	3.9	4.2	4.0	4.1
Venida	66	5.1	5.2	5.2	5.2
VESTAL	66	20.3	11.2	21.0	11.4
Villa Park	66	10.3	218.4	10.3	218.3
Visalia	66	8.8	7.1	9.0	7.0
WELDON	66	1.0	3.5	1.0	5.1
Bartsow East	34.5	2.9	12.4	3.0	12.8
CalNev	34.5	2.1	4.6	2.3	4.4
Coal Gas	34.5	3.4	9.3	3.8	9.4
Edwards	34.5	2.2	14.9	2.2	18.1
Gale	34.5	3.9	12.0	4.5	12.7
Garnet	34.5	3.3	71.7	3.4	71.5
Inyokern	34.5	2.6	93.5	2.6	102.5
Kerr Westend	34.5	1.4	28.5	1.4	30.9
Lime Rock	34.5	4.1	6.8	4.3	6.4
North Muroc	34.5	1.5	5.3	1.6	5.5
Pinnacles	34.5	1.4	38.6	1.4	42.4
Rancho	34.5	2.3	5.8	2.4	5.6
Searles	34.5	1.5	106.2	1.5	158.8
SEGS 1	34.5	4.0	10.5	4.2	10.4
Southbase	34.5	1.6	13.7	1.7	15.6
Tortilla	34.5	4.2	43.9	4.3	46.2
Victor	34.5	10.5	52.8	12.5	63.6
Victorville	34.5	4.6	7.0	4.9	6.6
Water Well	34.5	1.8	5.3	1.9	5.2
Barstow	12.47	4.5	9.2	5.7	11.4
Carodean	12.47	11.4	5.8	11.9	6.5
Dairymans	12.47	7.9	11.3	8.3	13.7
Goshen	12.47	11.5	44.3	11.6	45.8
Hanford_2	12.47	14.8	13.5	15.3	13.9
Hanford_3	12.47	13.9	9.2	14.3	9.3
Laurel	12.47	14.8	9.1	15.0	9.1
Liberty	12.47	16.7	19.2	16.9	19.4
Liberty	12.47	16.6	19.7	16.8	20.0
Marasch_1	12.47	18.2	26.1	18.6	27.2
Mascot12	12.47	14.3	12.9	15.0	13.7
Minneola	12.47	10.1	4.4	10.4	4.4
Oakgrove_1	12.47	15.7	12.2	15.8	12.2
Oakgrove_2	12.47	15.9	12.0	16.1	12.0
Octol_1	12.47	10.8	6.9	10.9	6.9
Pinnacles	12.47	0.0	1.0	0.0	1.0
Protein	12.47	8.1	21.6	8.5	34.8
Rancho	12.47	10.0	6.2	10.5	5.9
Rector	12.47	24.8	27.0	25.1	27.1

Riverway	12.47	15.5	31.7	15.6	31.9
Roadway	12.47	21.3	26.0	21.6	26.7
Savage	12.47	22.6	21.4	22.8	21.7
Tipton	12.47	10.0	7.4	10.1	7.4
Tortilla	12.47	16.7	17.0	16.8	17.2
Tulare_#1	12.47	16.0	18.7	16.5	20.2
tulare_#2	12.47	18.5	35.4	18.9	42.0
Victorville	12.47	8.6	23.5	8.9	22.8
Visalia	12.47	17.3	20.3	17.4	20.3
WELDON	12.47	3.9	8.2	4.1	12.5
Yermo	12.47	7.0	4.3	7.1	4.3
Yucca	12.47	16.0	7.5	16.2	8.1
LAKEGEN	6.9	0.0	17.7	0.0	1.0
Haagen	4.16	0.0	1.0	0.0	1.0
Tulare	4.16	13.3	21.8	13.4	22.4
Victorville	4.16	10.0	21.0	10.2	20.7

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0.0
0.1
0.2

Table H.1

With the inclusion of the proposed RNU and LDNU

Three – Phase-to-Ground Fault Analysis

Bus Name	Bus KV	PRE CASE		POST CASE		DELTA KA
		X/R	KA	X/R	KA	
Eldorado	500	14	46.7	14.4	47.6	0.9
Serrano	500	25	32.7	25.2	32.9	0.2
Whirlwind	500	23.8	37.8	24.2	38	0.2
Chino	230	16.1	50.9	16.1	51.3	0.4
Cool Water	230	20.8	15.8	20.8	16	0.2
Colorado River_2	230	0	0	51.8	24.6	24.6
Devers	230	25.9	52.1	25.9	52.5	0.4
Eldorado	230	17	56.2	17.1	56.4	0.2
Eldorado_2	230	20.1	40.5	20.8	42	1.5
Etiwanda	230	25.1	55.3	25.7	58.8	3.5
Highwind_230	230	21.5	18.6	24	22.1	3.5
Inyokern	230	6.2	11	6.3	11.3	0.3
Jasper	230	12.3	15	12.9	15.5	0.5
Kramer	230	14.8	20.8	15.5	21.7	0.9
Mira Loma A	230	20.2	54.4	20.1	54.6	0.2
Mira Loma B	230	21.8	59.3	21.8	60.9	1.6
Pardee	230	15.5	61.1	15.5	61.2	0.1
Pastoria	230	13.3	30.8	13.4	31.2	0.4
Rancho	230	25	56	25.6	59.3	3.3
San Ber_dino	230	24.8	41.5	24.7	42	0.5
Serrano	230	25	57.5	25.1	57.6	0.1
Vista	230	20.3	49.4	20.3	50.5	1.1
Wildlife	230	15.2	24.9	15.2	25.1	0.2
Devers_B	115	0	0	23.3	24.8	24.8
Farrell	115	9.5	14.5	9.2	15.1	0.6
Garnet	115	17.3	20.7	15.9	22.9	2.2
Indigo	115	16.1	19.7	14.8	21	1.3
Inyokern	115	5.7	12.7	6	13.8	1.1
Kramer	115	11.9	25.7	12.9	27.1	1.4
Leatherneck	115	0	0	3.1	2.1	2.1
Mogen	115	3.1	6.3	5	10.3	4
Rocket Test	115	3.1	5.6	3.1	5.7	0.1
US Borax	115	3.2	6.3	5.3	10.3	4
Victor	115	18.5	24.1	18.6	24.3	0.2
ANTELOPE	66	44.1	39.8	44.4	40.2	0.4
CAL CEMENT	66	20.6	19.3	20.5	19.6	0.3
DEL SUR	66	12.4	27	12.5	27.2	0.2
Etiwanda A	66	41	23.8	41.4	23.9	0.1
GREAT LAKES	66	3	6.4	3.2	6.7	0.3
Highwin66	66	0	0	50	12.7	12.7
Padua	66	31.8	25.6	31.9	25.8	0.2
Rector	66	12.5	20.7	12.2	22.2	1.5

ROSAMOND	66	3.8	9.1	5	9.9	0.8
Vestal	66	12.6	22.4	12.6	22.9	0.5
Windhub66_A	66	48	24.7	48.9	25.2	0.5
Windhub66_B	66	63.2	14.5	63.8	14.7	0.2

Table H.2
With the inclusion of the proposed RNU and LDNU
Single-Phase-to-Ground Fault Analysis

Bus Name	Bus KV	PRE CASE		POST CASE		DELTA KA
		X/R	KA	X/R	KA	
Colorado Rvr	525	22.3	23.8	23.9	24.9	1.1
Eldorado	525	12.7	41.7	13	42.6	0.9
Red Bluff	525	14.9	20.9	14.9	21	0.1
Serrano	525	12.9	29.2	12.9	29.3	0.1
Vincent	525	14.8	40.2	15.6	40.6	0.4
Whirlwind	525	18.4	34.9	18.4	35.1	0.2
Chino	230	13.7	42.6	13.7	42.8	0.2
Cool Water	230	21.6	16	21.4	16.1	0.1
Colorado River _2	230	0	0	45.9	29.7	29.7
Devers	230	22.2	56.7	22.3	57.4	0.7
Eldorado	230	15.9	53.3	16.1	53.5	0.2
Eldorado_2	230	20.6	45.3	21	48.1	2.8
Ellis	230	17.8	36.8	17.1	37.9	1.1
Etiwanda	230	16.8	55.5	17	59	3.5
Highwind_230	230	14.3	14.7	19	20.7	6
Inyokern	230	7.4	8.6	7.6	8.7	0.1
Jasper	230	9.2	10.6	11.3	13.2	2.6
Kramer	230	10.4	18.1	10.5	18.5	0.4
Mira Loma A	230	11.8	55.1	11.7	55.3	0.2
Mira Loma B	230	10	54.4	9.9	55.3	0.9
Pastoria	230	13.1	28	14.4	32.9	4.9
Pearblossom	230	6.5	8.2	6.9	8.4	0.2
Rancho	230	16.4	56.9	16.5	60	3.1
San Ber_dino	230	24.2	41.6	24.2	41.9	0.3
Vincent A	230	19.6	66.4	19.8	66.7	0.3
Vincent B	230	19.6	66.4	19.8	66.7	0.3
Vista	230	15.6	44.3	15.4	45.1	0.8
Whirlwind	230	31.4	58.1	31.6	58.2	0.1
Whirlwind_2	230	31.4	58.1	31.6	58.2	0.1
Windhub_A	230	42.2	36.6	39.4	39.6	3
Windhub_B	230	46.3	36.1	46.9	40.7	4.6
Devers_B	115	0	0	23	27.2	27.2
Farrell	115	9.3	13.4	9.1	13.7	0.3
Garnet	115	12.1	19.4	11.3	21	1.6
Inyokern	115	6.8	13.9	7.4	14.7	0.8
Kramer	115	11.9	25.5	12.5	27	1.5
Leatherneck	115	0	0	4.1	2.1	2.1
Mogen	115	4	5.2	5.3	8.3	3.1
Rocket Test	115	4.3	4.5	4.3	4.6	0.1
US Borax	115	3.9	4.9	5.2	7.8	2.9
Victor	115	17.9	26.8	17.9	26.9	0.1
ANTELOPE	66	26.8	24.2	25.1	25.1	0.9

Etiwanda A	66	43.8	22.9	44.1	23	0.1
GREAT LAKES	66	4.2	3.4	4.3	3.8	0.4
Highwin66	66	0	0	21.8	9.7	9.7
Rector	66	13.1	21.7	12.8	23	1.3
Vestal	66	11.9	18.8	11.6	19.5	0.7
Windhub66_A	66	27.3	15.3	27.3	15.4	0.1

Table H.3

With the inclusion of the proposed RNU, LDNU and ADNU

Three – Phase-to-Ground Fault Analysis

Bus Name	Bus Voltage	PRE QC5 Phase 1		Post QC5 Phase 1		DELTA KA
		X/R	KA	X/R	KA	
Windhub_500	500	26.1	27.6	27.3	30.3	2.7
ALBH500	500	24	22.6	24.3	27.1	4.5
Red Bluff	500	23.4	23.3	23.3	27.3	4
Kramer	500	0	0	25.2	13	13
Llano	500	0	0	24.7	30.2	30.2
Mesa	500	0	0	23.2	35	35
Antelope	500	22.9	39.2	23.4	42.6	3.4
Colorado Rvr	500	26.6	24	25.9	26.5	2.5
Eldorado	500	14	46.7	14.4	48.1	1.4
Lugo	500	22.3	47.7	22.9	49.9	2.2
Mira Loma	500	24.1	39.4	24.3	45.6	6.2
Serrano	500	25	32.7	25.2	34.9	2.2
Valley A	500	26.9	25.3	25.8	29.8	4.5
Valley B	500	26.9	25.3	25.8	29.8	4.5
Vincent	500	20	51.1	20.6	58.6	7.5
Antelope	230	28.4	41.9	29.2	42.8	0.9
Barre	230	18.9	51.8	19	52	0.2
Center	230	14.8	42.8	15	43.2	0.4
Chino	230	16.1	50.9	16.2	52.5	1.6
Cool Water	230	20.8	15.8	20.2	16.6	0.8
Colorado River_ 2	230	0	0	52.5	25.7	25.7
Del Amo	230	14.8	42.9	14.7	43.2	0.3
Devers	230	25.9	52.1	26	53.1	1
El Casco	230	18.4	17.8	18.4	17.9	0.1
Eldorado	230	17	56.2	17.1	56.6	0.4
Eldorado_2	230	20.1	40.5	20.8	42.2	1.7
Etiwanda	230	25.1	55.3	26	59.8	4.5
Gould	230	12.5	23.7	14	29.9	6.2
Highwind_230	230	21.5	18.6	24	22.3	3.7
Inyokern	230	6.2	11	5.8	13	2
Kramer	230	14.8	20.8	19.4	31	10.2
Lewis	230	19.9	47	20	47.6	0.6
Lighthipe	230	16.9	45.5	16.8	45.7	0.2
Lugo	230	29.8	42.3	29	43.2	0.9
Mira Loma A	230	20.2	54.4	20.7	56.4	2
Mira Loma B	230	21.8	59.3	22.2	62.4	3.1

Olinda	230	14.7	31.3	14.8	31.4	0.1
Pastoria	230	13.3	30.8	13.4	31.2	0.4
Rancho	230	25	56	25.8	60.3	4.3
San Ber_dino	230	24.8	41.5	24.6	42.2	0.7
San Onofre	230	21.6	56.9	21.5	57.1	0.2
Serrano	230	25	57.5	25.5	58.9	1.4
Sylmar (SCE)	230	15.2	62.9	15.3	63.7	0.8
Victor	230	15.8	25.1	15.6	25.4	0.3
Villa Park	230	23	49.4	23.2	50.3	0.9
Vista	230	20.3	49.4	20.3	50.9	1.5
Walnut	230	16	36.7	16.3	36.9	0.2
Wildlife	230	15.2	24.9	15.2	25.2	0.3
Whirlwind	230	41.3	50.5	42.6	51.9	1.4
Red Bluff	230	39.5	30.2	41.3	32	1.8
Jasper	230	12.3	15	12.8	15.7	0.7
Mesa_2	230	0	0	20	58.2	58.2
Whirlwind_2	230	41.3	50.5	42.6	51.9	1.4
Devers	115	42.9	28.9	42.7	29.2	0.3
Inyokern	115	5.7	12.7	6.1	14.2	1.5
Kramer	115	11.9	25.7	13.6	29.1	3.4
Victor	115	18.5	24.1	18.4	24.5	0.4
ALBH115	115	61	19.8	64.6	20.5	0.7
Tiffanywind	115	13.2	21.1	13.1	21.2	0.1
Terawind	115	15.6	23.3	15.5	23.5	0.2
Indigo	115	16.1	19.7	16	19.9	0.2
Garnet	115	17.3	20.7	17.2	20.8	0.1
Altwind	115	10.6	18	10.5	18.1	0.1
Venwind	115	6	17	6	17.1	0.1
Leatherneck	115	0	0	3.1	2.1	2.1
Mogen	115	3.1	6.3	5	10.5	4.2
Rocket Test	115	3.1	5.6	3.1	5.8	0.2
US Borax	115	3.2	6.3	5.2	10.5	4.2
Lewis	69	32.1	40.1	32.2	40.2	0.1
ANTELOPE	66	44.1	39.8	44.9	40.4	0.6
Etiwanda A	66	41	23.8	41.5	24	0.2
Gould	66	26.4	11.8	28.1	12.2	0.4
Highwin66	66	0	0	50	12.7	12.7
Mira Loma	66	41.2	38.5	41.8	38.7	0.2
Padua	66	31.8	25.6	32	25.9	0.3
Rector	66	12.5	20.7	12.2	22.2	1.5
San Ber_dino	66	43.3	32.1	43.4	32.2	0.1

Vestal	66	12.6	22.4	12.6	22.9	0.5
CAL CEMENT	66	20.6	19.3	20.5	19.7	0.4
DEL SUR	66	12.4	27	12.5	27.3	0.3
QUARTZ HILL	66	10	19.8	9.9	19.9	0.1
ROSAMOND	66	3.8	9.1	5	9.9	0.8
GREAT LAKES	66	3	6.4	3.2	6.7	0.3
Windhub66_A	66	48	24.7	49	25.3	0.6
Windhub66_B	66	63.2	14.5	64	14.7	0.2

Table H.4
With the inclusion of the RNU, LDNU and ADNU
Single-Phase-to-Ground Fault Analysis

Substation Name	Bus Voltage	PRE QC5 Phase 1		Post QC5 Phase 1		DELTA KA
		X/R	KA	X/R	KA	
Alberhill	500	14.5	22.7	13.7	27.3	4.6
Red Bluff	500	14.9	20.9	13.5	25.1	4.2
Kramer	500	0	0	14.9	10.5	10.5
Llano	500	0	0	13.5	23	23
Mesa	500	0	0	14.2	29.2	29.2
Antelope	500	18.2	33	17.9	35.1	2.1
Colorado Rvr	500	22.3	23.8	23	28.2	4.4
Eldorado	500	12.7	41.7	13	42.9	1.2
Lugo	500	12.3	36.2	13	39.3	3.1
Mira Loma	500	10.3	34	10.2	38.8	4.8
Serrano	500	12.9	29.2	12.4	30.5	1.3
Valley	500	14.5	25.6	13.7	30.4	4.8
Vincent	500	14.8	40.2	14.4	48.2	8
Antelope	230	28.7	46.1	29.3	46.9	0.8
Barre	230	13.9	42.5	13.8	42.6	0.1
Center	230	14.9	34.6	13.8	35.9	1.3
Chino	230	13.7	42.6	13.7	43.5	0.9
Cool Water	230	21.6	16	21	16.6	0.6
Colorado River A	230	0	0	46.8	31.1	31.1
Del Amo	230	10.4	40	10.3	40.2	0.2
Devers	230	22.2	56.7	22.1	57.5	0.8
Eldorado	230	15.9	53.3	16.1	53.6	0.3
Eldorado_2	230	20.6	45.3	21	48.2	2.9
Ellis	230	17.8	36.8	17.1	38	1.2
Etiwanda	230	16.8	55.5	16.7	59.7	4.2
Gould	230	9.2	19	8.8	24.1	5.1
Highwind_230	230	14.3	14.7	19	20.8	6.1
Inyokern	230	7.4	8.6	7.2	9.7	1.1
Kramer	230	10.4	18.1	14.6	29.9	11.8
Lewis	230	15.1	43.9	15.1	44.3	0.4
Lighthipe	230	11.4	40.9	11.2	41.6	0.7
Lugo	230	23.1	42.5	23.5	43.7	1.2
Mira Loma A	230	11.8	55.1	12	57.1	2
Mira Loma B	230	10	54.4	9.8	56.7	2.3

Pastoria	230	13.1	28	14.4	32.9	4.9
Rancho	230	16.4	56.9	16.2	60.9	4
San Ber_dino	230	24.2	41.6	24.2	42.1	0.5
Serrano	230	18.1	59.7	18	60.8	1.1
Sylmar (SCE)	230	12.5	68.6	12.5	69.2	0.6
Villa Park	230	16.8	44.1	16.8	44.5	0.4
Vista	230	15.6	44.3	15.4	45.3	1
Walnut	230	16.7	34.6	15.5	35.5	0.9
Whirlwind	230	31.4	58.1	31.7	59.4	1.3
Red Bluff	230	26.9	34.1	27.5	36.4	2.3
Jasper	230	9.2	10.6	11.2	13.3	2.7
Mesa_2	230	0	0	16.2	56.2	56.2
Whirlwind_2	230	31.4	58.1	31.7	59.4	1.3
Windhub_B	230	46.3	36.1	47.4	41.2	5.1
Wildlife	230	16.2	18.8	16.2	19	0.2
Windhub_A	230	42.2	36.6	39.6	40	3.4
Alberhill	115	50	24.7	52.2	25.5	0.8
Devers	115	35.9	32.9	35.4	33.2	0.3
Inyokern	115	6.8	13.9	7.5	15.1	1.2
Kramer	115	11.9	25.5	13.9	29.7	4.2
Valley AB	115	53.2	28.2	54.6	28.8	0.6
Valley C	115	50.2	44.5	51.1	45.2	0.7
Victor	115	17.9	26.8	17.8	27.1	0.3
Tiffanywind	115	10.3	18.4	10.2	18.5	0.1
Terawind	115	11.8	21.3	11.7	21.5	0.2
Garnet	115	12.1	19.4	12	19.5	0.1
Leatherneck	115	0	0	4.1	2.2	2.2
Mogen	115	4	5.2	5.3	8.4	3.2
Rocket Test	115	4.3	4.5	4.3	4.7	0.2
US Borax	115	3.9	4.9	5.1	7.9	3
Great Lake	66	4.2	3.4	4.3	3.8	0.4
Windhub66_A	66	27.3	15.3	27.3	15.4	0.1
Antelope	66	26.8	24.2	25.2	25.2	1
Etiwanda A	66	43.8	22.9	44.2	23	0.1
Gould	66	25.2	10.4	26.1	10.6	0.2
Highwin66	66	0	0	21.8	9.7	9.7
Rector	66	13.1	21.7	12.8	23	1.3
Vestal	66	11.9	18.8	11.6	19.5	0.7

Table H.5

With the proposed RNU

Three – Phase-to-Ground Fault Analysis

Bus Name	Bus KV	PRE QC5 Phase 1		POST QC5 Phase 1		DELTA KA
		X/R	KA	X/R	KA	
Colorado River	500	26.6	24	27	24.4	0.4
Eldorado	500	14	46.7	14.4	47.6	0.9
Serrano	500	25	32.7	25.2	32.9	0.2
Red Bluff	500	23.4	23.3	23.5	23.5	0.2
Chino	230	16.1	50.9	16.1	51.3	0.4
Colorado Rvr	230	39.8	46	40.8	47.5	1.5
Cool Water	230	20.8	15.8	20.8	16	0.2
Devers	230	25.9	52.1	25.9	52.6	0.5
Eldorado	230	17	56.2	17.1	56.4	0.2
Eldorado_2	230	20.1	40.5	20.8	42	1.5
Etiwanda	230	25.1	55.3	25.7	58.8	3.5
Highwind_230	230	21.5	18.6	24	22.1	3.5
Inyokern	230	6.2	11	6.3	11.3	0.3
Kramer	230	14.8	20.8	15.5	21.7	0.9
Merchant_2	230	16.4	50.9	16.5	51.1	0.2
Mira Loma A	230	20.2	54.4	20.1	54.6	0.2
Mira Loma B	230	21.8	59.3	21.8	60.9	1.6
Pardee	230	15.5	61.1	15.5	61.2	0.1
Pastoria	230	13.3	30.8	13.4	31.2	0.4
Rancho	230	25	56	25.6	59.3	3.3
San Ber_dino	230	24.8	41.5	24.7	42	0.5
Serrano	230	25	57.5	25.1	57.6	0.1
Vista	230	20.3	49.4	20.3	50.5	1.1
Wildlife	230	15.2	24.9	15.2	25.1	0.2
Jasper	230	12.3	15	12.9	15.5	0.5
Devers_B	115	0	0	23.3	24.8	24.8
Inyokern	115	5.7	12.7	6	13.8	1.1
Kramer	115	11.9	25.7	12.9	27.1	1.4
Victor	115	18.5	24.1	18.6	24.3	0.2
Farrell	115	9.5	14.5	9.2	15.1	0.6
Indigo	115	16.1	19.7	14.8	21	1.3
Garnet	115	17.3	20.7	15.9	22.9	2.2
Leatherneck	115	0	0	3.1	2.1	2.1
Mogen	115	3.1	6.3	5	10.3	4
Rocket Test	115	3.1	5.6	3.1	5.7	0.1
US Borax	115	3.2	6.3	5.3	10.3	4
ANTELOPE	66	44.1	39.8	43.1	40.2	0.4
Etiwanda A	66	41	23.8	41.4	23.9	0.1
Highwin66	66	0	0	50	12.7	12.7
Padua	66	31.8	25.6	31.9	25.8	0.2
Rector	66	12.5	20.7	12.2	22.2	1.5
Vestal	66	12.6	22.4	12.6	22.9	0.5
CAL CEMENT	66	20.6	19.3	20.5	19.6	0.3

DEL SUR	66	12.4	27	12.3	27.2	0.2
ROSAMOND	66	3.8	9.1	3.9	9.4	0.3
GREAT LAKES	66	3	6.4	3	6.6	0.2
Windhub66_A	66	48	24.7	48.9	25.2	0.5
Windhub66_B	66	63.2	14.5	63.8	14.7	0.2

Table H.6

With the proposed RNU

Single-Phase-to-Ground Fault Analysis

Bus Name	Bus KV	PRE QC5 Phase 1		POST QC5 Phase 1		DELTA KA
		X/R	KA	X/R	KA	
Colorado Rvr	500	22.3	23.8	23	24.4	0.6
Eldorado	500	12.7	41.7	13	42.6	0.9
Red Bluff	500	14.9	20.9	14.9	21	0.1
Serrano	500	12.9	29.2	12.9	29.3	0.1
Vincent	500	14.8	40.2	15.6	40.6	0.4
Chino	230	13.7	42.6	13.7	42.8	0.2
Colorado Rvr	230	29.5	52.5	30.5	55.6	3.1
Cool Water	230	21.6	16	21.4	16.1	0.1
Devers	230	22.2	56.7	22.3	57.4	0.7
Eldorado	230	15.9	53.3	16.1	53.5	0.2
Eldorado_2	230	20.6	45.3	21	48.1	2.8
Ellis	230	17.8	36.8	17.1	37.9	1.1
Etiwanda	230	16.8	55.5	17	59	3.5
Highwind_230	230	14.3	14.7	19	20.7	6
Inyokern	230	7.4	8.6	7.6	8.7	0.1
Jasper	230	9.2	10.6	11.3	13.2	2.6
Kramer	230	10.4	18.1	10.5	18.5	0.4
Lebec	230	12	23.1	16.6	30.3	7.2
Merchant_2	230	14.5	47.4	14.6	47.5	0.1
Mira Loma A	230	11.8	55.1	11.7	55.3	0.2
Mira Loma B	230	10	54.4	9.9	55.4	1
Pastoria	230	13.1	28	14.4	32.9	4.9
Rancho	230	16.4	56.9	16.5	60	3.1
San Ber_dino	230	24.2	41.6	24.2	41.9	0.3
Vincent A	230	19.6	66.4	19.8	66.7	0.3
Vincent B	230	19.6	66.4	19.8	66.7	0.3
Vista	230	15.6	44.3	15.4	45.1	0.8
Whirlwind	230	31.4	58.1	31.6	58.2	0.1
Whirlwind_2	230	31.4	58.1	31.6	58.2	0.1
Windhub_A	230	42.2	36.6	39.4	39.6	3
Windhub_B	230	46.3	36.1	46.9	40.7	4.6
Devers_B	115	0	0	23	27.2	27.2
Inyokern	115	6.8	13.9	7.4	14.7	0.8
Kramer	115	11.9	25.5	12.5	27	1.5
Victor	115	17.9	26.8	17.9	26.9	0.1
Farrell	115	9.3	13.4	9.1	13.7	0.3
Garnet	115	12.1	19.4	11.3	21	1.6
Leatherneck	115	0	0	4.1	2.1	2.1
Mogen	115	4	5.2	5.3	8.3	3.1
Rocket Test	115	4.3	4.5	4.3	4.6	0.1
US Borax	115	3.9	4.9	5.2	7.8	2.9
ANTELOPE	66	26.8	24.2	24.7	25.1	0.9
Etiwanda A	66	43.8	22.9	44.1	23	0.1

Highwin66	66	0	0	21.8	9.7	9.7
Rector	66	13.1	21.7	12.8	23	1.3
Vestal	66	11.9	18.8	11.6	19.5	0.7
GREAT LAKES	66	4.2	3.4	4.2	3.7	0.3
Windhub66_A	66	27.3	15.3	27.3	15.4	0.1

Appendix I – [Placeholder]

Appendix J – [Placeholder]

Appendix K – Operational Requirement (not provided in the Phase I Study)

Visual Resources (43-47)

INTRODUCTION

In 2012, staff discussed with the applicant the selection of Key Observation Points (KOPs) for this project; however, concerns raised by the Redondo Beach community over the adequacy of the information provided in the AFC and about potential visual impacts to residential areas adjacent to the project site prompted staff to re-evaluate the KOPs for this project. As a result of this evaluative process, the following data requests are being made.

BACKGROUND

Section 5.13.1.2 of the AFC, "Regional Setting," observes that "The land on the immediate area of the project site is mostly flat... The land east of the site slopes upward — gaining approximately 200 feet within 0.5 mile — where the area is predominately neighborhood residential (single and multi-family), and where the project site, harbor, and ocean are all at least partially visible where views are unobstructed, due to the increased elevation."

The AFC describes the variation in topography that exists within a 0.5-mile distance from the project site, and it notes the predominately residential areas to the east that are situated on the elevated slope and have unobstructed views toward the project site. However, the AFC does not include a topographic map depicting the variation in elevation that exists within one half mile of the project boundary. More importantly, the AFC does not show a relationship between the viewpoint locations and the topographic elevations of the RBEP site and its surroundings.

DATA REQUEST

43. For all AFC figures depicting the locations of Key Observation Points (KOPs) please show annotated elevation contours up to 1 mile from the RBEP site. The contour intervals shall be shown as 25 foot contours.

Response: The revised KOP location figure has been provided as Figure 5.13-1aR and 5.13-1bR.
Figure 5-13-1aR identifies locations of all KOPs for which simulations were produced, including those produced as part of this Data Response. Elevation contours at 25-foot intervals have been added.
Figure 5-13-1bR identifies the locations of all KOPs, including those provided in the AFC as character views (without accompanying simulations). Elevation contours at 25-foot intervals have been added for the area within 1 mile of the RBEP site.

BACKGROUND

Section 5.13.1.5 of the AFC, "Sensitive Viewing Areas and Observation Points," describes five KOPs as the representative viewpoints from the sensitive receptor locations within the project area's viewshed. The sensitive receptor locations are the view areas that would be the most sensitive to the project's potential visual impacts, and the sensitive receptors in those view areas are typically residents and recreationists.

Section 5.6.2.1.4 of the AFC, "Specific Land Uses within the Project Study Area —Residential," states "The residences closest to the RBEP site are located approximately 100 feet north of the RBEP site across Herondo Avenue within the city of Hermosa Beach." In addition, the AFC states "The closest residence to the noise-producing equipment (combustion turbine) is located approximately 600 feet to the east of the closest combustion turbine, on the northeast corner of North Catalina Avenue and North Francisca Avenue."

Additionally, Section 5.13.2.5 of the AFC, "Impact Significance," concludes "No. The proposed project would not substantially degrade the existing visual character of the project site and its surroundings." And that "The existing visual quality of the project area would be improved in all views, due to the removal of the Redondo Beach Generating Station and/or the placement of the smaller RBEP in a location that substantially reduces its prominence in views."

However, the AFC does not demonstrate that the new facilities would substantially reduce their presence in views from surrounding areas. Staff observes that the AFC did not include KOPs from the residential areas to the east, and the KOPs submitted to represent views from sensitive receptors to the north are insufficient, as discussed below.

The KOP 4 location at Pacific Coast Highway (PCH) and Anita Street is situated at an intersection within a low-scale commercial area, and it is at an elevation similar to that of the project site, whereas multi-story residences are situated along Anita Street, which has a steep slope between PCH and Prospect Avenue, located to the east. The residences on the slope and those residential areas on a similar elevated grade that are located south of Anita Street, in Redondo Beach, and north of Diamond Street have a view down toward the ocean, the beach, and the project site.

The proposed KOP 5 location, while it does demonstrate a high degree of visibility from residences to the north, offers only a partial view of the project site and its existing and proposed facilities, whereas the multi-story residential buildings adjacent to the park would presumably have a much more expansive view of the site. KOP 5 does not represent the views from multi-story residences along the north side of Anita Street, in Redondo Beach, many of which are situated at higher elevations.

Considering the existing residential areas to the north and east of the project site, the current visual impacts to these areas by the existing facilities, and that the proposed project will build and operate power generating facilities (albeit smaller in scale) on the existing site but closer to residences to the north and east, little analysis was done on the potential visual impacts to these residential areas; therefore, the visual impacts to these areas and the mitigation measures proposed for the project to address visual impacts cannot be adequately assessed by staff. Additional KOPs from the north and east are necessary to assess potential visual impacts to residences, businesses, and travelers in the neighborhoods within these areas.

DATA REQUEST

44. Please prepare and submit a revised KOP 5 to evaluate potential impacts to the multi-story residences along the north side of Herondo Street The revised KOP 5 should be located on the north side of Herondo Street at Valley Drive, and it should show the clearest possible view of the RBEP site from the residential buildings at that location. A photograph showing existing visual conditions and a visual simulation should be prepared and submitted for the revised KOP in the same format as the other KOPs in the AFC for the proposed project.

Response: As requested, existing and simulated views toward the RBEP site from the specified location is provided as Figure DR 44-1. The viewpoint is atop a slightly elevated knoll within the landscaped area between Herondo Street and the small plaza in front of the residential area. The KOP location is labeled as KOP DR 44 in the KOP location Figures 5.13-1aR and 5.13-1bR.

DATA REQUEST

45. Please prepare and submit a new KOP to evaluate potential impacts to the multistory residences along Anita Street and to travelers (motorists, bicyclists, and pedestrians) moving west on Anita Street. The new KOP should be located east along the north side of Anita Street and just west of Prospect Avenue, where the street slope begins to descend west toward Pacific Coast Highway and the project site. This KOP will be used by staff to also assess potential impacts to the residential areas situated along the same or similar topographic slope between Anita Street and Beryl Street and that have a view down toward the RBEP site. A photograph showing existing visual conditions and a visual simulation should be prepared and submitted for the new KOP in the same format as the other KOPs in the AFC for the proposed project.

Response: A simulation of the view toward the RBEP site from a location along Anita Street at North Paulina Avenue, approximately 700 feet west of Prospect Avenue is provided as Figure DR45-1. The viewpoint is on Anita Street at North Paulina Avenue location atop the steepest part of Anita Street's descent toward the harbor area.The KOP location is labeled as KOP DR 45 in the KOP location Figures 5.13-1aR and 5.13-1bR.

DATA REQUEST

46. Please prepare and submit a new KOP to evaluate potential visual effects on the residential area just east of the project site between North Catalina Avenue, Pacific Coast Highway, and Beryl Street. The new KOP should be located on North Catalina Avenue at North Francisca Avenue and it should show the clearest possible view of the RBEP site, particularly the location of the new facilities, from that location. A photograph showing existing visual conditions and a visual simulation should be prepared and submitted for the new KOP in the same format as the other KOPs in the AFC for the proposed project.

Response: A simulation of the view toward the RBEP site from the specified location is provided as Figure DR46-1. The viewpoint is on the eastern side of North Catalina Avenue and northern side of North Francisca Avenue, in front of the residences at that location. The KOP location is labeled as KOP DR 46 in the KOP location Figures 5.13-1aR and 5.13-1bR.

BACKGROUND

The Harbor/Civic Center Specific Plan 2008, 5.6 Catalina Avenue Corridor Sub-Area Goals, Objectives, and Policies, 5.6.1 Goals and Objectives, state "Ensure that the physical and environmental (relative to noise, light and glare, and traffic) integrity of the larger, intact, and established lower-density residential areas along the corridor (particularly on the eastern side of the Avenue between Beryl Street and Garnet Street) are respected, maintained, and protected."

AFC Figure 5.6-2, General Plan Land Use Designations, depicts both Low- and Medium-Density Residential, Commercial (primarily hotels), and Mixed-Use (which includes the Roland Mindeman Senior Residence at the Salvation Army) land uses along the Catalina Avenue Corridor (The Corridor). In addition, a Class II Bike Lane exists along the Corridor, a secondary arterial, south of Beryl Street. The proposed project, particularly the new facilities on the east side of the project site, may be highly visible from the Corridor; however, the AFC does not include a KOP representing a viewpoint from sensitive receptors within this view area.

In considering that the proposed project's new facilities will be located on the eastern portion of the project site and potentially highly visible as viewed north from Catalina Avenue, and the presence of residential areas, hotels, high traffic volume, and mix of travelers within the Corridor, a view from the Corridor is

necessary to adequately assess the potential effects of the proposed project on sensitive receptors within this area.

References

City of Redondo Beach. 1992. City of Redondo Beach General Plan Land Use Element.

City of Redondo Beach. 2008. City of Redondo Beach Harbor/Civic Center Specific Plan.

City of Redondo Beach.2009. City of Redondo Beach General Plan Circulation Element.

DATA REQUEST

47. Please prepare and submit a new KOP from North Catalina Avenue to evaluate the potential effects of the proposed project on sensitive receptors within the Corridor. The KOP should be located to show the clearest possible view of the RBEP site from the northeast corner of North Catalina Avenue at Beryl Street. A photograph showing existing visual conditions and a visual simulation should be prepared and submitted for the new KOP in the same format as the other KOPs in the AFC for the proposed project.

Response: A simulation of the view toward the RBEP site from the southeast corner of North Catalina Avenue at Beryl Street is provided as Figure DR47-1. The KOP location is labeled as KOP DR 47 in the KOP location Figures 5.13-1aR and 5.13-1bR.

Source:Department of Public Work's Water Resources Division(2004).
Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Legend

KOP

0 0.25 0.5 Miles

- AES Redondo Beach Energy Project
- Existing RBGS Aboveground Facilities
- Existing SCE Switchyard
- Proposed RBEP Aboveground Facilities
- Laydown and Parking Areas
- City Boundary
- 25-foot Contour

FIGURE 5.13-1aR
Key Observation Point Locations
AES Redondo Beach Energy Project
Redondo Beach, California

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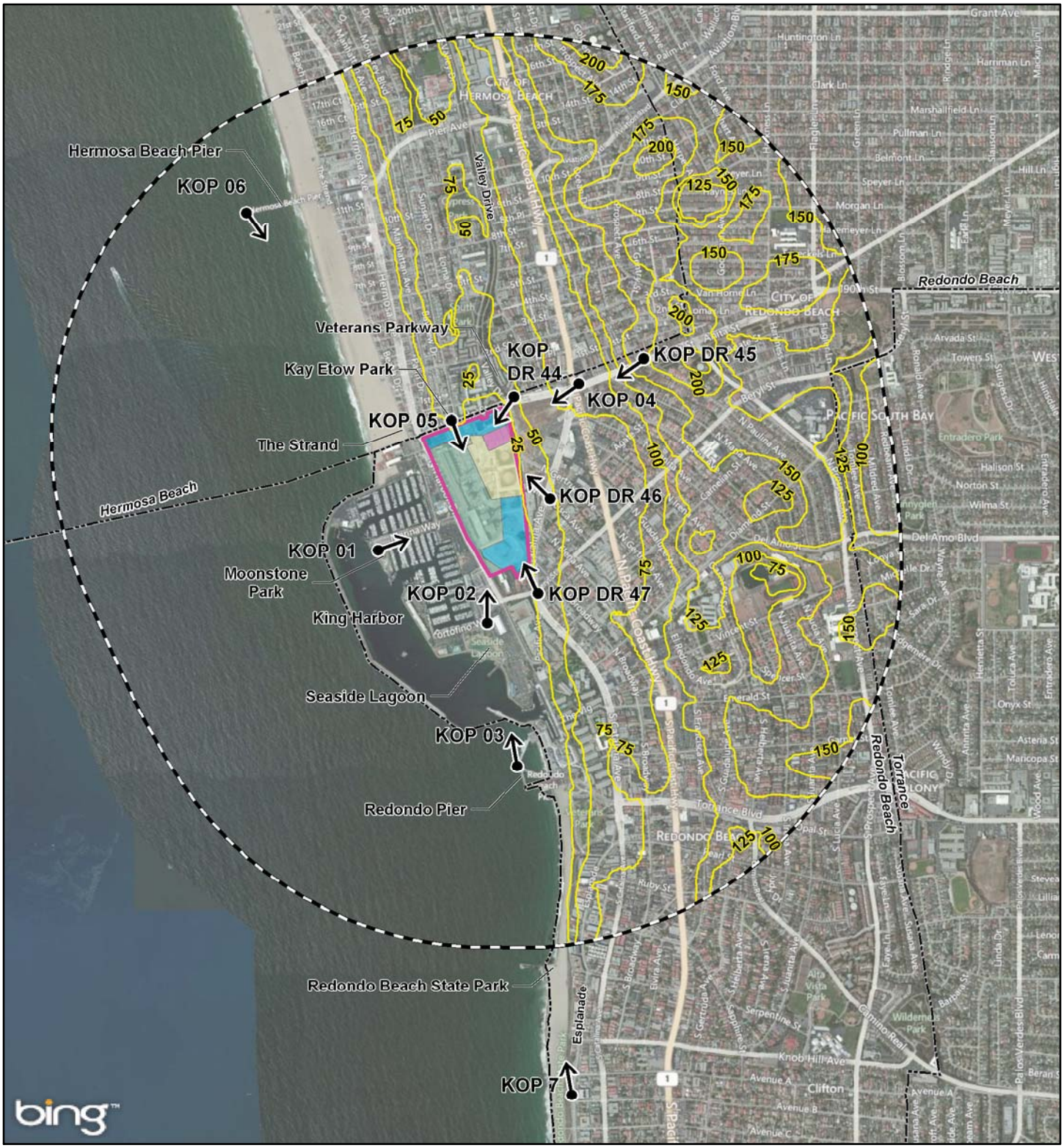

Source:Department of Public Work's Water Resources Division(2004).
Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

Legend

KOP

AES Redondo Beach Energy Project
Existing RBGS Aboveground Facilities
Existing SCE Switchyard
Proposed RBEP Aboveground Facilities
Laydown and Parking Areas
1-Mile Buffer
City Boundary
25-foot Contour

0 0.25 0.5 0.75 1 Miles

FIGURE 5.13-1bR
Key Observation Point Locations
AES Redondo Beach Energy Project
Redondo Beach, California

CH2MHILL

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A. View toward the project area from the north side of Herondo Street, east of Valley Drive. The existing RBGS is partially visible beyond the storage and transmission facilities visible in the foreground.

B. View from KOP DR 44 with simulated project visible in center of view and with current RBGS removed. Some of the vegetation proposed in the Conceptual Landscape Plan, shown as it would appear after 5 years of growth, would be visible from this location.

FIGURE DR 44-1
View from Key Observation Point DR 44
AES Redondo Beach Energy Project
Redondo Beach, California

A. View toward the project area from the north side of Anita Street, at the intersection with North Paulina Avenue. The existing RBGS is visible in the center and right portions of the view.

B. View from KOP DR 45 with simulated project visible in center and right portions of view and with current RBGS removed. Some of the vegetation proposed in the Conceptual Landscape Plan, shown as it would appear after 5 years of growth, would be visible from this location.

FIGURE DR 45-1
View from Key Observation Point DR 45
AES Redondo Beach Energy Project
Redondo Beach, California

A. View toward the project area from the northeast corner of the intersection of North Catalina Avenue and North Francisca Avenue. A slight portion of the existing RBGS is visible beyond the building occupying the left portion of the view.

B. View from KOP DR 46 with simulated project visible in the center of the view and with current RBGS removed. Vegetation proposed in the Conceptual Landscape Plan would not be visible from this location.

FIGURE DR 46-1
View from Key Observation Point DR 46
AES Redondo Beach Energy Project
Redondo Beach, California

A. View toward the project area from the intersection of North Catalina Avenue and Beryl Street. The existing RBGS is partially visible beyond the building in the foreground in the left portion of the view.

B. View from KOP DR 47 with simulated project visible in the center of the view and with current RBGS removed. Some of the vegetation proposed in the Conceptual Landscape Plan, shown as it would appear after 5 years of growth, would be visible from this location.

FIGURE DR 47-1
View from Key Observation Point DR 47
AES Redondo Beach Energy Project
Redondo Beach, California