

## DOCKETED

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<b>Document Title:</b>	Data Responses Set 1A to CEC Staff Request
<b>Description:</b>	Alamitos Energy Center Requests 1-8, 10-12, 16-17, 20-25, 38-44, 51-54, and 59-62.
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May 27, 2014

Mr. Keith Winstead  
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California Energy Commission  
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Sacramento, CA 95814-5512

Subject: Alamitos Energy Center (13-AFC-01)  
Data Response Set 1A – Responses to CEC Staff Data Requests 1-8, 10-12, 16-17, 20-25, 38-44,  
51-54, and 59-62

Dear Mr. Winstead:

Attached please find the Alamitos Energy Center's Data Response Set 1A, including responses to Data Requests 1-8, 10-12, 16-17, 20-25, 38-44, 51-54, and 59-62. This Data Response Set was prepared in response to California Energy Commission Staff Data Requests 1 through 63 for the Application for Certification for the Alamitos Energy Center's (13-AFC-01) dated April 25, 2014. The Applicant requested additional time to prepare responses to Data Requests 9, 13-15, 18-19, 48, 55-58, and 63 on May 15, 2014. Please note the following two items:

- The Applicant is continuing to request emissions data from SCAQMD to resolve Data Requests 18 and 19. The Applicant will provide this information when received and will submit a response to Data Request 19 within 30 days of receipt of Staff's review of the information submitted as part of Data Request 18.
- Modeling files discussed in this Data Response set will be provided in electronic copy on May 28, 2014.

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

A handwritten signature in black ink, appearing to read "Jerry Salamy".

Jerry Salamy  
AFC Project Manager

Attachment

cc: S. O'Kane, AES  
J. Harris, ESH  
S. Madams, CH2M HILL

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# Alamitos Energy Center

(13-AFC-01)

## Data Responses, Set 1 (Responses to Data Requests 1 to 63)

Submitted to  
**California Energy Commission**

Prepared by  
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With Assistance from

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May 27, 2014

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## Attachments

DR-1 Correspondence between the Applicant and the South Coast Air Quality Management District
DR-3 Alamitos Generating Station’s Title V operating permit
DR-4 Alamitos Generating Station Air Emission Estimates
DR-6 Revised AEC Laydown Area Emissions
DR-17 Cumulative Air Quality Impact Assessment Correspondence
DR-40 Highgrove Generating Station DPR form
DR-42 Redwine (1958) Excavation Report - Confidential
DR-44 Haynes Generating Station DPR - Revised
DR-52 Sensitive Receptors by Type, Location, and Receptor Number

# Introduction

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Attached are AES Southland Development, LLC's (AES or the Applicant) responses to the California Energy Commission (CEC) Data Request, Set 1 regarding the Alamos Energy Center (AEC) (13-AFC-01) Application for Certification (AFC). This submittal includes a response to data requests 1 through 63.

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.

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 28 would be numbered Table DR28-1. The first figure used in response to Data Request 28 would be Figure DR28-1, and so on. Figures or tables from the AEC AFC that have been revised have "R1" following the original number, indicating revision 1.

Additional tables, figures, or documents submitted in response to a data request (for example, supporting data, stand-alone 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 (1-27)

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## BACKGROUND: PROJECT PERMITS

The proposed project would 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). Once available, these documents will be integrated into the staff analysis. Therefore, staff will need copies of all 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 and Final Staff Assessments.

## DATA REQUEST

1. Please provide copies of all substantive District correspondence regarding the Alamitos Energy Center (AEC) within one week of submittal, receipt, or reporting event. This includes PDOC and FDOC preparation documents including emails and reports of conversation. This request is to remain in effect until the final Energy Commission Decision has been adopted.

**Response:** Attachment DR-1 presents correspondence between the Applicant and the South Coast Air Quality Management District (SCAQMD). If any other substantive District correspondence regarding the AEC is received, the Applicant will provide such correspondence to the Commission within one week of receipt.

## BACKGROUND: EMISSION ESTIMATES

Appendix 5.1A (Construction Emission Estimates) and Section 5.1B (Operational and Commissioning Emission Calculations) in the Application for Certification (AFC) are used to document emission calculations. Staff needs the original spreadsheet files of these estimates with live embedded calculations to complete its review.

Staff understands changes have been made to the project that may impact worst-case project construction emissions. AES Southland Development (AES-SD) submitted a Data Adequacy Supplement dated February 17, 2014 which noted that upgrading .of the 4,000 feet of offsite sewer line was not required. Therefore, AES is removing the sewer line upgrade from the project description. Please include any updated emission calculations in the spreadsheets.

## DATA REQUEST

2. Please provide the spreadsheet version of Appendix 5.1A and Appendix 5.1B work sheets with live, embedded calculations, and any applicable updates.

**Response:** Five compact discs containing the Appendix 5.1A and 5.1B spreadsheets are being submitted under separate cover.

## BACKGROUND: CONSTRUCTION, COMMISSIONING AND OPERATION OVERLAP IMPACTS

As stated in Section 5.1.1 of the AFC, the proposed construction period for the project is approximately 139 months starting in the first quarter of 2016 and lasting until the third quarter in 2027. The existing facility, Alamitos Generating Station (AGS), includes Units 1-6 currently in operation and retired Unit 7. The AFC details the proposed time periods for demolition of the existing units and construction of the new units but does not provide details on the planned operation of existing Units 1-6 during the construction period. Staff needs to evaluate potential worst case impacts associated with all phases of the project. The construction

and demolition emission estimates in AFC Appendix 5.1A do not appear to include the simultaneous operation of existing Units 1-6 during the construction and operation of the proposed units.

Section 5.1.6.1.1 (Construction and Demolition Emissions) in the AFC for AEC stated that construction would require the use of onsite laydown areas and an approximately 10-acre offsite laydown area adjacent to the existing site. The AFC did not include emissions associated with the preparation of the offsite laydown area or offsite truck travel associated with the use of the adjacent offsite laydown area because these emissions were included in a separate AFC for the Huntington Beach Energy Project (HBEP). The AFC for AEC stated the emissions from equipment used to move AEC items to and from the adjacent offsite laydown area for construction of AEC Block 3 are included in the Block 3 construction and demolition estimates. A final decision for certification has not been made yet for HBEP so the timing of construction of HBEP is unclear and there is uncertainty whether or not there is a potential for emission overlap for the preparation of the adjacent offsite laydown area with the start of the construction at AEC.

Section 5.1.6.3.2 (Modeling Scenarios and Source Data Used to Evaluate Impacts on Ambient Air Quality) in the AFC states the maximum monthly construction period emissions of oxides of nitrogen (NO<sub>x</sub>), particulate matter less than 10 microns (PM<sub>10</sub>), and particulate matter less than 2.5 microns (PM<sub>2.5</sub>) occur during the overlap of construction of the new and upgraded sanitary sewer pipeline with construction of AES Blocks 1 and 2. Since the offsite sewer line will no longer be upgraded, it is unclear whether the determined maximum hourly, daily, monthly or annual emissions timeframe will change.

Section 5.1.6.3.3 (Modeling Results Compared to the Ambient Air Quality Standards) in the Construction and Demolition Impacts Analysis subsection of the AFC, discusses the results of the construction period modeling combined with background concentrations.

Table 5.1-27 indicates the total predicted concentration, namely the combined maximum modeled concentration and background concentration, for nitrogen dioxide (NO<sub>2</sub>) exceeds the federal 1-hour National Ambient Air Quality Standard (NAAQS). In addition, the total predicted concentration for PM<sub>10</sub> exceeds 24-hour and annual California Ambient Air Quality Standards (CAAQS), and the 24-hour NAAQS and the total predicted concentration for PM<sub>2.5</sub> exceeds the annual CAAQS and NAAQS. The 24-hour and annual background concentrations for PM<sub>10</sub> used in the analysis exceed the CAAQS without the addition of the maximum modeled concentrations.

In addition, Section 5.1.6.3.3 discusses the modeled concentrations with respect to distance from the project. The section states the modeled concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> decrease rapidly with distance from the project and maximum impacts occur in areas that would not be accessible to the public. However, the proposed site has a charter school located on the property which is accessible to and used by the public. It is unclear if the onsite charter school within the project property boundary will be impacted by the proposed project.

Section 5.1.6.3.3 the Commissioning Impacts Analysis subsection also discusses potential impacts associated with AEC commissioning activities. The section states that maximum short term impacts would occur if the nine turbines in proposed Blocks 1-3 were in simultaneous cold-start mode while the three turbines in Block 4 were simultaneously undergoing commissioning activities. The section also states that maximum annual impacts would occur when assuming normal operation of all four power blocks plus Block 4 commissioning during a rolling 12 month period. Furthermore, Section 2.2 Project Construction, Table 2.2-1 indicates that demolition of Units 1-2 may occur during the same time. Additionally, Table 2.2-1 indicates a potential simultaneous commissioning of AEC Blocks 1 and 2, with the potential operation of existing Units 1-4 and the demolition of Units 5-6. It is unclear whether the maximum worst case scenario impacts associated with commissioning appropriately considers potential overlap of commissioning, operation and demolition.

AFC Appendix 5.1F (Dispersion Modeling Protocol), Section 5.6 (Building Wake Downwash and Good Engineering Practice), discusses accounting for building downwash and cavity zone effects in the air quality impact assessment modeling. The protocol indicated that if it was determined the existing structures would

influence downwash then the existing structures would be included in the commissioning and operational air quality impact assessments. Section 2.2 Project Construction, Table 2.2-1 indicates the overlap of construction and demolition would result in a changing site landscape throughout the construction period. The assumptions regarding the inclusion of existing and proposed building structures to assess impacts during construction and commissioning phases are not clear.

#### DATA REQUEST

3. In order to evaluate cumulative project emissions, please provide operating permits and emission limits for existing emission units.

**Response:** Attachment DR-3 presents the Alamos Generating Station's Title V operating permit.

#### DATA REQUEST

4. Please provide an estimation of the emissions from the planned operation of existing emission Units 1-6, during the entire construction period. Please include any background information or assumptions used to make these estimates.

**Response:** Attachment DR-4 presents the emission rates, in pounds per million British thermal units (lb/MMBtu) and pounds per hour (lb/hr), for Alamos Generating Station Units 1-6. The lb/MMBtu emission rates were calculated by summing the monthly emissions (pounds per month [lb/month]) and heat input (million British thermal units per month [MMBtu/month]) for a five year period (2008 to 2012)<sup>1</sup> and then dividing the total emissions by the total heat input. The lb/MMBtu emission rates were then multiplied by each Unit's permitted heat input (see Attachment DR-3) to calculate the lb/hr emission rates.

#### DATA REQUEST

5. Please discuss if the adjacent offsite laydown area would be needed for AEC construction if the HBEP does not go forward or begin construction before AEC.

**Response:** The adjacent offsite laydown area will be used during the construction of AEC, regardless of any other development activities by the Applicant. The primary AEC laydown area is located in the northern portion of the site and the adjacent offsite laydown area is immediately south of AEC Block 3. The adjacent offsite laydown area creates a location to store equipment closer to where Blocks 1 and 3 will be constructed. The storage of equipment/materials closer to where active construction is occurring reduces construction equipment use needed to transport materials from the storage location, which in turn reduces construction air emission impacts.

#### DATA REQUEST

6. Please provide the estimated potential emissions from the preparation of the adjacent offsite laydown area.

**Response:** Table DR-6 presents the construction emissions associated with preparing the adjacent offsite laydown area for use. These emission estimates assume the preparation of the adjacent offsite laydown area will occur over a 20-day period with the same mitigation measures used in the preparation of the AFC construction emission calculations. Attachment DR-6 includes the supporting documentation for emission estimates associated with preparation of the adjacent offsite laydown area.

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<sup>1</sup> See AFC Appendix Tables 5.1B-14a through 5.1B-14f.



**Table DR-6**  
**Laydown Area Construction Emissions**

Construction Year 2016	Criteria Pollutant Emissions					
	VOC	CO	NOx	SOx	PM <sub>10</sub> <sup>b</sup>	PM <sub>2.5</sub> <sup>b</sup>
Daily Emissions (lb/day) <sup>a</sup>	1.28	6.29	13.1	0.0082	0.96	0.70
Project Emissions (tons/project) <sup>a</sup>	0.013	0.063	0.13	0.000082	0.010	0.0070
Construction Year 2016	GHG Emissions					
	CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>	CO <sub>2</sub> e		
Project Emissions (metric tons/project) <sup>a</sup>	11.8	0.00029	0.00066	11.9		

Notes:

CH<sub>4</sub> = methane

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

CO<sub>2</sub>e = carbon dioxide equivalents

GHG = greenhouse gas

lb/day = pound(s) per day

metric tons/project = metric ton(s) per project

N<sub>2</sub>O = nitrous oxide

NOx = oxides of nitrogen

PM<sub>10</sub> = particulate matter with an aerodynamic diameter of 10 microns or less

PM<sub>2.5</sub> = particulate matter with an aerodynamic diameter of 2.5 microns or less

SOx = oxides of sulfur

tons/project = ton(s) per project

VOC = volatile organic compounds

<sup>a</sup> It was conservatively assumed that all construction equipment and vehicles could operate simultaneously on the worst-case day during the construction period.

<sup>b</sup> Implementation of mitigation measures is assumed to reduce fugitive dust emissions associated with earthmoving activities, including disturbed surfaces.

**DATA REQUEST**

7. Please indicate if there is the potential for the preparation of the adjacent offsite laydown area to overlap with the construction phase for the AEC.

**Response:** The adjacent offsite laydown area will be prepared prior to AEC construction and will not overlap with any other construction activities.

**DATA REQUEST**

8. Please make any relevant adjustments to the construction emission estimates from the updated plan for the sanitary sewer line construction.

**Response:** Table DR-8 includes a summary of the sanitary sewer pipeline construction air emission estimates. The spreadsheets provided in response to Data Request 2 include the supporting documentation for these emission estimates.

**Table DR-8**  
**Maximum Offsite Emissions from Sewer Line Construction**

Construction Year 2016	Criteria Pollutant Emissions					
	VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
Monthly Emissions (lb/month)	8.78	61.1	111	0.16	19.6	7.73
Project Emissions (lb/project) <sup>a</sup>	35.1	242	443	0.64	78.0	30.8

Construction Year 2016	GHG Emissions		
	CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>
Monthly Emissions (metric tons/month)	10.1	0.00018	0.00040
Project Emissions (metric tons/project) <sup>a</sup>	40.3	0.00072	0.0016

Notes:

lb/month = pound(s) per month

lb/project = pound(s) per project

metric tons/month = metric ton(s) per month

<sup>a</sup> Maximum annual offsite emissions for all pollutants would occur between months 9 - 12.

## DATA REQUEST

9. Please provide emission estimates and air quality modeling impacts for all pollutants and averaging periods associated with the worst-case potential conditions from the construction and commissioning period, including all potential simultaneous activities associated with construction and demolition, commissioning, and the operation of the existing and new units as applicable. Please include all assumptions made for the worst-case potential determinations, including potential overlap of existing equipment operation, potential overlap of laydown emissions, potential overlap of commissioning activities for the individual turbines and turbine block, potential overlap of turbine maintenance and commissioning, and changes to the construction emissions due to project updates.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

## DATA REQUEST

10. Please confirm there is a charter school onsite that may be open during the construction phase of AEC, and during operations of AEC. Please describe the grade levels, approximate enrollment, classroom hourly schedule and school year calendar.

**Response:** The existing Alamos Generating Station site has hosted a charter high school (Rosie the Riveter Youth Program for Women in Non-Traditional Employment Roles [W.I.N.T.E.R.]) since 2005. The high school includes grades 9 through 12, with 65 students currently enrolled and an enrollment capacity of 100 for students between the ages of 16 and 24 years old. The school is open year-round from 8 am to 4 pm. However, during July and August there are no classes as students rotate onsite for vocational training and offsite for practical training. The Applicant provides internship opportunities for which students at the school can apply for practical vocational training. On Friday, the students at the school are required to

attend an onsite construction day.<sup>2</sup> It is AES's desire to allow the school to continue operating at the site during the construction and subsequent operation of the AEC.

For more information, please refer to the two Report of Conversations with the Executive Director of W.I.N.T.E.R docketed by Commission Staff (TN # 202109 and 202336).

#### DATA REQUEST

11. Please provide the modeling plot files detailing the onsite and offsite property air quality impacts. Please include the impacts at, and in the vicinity of, the charter school site (including school buildings and property within the project boundary).

**Response: Response:** Five compact discs containing the modeling plot files are being submitted under separate cover. The charter school occurs within AES-controlled space and was not included in the area considered "ambient air" for the criteria pollutant modeling. Therefore, no onsite criteria pollutant dispersion modeling results are included in these files.

#### DATA REQUEST

12. Please describe the approaches to keep the public out of industrial areas where maximum construction impacts are predicted to occur.

**Response:** The AEC site will have controlled access via a closed gate and guard. No members of the public can legally enter the site without being admitted by the guard. The charter school has a separate entrance and is fenced to preclude access to the AEC site.

The charter school provides vocational training for its students and those attending the school receive extensive training to allow them to participate in both onsite and offsite vocational training, including 30-hour Occupational Safety and Health Administration for Construction, first aid, cardiopulmonary resuscitation (CPR), and hazardous materials training. Precluding the charter school's students from accessing the project site would eliminate valuable real-world job skills being sought specifically by these students.

#### DATA REQUEST

13. Please provide an explanation of the assumptions used to take into account the changing downwash effects of the existing and proposed structures during the various phases of construction.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

#### DATA REQUEST

14. The applicant's preliminary assessment indicates that health-based ambient air quality standards would be exceeded either because of high background values or due to the combined effect of background plus project construction impacts. Please include all feasible mitigation measures in updated modeling as necessary to reduce construction period impacts.

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<sup>2</sup> See Transaction Numbers 202109 and 202336 and <https://www.facebook.com/pages/Rosie-the-Riveter-Youth-Programs/180378738761992?id=180378738761992&sk=info>.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 45 to 60 days to complete this response.

#### DATA REQUEST

15. Please refine your analysis method to assess the total predicted concentration of N02 to compare to the federal 1-hour standard and the total predicted concentration of PM2.5 to compare to the annual CAAQS and NAAQs. Please make sure the PM10 analysis is consistent with the refined analysis for N02 and PM2.5.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

#### DATA REQUEST

16. Please provide an explanation of how AES plans to maintain the proposed construction and demolition time frame outlined in the AFC. Please include a discussion of the construction timeframe including potential changes that may impact the timeframes used to estimate the periods of maximum emissions and any uncertainties that may affect the timing of various emissions.

**Response:** The projected construction and demolition schedule included in the AEC AFC is based on sound engineering and construction management principles and refined with actual construction management experience. These principles also include the need to provide allowances for unexpected delays due to weather, contractor/supplier disruptions, labor disputes, and contingencies to account for discovering unexpected infrastructure or hazardous conditions. However, the projected schedule does not account for force majeure events like fires, earthquakes, or floods.

#### BACKGROUND: CUMULATIVE

Section 5.1.7 and Appendix 5.1F, 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 the permitting process 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

17. 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-17 provides copies of AES's correspondence with the SCAQMD regarding the identification of sources to include in the cumulative air quality impact assessment.

#### DATA REQUEST

18. Please provide a list of all sources to be considered in the cumulative air quality impact analysis for staff review and approval. Include a recommendation whether or not to include each source and the basis of this recommendation

**Response:** The Applicant submitted a public records request to the SCAQMD on April 2, 2014 (correspondence between the Applicant and the SCAQMD is provided in the response to Data Request 17) to obtain this information, but has not yet received the necessary data. As noted in the request for additional time, filed on May 15, 2014 (TN # 202337), the Applicant is requesting an additional 90 days to respond to this data request.

## DATA REQUEST

19. 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:** The Applicant will respond to Data Request 19 within 30 days of CEC Staff timely review of the information submitted as part of Data Request 18.

## BACKGROUND: PROJECT PERMITS

The AFC requests the project be evaluated by the SCAQMD and Energy Commission under Rule 1304 Exemptions. Rule 1304(a) (2) provides a source offset exemption for the replacement of utility steam boilers with combined cycle gas turbine(s) or other qualifying cleaner generation technologies. The purpose of the rule is to facilitate the removal of older, less efficient boiler/steam turbine technology with newer, cleaner gas turbine technology. The offset exemption only covers the maximum electrical power rating in megawatts that does not allow an increase of the basin-wide electricity generating capacity. If there is an increase in the basin-wide capacity, then only the increased capacity must be offset. The AFC states that AES plans to enable 1,995 MW of new generation under this rule by permanently retiring 1,950 MWs from existing Alamos Generating Station Units 1-6 and using 45 MWs from the retirement of Huntington Beach Generating Station Units 1 and 2. In a letter dated February 7, 2014 to the SCAQMD, Table 4 lists the gross and net MWs for the AES project to demonstrate there will not be a change in capacity. These MWs are based on ambient temperatures of 32, 33 and 28 degrees Fahrenheit. The AFC states the new units would have a gross capacity of 1,995 and net capacity of 1,936 MWs and a site ambient annual temperature (SAAT) of 65.3 degrees Fahrenheit. It is unclear whether SCAQMD has approved the demonstration. In addition, Rule 1304.1 requires fees for up to the full amount of offsets provided by the SCAQMD for facilities which use the offset exemption in Rule 1304(a) (2). The AFC states SCAQMD Rule 1304.1 is applicable to the project.

## DATA REQUEST

20. Please provide the current net and gross capacities of existing Units 1-6 at the Alamos Generating Station referenced to site ambient average temperature conditions.

**Response:** The Alamos Generating Station's parasitic load (the difference between gross and net generation capacities) does not include the energy intensive ancillary facilities that the Alamos Energy Center requires (such as fuel gas compressors and the air cooled condenser). The major ancillary facilities at the Alamos Generating Station include induced/forced draft air fans, boiler feedwater pumps, and once-through cooling water pumps, with a total plant-wide parasitic load of about 64 megawatts (assuming all six units are operated at their rated capacity). Therefore, the Alamos Generating Station's generating capacities presented in the February 7, 2014 letter from the Applicant responding to the SCAQMD's air permit application completeness letter represent the best available data.

## DATA REQUEST

21. Please document any derates or operational limits that are part of the current net and gross capacities.

**Response:** The Applicant is not proposing any derating of the existing Alamitos Generating Station units nor are any operational limitations required for these units or AEC units.

## DATA REQUEST

22. Please provide any correspondence from the SCAQMD indicating sufficient surplus MWS are available from the existing Huntington Beach Generating Station Units 1 and 2 to enable the proposed offset exemption approach to be used for the AEC.

**Response:** The SCAQMD has not provided a Preliminary Determination of Compliance (PDOC) for the Alamitos Energy Center. The PDOC is the document which would indicate if the proposed AEC is in compliance with all applicable SCAQMD and US EPA air quality rules and regulations including Rule 1304(a)(2). The SCAQMD's January 21, 2014 letter (Transaction Number 201591, item 1a) specifically requested a demonstration of sufficient megawatt retirements consistent with Rule 1304(a)(2) before the SCAQMD could determine the AEC air permit application complete. On February 7, 2014, the Applicant provided a response to the SCAQMD's letter identifying the megawatt retirements that were planned. As the SCAQMD deemed AEC's air permit application complete on February 21, 2014 (Transaction Number 201795), it is reasonable to conclude that the documentation presented in the February 7, 2014 letter demonstrated that sufficient megawatt reductions exist from the Huntington Beach Generating Station Units 1 and 2 to allow AEC to comply with the provisions of Rule 1304(a)(2), otherwise the SCAQMD would not have deemed the AEC air permit application complete.

## DATA REQUEST

23. Please provide full details and documentation on the compliance plan for Rules 1304 and 1304.1.

**Response:** Consistent with the SCAQMD's permit condition F52.1 (TN # 201404, page 60 of 141), for the Huntington Beach Energy Project, the Applicant will prepare a plan to address compliance with Rules 1304 within 60 days after the SCAQMD issues a Permit to Construct. It is expected the same condition would be applicable for the Alamitos Energy Center and a compliance plan would be prepared 60 days after the SCAQMD issues a Permit to Construct.

## BACKGROUND: PROJECT PERMITS

The Air Resources Board (ARB) has identified diesel particulate matter (PM) as a toxic air contaminant (TAC) and has implemented control measures designed to reduce diesel PM, including an air toxic control measure (ATCM) for stationary diesel engines. The ATCM for stationary diesel engines limits the operation of diesel engines when operating in close proximity to sensitive receptors such as schools. California also has a voluntary Portable Equipment Registration Program (PERP) which can allow the use of registered portable equipment such as air compressors and generators to operate without needing to get an individual permit to operate from a local district. This equipment is only considered portable if it does not reside at the same location longer than 12 consecutive months. Section 2452 (cc) of the Regulation to Establish a Statewide Portable Equipment Registration Program, includes the definition of portable equipment and discusses residency time and how to aggregate multiple engines performing the same function. Many local air districts have policies establishing the valid use of PERP registered equipment. The ARB recommends consultation with the local air district regarding the use of equipment that may have a longer residency time on a project site to determine if stationary permits are needed. Considering the length of the proposed construction schedule, and the proximity of neighboring schools including one located onsite, it is important to establish permitting requirements upfront.

## DATA REQUEST

24. Please provide any information regarding the use of diesel fired equipment onsite which may require a stationary source permit.

**Response:** A review of the diesel construction equipment identified for use in constructing AEC shows three pieces of equipment (plate compactor, pile driver, and air compressors) subject to the voluntary Portable Equipment Registration Program (PERP). The plate compactor is scheduled to be onsite continuously for approximately 4 months and is not subject to air permitting. The pile drivers are scheduled to be onsite continuously for approximately 6 months at a time, with more than 12 months between onsite uses, and are also not subject to air permitting. The air compressors are scheduled to be onsite continuously and are subject to air permitting. However, the Applicant will require construction contractors to either use existing Alamitos Generating Station electrically driven compressed air service or use portable electric air compressors as opposed to diesel-fired air compressors.<sup>3</sup> Therefore, no construction equipment proposed for use in constructing AEC will require air permits.

## DATA REQUEST

25. If the SCAQMD determines stationary permits are needed for the operation of any diesel engine during the construction period, the engine may be subject to the ATCM for stationary diesel engines. Considering the ATCM limits the allowable hours of operation of these engines if they are located close to schools, would the construction schedule be impacted if stationary permits were required?

**Response:** Please see the response to Data Request 24.

## BACKGROUND: GREENHOUSE GAS EMISSIONS

The U.S. Environmental Protection Agency (EPA) has initiated a process to update and add new rules setting minimum carbon performance standards for new, modified and existing power plants. The proposed rule applying to new plants (Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units) was published in the *Federal Register* on January 8, 2014. As currently proposed, the rule would require all new natural gas electric generating units (EGUs) to meet a 1,000 lbs CO<sub>2</sub>/MWh standard for units rated at greater than 850 MMBtu/hr, regardless of whether they are simple or combined cycle or if they are operated as base load, and 1,100 lbs CO<sub>2</sub>/MWh for all units rated at less than 850 MMBtu/hr. The proposal includes an exemption for low use units, defined as a unit with less than 33 percent annual capacity factor averaged retroactively over three years.

EPA has confirmed that any new facility that commences construction after the date of the proposed rule being published in the *Federal Register* is subject to the provisions as proposed, unless modified by a future re-publishing process. The standards are currently expected to be finalized within a year of the January 8th publication date. The facility would likely be subject to the finalized standards including any changes that are incorporated.

## DATA REQUEST

26. Please provide a detailed description of how the AEC plans to comply with the proposed requirements, including any loss of operating flexibility required to meet these requirements if they are deemed applicable.

<sup>3</sup> Please note that the response to Data Request 2 includes the air compressors as diesel-fired to expedite CEC Staff's review of the construction modeling results. Future construction/operational modeling requested in Data Requests 9, 14, 15, and 19 will include the use of electrified air compressors.

**Response:** As discussed in the Applicant's objection letter (TN # 202337), Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units is merely proposed and is not in effect at this time. Furthermore, AEC is expected to operate at a capacity factor of between 15 and 25 percent<sup>4</sup>, which is less than threshold capacity factor contained in the proposed regulation. The Applicant has accepted an operational limit (in terms of a maximum annual PM<sub>2.5</sub> emissions limit) for the HBEP in order to demonstrate compliance with SCAQMD Rule 1325. The Applicant will accept a similar operational limit for AEC.

## DATA REQUEST

27. Please confirm whether the applicant would be willing to accept operating limits to ensure the facility meets the proposed requirements and include a discussion of how the new requirements would affect operations.

**Response:** The Applicant objected to this request as the regulation is not yet finalized. However, the Applicant expects that the SCAQMD will include a permit condition consistent with the Huntington Beach Energy Project's Preliminary Determination of Compliance permit condition E193.7.<sup>5</sup> This condition recognizes that the proposed limit in this regulation may change and includes the following provision to accommodate the uncertainty present at this time. Therefore, a CEC-issued limit is not warranted or necessary.

The Applicant has accepted an operational limit (in terms of a maximum annual PM<sub>2.5</sub> emissions limit) for the HBEP in order to demonstrate compliance with SCAQMD Rule 1325. The Applicant will accept a similar operational limit for AEC.

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<sup>4</sup> See TN # 201620-7, page 2-43.

<sup>5</sup> See TN # 201404, page 70 of 141.



**Attachment DR-1**  
**Correspondence between the Applicant and**  
**SCAQMD**

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**From:** [Salamy, Jerry/SAC](#)  
**To:** [Marcel Saulis](#)  
**Cc:** [Salamy, Jerry/SAC](#); [Stephen O"Kane](#); [Madams, Sarah/SAC](#); [Engel, Flyse/SJC](#)  
**Subject:** RE: Alamos Energy Center Air Permit Application Completeness Response  
**Date:** Wednesday, April 23, 2014 1:55:00 PM  
**Attachments:** [AEC Tables 2.1-2.3\\_04-23-14.docx](#)

---

Hi Marcel,

Attached are the AEC Table 2.1 to 2.3 for your use. I have also attached an MS Word version for your convenience.

Table 2.1 Plant Output Per Turbine 3-on-1 Operation

	ISO 59 F - 60% RH (Evaporative Cooling Off)	107 F - 10% RH (Evaporative Cooling On)	28 F - 78% RH (Evaporative Cooling Off)	65 F - 87% RH (Evaporative Cooling On)
Gas Turbine Heat Input, mmbtu/h				
HHV	1356	1306	1459	1345
Gas Turbine Gross Output, kW	121213	115072	133149	119651
Steam Turbine Gross Output, kW	47597	44686	46500	47746
Total Gross Power Output, kW	168810	159758	179649	167397
Net Power Output, kW	163837	154918	174497	162463
Net Plant Heat Rate, btu/kWh, LHV	7524	7665	7604	7523
Net Plant Heat Rate, btu/kWh, HHV	8276	8432	8364	8275
Net Plant Efficiency, %, HHV	41.3	40.5	40.8	41.3

Table 2.2 Plant Output Per Turbine 2-on-1 Operation

	84.6 F - 45.83% RH (Evaporative Cooling On)	65 F - 87% RH (Evaporative Cooling On)
Gas Turbine Heat Input, mmbtu/h HHV	1315	1345
Gas Turbine Gross Output, kW	116140	119717
Steam Turbine Gross Output, kW	48294	48619
Total Gross Power Output, kW	164434	168336
Net Power Output, kW	159188	163040
Net Plant Heat Rate, btu/kWh, LHV	7511	7498
Net Plant Heat Rate, btu/kWh, HHV	8262	8248
Net Plant Efficiency, %, HHV	41.3	41.4

Table 2.3 Plant Output Per Turbine 1-on-1 Operation

	84.6 F - 45.83% RH (Evaporative Cooling On)	65 F - 87% RH (Evaporative Cooling On)
Gas Turbine Heat Input, mmbtu/h HHV	1315	1345
Gas Turbine Gross Output, kW	116144	119720
Steam Turbine Gross Output, kW	46291	46811
Total Gross Power Output, kW	162435	166531
Net Power Output, kW	156166	160203
Net Plant Heat Rate, btu/kWh, LHV	7657	7631
Net Plant Heat Rate, btu/kWh, HHV	8423	8394
Net Plant Efficiency, %, HHV	40.5	40.7

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

---

**From:** Marcel Saulis [mailto:msaulis@aqmd.gov]  
**Sent:** Thursday, April 17, 2014 9:10 AM  
**To:** Salamy, Jerry/SAC  
**Cc:** Marcel Saulis  
**Subject:** RE: Alamos Energy Center Air Permit Application Completeness Response

Jerry – please provide the specifications on the plant output on a per turbine basis; 3x1, 2x1, and 1x1 – similar to the HBEP PDOC Tables 2.1 to 2.3.

Thanks,

**Marcel Saulis**  
Engineering and Compliance Office, 3rd Floor  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
ph: (909) 396-3093  
fax: (909) 396-2999

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**From:** [Jerry.Salamy@CH2M.com](mailto:Jerry.Salamy@CH2M.com) [mailto:[Jerry.Salamy@CH2M.com](mailto:Jerry.Salamy@CH2M.com)]  
**Sent:** Monday, March 31, 2014 9:29 AM  
**To:** Marcel Saulis  
**Cc:** [stephen.okane@aes.com](mailto:stephen.okane@aes.com); [Jerry.Salamy@CH2M.com](mailto:Jerry.Salamy@CH2M.com); [JDH@eslawfirm.com](mailto:JDH@eslawfirm.com); [sgp@eslawfirm.com](mailto:sgp@eslawfirm.com); [Sarah.Madams@CH2M.com](mailto:Sarah.Madams@CH2M.com); [Elyse.Engel@ch2m.com](mailto:Elyse.Engel@ch2m.com)  
**Subject:** RE: Alamos Energy Center Air Permit Application Completeness Response

Good Morning Marcel,

Attached is the response to your email request below. Please let me know if you have any additional questions.

Thanks,

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

---

**From:** Marcel Saulis [mailto:msaulis@aqmd.gov]  
**Sent:** Thursday, March 13, 2014 5:22 PM  
**To:** Salamy, Jerry/SAC  
**Cc:** Marcel Saulis  
**Subject:** RE: Alamos Energy Center Air Permit Application Completeness Response

Jerry – I have the following request for information and clarifications in regards to the AEC project:

1. From Table 5.1B.1 Summary of Commissioning Emission Estimates, emission reductions are shown following the steam blows. This implies that the SCR and CO catalysts will be fully functional at that

point. Please confirm if this will be the case.

2. The same table provides a summary of the total emissions per turbine and per 3x1 block. Please clarify if all three turbines will be operated simultaneously during each phase of the commissioning activity listed on the table. Primarily during the first 67 hours, or period of highest unabated emissions, identified with the conclusion of the bypass mode/blowdown/valve and drum tuning. Please provide the sequence of operation for the three turbines up to and including the activity that corresponds to 40% load.
3. The information you provided indicates that first fire for blocks 1 and 2 will occur on, or about, 2/1/2019. For the activity periods identified in item no. 2 above, please provide the sequence of operation for all the six turbines in blocks 1 and 2.
4. The basis for determining annual emissions was identified in Table 5.1-17 in footnote (d), as well as in Table 5.1B.4, as 3,320 hours of operation with the balance of start-ups/shutdowns. Thus the total annual hours would be 3689.8 hours (calculated as  $3320 + 20 \times 90/60 + 125 \times 32.5/60 + 350 \times 32.5/60 + 495 \times 32.5/60$ ). It appears that the value of 3686 hours was used in subsequent calculations. Please clarify the total annual hours of operation and the methodology for its determination.
5. The VOC BACT proposed for AEC is 1 ppmvd @ 15% O<sub>2</sub>. The BACT limit is 2 ppmvd @ 15% O<sub>2</sub>. Please respond if the AEC project will change its proposal to 2 ppm for the technical purposes already discussed for RBEP and HBEP.

Please provide the information at your earliest convenience.

Thanks,

**Marcel Saulis**

Engineering and Compliance Office, 3rd Floor  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
ph: (909) 396-3093  
fax: (909) 396-2999

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**From:** [Jerry.Salamy@CH2M.com](mailto:Jerry.Salamy@CH2M.com) [<mailto:Jerry.Salamy@CH2M.com>]  
**Sent:** Friday, February 07, 2014 2:07 PM  
**To:** Marcel Saulis  
**Subject:** FW: Alamos Energy Center Air Permit Application Completeness Response

Marcel,

Mistyped your email address.

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

---

**From:** Salamy, Jerry/SAC  
**Sent:** Friday, February 07, 2014 2:06 PM  
**To:** 'marcel.saulis@AQMD.gov'  
**Cc:** Winstead, Keith@Energy; Bemis, Gerry@Energy; Fletcher, Nancy@Energy; Engel, Elyse/SJC; Madams, Sarah/SAC; 'Jeffery Harris'; 'Samantha Pottenger'; Stephen O'Kane; John Yee; Andrew Lee  
**Subject:** Alamos Energy Center Air Permit Application Completeness Response

Marcel,

Attached is AES's response to the District's January 21, 2014 Completeness letter. Please call 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***

**Attachment DR-3**  
**Alamitos Generating Station's Title V Operating**  
**Permit**

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# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • www.aqmd.gov

January 19, 2012

Mr. Weikko Wirta  
Plant Manager, AES Alamitos, LLC  
690 N. Studebaker Road  
Long Beach, CA 90803

Dear Mr. Wirta:

Please find attached the revised versions of your Facility Permit (ID# 115394). The revised permit reflects the proposed change of conditions to the equipment of the AES Alamitos, listed in Sections D. The following is a summary of the approved revisions:

Application #	Device #	Section #	Proposed Actions
526783	D3, D39, D42, D45, D48, D51	D	Modification of condition A195.6, A195.7, D28.1, D28.5

AQMD sent the draft permit to EPA on September 23, 2011 for the 45-day review. EPA did not provide comments during the review period. The permit is eligible for issuance. Please review the attached Section D carefully, then insert the enclosed section into your Facility Permit and discard the earlier version. Questions concerning changes to your permit should be directed to Mr. Li Chen at (909) 396-2426.

Very truly yours,

Brian L. Yeh  
Senior Manager  
Mechanical, Chemical and Public Services  
Engineering & Compliance

#### Attachments

cc: Gerardo Rios, US EPA Region IX  
Ed Pupka, Compliance



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
21865 Copley Drive, Diamond Bar, CA 91765

Title Page  
Facility ID: 115394  
Revision #: 23  
Date: January 19, 2012

## FACILITY PERMIT TO OPERATE

**AES ALAMITOS, LLC  
690 N STUDEBAKER RD  
LONG BEACH, CA 90803**

### 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 Nazem, P.E.  
Deputy Executive Officer  
Engineering & Compliance





**FACILITY PERMIT TO OPERATE  
AES ALAMITOS, LLC**

**TABLE OF CONTENTS**

Section	Description	Revision #	Date Issued
A	Facility Information	10	10/10/2008
B	RECLAIM Annual Emission Allocation	16	01/01/2012
C	Facility Plot Plan	TO BE DEVELOPED	
D	Facility Description and Equipment Specific Conditions	12	01/19/2012
E	Administrative Conditions	10	10/10/2008
F	RECLAIM Monitoring and Source Testing Requirements	8	10/10/2008
G	Recordkeeping and Reporting Requirements for RECLAIM Sources	8	10/10/2008
H	Permit To Construct and Temporary Permit to Operate	13	10/10/2008
I	Compliance Plans & Schedules	8	10/10/2008
J	Air Toxics	7	10/10/2008
K	Title V Administration	8	10/10/2008
Appendix			
A	NOx and SOx Emitting Equipment Exempt From Written Permit Pursuant to Rule 219	8	10/10/2008
B	Rule Emission Limits	7	10/10/2008



## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
<b>System 2: ELECTRIC GENERATION</b>					
BOILER, NO. 1, NATURAL GAS, BABCOCK AND WILCOX, FRONT FIRED, WITH OXYGEN CONTENT CONTROL, 1785 MMBTU/HR WITH A/N: 408704	D39	C135	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 (5) [RULE 2009, 5-11-2001]; PM10: 0.01 GRAINS/SCF NATURAL GAS (5B) [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 NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.1, A195.6, A305.1, A327.1, B59.1, D28.2, E193.2, K40.2
GENERATOR, 175 MW					
SELECTIVE CATALYTIC REDUCTION, SERVING BOILER NO. 1, IN-DUCT TYPE, CORMETECH, TITANIA/VANADIA HONEYCOMB EXTRUSION, 1871 CU.FT. WITH A/N: 376639	C135	D39		NH3: 10 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996]	A195.5, D12.6, D28.5, E179.4, E179.5, E193.2
AMMONIA INJECTION, TWO INJECTION GRIDS					

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
BOILER, NO. 2, NATURAL GAS, BABCOCK AND WILCOX, FRONT FIRED, WITH OXYGEN CONTENT CONTROL, 1785 MMBTU/HR WITH A/N: 408705	D42	C137	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 (5) [RULE 2009, 5-11-2001]; PM10: 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM10: 0.1 GRAINS/SCF NATURAL GAS (5B) [RULE 409, 8-7-1981]; PM10: 11 LBS/HR NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.1, A195.6, A305.2, A327.1, B59.1, D28.2, E193.2, K40.2
GENERATOR, 175 MW					
SELECTIVE CATALYTIC REDUCTION, SERVING BOILER NO. 2, IN-DUCT TYPE, CORMETECH, TITANIA/VANADIA HONEYCOMB EXTRUSION, 1871 CU.FT. WITH A/N: 377587	C137	D42		NH3: 10 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996]	A195.5, D12.6, D28.5, E179.4, E179.5, E193.2
AMMONIA INJECTION, TWO INJECTION GRIDS					

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
BOILER, NO. 3, NATURAL GAS, COMBUSTION ENGINEERING, TANGENTIALLY FIRED, WITH FLUE GAS RECIRCULATION, OXYGEN CONTENT CONTROL, 3350 MMBTU/HR WITH A/N: 408706	D45	C139	NOX: MAJOR SOURCE**	CO: 300 PPMV NATURAL GAS (5) [RULE 1303(b)(2) -Offset, 5-10-1996]; CO: 2000 PPMV (5A) [RULE 407, 4-2-1982]; NOX: 7 PPMV (5) [RULE 2009, 5-11-2001]; PM10: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM10: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409, 8-7-1981]; PM10: 11 GRAINS/SCF NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.4, A195.6, A305.3, A327.1, B59.1, D28.2, E193.2, K40.2
GENERATOR, 320 MW					
SELECTIVE CATALYTIC REDUCTION, SERVING BOILER NO. 3, IN-DUCT TYPE, CORMETECH, TITANIA/VANADIA HONEYCOMB EXTRUSION, 2312 CU.FT. WITH A/N: 372944	C139	D45		NH3: 10 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996]	A195.5, D12.6, D28.5, E179.4, E179.5, E193.2
AMMONIA INJECTION, TWO INJECTION GRIDS					

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
BOILER, NO. 4, NATURAL GAS, COMBUSTION ENGINEERING, TANGENTIALLY FIRED, WITH FLUE GAS RECIRCULATION, OXYGEN CONTENT CONTROL, 3350 MMBTU/HR WITH A/N: 408707	D48	C141	NOX: MAJOR SOURCE**	CO: 300 PPMV NATURAL GAS (5) [RULE 1303(b)(2) -Offset, 5-10-1996]; CO: 2000 PPMV (5A) [RULE 407, 4-2-1982]; NOX: 7 PPMV (5) [RULE 2009, 5-11-2001]; PM10: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM10: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409, 8-7-1981]; PM10: 11 LBS/HR NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.4, A195.6, A305.4, A327.1, B59.1, D28.2, E193.2, K40.2
GENERATOR, 320 MW					
SELECTIVE CATALYTIC REDUCTION, SERVING BOILER NO. 4, IN-DUCT TYPE, CORMETECH, TITANIA/VANADIA HONEYCOMB EXTRUSION, 2312 CU.FT. WITH A/N: 372945	C141	D48		NH3: 10 PPMV (4) [RULE 1303(a)(1)-BACT, 5-10-1996]	A195.5, D12.6, D28.5, E179.4, E179.5, E193.2
AMMONIA INJECTION, TWO INJECTION GRIDS					

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
BOILER, NO. 5, NATURAL GAS, BABCOCK AND WILCOX, MODEL UP-24, SUPERCRITICAL OPPOSED FIRING, WITH LOW NOX BURNER, FLUE GAS RECIRCULATION, 4750 MMBTU/HR WITH A/N: 408728  BURNER, NATURAL GAS, TODD COMBUSTION, MODEL DYNASWIRL, THIRTY TWO, WITH LOW NOX BURNER  GENERATOR, 480 MW	D51	C53	NOX: MAJOR SOURCE**	CO: 300 PPMV NATURAL GAS (5) [RULE 1303(b)(2) -Offset, 5-10-1996]; CO: 2000 PPMV (5A) [RULE 407, 4-2-1982]; NOX: 5 PPMV (5) [RULE 2009, 5-11-2001]; PM10: 0.01 GRAINS/SCF NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM10: 0.1 GRAINS/SCF NATURAL GAS (5) [RULE 409, 8-7-1981]; PM10: 11 LBS/HR NATURAL GAS (5B) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.2, A195.4, A195.7, A327.1, B59.1, D28.1, D28.2, K40.3

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
SELECTIVE CATALYTIC REDUCTION, NO. 5, VANADIUM/TITANIUM CATALYST BED, WITH 3475 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 30 FT ; HEIGHT: 41 FT ; LENGTH: 58 FT WITH A/N: 339179  AMMONIA INJECTION, INJECTION GRID, WITH 1800 INJECTION NOZZLES	C53	D51		NH3: 20 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	D12.5, D12.6, E73.1, E179.3, E193.1, K48.1, K67.8

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 1: EXTERNAL COMBUSTION</b>					
BOILER, NO. 6, NATURAL GAS, BABCOCK AND WILCOX, SUPERCRITICAL OPPOSED FIRING, WITH FLUE GAS RECIRCULATION, 4752.2 MMBTU/HR WITH A/N: 408708  BURNER, NATURAL GAS, TODD COMBUSTION, MODEL DYNASWIRL, THIRTY TWO, WITH LOW NOX BURNER  GENERATOR, 480 MW	D3	C55	NOX: MAJOR SOURCE**	CO: 300 PPMV NATURAL GAS (5) [RULE 1303(b)(2) -Offset, 5-10-1996]; CO: 2000 PPMV (5A) [RULE 407, 4-2-1982]; NOX: 5 PPMV (5) [RULE 2009, 5-11-2001]; PM10: 0.01 GRAINS/SCF NATURAL GAS (5) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; PM10: 0.1 GRAINS/SCF NATURAL GAS (5B) [RULE 409, 8-7-1981]; PM10: 11 LBS/HR NATURAL GAS (5A) [RULE 475, 10-8-1976; RULE 475, 8-7-1978]; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A195.2, A195.4, A195.7, A327.1, B59.1, D28.1, D28.2
SELECTIVE CATALYTIC REDUCTION, NO. 6, VANADIUM/TITANIUM, WITH 3475 CUBIC FEET OF TOTAL CATALYST VOLUME, WIDTH: 30 FT ; HEIGHT: 41 FT ; LENGTH: 58 FT WITH A/N: 372949  AMMONIA INJECTION, INJECTION GRID, WITH 1800 INJECTION NOZZLES	C55	D3		NH3: 20 PPMV NATURAL GAS (4) [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1) -BACT, 12-6-2002]	D12.5, D12.6, E73.1, E179.3, E193.1, K48.1, K67.8

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 4: INORGANIC CHEMICAL STORAGE</b>					
STORAGE TANK, UNDERGROUND, TK-001, AQUEOUS AMMONIA, DOUBLE WALLED, 20000 GALS; DIAMETER: 10 FT 2 IN; HEIGHT: 37 FT 10 IN A/N: 339195	D19				C157.1, E144.1
STORAGE TANK, FIXED ROOF, NO. 1, AQUEOUS AMMONIA 29%, WITH A VAPOR RETURN LINE, 20000 GALS A/N: 372946	D151				C157.2, E144.1, E193.2
STORAGE TANK, FIXED ROOF, NO. 2, AQUEOUS AMMONIA 29%, WITH A VAPOR RETURN LINE, 20000 GALS A/N: 372947	D152				C157.2, E144.1, E193.2
STORAGE TANK, FIXED ROOF, NO. 3, AQUEOUS AMMONIA 29% SOLUTION, WITH A VAPOR RETURN LINE, 20000 GALS A/N: 376484	D153				C157.2, E144.1, E193.2
<b>Process 11: Rule 219 Exempt Equipment Subject to Source-Specific Rules</b>					
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E126			ROG: (9) [RULE 1113, 11-8-1996; RULE 1113, 12-5-2003; RULE 1171, 8-2-2002; RULE 1171, 11-7-2003]	K67.7
RULE 219 EXEMPT EQUIPMENT, OIL WATER SEPARATORS, GRAVITY-TYPE, < 45 FT <sup>2</sup> AIR/LIQUID INTERFACIAL AREA	E127				H23.1
RULE 219 EXEMPT EQUIPMENT, FUGITIVE EMISSIONS, COMPRESSORS	E128				H23.2

(1) (1A) (1B) Denotes RECLAIM emission factor

(3) Denotes RECLAIM concentration limit

(5) (5A) (5B) Denotes command and control emission limit

(7) Denotes NSR applicability limit

(9) See App B for Emission Limits

(2) (2A) (2B) Denotes RECLAIM emission rate

(4) Denotes BACT emission limit

(6) Denotes air toxic control rule limit

(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)

(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 ALAMITOS, 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
<b>Process 11: Rule 219 Exempt Equipment Subject to Source-Specific Rules</b>					
RULE 219 EXEMPT EQUIPMENT, FUGITIVE EMISSIONS, PUMPS	E129				H23.2
RULE 219 EXEMPT EQUIPMENT, FUGITIVE EMISSIONS, FLANGES	E130				H23.3
RULE 219 EXEMPT EQUIPMENT, FUGITIVE EMISSIONS, PRV	E131				H23.4
RULE 219 EXEMPT EQUIPMENT, ABRASIVE BLASTING EQUIPMENT, GLOVE-BOX, <= 53 FT <sup>3</sup> , WITH DUST TER	E132			PM: (9) [RULE 1140, 2-1-1980; RULE 1140, 8-2-1985; RULE 404, 2-7-1986; RULE 405, 2-7-1986]	D322.2, D381.1, K67.6

- (1) (1A) (1B) Denotes RECLAIM emission factor  
(3) Denotes RECLAIM concentration limit  
(5) (5A) (5B) Denotes command and control emission limit  
(7) Denotes NSR applicability limit  
(9) See App B for Emission Limits

- (2) (2A) (2B) Denotes RECLAIM emission rate  
(4) Denotes BACT emission limit  
(6) Denotes air toxic control rule limit  
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)  
(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 ALAMITOS, 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 ALAMITOS, LLC**

**SECTION D: DEVICE ID INDEX**

Device Index For Section D			
Device ID	Section D Page No.	Process	System
D3	7	1	2
D19	8	4	0
D39	1	1	2
D42	2	1	2
D45	3	1	2
D48	4	1	2
D51	5	1	2
C53	6	1	2
C55	7	1	2
E126	8	11	0
E127	8	11	0
E128	8	11	0
E129	9	11	0
E130	9	11	0
E131	9	11	0
E132	9	11	0
C135	1	1	2
C137	2	1	2
C139	3	1	2
C141	4	1	2
D151	8	4	0
D152	8	4	0
D153	8	4	0



## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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 SO<sub>2</sub> Allowance Allocation for affected units are as follows:

Device ID	Boiler ID	Contaminant	Tons in any year
39	Unit 1	SO <sub>2</sub>	2751
42	Unit 2	SO <sub>2</sub>	105
45	Unit 3	SO <sub>2</sub>	290
48	Unit 4	SO <sub>2</sub>	814
51	Unit 5	SO <sub>2</sub>	4193
3	Unit 6	SO <sub>2</sub>	1476





## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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 SO<sub>2</sub> allowance allocations identified in this permit (see 40 CFR 72.84)

**[40CFR 73 Subpart B, 1-11-1993]**

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 500 PPM CO emission limit(s) is averaged over 60 minutes at 3 percent O<sub>2</sub>, dry.



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

**[RULE 1303(b)(2)-Offset, 5-10-1996]**

[Devices subject to this condition : D39, D42]

A195.2 The 20 PPM NH<sub>3</sub> emission limit(s) is averaged over 60 minutes at 3 percent O<sub>2</sub>, dry.

**[RULE 1303(a)(1)-BACT, 5-10-1996]**

[Devices subject to this condition : D3, D51]

A195.4 The 300 PPM CO emission limit(s) is averaged over 60 minutes at 3 percent O<sub>2</sub>, dry.

**[RULE 1303(b)(2)-Offset, 5-10-1996]**

[Devices subject to this condition : D3, D45, D48, D51]

A195.5 The 10 PPMV NH<sub>3</sub> emission limit(s) is averaged over 60 minutes at 3 percent O<sub>2</sub>, dry. The operator shall calculate and continuously record the NH<sub>3</sub> slip concentration using the following:  $\text{NH}_3 \text{ (ppmv)} = [a-b*c/1E6]*1E6/b$ , where a = NH<sub>3</sub> injection rate (lbs/hr)/17 (lbs/lb-mole), b = dry exhaust gas flow rate (lbs/hr)/29 (lbs/lb-mole), c = change in measured NO<sub>x</sub> across the SCR (ppmvd). The operator shall install and maintain a NO<sub>x</sub> analyzer to measure the SCR inlet NO<sub>x</sub> ppmv accurate to +/- 5 percent calibrated at least once every 12 months.

**[RULE 1303(a)(1)-BACT, 5-10-1996]**

[Devices subject to this condition : C135, C137, C139, C141]



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

A195.6 The 7.0 PPMV NO<sub>x</sub> 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 NO<sub>x</sub> concentration (ppmv) and to calculate and record the heat input weighted average NO<sub>x</sub> 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 NO<sub>x</sub> concentration shall be calculated using the following equation, or other equivalent equation:

1.  $PPMV(3\% O_2) = (Et/Qt) * K$ ; where  $PPMV(3\% O_2)$  = the concentration of NO<sub>x</sub> in PPMV corrected to 3% O<sub>2</sub>; 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 NO<sub>x</sub> 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 : D39, D42, D45, D48]





## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

A195.7 The 5.0 PPMV NO<sub>x</sub> 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 NO<sub>x</sub> concentration (ppmv) and to calculate and record the heat input weighted average NO<sub>x</sub> 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 NO<sub>x</sub> concentration shall be calculated using the following equation, or other equivalent equation:

1.  $PPMV(3\% O_2) = (Et/Qt) * K$ ; where PPMV(3% O<sub>2</sub>) = the concentration of NO<sub>x</sub> in PPMV corrected to 3% O<sub>2</sub>; 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 NO<sub>x</sub> 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 ALAMITOS, 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 : D3, D51]

- A305.1 Whenever this equipment is in operation, control device C135 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, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : D39]

- A305.2 Whenever this equipment is in operation, control device C137 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, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : D42]

- A305.3 Whenever this equipment is in operation, control device C139 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, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : D45]



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

#### **The operator shall comply with the terms and conditions set forth below:**

A305.4 Whenever this equipment is in operation, control device C141 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, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : D48]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition : D3, D39, D42, D45, D48, D51]

#### **B. Material/Fuel Type Limits**

B59.1 The operator shall only use the following material(s) in this device :

409 stainless steel or other equivalent material for air preheater baskets

[RULE 402, 5-7-1976]

[Devices subject to this condition : D3, D39, D42, D45, D48, D51]

#### **C. Throughput or Operating Parameter Limits**



## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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 : D19]

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 : D151, D152, D153]

#### **D. Monitoring/Testing Requirements**

D12.5 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the boiler exhaust at the outlet of the SCR reactor.

[RULE 2012, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : C53, C55]

D12.6 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH<sub>3</sub>).

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.



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

**[RULE 2012, 12-7-1995; RULE 2012, 4-9-1999]**

[Devices subject to this condition : C53, C55, C135, C137, C139, C141]

D28.1 The operator shall conduct source test(s) in accordance with the following specifications:

The test shall be conducted to demonstrate compliance with Rule 1303 concentration limit.

The test shall be conducted to determine the NH<sub>3</sub> 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 NH<sub>3</sub> emissions at the outlet.

The test shall be conducted that the NO<sub>x</sub> concentration during the source test does not exceed the limit in condition A195.7 averaged over the full duration of the test and corrected to 3% O<sub>2</sub> dry.

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]**

[Devices subject to this condition : D3, D51]

D28.2 The operator shall conduct source test(s) in accordance with the following specifications:





## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### 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 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 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.

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.

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]**

[Devices subject to this condition : D3, D39, D42, D45, D48, D51]

D28.5 The operator shall conduct source test(s) in accordance with the following specifications:



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### 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 and the results submitted to the District within 45 days after the test date.

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 to determine the NH<sub>3</sub> emissions using District Method 207.1 and 5.3, or EPA Method 17 measured over a 60 minute averaging time period. The NO<sub>x</sub> 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 NO<sub>x</sub> emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted that the NO<sub>x</sub> concentration during the source test does not exceed the limit in condition A195.6 averaged over the full duration of the test and corrected to 3% O<sub>2</sub> dry.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1401, 3-17-2000]

[Devices subject to this condition : C135, C137, C139, C141]

D322.2 The operator shall perform annual inspection of the equipment and filter media for leaks, broken or torn filter media, and improperly installed filter media.

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]



## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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 : E132]

D381.1 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on an annual basis, at least, unless the equipment did not operate during the entire annual period. The routine annual inspection shall be conducted while the equipment is in operation and during daylight hours. If any visible emissions (not including condensed water vapor) are detected, the operator shall take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

- 1). Stack or emission point identification;
- 2). Description of any corrective actions taken to abate visible emissions; and
- 3). Date and time visible emission was abated.

**[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]**

[Devices subject to this condition : E132]

#### **E. Equipment Operation/Construction Requirements**

E73.1 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

the outlet exhaust temperature of the SCR reactor is 400 Deg F or less





## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

[RULE 402, 5-7-1976]

[Devices subject to this condition : C53, C55]

- 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; RULE 462, 6-9-1995]

[Devices subject to this condition : D19, D151, D152, D153]

- E179.3 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 12-6

[RULE 2012, 12-7-1995; RULE 2012, 4-9-1999; RULE 402, 5-7-1976]

[Devices subject to this condition : C53, C55]

- E179.4 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 upon the average of the continuous monitoring for that hour.

Condition Number 12-6

Condition Number 12-7

Condition Number 195-5



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

[RULE 2012, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : C135, C137, C139, C141]

- E179.5 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 12-8

[RULE 2012, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : C135, C137, C139, C141]

- E193.1 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In accordance with the operational phase air quality mitigation measures stipulated in the Mitigation Monitoring Plan document prepared for this project

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : C53, C55]

- E193.2 The operator shall construct, operate, and maintain this equipment according to the following specifications:



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

#### The operator shall comply with the terms and conditions set forth below:

In accordance with all mitigation measures stipulated in Environmental Impact Report (SCH No. 2000111039) that was prepared for this project by the South Coast Air Quality Management District.

In accordance with the Settlement Agreement 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 September 9, 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 control 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 : D39, D42, D45, D48, C135, C137, C139, C141, D151, D152, D153]

#### H. Applicable Rules

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	464



**FACILITY PERMIT TO OPERATE  
AES ALAMITOS, LLC**

**SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS**

**The operator shall comply with the terms and conditions set forth below:**

**[RULE 464, 12-7-1990]**

[Devices subject to this condition : E127]

H23.2 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	466

**[RULE 466, 10-7-1983]**

[Devices subject to this condition : E128, E129]

H23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
ROG	District Rule	466.1

**[RULE 466.1, 5-2-1980; RULE 466.1, 3-16-1984]**

[Devices subject to this condition : E130]

H23.4 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	467



## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

[RULE 467, 3-5-1982]

[Devices subject to this condition : E131]

#### **K. Record Keeping/Reporting**

K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:

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.

Source test results shall also include fuel flow rate (CFH) and generator output (MW) under which the test was conducted.

Emission data shall be expressed in terms of lbs/MM cubic feet.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1401, 3-17-2000; RULE 2012, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : D39, D42, D45, D48]





## FACILITY PERMIT TO OPERATE AES ALAMITOS, LLC

### SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

**The operator shall comply with the terms and conditions set forth below:**

K40.3 The operator shall provide to the District a source test report in accordance with the following specifications:

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), mass rate (lbs/hr), and lbs/MM Cubic Feet. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

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.

Source test results shall also include the oxygen levels in the exhaust, fuel flow rate (CFH), the flue gas temperature, and the generator power output (MW) under which the test was conducted.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition : D51]

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. 12-5

Condition no. 12-6

[RULE 2012, 12-7-1995; RULE 2012, 4-9-1999]



## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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 : C53, C55]

K67.6 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

the name of the person performing the inspection and/or maintenance of the dust collector

the date, time and results of the inspection

the date, time and description of any maintenance or repairs resulting from the inspection

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]

[Devices subject to this condition : E132]

K67.7 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]



## FACILITY PERMIT TO OPERATE AES ALAMITOS, 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 : E126]

K67.8 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, 12-7-1995; RULE 2012, 4-9-1999]

[Devices subject to this condition : C53, C55]



**Attachment DR-4  
Alamitos Generating Station's Air Emission  
Estimates**

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**Alamitos Energy Center**  
**Attachment DR-4**  
**Summary of Hourly Emission Rates for Alamitos Generating Station**  
**May 2014**

	Average Emission Rates (lb/MMBtu) <sup>a</sup>								
	VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub> <sup>b</sup>	PM <sub>2.5</sub> <sup>b</sup>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>AGS1</b>	1.74E-03	1.90E-01	7.61E-03	6.20E-04	1.10E-03	1.10E-03	1.17E+02	1.98E-03	1.98E-03
<b>AGS2</b>	1.16E-03	1.39E-01	7.25E-03	5.94E-04	1.10E-03	1.10E-03	1.17E+02	1.98E-03	1.98E-03
<b>AGS3</b>	1.87E-03	9.37E-02	7.19E-03	5.91E-04	1.10E-03	1.10E-03	1.17E+02	1.98E-03	1.98E-03
<b>AGS4</b>	1.13E-03	1.41E-02	4.65E-03	5.93E-04	1.10E-03	1.10E-03	1.17E+02	1.98E-03	1.98E-03
<b>AGS5</b>	2.70E-03	1.47E-01	5.01E-03	5.89E-04	1.10E-03	1.10E-03	1.17E+02	1.98E-03	1.98E-03
<b>AGS6</b>	1.63E-03	6.38E-02	5.13E-03	5.91E-04	1.10E-03	1.10E-03	1.17E+02	1.98E-03	1.98E-03

	Maximum Load (MMBtu/hr) <sup>c</sup>	Hourly Emission Rates (lb/hr)								
		VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>AGS1</b>	1,785	3.10	340	13.6	1.11	1.96	1.96	208,804	3.54	3.54
<b>AGS2</b>	1,785	2.06	249	12.9	1.06	1.96	1.96	208,804	3.54	3.54
<b>AGS3</b>	3,350	6.27	314	24.1	1.98	3.69	3.69	391,873	6.65	6.65
<b>AGS4</b>	3,350	3.79	47.1	15.6	1.99	3.69	3.69	391,873	6.65	6.65
<b>AGS5</b>	4,750	12.8	696	23.8	2.80	5.23	5.23	555,641	9.42	9.42
<b>AGS6</b>	4,752	7.73	303	24.4	2.81	5.23	5.23	555,899	9.43	9.43

Notes:

<sup>a</sup> Average emission rates are the total estimated emissions divided by the total fuel usage for the years 2008-2012 as shown in Attachment 5.1B of the AFC, unless otherwise noted.

<sup>b</sup> PM<sub>10</sub> and PM<sub>2.5</sub> emission rates are based on the *Particulate Matter (PM<sub>2.5</sub>) Test Results for AES Southland Utility Boilers in Southern California* study conducted by Sierra Research, November 8, 2011.

<sup>c</sup> As shown in the AGS Title V permit.

**Attachment DR-6**  
**Revised AEC Laydown Area Emissions**

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**Alamitos Energy Center**  
**Attachment DR-6 Table 1**  
**Summary of Laydown Area Emissions**  
**May 2014**

**Construction Emissions**

Construction Year 2016	Criteria Pollutant Emissions					
	VOC	CO	NOx	SOx	PM <sub>10</sub> <sup>b</sup>	PM <sub>2.5</sub> <sup>b</sup>
Daily Emissions (lbs/day) <sup>a</sup>	1.283	6.293	13.059	0.008	0.962	0.703
Project Emissions (tons/project) <sup>a</sup>	0.013	0.063	0.131	0.000	0.010	0.007
Construction Year 2016	GHG Emissions					
	CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>	CO <sub>2</sub> e <sup>c</sup>		
Project Emissions (metric tons/project) <sup>a</sup>	11.790	0.000	0.001	11.895		

Notes:

<sup>a</sup> It was conservatively assumed that all construction equipment and vehicles could operate simultaneously on the worst-case day during the construction period.

<sup>b</sup> Implementation of mitigation measures is assumed to reduce fugitive dust emissions associated with earthmoving activities, including disturbed surfaces.

<sup>c</sup> CO<sub>2</sub>e emissions were computed using the following global warming potentials from Intergovernmental Panel on Climate Change, Fourth Assessment Report (IPCC, 2007):

CO<sub>2</sub>: 1

N<sub>2</sub>O: 310

CH<sub>4</sub>: 21

Equipment / Vehicle List	Equipment / Vehicle Type	Quantity <sup>a</sup>	Units	Number of Days Used <sup>a</sup>	Hours per Day <sup>b</sup>	Miles per Day <sup>c</sup>	Emissions (lbs/day) <sup>d</sup>						Emissions (tons/project) <sup>d</sup>						Emissions (metric tons/project) <sup>d</sup>		
							VOC	CO	NOx	SOx	PM <sub>10</sub> <sup>e</sup>	PM <sub>2.5</sub> <sup>e</sup>	VOC	CO	NOx	SOx	PM <sub>10</sub> <sup>e</sup>	PM <sub>2.5</sub> <sup>e</sup>	CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>
Water Truck	Construction Equipment	1	--	20	10	--	1.178	6.317	13.565	0.016	0.512	0.471	0.012	0.063	0.136	0.000	0.005	0.005	25.178	0.001	0.001
Grader	Construction Equipment	1	--	20	10	--	1.281	6.195	13.049	0.008	0.733	0.674	0.013	0.062	0.130	0.000	0.007	0.007	11.537	0.000	0.001
Construction Worker Commute	Light-duty Auto/Truck	1	--	20	--	29.4	0.002	0.098	0.010	0.000	0.022	0.006	0.000	0.001	0.000	0.000	0.000	0.000	0.253	0.000	0.000
Fugitive Dust <sup>f</sup>	Disturbed Surface	10	acres	20	--	--	--	--	--	--	0.207	0.022	--	--	--	--	0.002	0.000	--	--	--

Notes:

-- = Parameter not required for computing emissions.

<sup>a</sup> Assume one Water Truck, one Grader, and two Construction Workers are needed to grade the laydown area. Number of days assumes 10 acres could be graded at a rate of 0.5 acres/day, for a total of 20 days.

<sup>b</sup> The hours of operation per day taken from 'MANPOWER\_SCHEDULE\_ALAMITOS 02 01 13.xls'.

<sup>c</sup> Roundtrip miles/day taken for the South Coast Air Basin from Table 4.2 (Urban H-W value) of Appendix D of the *CalEEMod User's Guide* (ENVIRON, 2013).

<sup>d</sup> The following conversion factors were used to estimate emissions:

1 lb =	453.6	g
1 kg =	0.001	metric tons
1 kg =	1,000	g
1 ton =	2,000	lbs
1 acre =	43,560	ft2
1 mile =	5,280	ft2

<sup>e</sup> PM<sub>10</sub> and PM<sub>2.5</sub> emissions include paved road fugitive dust emissions associated with offroad travel, as applicable.

<sup>f</sup> A total of 10 acres is disturbed to create the laydown area. Per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013), the following blade width was assumed for grading equipment:

Alamitos Energy Center  
 Attachment DR-6 Table 3  
 Construction Equipment Emission Factors  
 May 2014

Construction Equipment Emission Factors

Equipment <sup>a</sup>	Horsepower <sup>b</sup>	Load Factor <sup>b</sup>	Emission Factors (g/bhp-hr) <sup>c</sup>						Fuel Consumption (gallons/hour) <sup>d</sup>
			VOC	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>	
Water Truck <sup>e</sup>	400	0.38	0.351	1.885	4.048	0.005	0.153	0.141	12.33
Grader	175	0.41	0.810	3.916	8.250	0.005	0.464	0.426	5.65

Notes:

<sup>a</sup> Assumed all equipment is fired with diesel fuel, per Section 4.2 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

<sup>b</sup> Construction equipment horsepower and load factors taken from Table 3.3 of Appendix D of the *CalEEMod User's Guide* (Enviro, 2013).

<sup>c</sup> Construction equipment emission factors taken from Table 3.4 of Appendix D of the *CalEEMod User's Guide* (Enviro, 2013).

<sup>d</sup> Fuel consumption based on consumption in the OFFROAD2007 model for the South Coast Air Basin in the year 2016; value estimated by dividing the reported consumption (gallons/day) by the reported activity (hours/day).

<sup>e</sup> Horsepower, load factor, and emission factors for Off-Highway Trucks were assumed representative of Water Trucks.

Alamitos Energy Center  
Attachment DR-6 Table 4  
Vehicle Emission Factors  
May 2014

Vehicle	Vehicle Class <sup>a</sup>	Exhaust Emission Factors (g/mile) <sup>b</sup>						Road Emission Factors (g/mile) <sup>c</sup>		Fuel Economy (mpg) <sup>e</sup>
		VOC	CO	NOx	SOx	PM <sub>10</sub> <sup>d</sup>	PM <sub>2.5</sub> <sup>d</sup>	PM <sub>10</sub>	PM <sub>2.5</sub>	
Construction Worker Commute	Light-duty Auto/Truck	0.033	1.513	0.149	0.004	0.047	0.019	0.300	0.075	20.413

Notes:

<sup>a</sup> The vehicle classes are represented as follows:

Light-duty Auto/Truck: 50% LDA, GAS; 25% LDT1, GAS; and 25% LDT2, GAS values, per Section 4.5 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

<sup>b</sup> Exhaust emission factors from EMFAC2011-PL for the South Coast Air Basin calendar year 2016. EMFAC2007 Vehicle Categories were used. A speed of 40 mph was assumed for worker commutes, which is consistent with the CalEEMod default.

<sup>c</sup> Paved road emission factors were calculated using CalEEMod methodology, as described below.

<sup>d</sup> The PM<sub>10</sub> and PM<sub>2.5</sub> emission factors include tire and brake wear.

<sup>e</sup> Fuel economy from EMFAC2011 Web Based Emissions Database for the South Coast Air Basin calendar year 2016, using EMFAC2007 Vehicle Categories. An aggregated speed and model year were used for offsite vehicles. Value estimated by dividing the VMT (miles/day) by the Fuel (gal/day).

**Derivation of Paved Road Emission Factors**

Parameter	PM <sub>10</sub>	PM <sub>2.5</sub>
Average Weight <sup>a</sup>	2.4	2.4
k <sup>b</sup>	1	0.25
sL <sup>c</sup>	0.1	0.1
<b>Emission Factor (g/mile) <sup>d</sup></b>	<b>0.300</b>	<b>0.075</b>

Notes:

<sup>a</sup> Average Weight taken as the default value from Section 5.3 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

<sup>b</sup> k taken from Table 13.2.1-1 of Section 13.2.1 of *AP-42* (EPA, 2011).

<sup>c</sup> sL taken as the CalEEMod default for the Long Beach climate region of the South Coast Air Basin.

<sup>d</sup> Emission factor calculated using Equation 1 from Section 13.2.1 of *AP-42* (EPA, 2011):

$$\text{Emission Factor (g/mile)} = k \text{ (g/mile)} \times [\text{sL (g/m}^2\text{)}]^{0.91} \times [\text{Average Weight (tons)}]^{1.02}$$

**Alamitos Energy Center**  
**Attachment DR-6 Table 5**  
**Fugitive Dust Emission Factors for Grading**  
**May 2014**

Parameter	PM <sub>10</sub> <sup>a</sup>	PM <sub>2.5</sub> <sup>b</sup>
S (mph) <sup>a</sup>	7.100	7.1000
F <sup>a</sup>	0.600	0.031
Emission Factor (lbs/VMT) <sup>b</sup>	1.543	0.167
Reduction from Watering Every 3 Hours <sup>c</sup>	61%	61%
Emission Factor (Controlled, lbs/VMT)	0.602	0.065

Notes:

<sup>a</sup> The mean vehicle speed (S) and the particulate matter scaling factor (F) taken from Tables 11.9-1 and 11.9-3 of Section 11.9 of *AP-42* (EPA, 1998) per Section 4.3 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013).

<sup>b</sup> Emission factor calculated using the following equation from Section 4.3 of Appendix A of the *CalEEMod User's Guide* (ENVIRON, 2013):

$$\text{PM}_{10} \text{ Emission Factor (lbs/VMT)} = 0.051 \times (S)^{2.0} \times F_{\text{PM}_{10}}$$

$$\text{PM}_{2.5} \text{ Emission Factor (lbs/VMT)} = 0.04 \times (S)^{2.5} \times F_{\text{PM}_{2.5}}$$

<sup>c</sup> Control efficiency taken from Table XI-A of the *CEQA Handbook* for Construction Activities (SCAQMD, 2007).



Alamos Energy Center  
 Attachment DR-6 Table 6  
 Greenhouse Gas Emission Factors  
 May 2014

Fuel / Category Type	Emission Factor	Emission Factor Units	Emission Factor Source
<b>CO<sub>2</sub> Emission Factors</b>			
Gasoline	8.78	kg CO <sub>2</sub> /gallon	The Climate Registry General Reporting Protocol, Version 2.0, Table 13.1, March 2013 as updated through April 2013.
Diesel	10.21	kg CO <sub>2</sub> /gallon	The Climate Registry General Reporting Protocol, Version 2.0, Table 13.1, March 2013 as updated through April 2013.
<b>N<sub>2</sub>O Emission Factors</b>			
Gasoline Passenger Car Model Year 2010 <sup>a</sup>	0.0036	g N <sub>2</sub> O/mile	The Climate Registry General Reporting Protocol, Version 2.0, Table 13.5, March 2013 as updated through April 2013.
Diesel Off-road Vehicle	0.26	g N <sub>2</sub> O/gallon	The Climate Registry General Reporting Protocol, Version 2.0, Table 13.7, March 2013 as updated through April 2013.
<b>CH<sub>4</sub> Emission Factors</b>			
Gasoline Passenger Car Model Year 2010 <sup>a</sup>	0.0173	g CH <sub>4</sub> /mile	The Climate Registry General Reporting Protocol, Version 2.0, Table 13.5, March 2013 as updated through April 2013.
Diesel Off-road Vehicle	0.58	g CH <sub>4</sub> /gallon	The Climate Registry General Reporting Protocol, Version 2.0, Table 13.7, March 2013 as updated through April 2013.

Notes:

<sup>a</sup> Model Year 2010 was the most recent year of emission factors available. As a result, it was assumed representative of vehicles used for this project.

**Attachment DR-17**  
**Cumulative Air Quality Impact Assessment**  
**Correspondence**

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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: Beth Smoker		DATE: 04/02/2014
COMPANY: CH2M HILL		
MAILING ADDRESS: 2485 Natomas Park Dr.		
CITY: Sacramento	STATE: CA	ZIP CODE: 95833
PHONE NUMBER: 916-286-0259		FAX NUMBER: 916-920-8463
EMAIL ADDRESS: Beth.Smoker @ch2m.com		

### REQUESTED RECORDS (3 items per form )

<input type="checkbox"/> Applications (APPLS)	<input type="checkbox"/> Complaints	<input type="checkbox"/> Asbestos Notifications/Records
<input type="checkbox"/> Permits to Operate (P/O)	<input type="checkbox"/> Site Inspection Reports (I/R)	<input type="checkbox"/> Facility Potential to Emit (PTE)
<input type="checkbox"/> Equipment List Report (EQL)	<input type="checkbox"/> Emissions Summary	<input type="checkbox"/> Facility Positive Balance (NSR)
<input type="checkbox"/> Notices of Violation (NOV)	<input type="checkbox"/> Source Test Reports (S/T RPTS)	<input type="checkbox"/> Toxic-Health Risk Assessment (HRA)
<input type="checkbox"/> Notices to Comply (N/C)	<input type="checkbox"/> Air Monitoring Data	<input checked="" type="checkbox"/> Other (describe below or on additional pages):
See attached memo.		
TIME PERIOD OF DOCUMENTS REQUESTED      From: 2006      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 \$.50 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).

*E. Smoker*

\_\_\_\_\_  
Signature of Requestor

# **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

## **INSTRUCTIONS FOR REQUESTING RECORDS** **(California Public Records Act, Govt. Code Sections 6250-6276.48)**

1. In order to expedite your request, requests for records should be in writing. Requests will be processed in the order in which they are received. A Public Records Request Form can be faxed to you by calling (909) 396-3700 and following the menu options. A form is also available on the A.Q.M.D.'s web page at <http://www.aqmd.gov>. Select the "Contact Us" menu, followed by the "Public Records" menu. Requests may be submitted by facsimile to (909) 396-3330, or by email to [PublicRecordsRequests@aqmd.gov](mailto:PublicRecordsRequests@aqmd.gov).
2. Requests must be for records prepared, owned, used, or retained by the District (Gov. Code Sec. 6252(e)). Requests should be for clearly identifiable records. If necessary, the District will assist the requestor in making a request that describes reasonably identifiable records (Gov. Code Sec. 6253.1). Copies will not be provided if disclosure would infringe upon a copyright, trade secret, or is otherwise exempt in accordance with state law.
3. A search for facility records can only be conducted by one or all of the following:  
  
Facility Name, Address, or Identification Number;  
Facility Application Number, or Permit to Operate Number; or  
Facility Notice of Violation/Notice to Comply Number.
4. You will be notified by mail within ten (10) days whether your request seeks copies of disclosable public records prepared, owned, used, or retained by this agency. In most cases, your request will be completed within 3-4 weeks.
5. If the search for records finds the records voluminous, you will be notified of the approximate number of pages and/or length of time it will take to process your request.
6. If the records you requested have been marked confidential by the source of the record, you will be notified and given the option of continuing with the District's trade secret process.
7. If your request is to review records, rather than receive copies, the District will notify you once the records are gathered, and arrangements will be made for your review.
8. The charge for the direct cost of duplication is as follows: Paper Copies, \$0.15/page each over 10 pages (first 10 pages are free); Copied CD's or Copied Diskettes, no charge; and Copied Audio Tapes, \$5.00 each. When records are requested in electronic format, the requestor shall bear the cost of producing a copy of the record, including the cost to construct the record and the cost of programming and computer services necessary to produce a copy of the record when either of the following applies: (1) the District would be required to produce a copy of an electronic record and the record is one that is produced only at otherwise regularly scheduled intervals, or (2) the request would require data compilation, extraction, or programming to produce the record. (Gov. Code Sec. 6253.9(b)). The transfer of gathered electronic records onto CD or Diskette typically cost \$10.00 each. An invoice will accompany your records when completed.
9. For further clarification please refer to the California Public Records Act (California Gov. Code Sec. 6250 et seq.) and/or the District's Guidelines for Implementing the California Public Records Act. The Guidelines are available in the lobby of the District Headquarters or on the District's web site at [www.aqmd.gov](http://www.aqmd.gov).

If you have questions pertaining to the submittal of a Public Records Act request, you may contact the Public Records Unit, (909) 396-3700, Tuesday through Friday, 7:00 a.m. to 5:30 p.m. Our Fax number is (909) 396-3330. Our email address is [PublicRecordsRequests@aqmd.gov](mailto:PublicRecordsRequests@aqmd.gov).

## Public Records Request for Cumulative Source Information for the Alamitos Energy Center

PREPARED FOR: Public Records South Coast  
Air Quality Management  
District

PREPARED BY: Beth Smoker/CH2M HILL  
Elyse Engel/CH2MHILL

Copied To: Jerry Salamy/CH2M HILL

DATE: April 2, 2014

PROJECT NUMBER: 491232

CH2MHILL is currently working on the preparation of an Application for Certification (AFC) for the Alamitos Energy Center (AEC). AES Southland Development, LLC (AES) proposes to construct the AEC at the existing AES Alamitos Generating Station site, which is located at 690 N. Studebaker Road, Long Beach, CA 90803. The AEC will have a net generating capacity of 1,936 megawatts and will consist of four 3-on-1 combined-cycle gas turbine power blocks with twelve natural-gas-fired combustion turbine generators, twelve heat recovery steam generators, four steam turbine generators, four air-cooled condensers, and related ancillary equipment.

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 since 2006 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 New Source Review or California Environmental Quality Act permitting process), and
- 3) sources that have a potential to emit five tons or more per year of oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>), particulate matter with an aerodynamic diameter of 2.5 microns or less (PM<sub>2.5</sub>), or oxides of sulfur (SO<sub>x</sub>).

Based on the three criteria above, it is anticipated that the following sources would be excluded from the cumulative impacts analysis: sources emitting only volatile organic compounds (VOC), 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 AEC is attached.

If you have any questions regarding this request or if there are additional data request forms required, please contact Beth Smoker ([beth.smoker@ch2m.com](mailto:beth.smoker@ch2m.com)) at (916) 286-0259 or Elyse Engel ([elyse.engel@ch2m.com](mailto:elyse.engel@ch2m.com)) at (669) 800-1012 .

**Alamitos Energy Center (AEC)**  
**List of Zip Codes within a 6-mile Radius of AEC**  
**April 2014**

<b>City</b>	<b>Zip Code</b>
Buena Park	90620
La Palma	90623
Cypress	90630
Stanton	90680
Artesia	90701
Cerritos	90703
Lakewood	90712
Lakewood	90713
Lakewood	90715
Hawaiian Gardens	90716
Rossmore	90720
Seal Beach	90740
Sunset Beach	90742
Surfside	90743
Signal Hill	90755
Long Beach	90802
Long Beach	90803
Long Beach	90804
Long Beach	90806
Long Beach	90807
Long Beach	90808
Long Beach	90813
Long Beach	90814
Long Beach	90815
Long Beach	90822
Long Beach	90831
Huntington Beach	92647
Huntington Beach	92648
Huntington Beach	92649
Midway City	92655
Westminster	92683
Anaheim	92804
Garden Grove	92841
Garden Grove	92845

**From:** [Lisa Ramos](#)  
**To:** [Smoker, Beth/SAC](#); [OB PR Support NA Docs](#)  
**Subject:** Request for Records from the South Coast Air Quality Management District  
**Date:** Friday, April 04, 2014 1:34:11 PM

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BETH SMOKER  
2485 NATOMAS PARK DR  
SACRAMENTO, CA 95833-

RE: Request for Records  
Control #: 76089  
Request: CUMULATIVE SOURCE INFORMATION FOR ALAMITOS GENERATING STATION, 690 N. STUDEBAKER ROAD, LONG BEACH, CA 90803.

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



# Biological Resources (28–37)

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## BACKGROUND: NITROGEN DEPOSITION

The AFC (Section 5.2.3.3.1) states that the critical load for atmospheric nitrogen deposition into coastal wetlands is difficult to establish because wetlands subject to tidal exchange have open nutrient cycles. It further states that nitrogen loading in wetlands is often affected by sources other than atmospheric deposition. In addition, it states that air pollution controls limit emissions of oxides of nitrogen and that RECLAIM puts a cap on region wide NO<sub>x</sub> emissions. The section concludes that the AEC nitrogen deposition impacts are not expected to contribute significantly to nitrogen loading on coastal salt marshes. Staff agrees with AEC's conclusion regarding tidal salt marsh habitat. However, there is no discussion of the relative location of the proposed project to other sensitive habitats that could be affected by nitrogen emissions from AEC, nor is there a quantitative analysis of nitrogen deposition impacts.

Background data that could be used in conjunction with nitrogen deposition modeling for the AEC could be established using available resources such as the California Energy Commission publication Assessment of Nitrogen Deposition: Modeling and Habitat Assessment (CEC-500-2006-032, March 2007). However, because no nitrogen deposition modeling was performed for the AEC, this step is still needed and the general information provided in the AFC does not support the applicant's conclusion that nitrogen deposition from AEC emissions would have no impacts on native habitat and vegetation. Energy Commission staff believes that nitrogen deposition resulting from emissions from the proposed AEC, namely nitrogen oxides (NO<sub>x</sub>) and ammonia (NH<sub>3</sub>) could have negative impacts on biological resources and that a quantitative analysis of such impacts is needed.

Impacts of excessive nitrogen deposition to plant communities include direct toxicity, changes in species composition among native species, and enhancement of non-native invasive species. The increased dominance and growth of invasive annual grasses is especially prevalent in low-biomass vegetation communities that are naturally nitrogen-limited. Invasive non-native vegetation, enhanced by atmospheric nitrogen deposition, affects these species by outcompeting them for space, sunlight, moisture, and nutrients. In addition to coastal salt marshes, riparian scrub, alkali meadow, southern foredunes, southern dune scrub, and other sensitive vegetation located in the vicinity of the project site could be impacted by nitrogen deposition contributed by the AEC.

The anticipated nitrogen emissions from AEC may contribute to the ongoing (cumulative) degradation of sensitive species habitat located near the project site.

In order to assess impacts to nitrogen-sensitive biological resources, staff requires additional information on nitrogen deposition as established by proper modeling of nitrogen emissions resulting from the AEC.

## DATA REQUEST

28. Please quantify the existing baseline total nitrogen deposition rate in the vicinity of the AEC in kilograms per hectare per year (kg/ha/yr). The geographical extent of the nitrogen deposition mapping should include a six-mile radius from the project stacks.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

## DATA REQUEST

29. Please use AERMOD to provide an analysis of impacts due to total nitrogen deposition (from NO<sub>x</sub> and NH<sub>3</sub> emissions) from future operation of the proposed AEC. The analysis should include the amount of total nitrogen deposition in kg/ha/yr at the Los Cerritos

Wetland Complex and associated privately owned lands, the Jack Dunster Marine Biological Reserve, the Golden Shore Marine Biological Reserve Park, the Bolsa Chica Ecological Reserve, the Seal Beach National Wildlife Refuge, western snowy plover critical habitat, and any other special-status species habitats, vegetation types, and critical habitat in the six-mile radius for wet and dry deposition. Please provide the complete citation for references used in determining these impacts. Please use meteorological data consistent with that used for annual air quality impact analyses.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

30. Please provide an equivalent analysis to that requested in Data Request #30 to identify the current nitrogen deposition from operation of the existing Alamitos Generating Station, in order to assess the net change in nitrogen deposition that would occur from implementation of the AEC at each location evaluated in Data Request #30. This analysis should be conducted using emissions data typical of the past 2 to 3 years of operating the existing facility.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

31. Please provide an isopleth graphic over USGS 7.5-minute maps (or equally detailed map) of the net change in direct nitrogen deposition rates caused by the project. This will be a graphical depiction of the project's net nitrogen deposition (relative to the nitrogen deposition from the existing Alamitos Generating Station).

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

32. Please provide a comprehensive cumulative impact analysis, consistent with the methods used for the cumulative analysis conducted for the Air Quality section, for the direct nitrogen deposition in kg/ha/yr caused by AEC. Provide an isopleths graphic over USGS 7.5-minute maps of the direct nitrogen deposition values in the cumulative analysis and specify the cumulative nitrogen deposition rate in kg/ha/yr at any affected special-status species habitat, vegetation type, or critical habitat. The geographical extent of the cumulative nitrogen deposition mapping should be a six-mile radius from the project's stacks.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### BACKGROUND: CONSTRUCTION AND DEMOLITION NOISE

The Los Cerritos Wetlands are immediately east of the project area. Section 5.2.2.2 of the AFC (pages 5.2-4 and 5.2-5) states that these wetlands support the federally and state-listed endangered California least tern and the state-listed endangered Belding's savannah sparrow. Approximately 2 acres of the Los Cerritos

Wetlands have been established as a California least tern nesting site. The wetlands also provide nesting habitat for birds protected under the federal Migratory Bird Treaty Act.

Section 5.2.3.2.5 of the AFC (page 5.2-29) acknowledges that noise from construction and demolition could disturb nesting birds close to the project area, causing them to relocate or potentially abandon their nests. However, the AFC does not provide any quantitative information regarding existing (baseline) or anticipated construction and demolition noise levels in the Los Cerritos Wetlands. This information is necessary to analyze potential impacts to special-status birds in the Los Cerritos Wetlands. Therefore, staff requires information on ambient noise levels and anticipated future project-related noise levels in the wetlands.

#### DATA REQUEST

33. Please conduct continuous ambient noise monitoring to determine the level of existing noise at important wildlife habitat areas along the San Gabriel River and in the Los Cerritos Wetlands (locations described below and illustrated in the attached map), using the same methods and reporting that were used for the ambient noise survey presented in AFC Section 5.7.3.2. Please provide these data for: (1) the fenceline at the southwest corner of Studebaker Road and Loynes Drive; (2) the fenceline south of East 2nd Street (Westminster Blvd.) and just west of the San Gabriel River crossing, and (3) either bank of the San Gabriel River directly east of existing Unit 4. There is an accessible bicycle path on the east banks of the river. Please contact staff to discuss alternate monitoring locations if for any reason these locations cannot be safely accessed.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

34. Please provide the anticipated sound level during construction and demolition at the locations where ambient noise monitoring was conducted. Data should be provided in a unit of measure that will allow for a reasonable comparison against the ambient noise data requested under Data Request #34.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

35. Please provide the anticipated sound level during future operation of the proposed AEC at the locations where ambient noise monitoring was conducted. Data should be provided in a unit of measure that will allow for a reasonable comparison against the ambient noise data requested under Data Request #34.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

36. Please provide a model (isopleths map) of the anticipated noise level throughout the Los Cerritos Wetlands during construction and demolition. Data should be provided in a unit of measure that will allow for a reasonable comparison against the ambient noise data requested under Data Request #34.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### DATA REQUEST

37. Please provide a model (isopleths map) of the anticipated noise level throughout the Los Cerritos Wetlands during future operation of the proposed AEC. Data should be provided in a unit of measure that will allow for a reasonable comparison against the ambient noise data requested under Data Request #34.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

# Cultural Resources (38–47)

## BACKGROUND

The cultural resources section of the application for certification (AFC) and the cultural resources inventory report contain information backed by in-text citations that lack corresponding bibliographic entries in the References Cited or Consulted section of both documents; other references cited conflict with the corresponding bibliographic entries (AES 2013:5.3-37-41; Cardenas et al. 2013:6-1-4). Without this bibliographic information, staff, parties, and the public have no way to verify the accuracy of certain statements made in the AFC and cultural resources inventory report. In turn, this hinders efforts to assess the potential impacts of the proposed project on cultural resources. The table immediately below identifies the citations in question, which document contains the suspect citations, and on which page(s) the citations occur in the respective documents.

Citation	Document and Page Number	Notes/Comments
City of Huntington Beach 1996	AES 2013:5.3-13	Not in references. Staff consulted the Huntington Beach General Plan's Cultural Resources element 1 and did not find the cited information there.
Dixon 1972	AES 2013:5.3-26; Cardenas et al. 2013:4-6	In both documents' description of resource P-19-306 (Puvunga Indian Village), they refer to excavation work conducted by Dixon in 1974, but cite Dixon (1972) as supporting documentation.
Herbert and Brookshear 2006	AES 2013:5.3-16; Cardenas et al. 2013:2-11	One of the in-text citations provides partial substantiation of quoted material. The citation does not give the page number(s) containing the quoted material, contrary to standard practice. Furthermore, the bibliographic information in References Cited incorrectly identifies the source as the Building, Structure, and Object (BSO) form for Highgrove Generating Station; the BSO form does not contain the quoted statement.
Williams 1997	AES 2013:5.3-16; Cardenas et al. 2013:2-11, 2-12	The Williams quote on these pages of the documents does not have the page number indicated.
Redwine 1958	AES 2013:Table 5.3-1; Cardenas et al. 2013:Table 1	Report not provided.
<sup>1</sup> <a href="http://www.huntingtonbeachca.gov/files/users/planning/historic_cultural_resources_element.pdf">http://www.huntingtonbeachca.gov/files/users/planning/historic_cultural_resources_element.pdf</a>		

## DATA REQUEST

38. Please provide bibliographic information for City of Huntington Beach (1996).

**Response:** This citation should read, "Sherwood, 1996". The correct citation is Sherwood, Wayne Edward. 1996. The History of Huntington Beach. Electronic document, <http://www.hbsurfcity.com/history/hist.htm>, accessed July 1, 2013.

## DATA REQUEST

39. Please indicate whether the archaeological work conducted by Keith Dixon at CA-LAN-306 was done in 1972 or 1974. If it was done in 1974, please provide a citation and bibliographic information that does not precede the date of fieldwork.

**Response:** Dixon worked at CA-LAN-306 in 1972 and 1974. The specific statement in the AFC should read, "In 1972, Keith Dixon provided a detailed analysis of the village site (Dixon 1972)."

The citations are:

Dixon, Keith A. 1972. Reviving an Archaeological Project at Rancho Los Alamitos. Unpublished manuscript on file, SCCIC, Fullerton.

Dixon, Keith A. 1974. Archaeological Resources and Policy Recommendations of Long Beach. Unpublished manuscript on file, SCCIC, Fullerton.

## DATA REQUEST

40. Please provide a citation and bibliographic information for the entire resource record form set for Highgrove Generating Station or the specific form that contains the quoted information. Please provide the page number(s) on which the information appears.

**Response:** The following quote lacks a page number in the in text citation. "Steam turbine power plants were cheaper and quicker to build than hydroelectric plants, so utilities companies moved away from hydroelectricity, establishing steam turbine power as the generator of choice" (Herbert and Brookshear 2006).

This quote is found on page 11 of 15 on the continuation sheets, under "B10 –Significance" in Attachment DR-40.

## DATA REQUEST

41. Please provide a page number for the quoted material that is attributed to Williams (1997).

**Response:** The following quote lacks a page number in the in text citation. The "momentum for steam had been established by war, by drought, and by a positive history of increased thermal power plant development" (Williams 1997).

The statement should read as follows, "The 'momentum for steam had been established by war, by drought, and,' wrote Williams, 'by a positive history of increased thermal power plant development.'" (Herbert and Brookshear, 2006: 11)

This quote is found on page 11 of 15 on the continuation sheets, under "B10 –Significance" in Attachment DR-40.

## DATA REQUEST

42. Please provide a copy of Redwine (1958). In accordance with the Energy Commission's siting regulations (20 Cal. Code Regs., §1704 ([b][2]), Appendix (B[g][2][b])), the applicant must provide staff with copies of all reports on archaeological excavations within the records search area. During the course of reviewing records search data provided by the applicant, staff discovered that Redwine (1958) is an excavation report; this was not discernible to staff during data adequacy review, as the bibliographic entry in the records search gave the report title simply as *Landing Hill*.

**Response:** A copy of Redwine (1958) is attached to this DR as Confidential Attachment DR-42.

## BACKGROUND

In assessing the potential impacts of the proposed project on archaeological resources, staff routinely examines a variety of literature that describes subsurface conditions in the project area. Geotechnical, soil characterization and environmental site assessments are among the most valuable sources of site-specific, subsurface conditions. Primary or first-hand data regarding subsurface conditions at the project site are contained in a geotechnical report and Phase I environmental site assessment (EMS 2013; Ninyo & Moore 2011). Ninyo & Moore (2011: Appendix A) presents four soil boring logs for the project site. The Phase I Environmental Site Assessment appended to the AFC indicates that the applicant possesses about as many as five other documents with additional boring logs for the project site (EMS 2013:17-19, 35-36). These data would be invaluable to staff's impact assessment.

## DATA REQUEST

43. Please provide a copy each of the following reports, cited in EMS (2013:35-36).

- CH2M Hill (1997a, 1997b)
- Dames & Moore (1986)
- Hamilton (n.d., 1997).

**Response:** The Applicant has reviewed its files for the reports identified above and could not locate copies. The Applicant will continue to search for copies of these reports and will provide them when located.

## BACKGROUND

The California Environmental Quality Act (CEQA) Statute and Guidelines direct lead agencies to identify historical resources and unique archaeological resources that may be affected by proposed projects, and assess project impacts on those resources (Pub. Resources Code §21083.2[a]; 14 Cal. Code Regs., §15064.5[b] and [c]). Lead agencies (in this case, the Energy Commission) “shall determine whether a project may have a significant effect on the environment based on substantial evidence in light of the whole record” (Pub. Resources Code, §21082.2), as defined at Title 14, California Code of Regulations, section 15384.<sup>6</sup> Two cultural resources, the Haynes Generating Station and the San Gabriel River Channel, were not sufficiently evaluated in the Data Adequacy Supplement (AES 2014).

The Data Adequacy Supplement (AES 2014) and the Department of Parks and Recreation (DPR) forms provided in Attachment DA5.3--4 of that document present a California Register of Historical Resources (CRHR) evaluation of the Haynes Generating Station. The evaluation is incomplete, however, because it does not include an evaluation of the resource under CRHR Eligibility Criterion 3, one of the four criteria of eligibility for the CRHR.<sup>7</sup>

The Data Adequacy Supplement (AES 2014) and the DPR forms regarding the San Gabriel River segment and levees provided in Attachment DA5.3-4 of that document present a CRHR-eligibility evaluation of the segment of the San Gabriel River Channel—a portion of Reach 7-and its levees that fall within the survey

<sup>6</sup> The CEQA Statute and Guidelines define historical resources to include all resources listed in or formally determined eligible for the National Register of Historic Places, the California Register of Historic Resources, or local registers.

<sup>7</sup> An historical resource must be significant at the local, state, or national level under one or more of the following criteria defined in Title 14, California Code of Regulations, section 4850:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

area and are part of the AES property. The eligibility evaluation provided for the San Gabriel River segment and levees are unsupported by readily available evidence and are incomplete. Indeed, an explicit CRHR evaluation of the resource is not provided at all; instead, the evaluation considers only the channel levees in a manner that isolates the resource from its historic context. Energy Commission staff reviewed historic maps of the San Gabriel River, comparing them to the modern alignment and found that the portion of the river located within the Architectural Survey Area was channelized during the historic period; its current alignment is the result of engineering and is not natural. Historic maps and aerial photographs contained in the AFC indicate that Reach 7 of the San Gabriel River was channelized and straightened by 1928 (EMS 2013:Appendices F and G). The Data Adequacy Supplement (AES 2014:5.3-3) and corresponding DPR forms (Attachment DA5.3-4) state:

The overall linear resource of the San Gabriel River watershed system has not been evaluated for the NRHP [National Register of Historic Places] or CRHR. However, this segment would not seem to contribute to the potential eligibility of the greater resource because it had few modifications as part of the flood control project. It remains a natural, soft-bottomed channel and the only flood control modification appears to have been the earthen levees along its banks.

The Data Adequacy Supplement (AES 2014:5.3-3) further states in reference to the segment of the San Gabriel River Channel within the Architectural Survey Area, “It is located south of Coyote Creek and although it serves as part of the watershed system, it has not been channelized. It is a natural tributary and retains a soft bottom (LACDPW 2006).” However, Page 3-35, section 3.6.7 of the reference cited by the applicant (LACDPW 2006) discusses Reach 7 (the subject segment) and indicates it has a soft bottom, but does not state that it is a natural watercourse; it refers to this segment as “the channel.” While this portion of the river may remain soft-bottomed, it is still considered a historic-period engineered structure. Research performed by staff indicates the San Gabriel River Channel—including Reach 7—is an historic-era, engineered flood-control structure and needs to be evaluated as such.

The applicant does not provide a CRHR eligibility evaluation of the larger resource, the San Gabriel River Channel, of which this segment and the levees are an integral part. To determine if the segment within the Architectural Survey Area is eligible for the CRHR and, thus, a historical resource under CEQA, an eligibility evaluation of the San Gabriel River Channel is needed.

## DATA REQUEST

Additional information is needed for evaluating the CRHR eligibility of the San Gabriel River Channel and Haynes Generating Station and to assess potential impacts that would result from the proposed project. Provide a reevaluation of the San Gabriel River and Haynes Generating Station and associated DPR 523 records to incorporate the information detailed below. The reevaluation may be submitted as either a stand-alone addendum report or incorporated as revisions to the Cultural Resources Inventory Report. Please note that the reevaluation, supporting information, and DPR 523 records do not need to be submitted under confidential cover with the archaeological responses.

44. Provide an eligibility evaluation of the Haynes Generating Station under CRHR Eligibility Criterion 3 and amend sections 4.5 and 5 of the Cultural Resources Inventory Report and section P3a of the Haynes Generating Station DPR Primary Record Continuation Sheet to include that information.

**Response:** The buildings and structures at the Haynes Generating Station do not embody distinctive characteristics of a type, period, region or method of construction. They are not the work of a master and do not have high engineering value (Criterion C and 3). They are typical components of a mid-century electrical power generating facility, of which there are several similar remaining examples. These buildings and



structures do not display any architectural style and are unexceptional examples of standard designs. In addition, most of the original units (3, 4, 5, and 6) have been physically altered either through decommissioning and/or through decreased generating capacity.

## DATA REQUEST

45. Provide the following information regarding the San Gabriel River Channel:

- a. Provide a focused record search to identify any previous significance evaluations or eligibility determinations for the San Gabriel River Channel or its associated segments or features. This should include a focused records search through the South Central Coastal Information Center to determine whether or not other segments of the Channel (e.g., the Channel downstream of Whittier Narrows to the Pacific Ocean) have been recorded and evaluated for historical significance. Records at other agencies should also be searched, including the U.S. Army Corps of Engineers, the Los Angeles County Flood Control District (LACFCD) and other agencies that may have related environmental documents. Incorporate the results of the focused San Gabriel River records search into Section 4.1 of the Cultural Resources Inventory Report. Also incorporate information gathered from the focused record search regarding any prior significance recommendations or eligibility determinations for the San Gabriel River Channel, its segments, and/or features into discussions of the resource.
- b. Provide accurate historical information regarding the San Gabriel River Channel as a historic-period engineered structure and its development with referenced, verifiable construction dates for the associated flood control features and the river's channelization, including Reach 7.
- c. If there is no previous historical significance evaluation or eligibility determination for the San Gabriel River or its associated segments or features identified through the focused record search, provide an evaluation of the San Gabriel River Channel under all four CRHR eligibility criteria. No additional fieldwork is requested for that evaluation; it is anticipated that the historical significance assessment can be adequately performed using readily available literature and online sources regarding the developmental history and importance of the San Gabriel River Channel at the local, state, and national levels.
- d. If the San Gabriel River Channel is found to be eligible for the CRHR, provide a revised assessment of potential impacts to the historical resource that would result from the project and revise Section 5 of the Cultural Resources Inventory Report.
- e. Provide a DPR Primary Record and a Building, Structure, and Object (BSO) Record for the San Gabriel River Channel that details the construction history of the historic engineered structure and incorporates the project description information clarifications requested by the project manager on April 1, 2014 for items 2–6.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

## BACKGROUND

The Alamos Generating Station (AGS) includes other built environment features that were not inventoried or included in the CRHR eligibility evaluation of the property as presented in the Cultural Resources Inventory Report and associated DPR records (AES 2014:Appendix 5.38). Those built environment resources noted by staff as missing are two intake channels entering the AGS property on the west side and at least three retention basins located in the eastern portion of the AGS facility. The inclusion of those structures in the inventory, CRHR eligibility evaluation, and assessment of impacts is needed to provide completeness and accuracy of the CEQA record.

In addition, the CRHR evaluation of the AGS under Eligibility Criterion 3 is not provided in the Cultural Resources Inventory Report (Appendix 5.38) or associated DPR forms. A summary significance statement provided on Page 2 of the AGS DPR District Record indicates that the property is not eligible under Criterion 3. However, the evaluation of AGS eligibility provided on Page 5 of the District Record does not include an evaluation of the property under Eligibility Criterion 3 or justification as to why Page 2 of the DPR indicates AGS is ineligible under Criterion 3.

## DATA REQUEST

46. Provide the following information for the AGS:

- a. Provide completed DPR Primary Record forms for each of the retention basins and each intake channel to complete the AGS DPR District Record packet.
- b. Does inclusion of the intake channels and retention basins in the CRHR eligibility evaluation alter the eligibility recommendations provided in the AFC? If so, provide an amended statement of CRHR eligibility for the AGS property. Revise Section D.6 of the AGS DPR District Record to incorporate any changes to the eligibility evaluation.
- c. Provide an eligibility evaluation of the AGS under CRHR Eligibility Criterion 3 and amend section P3a of the Haynes Generating Station DPR Primary Record Continuation Sheet to include that information;
- d. If the AGS is found to be eligible for the CRHR, revise the impacts assessment for the AGS property currently presented in Section 5 of the Cultural Resources Inventory Report and consider these structures in the assessment. Does inclusion of the intake channels and retention basins in the impacts assessment alter the previous study results?

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

## BACKGROUND

The following five historic-era built environment resources that fall within the Architectural Survey Area were not inventoried or assessed for potential impacts in the Cultural Resources Inventory Report (AES 2013:Appendix 5.3B, Figures 1 and 2).

- Bridge 1563 over North Intake Channel (Caltrans' Bridge 53C0801L and R),
- Bridge 3460 over South Intake Channel (Caltrans' Bridge 53C0802L and R),
- Bridge 2750 over Los Cerritos Channel on Loynes Drive (Caltrans' Bridge 53C0730),
- Studebaker Road, and

- Los Cerritos Channel.

According to Caltrans' (2010) bridge inventory, the two bridges over the intake channels are historic in age (built in 1966) and have been determined ineligible for the NRHP, but have not been evaluated for the CRHR. Likewise, Studebaker Road is more than 45 years of age and was not inventoried or evaluated, and potential impacts to the road that would result from the project were not assessed. Both of the bridges and Studebaker Road fall within the one parcel extent for architectural survey and consideration.

The AFC indicates that 1,000 feet of new sewer line will be installed and a portion attached to Bridge 2750 over Los Cerritos Channel on Loynes Drive (Caltrans' Bridge 53C0730). The Cultural Resource Report does not include an inventory or evaluation of the bridge or an assessment of impacts to the bridge that would result from the project. The bridge is more than 45 years in age (built in 1966). As with the two bridges discussed above, the Caltrans' (2010) bridge inventory indicates that Bridge 2750 (Caltrans' Bridge 53C0730) has been determined ineligible for the NRHP, but has not been evaluated for the CRHR.

Los Cerritos Channel is a built feature that pre-dates construction of the Alamitos Plant in 1955. Historic maps and aerial photographs contained in the AFC indicate that the Los Cerritos Channel was constructed by 1947 (EMS 2013: Appendix F and G). Both it and the San Gabriel River Channel are working parts of the Alamitos Power Plant's historic-era cooling water system. There is no inventory or evaluation of this historic-era engineered structure or assessment of project impacts to the channel in the Cultural Resources Inventory Report (AFC Appendix 5.3B). Los Cerritos Channel falls within the one parcel extent for architectural survey and consideration.

## DATA REQUEST

Staff requires the information requested below to assess potential impacts to cultural resources that would result from the proposed project. The requested information below should be incorporated into either a stand-alone addendum report with the other requested cultural resource information detailed above or as revisions to the Cultural Resources Inventory Report and associated DPR records. Please note that the report and DPR records do not need to be submitted under confidential cover with the archaeological responses.

47. Information detailed below is requested for the following resources:

- a. Perform an architectural survey of the following resources:
  - Bridge 1563 over North Intake Channel (Caltrans' Bridge 53C0801L and R),
  - Bridge 3460 over South Intake Channel (Caltrans' Bridge 53C0802L and R),
  - Bridge 2750 over Los Cerritos Channel on Loynes Drive (Caltrans' Bridge 53C0730),
  - Studebaker Road, and
  - Los Cerritos Channel

The resources are to be recorded following the *California Office of Historic Preservation's (OHP) Instructions for Recording Historical Resources* (1995), including completion of a DPR Primary and BSO record for each resource. The architectural survey is to be performed by a cultural resource professional who meets the Secretary of the Interior's Professional Qualification Standards for Architectural Historian;

- b. Evaluate CRHR eligibility (under all four eligibility criteria) of each of the resources indicated above; and
- c. For each resource listed above that is found to be eligible for the CRHR, provide a revised project impacts assessment to include an analysis of potential impacts to each of the five indicated structures that would result from the project.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

#### CEC STAFF CITED REFERENCES

AES 2013—AES Southland Development, with CH2M Hill. *Application for Certification: Alamos Energy Center*. Vol. 1. December. Long Beach, CA, and Sacramento, CA. Submitted to California Energy Commission, Sacramento. On file, Dockets Unit, California Energy Commission, Sacramento. 13-AFC-01. TN #201620.

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EMS 2013—Environmental Management Strategies. *Technical Report: Phase I Environmental Site Assessment, Alamos Electrical Power Plant, 690 North Studebaker Road, Long Beach, CA*. March. Irvine, CA. Prepared for AES North America Development, Long Beach, CA. Appendix 5.14A to *Application for Certification: Alamos Energy Center*, by AES Southland Development, with CH2M Hill. December. Long Beach, CA, and Sacramento, CA. Submitted to California Energy Commission, Sacramento. On file, Dockets Unit, California Energy Commission, Sacramento. 13-AFC-01. TN #201620-70.

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Herbert and Brookshear 1996—Rand Herbert and Cheryl Brookshear. *Building, Structure, and Object Record for Highgrove Generating Station*. November. JRP Historical Consulting, Davis, CA. On file, Cultural Resources Unit, California Energy Commission, Sacramento. 06-AFC-2.

LACDPW 2006—Los Angeles County Department of Public Works.—*A Common Thread Rediscovered: San Gabriel River Corridor Master Plan*. Berkeley, CA: Moore Iacofano Goltsman.

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Office of Historic Preservation (OHP) 1995—*Instructions for Recording Historical Resources*. Sacramento, Office of Historic Preservation, California Department of Parks and Recreation.

Redwine 1958—Peter Redwine. *Landing Hill*. On file, South Central Coastal Information Center, California Historical Resources Information System, Fullerton. Study OR-1049.

Williams 1997—James Williams. *Energy and the Making of Modern California*. Akron, Ohio: University of Akron.

**Attachment DR-40**  
**Highgrove Generating Station DPR Form**

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# ATTACHMENT CR-28A

State of California – The Resources Agency  
DEPARTMENT OF PARKS AND RECREATION  
**PRIMARY RECORD**

Primary # \_\_\_\_\_  
HRI # \_\_\_\_\_  
Trinomial \_\_\_\_\_  
NRHP Status Code 6Z

Other Listings \_\_\_\_\_  
Review Code \_\_\_\_\_ Reviewer \_\_\_\_\_ Date \_\_\_\_\_

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

P1. Other Identifier: Highgrove Generating Station

\*P2. Location: ☐ Not for Publication ☒ Unrestricted  
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

\*a. County San Bernardino

\*b. USGS 7.5' Quad San Bernardino South Date 1980 T2S; R 4W; SE ¼ of Sec 6; MD B.M.

c. Address 12700 Taylor St. City Grand Terrace Zip 92313

d. UTM: (give more than one for large and/or linear resources) Zone \_\_\_\_\_; \_\_\_\_\_ mE/ \_\_\_\_\_ mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

\*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Highgrove Generating Station is a combination natural gas and fuel oil burning steam generating electrical power plant located east of I-215 in Highgrove, in San Bernardino County on the north side of the San Bernardino and Riverside county line. The 35-acre complex contains four units each with a boiler, a generator and a cooling tower; subsidiary maintenance structures; and an administration building. Consistent with National Register guidelines and standard professional cultural resource management practices, this integrated industrial facility is treated as a single resource for the purpose of evaluating its potential historic significance. Each structure is described individually below, and the locations of the structures in relation to each other are shown on the attached **Sketch Map**. (See Continuation Sheet).

\*P3b. Resource Attributes: (List attributes and codes) HP9 Public utility building

\*P4. Resources Present: ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date,

accession#) Photograph 1. Generating station, camera facing southwest, November 14, 2006.

\*P6. Date Constructed/Age and Sources:  
☒ Historic ☐ Prehistoric ☐ Both  
1951-1955

\*P7. Owner and Address:  
AES Highgrove  
12700 Taylor St.  
Grand Terrace, CA 92313

\*P8. Recorded by: (Name, affiliation, address)  
Rand Herbert/ Cheryl Brookshear  
JRP Historical Consulting, LLC  
1490 Drew Ave, Suite 110,  
Davis, CA 95618

\*P9. Date Recorded: November 14, 2006

\*P10. Survey Type: (Describe) Single Site

\*P11. Report Citation: (Cite survey report and other sources, or enter "none.") None

\*Attachments: ☐ None ☐ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record  
☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record  
☐ Other (list) \_\_\_\_\_

DPR 523A (1/95)

\*Required Information

**BUILDING, STRUCTURE, AND OBJECT RECORD**

Primary # \_\_\_\_\_  
HRI # \_\_\_\_\_

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\*NRHP Status Code 6Z

\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

B1. Historic Name: Highgrove Power Plant

B2. Common Name: Highgrove Power Plant

B3. Original Use: Power Plant B4. Present Use: Decommissioned

\*B5. Architectural Style: Industrial

\*B6. Construction History: (Construction date, alteration, and date of alterations) Units 1 and 2 1951, Unit 3 1953, and Unit 4 1955.

\*B7. Moved? ☒ No ☐ Yes ☐ Unknown Date: \_\_\_\_\_ Original Location: \_\_\_\_\_

\*B8. Related Features: Subsidiary buildings and structures including administration building.

B9. Architect: Fluor Corporation Limited, Los Angeles b. Builder: Fluor Corporation Limited, Los Angeles

\*B10. Significance: Theme n/a Area n/a  
Period of Significance n/a Property Type n/a Applicable Criteria n/a

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Highgrove Generating Station does not appear to be a historic resource for the purposes of CEQA. The power plant, built between 1951 and 1955, is not associated with events that have made a significant contribution to the history of the local area, region or state (Criterion A and 1). The property does not appear to have been associated with a person who made significant contributions to local, state or national history (Criterion B and 2). The building does not embody characteristics of a type, period, region or method of construction. It is not the work of a master and does not have high engineering value (Criterion C and 3). Rarely buildings can provide information about historical methods of construction (Criterion D and 4); however, information on this building is recorded elsewhere and it does not appear to be a primary source in this regard. This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and does appear to be a historical resource for the purposes of CEQA. (See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

\*B12. References:

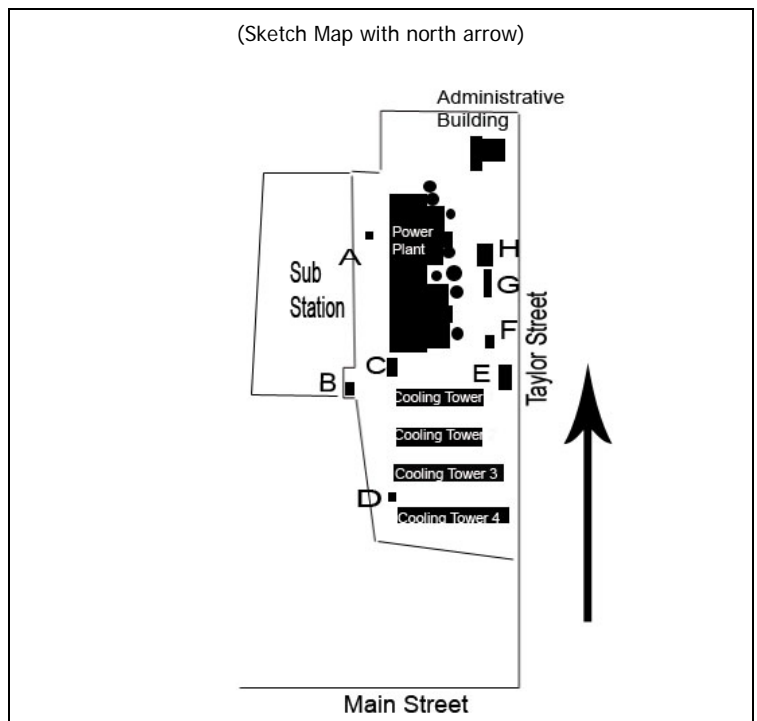
Williams, *Energy and the Making of Modern California*;  
Termuehlen, *100 Years of Power Plant Development*,  
Klure, *California Electric Power Company*; for additional citations see  
also footnotes in B10. Significance.

B13. Remarks:

\*B14. Evaluator: Rand Herbert/ Cheryl Brookshear

\*Date of Evaluation: November 2006

(This space reserved for official comments.)





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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

### **P3a. Description (continued):**

#### Administration Building

The administration building consists of a single story square on the east and a 1 ½ story rectangle on the west. The entire building is clad in long thin bricks. The eastern portion has deep eaves and a low hip roof. Two large single-pane windows face east. An entrance porch supported by square brick columns faces south. High ribbon windows flank the entrance. **(Photograph 1)** The western portion has a flat roof. The west side has a large picture window, a double glass door and a single personnel door with an overhang. The south end has a decorative brick pattern. **(Photograph 2)**



Photograph 2. Administration Building, camera facing northwest



Photograph 3. Administration Building, camera facing north

#### Main Plant

The main portion of the plant consists of four generating units. The units are in line, with the boiler and exhaust stacks to the east, and the turbines and generators to the west. The units were built and numbered beginning at the north end. A poured concrete deck connects the units and four metal mesh bridges connect the firing deck to the generator deck. Both decks are about 10 to 15 feet above grade. The boilers and stacks dominate the complex. The boilers are surrounded by an open steel beam superstructure with steel decks. The boilers are clad in insulation. Units 2 and 4 have added corrugated metal flue and stack coverings in some areas. Units 1 and 2 are approximately 35 feet tall and units 3 and 4 are about 45 feet. The stacks are west of the superstructure. Units 1 and 2 have stacks approximately 70 feet tall the stacks of Units 3 and 4 are approximately 116 feet tall. **(Photograph 1; Photograph 4)**

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update



Photograph 4. Boilers, flues and stacks, camera facing northwest

Each boiler has six doors on the west side. (**Photograph 5**) Units 3 and 4 have an air circulator system of large curving ducts along the sides. Unit 3 has a mechanized feed system of pipes covering the boiler doors.



Photograph 5. Unit 1 boiler doors, camera facing southeast



Photograph 6. Unit 3 boiler feeder, camera facing northeast

Two control buildings are located between the units. The first control building is located between Units 1 and 2; the second is located between Units 3 and 4. Both are two story rectangular buildings with flat roofs, constructed of poured concrete, and have glass-fronted control rooms on the west side. (**Photograph 7**) A double glass door leads from the firing deck to the control room. On the east side each has a double metal door at ground level. The control building between Units 1 and 2 has four three by four light windows on the second floor. The other control building between units 3 and 4 has two industrial steel sash windows of three by four lights; the center and top row of lights are operable. (**Photograph 8**)



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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update



Photograph 7. Unit 1 & 2 Control room, camera facing east



Photograph 8. Unit 3 & 4 Control room, camera facing west

Two water tanks are north of Unit 1, and two more are between Units 2 and 3. The generators sit across from their respective boilers on the generator deck above the turbines. A 45-ton overhead traveling crane runs on rails located on either side of the generator deck. **(Photograph 9)** The General Electric generators are sheathed in metal and have metal shelters over the northern half of them. **(Photograph 10)** The rectangular shelters have frieze bands and flat roofs that curve on the north and south edges, giving them a slight Moderne appearance.



Photograph 9. Traveling service crane, camera facing southwest



Photograph 10. Generator deck, camera facing southwest

Under each generator within the poured concrete foundations are the turbines. **(Photograph 11)** To the west of each turbine at ground level is a large horizontal tank with large pipe that heads underground. These are a part of the hydrogen cooling system for the turbines. **(Photograph 12)** A set of wires and pipes connect the generators with the transformers in the neighboring substation.

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update



Photograph 11. Unit 1 turbine, camera facing north.



Photograph 12. Hydrogen cooling tank, camera facing southeast

#### Service Shed 1 (A)

The service shed is located between the turbines and the substation. It is a small rectangular building 6 feet by 10 feet with a shed roof. **(Photograph 13)** The building has a wood frame clad in corrugated fiberglass. It has a double door facing east.



Photograph 13. Service Shed 1, camera facing northwest.



Photograph 14. Service Shed 2, camera facing southwest.

#### Service Shed 2 (B)

This raised bead metal shed is located at the southeast corner of the substation. The shed is approximately 8 feet by 16 feet with a side gable roof. The edges of the eaves are curved and a circular vent is on the ridge. A large double, hinged door faces east. **(Photograph 14)**



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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

### Hazardous Materials Building (C)

South of the main plant is a concrete block hazardous materials shed. **(Photograph 15)** The building has an enclosed room on the south side and two bays at grade level and a third excavated loading bay all under a traversite shed roof.



Photograph 15. Hazardous Materials Building, camera facing northwest.

### Cooling Towers

The cooling towers are large rectangular structures at the south end of the property. **(Photographs 16-18)** They run lengthwise east to west with Tower 1 at the north and Tower 4 at the south. The towers are spaced about 60 feet apart. Each tower has a concrete pit with Allis Chalmers condenser pumps at the west end. The poured concrete foundation creates a basin about five feet below grade. Redwood framing is placed on equally spaced concrete piers within the basin. Open metal grid work is supported by the redwood framing. The towers are clad with horizontal corrugated fiberglass siding. The upper edges of the bottom three courses of siding are tilted out, creating vents. Redwood stairs are on the exterior. Between Towers 1 and 2 and between 3 and 4 a series pipes exit the ground and enter the building high on the sides. Towers 1 and 2 are approximately 197 x 54 feet and Towers 3 and 4 are 262 x 54 feet.



Photograph 16. Cooling Tower 1, camera facing southeast.



Photograph 17. Pipes entering Cooling Towers 1 and 2, camera facing west.

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update



Photograph 18. Interior of Cooling Tower 3 showing metal gridwork. Camera facing north.

#### Cathodic Protection Rectifier (D)

This small, square concrete block building with shed roof is located between Cooling Towers 3 and 4. It has a metal door. **(Photograph 19)**



Photograph 19. Camera facing west.



Photograph 20. Chemical Storage camera facing southeast.

#### Chemical Storage Building (E)

The chemical storage shed has a side-gable roof with curved eaves. The building is clad in raised bead metal sheeting. The enclosed portion has a sliding personnel door and a 12-light industrial metal sash window. The upper two courses of the window louver open. The south end is open on the west side, creating two bays. A third bay is created by a fiberglass extension with shed roof on the north side. **(Photograph 20)**

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

Char Processing (F)

The char processing unit is west of Unit 4 and attached to the plant by pipes. The char unit has two tanks and a smaller fuel tank. A conveyor removes material to a concrete bin to the west. The process is controlled in a shed-roofed building with metal sash holding plywood and sliding windows. One plywood door is located on the south side. **(Photograph 21)**



Photograph 21. Char Processing, camera facing north.

Mobile Building (G)

One mobile building is present on the site. It is a doublewide mobile home with a side-gable roof and vertical metal siding and horizontal bands at top and bottom. The building has two doors protected by shed roofs supported by metal pipes and reached by metal stairs. The building has one single-pane window. **(Photograph 22)**



Photograph 22. Mobile Unit, camera facing northeast.



Photograph 23. Vehicle shelter, camera facing northeast.



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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

Vehicle Shelter (H)

The shelter has two bays under a corrugated metal roof supported by steel I-beams. (**Photograph 23**)

**B10. Significance (continued):**

General History of Steam Plants in California

Steam plants comprised the first generation of electric generating facilities in California. British designer Sir Charles Parsons built the first steam turbine-generator in 1884, and almost immediately others began making improvements upon his original concept. The earliest steam generating plants were little more than steam engines converted to drive a generator rather than a locomotive. By the beginning of the twentieth century, power plants with steam turbines began to replace the original steam engine power plants. Aegidius Elling of Norway is credited with creating the first applied method of injecting steam into the combustion chambers of a gas turbine engine in 1903-04. Within a relatively short time, the technology of engines capable of supplying power and electricity improved greatly. New and better methods and designs helped to spread electricity to a wide range of commercial buildings and residences.<sup>1</sup>

In the beginning stages of development of steam turbine power plants, the materials needed to withstand the high temperatures of modern turbines were not yet available. Technology and improvements for steam turbine engines continued to advance throughout the 1920s and 1930s, leading to a generation of more efficient turbine power plants in the 1950s. By this time, utilities retired or replaced many of the older steam-electric plant generating units following the construction of more modern units. While the technology of turbine power plants peaked in the 1950s, it appears to have remained relatively unchanged until the 1980s, despite the availability of newer technology that would allow an increase of pressure and heat for the systems.<sup>2</sup>

Steam power generation has been an important part of California's power production throughout the twentieth century, although the over-all importance of steam diminished considerably during the 1920-1940 era, when a large number of hydroelectric generating facilities came on line throughout the state. In 1920, hydroelectric power accounted for 69% of all electrical power generated in California. By 1930, that figure had risen to 76%; it rose again to 89% in 1940. Rapid construction of new thermal or steam-electric generating units, however, accounted for most of the new power capacity in the state after 1941. By 1950, hydroelectricity accounted for only 59% of the total, falling to 27% in 1960. Some new hydroelectric plants were built during the 1960s, chiefly associated with federal and state water projects, but by 1970, hydroelectric plants accounted for only 31% of all electricity generated in California.<sup>3</sup>

These statistics, however, mask the effort of both Pacific Gas & Electric Company (PG&E) and Southern California Edison (SCE), California's largest electrical utility providers, to build large-scale steam generation plants as early as the 1920s. James Williams, a historian of energy policies and practices in California, noted that the decision by PG&E and SCE to build steam plants may be attributed to several converging trends in the mid- to late-1920s. First, a persistent drought in California caused the major utilities to begin to question the reliability of systems relying so heavily upon hydroelectricity. This drought began in 1924 and continued, on and off, for a decade. At about the same time, new power plants on the East Coast (where steam had always played a more important role than in California) achieved far greater efficiencies than had previously been possible. Between 1900 and 1930, for example, the fuel efficiency of steam plants, measured in kilowatts

<sup>1</sup> Heinz Termuehlen, *100 Years of Power Plant Development: Focus on Steam and Gas Turbines as Prime Movers*, (New York: ASME Press, 2001), 11; Douglas Stephen Beck and David Gordon Wilson, *Gas Turbine Regenerators*, (New York: Chapman & Hall, 1996), 30; William A. Myers, *Iron Men and Copper Wires: A Centennial History of the Southern California Edison Company*, (Glendale, CA: Trans-Anglo Books, 1984), 8.

<sup>2</sup> Termuehlen, *100 Years of Power Plant Development*, 21-28.

<sup>3</sup> James C. Williams, *Energy and the Making of Modern California* (Akron, Ohio: University of Akron Press, 1997), 374.



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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

per barrel of oil, increased more than nine-fold. In addition, new natural gas lines were completed that could bring new supplies to both northern and southern California in the late 1920s, tapping large reserves in the San Joaquin Valley. Natural gas has always played an important role in steam electric power generation in California.<sup>4</sup>

Steam generation plants also fit the “build and grow” philosophy based on Samuel Insull’s example. In the “build and grow” plan, electric companies encouraged electrical use to establish a market, and thus justify the need to build new generating plants. The new plants used new more efficient technologies and had a smaller operating margin than the old plants. The company passed some of the savings along to customers, thereby encouraging more electrical use. California companies were able to keep the “build and grow” cycle active through the 1960s.<sup>5</sup>

The confluence of these various factors – a drought, new steam generator technologies, new supplies of natural gas, and the “build and grow” philosophy – induced PG&E, SCE, and other utilities to begin construction of large steam plants during the late 1920s and early 1930s. In 1929, the Great Western Power Company (which was absorbed by PG&E in 1930) built a large steam plant on San Francisco Bay, near the Hunters Point shipyard, fitted with two 55 MW generators.<sup>6</sup> PG&E built a steam plant in Oakland in 1928, called Station C. SCE had an even longer history of steam generation, having operated its large facility at Long Beach on Terminal Island throughout most of the 20<sup>th</sup> century. By World War II, the Long Beach plant was huge, with eleven units on line that had been constructed in stages beginning in 1911. In Southern California, the Los Angeles Department of Water and Power constructed a steam station at Seal Beach consisting of two units installed in 1925 and 1928. These steam plants proved to be both profitable and reliable for the various utilities. In 1930, the PG&E vice-president for engineering wrote, “under the circumstances which now prevail, it is natural to question the future of hydro in California.”<sup>7</sup>

The post-World War II era was a time of rapid growth in Southern California. Population and housing swelled along with business and industrial development. Fueled by wartime defense industries, southern California grew rapidly, spreading out into agricultural areas and creating suburbs outside the original city limits of the communities around Los Angeles and San Diego. The need to generate power was imperative, and SCE, Los Angeles Department of Water and Power (LADWP), and San Diego Gas & Electric Company (SDG&E) expanded their systems along with PG&E and the rest of California’s energy industry. Since most of the more favorable hydroelectric sites in California had already been developed, and the cost of steam generating facilities had been reduced by technological developments in design and abundant natural gas resources, steam plants became the more favorable option. Steam turbine power plants were cheaper and quicker to build than hydroelectric plants, so utilities companies moved away from hydroelectricity, establishing steam turbine power as the generator of choice. Such plants conserved water and kept costs down for the business and the consumer. The “momentum for steam had been established by war, by drought, and,” wrote Williams, “by a positive history of increased thermal power plant development.”<sup>8</sup>

Dozens of new steam generation plants were built throughout California, chiefly by PG&E and SCE, although LADWP, California Electric Power Company (see below), and SDG&E built a few as well. The plants relied upon proven technologies but were assembled quickly and inexpensively, relative to earlier plants. In a detailed article in 1950 in *Civil Engineering*, I. C. Steele, Chief Engineer for PG&E, summarized the design criteria that went into construction of four

<sup>4</sup> Williams, *Energy and the Making of Modern California*, 278.

<sup>5</sup> William Allan Myers, *Affairs of Power: Restructuring California’s Electric Utility Industry 1968-1998* (University of California Riverside, Disertaion 1997) 58.

<sup>6</sup> This plant still exists, although it was fitted with new units in the early 1950s, at the same time that the Kern Power Plant was being constructed. Coleman, 298.

<sup>7</sup> “1928 Steam Plants Account for 45 Percent of New Generating Capacity,” *Electrical West*, February 2, 1929, 80-81; R.W. Spencer, “Cooling Water For Steam Electric Stations in Tidewater,” *Transactions of the American Society of Civil Engineers* 126 (1961): 294, 300; Williams, *Energy and the Making of Modern California*, 279.

<sup>8</sup> Myers, *Iron Men and Copper Wires*, 200; James C. Williams, *Energy and the Making of Modern California*, 277-78, 282-83.

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

major steam plants the company had under construction at that time, at Moss Landing, Contra Costa, Kern, and Hunters Point in San Francisco. These plants had much in common with each other, he argued, and with other steam plants under construction in the state. The design criteria were the same in all cases: build the facility close to load centers to reduce transmission costs; be close to fuel supplies; be near a water supply; and be on a site where land was cheap and could support a good foundation. In another article in *Transactions of the ASCE*, Walter Dickey, an engineer from Bechtel, detailed the reasons for the boom in steam plant building postponements due to World War II, lack of economical hydroelectric sites and needed support of peak load periods. He compared steam generation plant with hydroelectric plants and found steam favorable. Virtually all of the plants in the 1950s and 1960s were designed to be expanded if market conditions warranted; most of them were.<sup>9</sup>

The decades between 1950 and 1970 were the peak expansion of steam generating capacity for both the SCE and the PG&E, as well as for smaller utility companies. During this period, SCE built a series of very similar steam plants in the Los Angeles Basin and in San Bernardino County. In 1952, the company began work on Redondo No. 2, which was adjacent to an earlier plant at Redondo Beach. In 1953, the Etiwanda plant went online, followed in 1955 by El Segundo, Alamitos in 1956, and Huntington Beach and Mandalay in 1958. By 1960, all SCE plants either had multiple units or had additional units in the planning stages. In 1950, PG&E operated 15 steam electric plants in California, and during the following decade added several new plants and expanded older ones. Chief among these were the Kern plant (1948-50), Contra Costa (1951-53), Moss Landing (1950-52), Morro Bay (1955), Hunters Point (addition 1958), Humboldt Bay (1956-58), and Pittsburg (1959-60). The Pittsburg plant was at the time of its construction the largest steam station in the west, with a capacity of over 1,300,000 kW in 1960. The LADWP system was much smaller than those of SCE and PG&E, consisting of five steam plants by 1962. In addition to its Seal Beach Plant (1925-28), and Harbor Plant on Los Angeles Harbor (1943) these included the Valley Plant (San Fernando Valley, 1954), Scattergood (1958), and Haynes (1961). SDG&E had three steam-electric power plants, Silver Gate (1943), Encina (1954), and South Bay (1960). By the late 1970s, there were more than 20 fossil fuel thermal plants in California, clustered around San Francisco Bay, Santa Monica Bay, and in San Diego County, along with a few interior plants in San Bernardino County and Riverside and Imperial Counties, as well as a few plants on the Central Coast.<sup>10</sup>

Most of the oil- or gas-fired steam plants currently in use in California were installed in the period from about 1950 through 1970. After 1970, the major utilities began to look for alternative energy sources, ranging from nuclear power to wind, geothermal, and other “green” energy sources, other than hydroelectric. Despite these efforts, however, fossil fuel steam generation remains the backbone of electrical generating capacity in California. Information from the California Energy Commission (CEC) states that there are currently 34 steam turbine power plants in California of a variety of ages and locations.<sup>11</sup>

<sup>9</sup> I. C. Steele, “Steam Power Gains on Hydro in California,” *Civil Engineering* (January 1950): 17-21; Edgar J. Garbarini, “Design Saves Construction Dollars on Contra Costa Power Plant,” *Civil Engineering* (May 1953): 31-33; Walter L. Dickey, “The Design of Two Steam Electric Plants,” *ASCE Transactions* (1956): 253-273.

<sup>10</sup> Annual Reports of the Southern California Edison Company, various years. R.W. Spencer, “Cooling Water For Steam Electric Stations in Tidewater,” *Transactions of the American Society of Civil Engineers* 126 (1961): 280-302; I. C. Steele, “Steam Power Gains on Hydro in California,” 17-19; Dickey, “The Design of Two Steam Electric Plants,” 253-255; *Southwest Builder and Contractor*, “Haynes Steam Plant Will Grow With Demand,” *Southwest Builder and Contractor* (October 12, 1962): 24-27; Williams, *Energy and the Making of Modern California*, 257.

<sup>11</sup> The California Energy Commission retains figures on the fuel type for all electricity used in the state, even if the power is generated out of state. In 1999, natural gas-fired generators were responsible for 31% of all electricity used in the state, compared with 20% for hydroelectricity. Coal-fired steam plants, all of them out of state, accounted for 20% of the total. “Green” sources accounted for 12%. The percentage of in-state natural gas-fired steam electricity is much larger than 31%, since all of the coal and much of the hydroelectric power is generated out of state. See [www.energy.ca.gov/electricity/system\\_power](http://www.energy.ca.gov/electricity/system_power).

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

### California Electric Power Company

The company that became California Electric Power Company had its origins in the southern Sierra Nevada. Organized as Nevada Power Mining and Milling Co. on December 31, 1904, the company planned to provide mines in the region with inexpensive electricity. Engineers sent to find a mine site had located a creek above Bishop, California in the Owens Valley and recognized it as an opportunity to generate hydroelectricity. The first line was completed eight months later supplying electricity to camps 125 miles away. Quickly the company developed four more plants along the creek. When mining began to decline the company searched for new markets in southern California. In 1912, it built a transmission line to San Bernardino. Over the next decades it purchased smaller companies in San Bernardino and Riverside counties and expanded into Mono, Inyo and Kern counties. The company also served three counties in Nevada. It was active in rural electrification and the development of Hoover Dam. By the 1950s the company had tapped all the hydropower sites in its service area.<sup>12</sup> As a result, the company began a program of building steam generating power plants. The first plant was Highgrove in 1951, followed by San Bernardino (1956), Norton Air Force Base (1957), Cool Water Steam Plant (1961), Barstow (1959) and a joint project in Yuma, Arizona.<sup>13</sup> California Electric Power Company merged with SCE on January 1, 1964. The complex merger retained many of California Electric's employees and the President of California Electric, Fred Oldendorf, became the Vice-President of the merged company.<sup>14</sup>

### Highgrove Generating Station

Construction of Highgrove Generating Station began in 1950, as the first of California Electric Power Company's steam generation plants.<sup>15</sup> The plant was designed and built by Fluor Corporation of Los Angeles. The first phase of the plant consisted of Units 1 and 2 at the north end of the complex, each with a 30,000 kW General Electric generator and hydrogen cooled turbine. The design was distinctive at the time as it lacked an exterior shell and is considered an "outdoor" plant. In 1951, it was the first of such plants in the west although others were under construction or being designed. The first two units went into operation in 1952 and became the company's primary power source. The plant was operated by 25 employees and could use either fuel oil or natural gas. Even while the company was building the first two units, it had plans in development for Units 3 and 4. The generator for Unit 3 was delivered and placed on the generator deck in July of 1953.<sup>16</sup> The gantry crane at the north end was modified to lift the 94-ton generator and move it past the two generators already in place. It was larger than the previous two with the ability to generate 40,000 kW of power. The generator and its components were also the largest equipment expense for the company up until that point, costing \$1,461,816.14.<sup>17</sup> Unit 4 was completed in 1955 and increased Highgrove's total generating capacity to 154,000 kW. The company director and former president A.B. West pointed out, "this Number Four Unit alone will have a generating capacity exceeding in kilowatt-hours the entire output of our existing eight hydro plants on Bishop Creek and in Mono Basin, and will represent more than our entire system load in 1931."<sup>18</sup> With all four units running the plant employed 65 people.<sup>19</sup> Similar and larger plants quickly followed Highgrove. When California Electric Power merged with SCE, Highgrove was merged into the system along with its other plants. Upon deregulation, SCE was required to sell one half of its plants. Instead, it decided to sell all of its gas and oil fueled generating plants valued at \$700 million in 1996. They included the Etiwanda, Highgrove and San Bernardino plants. Together, these plants made up 20% of the power supplied to SCE consumers. Most of the

<sup>12</sup> "To Water Add Steam: Output Grows" *San Bernardino Daily Sun* (April 23, 1958).

<sup>13</sup> Laura L. Klure, *California Electric Power Company* (Riverside, CA: A to Z Printing, 2005) 76-77. "Calctric's Birth Came When Men Hunting for Gold Discovered Water," *San Bernardino Daily Sun* (April 23, 1958).

<sup>14</sup> "Official Midnight Merger Made by Edison-Calelectric" *San Bernardino Daily Sun* (January 1, 1964); <http://www.sce.com/abt/sce/history/historical+timeline1948-1978.html>.

<sup>15</sup> "1<sup>st</sup> Unit of Calctric Steam Plant Nearing Completion," *Riverside Daily Press* (February 13, 1952) 9.

<sup>16</sup> "Calctric Begins Work on Third Unit at Highgrove" *San Bernardino Daily Sun* (July 22, 1953).

<sup>17</sup> Klure, *California Electric Power Company*, 74.

<sup>18</sup> Klure, *California Electric Power Company*, 75.

<sup>19</sup> "Highgrove Joins the Old and New" *Riverside Press* (May 25, 1959).

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

remaining power came from hydroelectric sources and the San Onofre nuclear plant. In order to meet the obligations to the 77 employees at these three plants, SCE and the buyer had to agree to operate the plant until 1998.<sup>20</sup> The plant has since been decommissioned and is now owned by AES.

### Evaluation

The Highgrove Generation Station does not appear to be a historic resource for the purposes of CEQA. The generation station, built between 1951 and 1955, does not appear to be significant in the context of the history of California Electric Power Company, the history of steam generation of electricity or the history of post World War II steam generation plants. (Criterion A and 1)

As discussed above Highgrove was the first of several steam generating plants for California Electric Power Company. It was the first for the company, but part of a larger trend for all electric companies in California to build steam generation plants to keep up with growing demand from new development and higher customer usage. California Electric Power Company rapidly followed Highgrove's construction with the construction of plants at San Bernardino (1956), Norton Air Force Base (1957), Cool Water (1961) and Yuma. While Highgrove was being constructed, Southern California Edison was laying foundations for its Etiwanda plant and San Diego Gas & Electric was soliciting bids for its Encina plant.<sup>21</sup> Etiwanda was of the "outdoor" type, while SDG&E enclosed Encina for aesthetic reasons. The rapid construction of these plants, and similar plants by other companies, suggests that these plants were all being planned and designed at about the same time. The demand for these plants was a result of exhaustion of available hydroelectric sites at the same time that demand for electricity continued to grow. Highgrove being first for California Electric Power Company is more related to its specific requirements than any pioneering concept of steam generation plants of this era. Together, the plants supplied the majority of power for the California Electric Power Company, overshadowing the importance of any single plant. Each was important the community it served, providing power for the increasing demands of new technology and development in the area. Placed in the context of the time and other power plants and community services, Highgrove does not suggest any unique significance.

California Electric's employee magazine, and subsequent works on that company's history and on the history of SCE, have cited as the first "outdoor" generating plant in the west.<sup>22</sup> However, many plants of this type were built in southern California in the 1950s and 1960s, a number of which may have been in design at nearly the same time. Because of this, Highgrove could be seen as significant for being first in this trend (Criterion A or 1) or for its embodiment of this type (Criterion C and 3). However, before such a claim for significance can be made, the trend itself must be evaluated. An "outdoor" steam generation plant is one without a protective skin or roof structure. Most of the components, pipes, boilers and machinery are left exposed to the elements. Specific portions may be enclosed, such as control rooms or the shelters over half of each generator at Highgrove. Plants with this design are suitable for temperate climates like those in California, the south, and the southwest. However, the elimination of the protective structure did not alter the design or operation of the workings of the plants or change the engineering specifications to any extent. A review of engineering and building journals did not reveal any studies of the benefits of "outdoor" style plants. Advances in foundations, seismic stability, and transportation of parts and materials are frequently discussed; "outdoor" plants are mentioned as such without further comment. The lack of studies and articles on the subject suggest that it was not considered a significant change in the overall design of such plants. These plants cost less to build because they did not include exterior walls or enclosures for the equipment reducing initial construction cost and the expense of maintenance.<sup>23</sup> As a result, this design is an applied aesthetic, not a part of the overall requirement of the plant. In order to qualify as significant under Criterion C and 3, the

<sup>20</sup> Michael Diamond, "Edison to Sell Three Inland Empire Power Plants," *The Sun* (November 23, 1996).

<sup>21</sup> "Huge New Steam Electric Plant at Fontana," *Southwest Builder and Contractor* (November 9, 1951) 10; "Power Plants," *Southwest Builder and Contractor* (October 26, 1951) 20.

<sup>22</sup> Klure, *California Electric Power Company*, 74.

<sup>23</sup> Conversation with Joe Odahal, Engineering Manager, South Bay Power Plant, November 16, 2006.

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\*Resource Name or # (Assigned by recorder) Highgrove Generating Station

\*Recorded by Rand Herbert/ Cheryl Brookshear \*Date November 14, 2006 ☒ Continuation ☐ Update

structure's type, period and method of construction must be integrated with the building's overall plan. Highgrove's aesthetic "outdoor" plan is not significant under Criterion C and 3. The "outdoor" plan did not have any significant impact on plant operation, and it did not impact the development of electrical generation, distribution or use in the areas it was used. As a result, the "outdoor" type would not appear to have any significance under Criterion A and 1. It is interesting to observe that modern hydroelectric power plants, like PG&E's Belden Powerhouse on the Feather River, or the City of San Francisco's Moccasin Powerhouse, are of an outdoor type as well. Moccasin Powerhouse replaced an older, Mission Revival enclosed structure; the hydroelectric plants using the fall of the Feather River are a mixture of the two types (enclosed, like Caribou, and outdoor, like Belden).

Highgrove does not appear to be associated with the life of a historically significant person (Criterion B and 2), nor is it significant under Criterion D and 4, as a potential source of data on human history. This property is well-documented through company records and construction documents and does not appear to be a principal source of important information. The plant has had minor alterations, yet as a whole it retains integrity of location, design, setting, materials, workmanship, feeling and association.

Attachment DR-42  
**CONFIDENTIAL** - Redwine (1958) Excavation  
Report

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Attachment DR-42, Confidential Redwine (1958) Excavation Report has been provided under separate cover with a request for confidentiality.

**Attachment DR-44**  
**Haynes Generating Station DPR Forms - Revised**



## PRIMARY RECORD

Primary #  
HRI #  
Trinomial  
NRHP Status Code 6Z

Other Listings  
Review Code

Reviewer

Date

Page 1 of 10

\*Resource Name or #: Haynes Generating Station

**P1. Other Identifier:**

\*P2. Location: ☐ Not for Publication ☒ Unrestricted

\*a. County: Los Angeles

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

\*b. USGS 7.5' Quad: Los Alamitos

Date: 1981 T 5S ; R 12W ; ¼ of ¼ of Sec 2, 3 and 11; M.D. B.M.

c. Address: 6801 E. 2<sup>nd</sup> Street

City: Long Beach

Zip: 90803

d. UTM: Zone: 11; Northwest corner 398397.214929, 398397.214929; Northeast corner 398491.344803, 398491.344803;

Southwest corner 398342.869235, 398342.869235; Southeast corner 398865.047676, 398865.047676

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Parcel number 7237-019-270

\*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) Haynes Generating Station (HGS) is an electric power generating facility owned by Los Angeles Department of Water and Power (LADWP). HGS covers approximately 120 acres, most of which is located in the City of Long Beach. Most of the eastern boundary of HGS is also the boundary between Los Angeles and Orange counties. HGS is bounded by the Leisure World residential community on the east side, separated from it by the Los Alamitos Channel, an Orange County Flood Control Channel. It is bounded to the south by the Island Village residential community; to the west by the San Gabriel River and Alamitos Generating Station; and to the north by a residential area and a community park across State Route 22.

LADWP acquired the HGS property in 1957 to build a generating facility to replace the 1920s-era Seal Beach Steam Generating Plant (LADWP 2010). The first units at HGS, Units 1 and 2, were placed into operation in 1962 and 1963, respectively; Units 3 and 4 were placed into operation in 1964 and 1965, respectively; and Units 5 and 6 were placed into operation in 1966 and 1967, respectively. Unit 7 (an emergency backup power generator) was added in 1970. In 2004, Units 8, 9, and 10, a combined cycle generating system (CCGS), replaced the generation capacity of steam boiler Units 3 and 4, which were decommissioned. As part of the CCGS project, Unit 6 was also physically altered to reduce its net generating capacity (LADWP 2010). (see continuation sheet.)

\*P3b. Resource Attributes: HP9 – public utility

\*P4. Resources Present: ☒ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo:

View looking northeast at entry to Haynes Generating Station from Westminster Blvd/E. 2<sup>nd</sup> Street, February 3, 2014

\*P6. Date Constructed/Age and

Sources: ☒ Historic

☐ Prehistoric ☐ Both

1962 to 1970

Source: Los Angeles Department of Water and Power

\*P7. Owner and Address:

Los Angeles Department of Water and Power

111 North Hope Street  
Los Angeles, CA 90012

\*P8. Recorded by:

Lori D. Price  
CH2M HILL  
6 Hutton Center Dr., Suite 700  
Santa Ana, CA, 92707

\*P9. Date Recorded: February 12, 2014

\*P10. Survey Type: Intensive

\*P11. Report Citation: Cardenas et al. 2013. *Cultural Resources Inventory Report for the Alamitos Energy Center – Los Angeles County, California*

\*Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☐ Building, Structure, and Object Record  
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record  
☐ Artifact Record ☐ Photograph Record ☐ Other (List):

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation

☐ Update

**\*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)**

In 2013, a new electrical simple cycle generating station (SCGS) added six new natural gas-fired combustion turbine (CT) generators, associated cooling and pollution control systems, and other ancillary facilities to HGS. The new generation units are designated as Units 11, 12, 13, 14, 15, and 16. When these new units were brought on line, Units 5 and 6 were decommissioned. The new units have dry cooling towers instead of using ocean water.

Units 1 - 6 are steam boiler units. The CCGS consists of one steam turbine (Unit 8) and two natural-gas fired generators (Units 9 and 10). The height of the primary structures for the generator units ranges from approximately 75 feet for the CCGS to approximately 150 feet for the six older units. The generator exhaust stacks range in height from approximately 150 feet (Units 9 and 10 of the CCGS) to approximately 250 feet for the six older units. All of the generator units are located in the southwest quadrant of the HGS property (LADWP 2010).

Except for Units 11-16, HGS units operate on a once-through cooling process. A circulating water channel provides ocean water for cooling the HGS steam boiler units. This channel extends southwest from the HGS property for approximately one mile, roughly paralleling the San Gabriel River between 2nd Street and State Highway 1. Near the highway, the channel ends and a system of pipes crosses under the San Gabriel River and connects to an intake structure in the Alamitos Bay Marina. After use, the cooling water is discharged into the San Gabriel River through three discharge structures, which are located on the east bank of the river. The discharge structures have two outfalls each, because each of the six generator units that utilize once-through cooling has one discharge pipe.

In addition to the generator units, the HGS property contains other components to service the plant. Electrical switchyards are located west of the generator units (between the generators and the San Gabriel River). There is a small compressor station near the center of the property to boost the natural gas pressure for use in Units 9 and 10. Five aboveground fuel oil storage tanks are located in the southeastern quadrant of the property surrounded by an approximately 4-foot high earthen dike. Four of these tanks are empty and one is used to store distillate oil as backup fuel for the CCGS. These tanks are 160 feet in diameter and 43 feet in height, except for the one on the north end which is approximately 200 feet in diameter and 43 feet in height. There are three 500,000-gallon settling basins in the southeastern quadrant of the property. An administrative building with a paved surface parking lot is located at the south end of the property. Various small storage and support buildings are located throughout the property, which is surrounded by a chain link security fence.

The HGS is not recommended as a historical resource for the purposes of CEQA. Based on available research, the generating station is not significant in the context of the history of LADWP, the history of steam generation of electricity, or the history of post-World War II steam generation plants (Criterion A and 1).

HGS was one of several steam generating plants built in the mid-twentieth century. It was part of a trend in California to build steam generation plants to keep up with growing demand from new development and higher customer usage. The short time-frame for construction of these plants, and their similar technologies and designs, suggests that they were all being planned and designed at about the same time. These plants and their steam generation technology were the result of the exhaustion of available hydroelectric sites coinciding with a growing need for electricity. Together, the plants impacted the nature of power generation in southern California, overshadowing the importance of any single plant. As of 2008, 21 once-through cooling, steam generation units remained in southern California, including HGS, all dating from the same general time period, with an average age of 40 years. More than 1,200 steam-generating units use this cooling method in the United States (TetraTech 2008). Placed in the context of the time and of other power plants, HGS is not unique.

The buildings and structures at HGS do not embody distinctive characteristics of a type, period, region or method of construction. They are not the work of a master and do not have high engineering value (Criterion C and 3). They are typical components of a mid-century electrical power generating facility, of which there are several similar remaining examples, as noted above. They do not display any architectural style and are unexceptional examples of standard designs. In addition, most of the original units (3, 4, 5, and 6) have been physically altered either through decommissioning and/or through decreased generating capacity.

Available research does not provide any evidence of HGS being associated with the life of a historically significant person (Criterion B and 2), and it is not significant under Criterion D and 4 as a potential source of data on human history. This property is well-documented through company records and construction documents and is not a principal source of important information. The plant has had numerous alterations, including the addition of Units 8, 9, and 10 in 2004, the decommissioning of Units 3, 4, 5, and 6, the removal of four large aboveground storage tanks in the north end of the property, and the addition of Units 11-16. Although the design, feeling, and workmanship has been impacted by these changes, the property retains integrity of location, setting, materials, and association.

This property has been evaluated in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code, and is not recommended as a historical resource for the purposes of CEQA.

**CONTINUATION SHEET**

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\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation

☐ Update

**\*D7. References:**

Los Angeles Department of Water and Power (LADWP). 2010. *Haynes Generating Station Units 5 & 6 Repowering Project Draft Environmental Impact Report (Sch#2005061111)*. With technical assistance from AECOM. January 2010.

Tetra Tech, Inc. 2008. *California's Coastal Power Plants: Alternative Cooling System Analysis*. Prepared for California Ocean Protection Council, Oakland, CA. February 2008.

## CONTINUATION SHEET

Primary #

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Trinomial

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\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation

☐ Update



Haynes Generating Station, view looking southeast from San Gabriel River Bike Trail, February 2014. Units 11-16 are in the center of the photo; the older units are visible at the far right.



Haynes Generating Station, view looking northeast from San Gabriel River Bike Trail, February 2014.



\*Recorded by: Lori D. Price      \*Date: February 12, 2014      ☒ Continuation    ☐ Update



Haynes Generating Station, view looking southeast from Alamitos Generating Station, September 2011. Units 1-6.



Units 1 and 2, view looking northeast. February 2014.

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Trinomial

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\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation ☐ Update



Units 3 and 4, view looking east. February 2014.



Units 5 and 6, view looking east. February 2014. Unit 4 is visible at far right.



## CONTINUATION SHEET

Primary #

HRI#

Trinomial

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\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation ☐ Update



Units 8-10, view looking southeast, February 2014. Units 3 and 4 are visible at far right.



Units 11 and 12, view looking northeast. February 2014.

## CONTINUATION SHEET

Primary #

HRI#

Trinomial

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\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation ☐ Update



Units 11 and 12 on the right, and Units 13 and 14 on the left, view looking northeast. February 2014.



Units 15 and 16, view looking northeast. February 2014.



\*Recorded by: Lori D. Price

\*Date: February 12, 2014

Continuation    Update



**Legend**  
Property Boundary

Township 5S, Range 12W, Sections 2,3,11  
Quad Name: Los Alamitos

0 1,000 2,000  
Feet

**Haynes Generating Station**  
Alamitos Energy Center  
Long Beach, California

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State of California — The Resources Agency  
DEPARTMENT OF PARKS AND RECREATION  
**CONTINUATION SHEET**

Primary #  
HRI#  
Trinomial

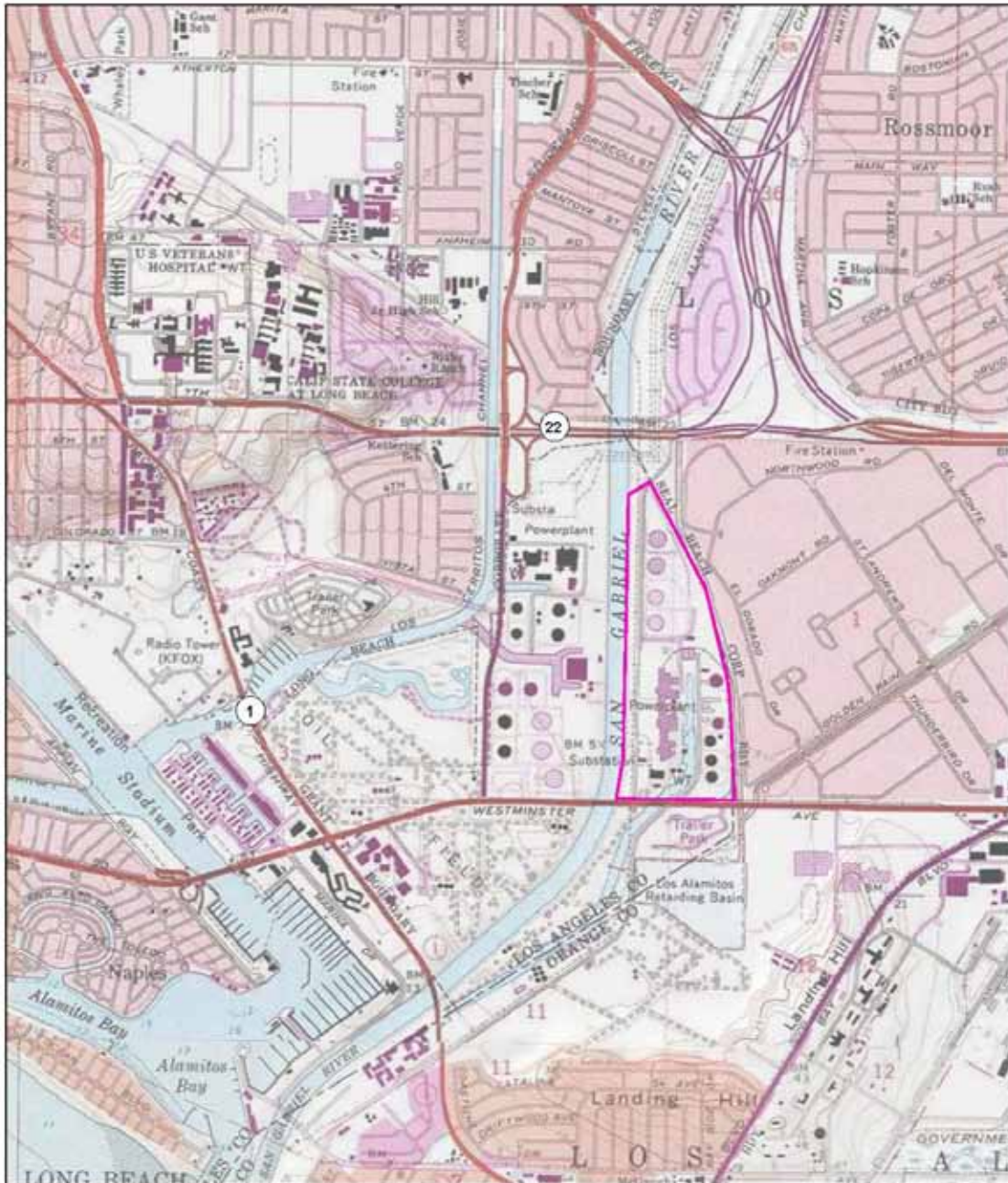
Page 10 of 10

\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

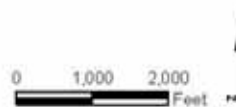
\*Date: February 12, 2014

✓ Continuation    ○ Update



**Legend**  
 Property Boundary

Township 5S, Range 12W, Sections 2,3,11  
 Quad Name: Los Alamitos



**Haynes Generating Station**  
 Alamitos Energy Center  
 Long Beach, California

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**CONTINUATION SHEET**

Page 3 of 10

\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation

☐ Update

**\*D7. References:**

Los Angeles Department of Water and Power (LADWP). 2010. *Haynes Generating Station Units 5 & 6 Repowering Project Draft Environmental Impact Report (Sch#2005061111)*. With technical assistance from AECOM. January 2010.

Tetra Tech, Inc. 2008. *California's Coastal Power Plants: Alternative Cooling System Analysis*. Prepared for California Ocean Protection Council, Oakland, CA. February 2008.

## CONTINUATION SHEET

Primary #

HRI#

Trinomial

Page 4 of 10

\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation

☐ Update



Haynes Generating Station, view looking southeast from San Gabriel River Bike Trail, February 2014. Units 11-16 are in the center of the photo; the older units are visible at the far right.



Haynes Generating Station, view looking northeast from San Gabriel River Bike Trail, February 2014.



\*Recorded by: Lori D. Price      \*Date: February 12, 2014      ☒ Continuation    ☐ Update



Haynes Generating Station, view looking southeast from Alamitos Generating Station, September 2011. Units 1-6.



Units 1 and 2, view looking northeast. February 2014.

## CONTINUATION SHEET

Primary #

HRI#

Trinomial

Page 6 of 10

\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation ☐ Update



Units 3 and 4, view looking east. February 2014.



Units 5 and 6, view looking east. February 2014. Unit 4 is visible at far right.



\*Recorded by: Lori D. Price      \*Date: February 12, 2014      ☒ Continuation    ☐ Update



Units 8-10, view looking southeast, February 2014. Units 3 and 4 are visible at far right.



Units 11 and 12, view looking northeast. February 2014.

## CONTINUATION SHEET

Primary #

HRI#

Trinomial

Page 8 of 10

\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

\*Date: February 12, 2014

☒ Continuation ☐ Update



Units 11 and 12 on the right, and Units 13 and 14 on the left, view looking northeast. February 2014.



Units 15 and 16, view looking northeast. February 2014.



\*Recorded by: Lori D. Price

\*Date: February 12, 2014

Continuation    Update



**Legend**  
Property Boundary

Township 5S, Range 12W, Sections 2,3,11  
Quad Name: Los Alamitos

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Feet

**Haynes Generating Station**  
Alamitos Energy Center  
Long Beach, California

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State of California — The Resources Agency  
DEPARTMENT OF PARKS AND RECREATION  
**CONTINUATION SHEET**

Primary #  
HRI#  
Trinomial

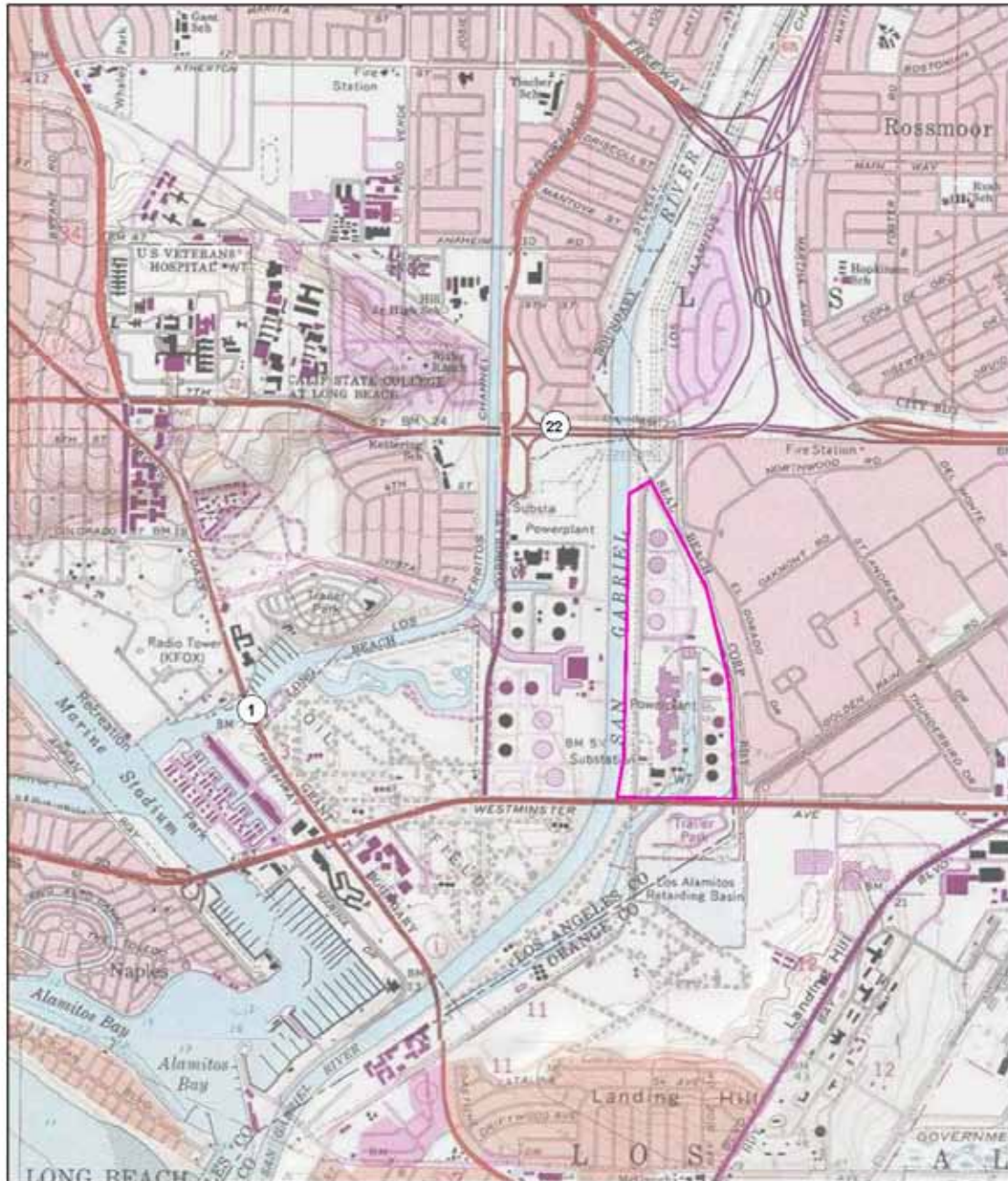
Page 10 of 10

\*Resource Name or #: Haynes Generating Station

\*Recorded by: Lori D. Price

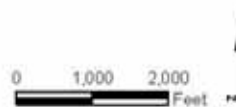
\*Date: February 12, 2014

☑ Continuation    ☐ Update



**Legend**  
 Property Boundary

Township 5S, Range 12W, Sections 2,3,11  
 Quad Name: Los Alamitos



**Haynes Generating Station**  
 Alamitos Energy Center  
 Long Beach, California

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# Hazardous Materials Management (48–51)

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## BACKGROUND

The project would store and use various hazardous materials as described in the AFC in Tables 5.5-1, -2, and -3. The AFC also contains a protocol for conducting an Off-site Consequence Analysis (OCA) in Appendix 5.5A. Staff needs additional information and formatting in order to be able to complete its assessment of the potential for on-site and off-site consequences.

## DATA REQUEST

48. Please conduct the OCA described in Appendix 5.5A and provide the input variables, the model used, and the results to staff.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

## DATA REQUEST

49. Please provide the most current Hazardous Materials Business Plan for the existing AGS.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

## DATA REQUEST

50. Please provide the most current Spill Prevention Control and Countermeasures Plan for the existing AGS.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant objects to this Data Request.

## DATA REQUEST

51. Please provide a description of all ammonia leak detectors and their proposed locations for the proposed project.

**Response:** Two to three ammonia sensors will be placed around the ammonia storage tank to detect leaks. The exact number and location of the sensors will be determined during the final design of the AEC.

# Public Health (52–58)

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## BACKGROUND: SENSITIVE RECEPTORS

The Application for Certification (AFC) and appendices to the AFC provided some information on how the applicant conducted their health risk assessment. The potential impacts associated with toxic air emissions from the proposed power plant were addressed in a health risk assessment (Section 5.9 Public Health, Appendix 5.9, and Appendix 5.9A Environmental Data Resources (EDR) Offsite Receptor Report). This health risk assessment was prepared using guidelines developed by Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (ARB), as implemented in the latest version of the HARP (Hotspots Analysis and Reporting Program) model. Appendix 5.9A Sensitive Receptor Report and Appendix 5.9B Supplemental Sensitive Receptors within 6 miles listed all the sensitive receptors including day care centers, nursing homes, schools, hospitals and colleges within 6 miles of the proposed power plant. However, staff was unable to identify these sensitive receptors from discrete grid receptors when using either American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) or HARP. Staff needs the AERMOD and HARP files, which contain the information on grid identification numbers (or receptor numbers) and locations of both sensitive receptors and residential receptors to review and verify the applicant's health risk assessment.

## DATA REQUEST

52. Please provide the input files of data (i.e. the "\*.ROU" files) for AERMOD and HARP which contain the information of sensitive receptors and residential receptors, including grid identification numbers (i.e. HARP receptor numbers), type (ex: day care centers, nursing homes, schools) and corresponding locations (UTMs), so that staff can differentiate them from all other grid receptors.

**Response:** Five compact discs containing construction and operations AERMOD (input and graphical output files) and HARP (emission, site parameters, on-ramp, receptor, and XOQ files) modeling files are provided under separate cover. Attachment DR-52 presents a table identifying the sensitive receptors by type, location, and receptor number.

## DATA REQUEST

53. Please provide all other related files to enable staff to replicate the health risk assessment.

**Response:** Please see response to Data Request #52.

## DATA REQUEST

54. Please specify the HARP receptor number and UTMs of the following sensitive receptors:
- The Rosie the Riveter Charter High School
  - The closest sensitive receptor outside the AEC property—Kettering Elementary School
  - The nearest residence
  - The nearest business.

**Response:** The Rosie the Riveter Charter High School receptor numbers are 19,395 and 16,664 for the operational and construction health risk assessments, respectively. The school is located at Universal

Transverse Mercator (UTM) coordinates 397,910.93 meters (x) and 3,737,213.62 meters (y). The Kettering Elementary School receptor numbers are 17,750 and 15,019 for the operational and construction health risk assessments, respectively. The school is located at UTM coordinates 397,549.58 meters (x) and 3,737,505.66 meters (y).

Due to the nature of the health risk assessment using HARP and the need to identify the point of maximum impact (PMI), maximally exposed individual resident (MEIR), and maximally exposed individual worker (MEIW), the top-impacted receptors were stepped through one-by-one and evaluated by land use type using satellite imagery and land use maps. The top-impacted receptor was considered a worker receptor regardless of land use. Satellite imagery was used to categorize receptors as residential receptors. The nearest residential area is approximately 0.15 kilometer west of the facility.

## BACKGROUND: CONSTRUCTION HEALTH RISK ASSESSMENT (HRA)

In the AFC, a screening construction health risk assessment for diesel particulate matter (DPM) was conducted to assess the potential impacts associated with diesel emissions during the construction and demolition activities at Alamitos Energy Center (AEP). The results of the analysis are contained in Section 5.9.3.3 and Appendix 5.9C. This screening health risk assessment was conducted based on the annual average emissions of DPM. The incremental increases in cancer risk were estimated by multiplying the predicted annual DPM concentration by the Office of Environmental Health Hazard Assessment (OEHH) inhalation unit risk factor of  $3.0\text{E-}04 \text{ } (\mu\text{g}/\text{m}^3)^{-1}$  and adjusting the predicted results to a 9-year exposure duration to more closely reflect the exposure duration associated with construction activities (OEHH, 2003, p. 8-3).

Even though the construction and demolition activities at the project site are anticipated to last 139 months, the construction HRA was performed for a shorter exposure duration. This is because the HARP model limits short-term, continuous residential exposure to 9 years. Therefore, the average annual emissions, calculated as previously described, were assumed to occur each year for 9 years of continuous exposure.

An adjusted 9-year, 5-days-per-week, 10-hours-per-day exposure duration was used for commercial/industrial receptors, resulting in a 3.36 ground level concentration factor.

Based on the analysis, the incremental increases in cancer risk at the Point of Maximum Impact (PMI), Maximally Exposed Individual Resident (MEIR), Maximally Exposed Individual Worker (MEIW), and maximum exposed sensitive receptor, associated with construction and demolition activities are predicted to be 14.7, 3.3, 8.9, and 5.7 in 1 million, respectively. The chronic health indices at the PMI, MEIR, MEIW, and maximum exposed sensitive receptor are predicted to be 0.037, 0.0084, 0.13, and 0.014, respectively. The applicant stated that "... Although the PMI excess cancer risk is greater than 10 in 1 million, the elevated risk only occurs in areas where public access is controlled [i.e., within the AES Southland Development, LLC (AES-SLD)-controlled fence line] or in areas that are not considered residential, commercial, or habitable. Additionally, potential exposure would be sporadic and limited in length. The predicted incremental increase in cancer risk at the MEIR, MEIW, and maximum exposed sensitive receptor, and chronic health index at the PMI, MEIR, MEIW, and maximum exposed sensitive receptor, are less than the Proposition 65 and CEQA significance thresholds of 10 in 1 million and 1.0, respectively. Therefore, impacts associated with the finite construction and demolition activities are less than significant."

## DATA REQUEST

55. For residential exposures, please provide a map containing health risk isopleths, including an isopleth showing the risk value of 10 in a million.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

## DATA REQUEST

56. For worker exposures, please provide a reevaluation of the risks at the MEIW, the Rosie the Riveter Charter High School and other commercial/industrial receptors with an exposure duration of 12 years instead of 9 years to more closely reflect the exposure duration associated with construction activities of 139 months (11.5 years). Please also provide a map containing health risk isopleths, especially the isopleth with the risk value of 10 in a million.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

## BACKGROUND: AGE SENSITIVITY FACTORS (ASF) IN HRA

Effective August 2012, all air toxics HRAs should use the new OEHHA's Air Toxics Hot Spots Program Risk Assessment Guideline (OEHHA 2012) which recommends breaking down exposure/risk by age group using age-dependent adjustment factors (i.e. Age Sensitivity Factors) to calculate the cancer risk (OEHHA, 2012, page 1-6).<sup>8</sup> This new methodology is used to reflect the fact that exposure varies among different age groups and exposure occurring in early life has a higher weighting factor.

## DATA REQUEST

57. To comply with the new age weighted OEHHA 2012 guidelines, please redo the HRA for cancer and provide the analysis and results to staff.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

## BACKGROUND: CANCER BURDEN:

If a predicted Derived Adjusted cancer risk is greater than 1 in 1 million, the cancer burden is calculated for each census block receptor. Cancer burden is defined as the estimated increase in the occurrence of cancer cases in a population resulting from exposure to carcinogenic air contaminants. The population data for census block receptors within 6 miles of the AEC site are based on the population information within the HARP database.

Based on the SCAQMD Air Quality Significance Thresholds<sup>9</sup> a cancer burden greater than 0.5 excess cancer cases in areas with an incremental increase greater than 1 in 1 million individuals is considered significant.

The incremental increase in cancer risk at the PMI associated with the AEC is predicted to be 3.4 in 1 million. The incremental increase in cancer risk at the MEIR is predicted to be 3.1 in 1 million. However, there is no calculation of cancer burden.

<sup>8</sup> [http://oehha.ca.gov/air/hot\\_spots/pdf/2012tsd/Chapter1\\_2012.pdf](http://oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter1_2012.pdf)

<sup>9</sup> <http://www.agmd.gov/cega/handbook/signthres.pdf>

## DATA REQUEST

58. Please calculate the cancer burden after re-conducting the cancer HRA by complying with the new OEHHA 2012 guideline as requested in data request #57, and provide the analysis and results to staff.

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.

## CEC STAFF CITED REFERENCES

OEHHA {Office of Environmental Health Hazard Assessment}. 2012, Air Toxics Hot Spots Program Risk Assessment Guidelines. Technical Support Document for Exposure Assessment and Stochastic Analysis, August 2012.

**Attachment DR-52**  
**Sensitive Receptors by Type, Location, and**  
**Receptor Number**

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**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
KETTERING ELEMENTARY	School	397,549.58	3,737,505.66	17,750	15,019
JAVADINOVIN FAMILY DAY CARE	Daycare	397,207.06	3,737,621.29	17,751	15,020
EDGAR R PALAREA MD INC	Hospital	397,388.84	3,737,893.00	17,752	15,021
LEISURE WORLD HEALTH CARE CENTER	Hospital	399,604.94	3,736,580.61	17,753	15,022
MARY B SHERMAN MD	Hospital	399,604.94	3,736,580.61	17,753	15,022
THOMAS DENMARK MD	Hospital	399,604.94	3,736,580.61	17,753	15,022
BONNI FRANKEL MD	Hospital	399,604.94	3,736,580.61	17,753	15,022
CALIFORNIA DERMATOLOGY CTR A MED CORP	Hospital	399,604.94	3,736,580.61	17,753	15,022
PRAKASH NARAIN MD	Hospital	399,604.94	3,736,580.61	17,753	15,022
HOWARD CAPLAN MD	Hospital	399,604.94	3,736,580.61	17,753	15,022
RUDOLF HAIDER MD	Hospital	399,604.94	3,736,580.61	17,753	15,022
HILL MIDDLE	School	397,583.35	3,738,407.15	17,761	15,030
JACOBS FAMILY CHILD CARE	Daycare	398,290.35	3,738,574.31	17,762	15,031
FRANCIS HOPKINSON ELEMENTARY	School	399,263.24	3,738,340.43	17,763	15,032
KAKKIS MEDICAL GROUP INC	Hospital	397,353.54	3,735,554.40	17,764	15,033
LENZINI, JEANETTE	Daycare	399,172.96	3,738,439.05	17,765	15,034
WELLS, ARLIN FAMILY DAY CARE	Daycare	398,023.98	3,738,691.62	17,766	15,035
BONILLA FAMILY CHILD CARE	Daycare	398,166.21	3,738,708.17	17,767	15,036
HENRIQUEZ FAMILY DAY CARE	Daycare	398,056.32	3,738,750.57	17,768	15,037
COUNTRY VILLA SEAL BEACH HEALTHCARE CENTER	Hospital	400,073.73	3,737,614.30	17,769	15,038
BEVERLY HOME HLTH CARE AGENCY	Hospital	400,073.73	3,737,614.30	17,769	15,038
AG SEAL BEACH DBA	Hospital	400,073.73	3,737,614.30	17,769	15,038
COUNTRY VILLA SEAL BEACH HEALTHCARE CENTER	Nursing	400,073.73	3,737,614.30	17,769	15,038
SEASIDE CHILD DEVELOPMENT CENTER	Daycare	396,494.97	3,737,811.96	17,773	15,042
SEASIDE INFANT CENTER	Daycare	396,494.97	3,737,811.96	17,773	15,042
VA HOSP	Hospital	396,494.97	3,737,811.96	17,773	15,042
VA LONG BEACH HCS	Hospital	396,494.97	3,737,811.96	17,773	15,042
LONG BEACH VA HOSPITAL DONOR CENTER	Hospital	396,494.97	3,737,811.96	17,773	15,042
PAUL S GREENBERG MD A MEDICAL CORP	Hospital	400,245.05	3,737,378.79	17,778	15,047
PACIFIC COAST HOME HEALTH	Hospital	400,245.05	3,737,378.79	17,778	15,047
PACIFIC COAST HM HLTH-DPT LAKEWOOD REG	Hospital	400,245.05	3,737,378.79	17,778	15,047
DRS AHEARN RIGHTMIER SANDELL & SLEEP	Hospital	400,245.05	3,737,378.79	17,778	15,047
AGENCY REHABILITATION SERVICE	Hospital	400,048.08	3,736,012.05	17,782	15,051
BEACH PHYSICAL THERAPY INC	Hospital	400,048.08	3,736,012.05	17,782	15,051
MEYERS FAMILY DAY CARE	Daycare	398,458.48	3,739,116.94	17,784	15,053
TINCHER ELEMENTARY	School	398,112.42	3,739,133.63	17,785	15,054
BEHNING FAMILY CHILD CARE	Daycare	398,270.56	3,739,215.65	17,786	15,055
WACKERMAN, BARBARA & CHARLES	Daycare	398,768.08	3,734,705.06	17,787	15,056
ARTHUR J LUNSK MD INC	Hospital	396,325.16	3,735,608.01	17,788	15,057
PROHEALTH PARTNERS, A MEDICAL GRP INC	Hospital	396,325.16	3,735,608.01	17,788	15,057
MULLIKIN MEDICAL CENTER-NAPLES	Hospital	396,325.16	3,735,608.01	17,788	15,057
TERRY FAMILY CHILD CARE	Daycare	398,555.98	3,739,340.70	17,791	15,060
JEFFERS FAMILY CHILD CARE	Daycare	398,414.54	3,739,397.37	17,792	15,061
IGOR PERSIDSKY	Hospital	395,850.94	3,737,030.27	17,793	15,062
STEVEN E GAMMER MD	Hospital	397,612.28	3,734,599.69	17,794	15,063
WANG FAMILY CHILD CARE	Daycare	398,780.72	3,739,484.79	17,795	15,064
J. H. MCGAUGH ELEMENTARY	School	398,709.22	3,734,419.55	17,796	15,065
ZAVAHIR FAMILY CHILD CARE	Daycare	398,636.73	3,739,540.54	17,797	15,066
BAFFERT FAMILY DAY CARE	Daycare	395,719.40	3,736,253.09	17,798	15,067
MONTESSORI CHILDREN'S HOUSE -1	Daycare	397,429.13	3,739,516.36	17,799	15,068
MONTESSORI CHILDREN'S HOUSE -1	Daycare	397,429.13	3,739,516.36	17,799	15,068
LI'L COTTONWOOD PLAYGROUP	Daycare	400,354.03	3,738,703.77	17,801	15,070
SEAL BEACH FAMILY MEDICAL GROUP	Hospital	398,075.28	3,734,229.62	17,802	15,071
DIABLO STADIUM	Arena	396,028.24	3,738,519.10	17,803	15,072
LOS ALAMITOS CHILD DEVELOPMENT CENTER-WEAVER SITE	Daycare	399,471.43	3,739,440.71	17,804	15,073
JACK L. WEAVER ELEMENTARY	School	399,471.43	3,739,440.71	17,804	15,073
SEAL BEACH PLAYGROUP, INC	Daycare	397,138.76	3,734,460.13	17,806	15,075
EGGERTSEN FAMILY DAY CARE	Daycare	398,489.05	3,739,725.36	17,807	15,076

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
EXCEPTIONAL HOME HEALTH CARE OF	Hospital	397,430.19	3,739,615.58	17,808	15,077
EXCEPTIONAL HOME HEALTH CARE OF SO CALIF INC	Hospital	397,430.19	3,739,615.58	17,808	15,077
HOSSEINZADEN FAMILY DAY CARE	Daycare	395,892.98	3,738,441.94	17,810	15,079
CORNER DRUG STORE	Hospital	397,756.20	3,734,175.61	17,811	15,080
COOK FAMILY CHILD CARE	Daycare	398,891.19	3,739,737.26	17,812	15,081
SUN N FUN CREATIVE PLAYGROUP, INC.	Daycare	397,553.64	3,734,219.02	17,813	15,082
SAVE ON DRUG #9551	Hospital	400,755.92	3,738,444.33	17,814	15,083
RALPHS PHARMACY STORE 604	Hospital	400,756.14	3,738,465.26	17,815	15,084
GRACE HOME HEALTH CARE	Hospital	397,432.72	3,739,732.55	17,816	15,085
LONG BEACH SPORTS & PHYSICAL THERAPY	Hospital	397,432.72	3,739,732.55	17,816	15,085
GRACE HOME HEALTH CARE	Hospital	397,432.72	3,739,732.55	17,816	15,085
SUN 'N FUN CREATIVE PLAY GROUP, INC	Daycare	398,025.39	3,734,072.48	17,819	15,088
OCEAN VIEW INTERNAL MEDICINE INC	Hospital	395,598.34	3,735,856.04	17,820	15,089
REDMON FAMILY CHILD CARE	Daycare	398,847.89	3,739,839.18	17,821	15,090
LIONS DISTRICT MD 4/4L2	Hospital	395,407.00	3,737,614.53	17,822	15,091
ABRAHAMS FAMILY DAY CARE	Daycare	396,866.44	3,739,554.13	17,823	15,092
WOOD, MARY FAMILY DAY CARE	Daycare	397,330.35	3,739,765.04	17,824	15,093
SEAL BEACH MEDICAL GROUP	Hospital	397,605.39	3,734,074.44	17,825	15,094
WILLIAMS FAMILY DAY CARE	Daycare	396,836.11	3,739,563.65	17,826	15,095
GRAVLEY FAMILY DAY CARE	Daycare	398,936.99	3,739,869.93	17,827	15,096
ELLIOTT, VICKIE FAMILY DAY CARE	Daycare	398,940.82	3,739,873.06	17,828	15,097
WIMALARATNE FAMILY CHILD CARE	Daycare	397,580.59	3,739,921.50	17,829	15,098
ROGERS MIDDLE	School	395,242.80	3,736,869.79	17,830	15,099
SCOTT FAMILY DAY CARE	Daycare	395,246.62	3,736,755.26	17,831	15,100
YMCA GLB LOS ALTOS BRANCH - NAPLES ELEMENTARY	Daycare	395,577.31	3,735,557.48	17,832	15,101
NAPLES ELEMENTARY	School	395,577.31	3,735,557.48	17,832	15,101
GWINN FAMILY DAY CARE	Daycare	395,241.31	3,736,734.07	17,834	15,103
ZIMMERMAN FAMILY CHILD CARE	Daycare	397,501.97	3,739,921.71	17,835	15,104
FULLERTON FAMILY CHILD CARE	Daycare	397,170.04	3,739,835.25	17,836	15,105
LOS ALTOS BRETHREN CHURCH	Daycare	397,793.56	3,740,031.77	17,837	15,106
LOS ALTOS GRACE BRETHREN SCHOO	School	397,793.56	3,740,031.77	17,837	15,106
ISABEL PATTERSON CHILD DEVELOPMENT CENTER	Daycare	396,219.31	3,739,290.06	17,839	15,108
ISABEL PATTERSON CHILD DEVELOPMENT CENTER	Daycare	396,219.31	3,739,290.06	17,839	15,108
ISABEL PATTERSON CDC	Daycare	396,219.31	3,739,290.06	17,839	15,108
CHRIST LUTHERAN INFANT CENTER	Daycare	397,697.06	3,740,021.07	17,842	15,111
CHRIST LUTHERAN PRE-SCHOOL	Daycare	397,697.06	3,740,021.07	17,842	15,111
HARRIMAN JONES MEDICAL GROUP	Hospital	397,594.85	3,733,920.05	17,844	15,113
GANT ELEMENTARY	School	396,384.53	3,739,439.19	17,845	15,114
LOWELL ELEMENTARY	School	395,162.37	3,736,592.21	17,846	15,115
FREGOSO, MARY	Daycare	398,319.36	3,733,794.62	17,847	15,116
LOS ALTOS UNITED CHURCH NURSERY (CONGREGATIONAL)	Daycare	396,025.23	3,739,287.42	17,848	15,117
MONTESORI CHILDRENS HOUSE	School	396,025.23	3,739,287.42	17,848	15,117
W L COWDELL MD	Hospital	395,145.90	3,736,016.74	17,850	15,119
TINSLEY FAMILY DAY CARE	Daycare	396,312.63	3,739,590.89	17,851	15,120
OUR LADY OF REFUGE HOME CARE INC	Hospital	395,913.12	3,739,241.40	17,852	15,121
JOHN P HOEHN MD	Hospital	395,913.12	3,739,241.40	17,852	15,121
GREGORY S RIHACEK MD	Hospital	395,913.12	3,739,241.40	17,852	15,121
DIANA R BRYANT, MD A PROFESSIONAL CORP	Hospital	395,913.12	3,739,241.40	17,852	15,121
MARIA R GALIT FLICKINGER MD	Hospital	395,913.12	3,739,241.40	17,852	15,121
LOIDA P CONSTANTINO MD MEDICAL CLINIC	Hospital	395,913.12	3,739,241.40	17,852	15,121
OIDA P CONSTANTINO MD MEDICAL CLINIC	Hospital	395,913.12	3,739,241.40	17,852	15,121
AMERICAN HEALTHNET LABORATORIES LLC	Hospital	395,913.12	3,739,241.40	17,852	15,121
LESLIE M GONZALEZ MD	Hospital	395,913.12	3,739,241.40	17,852	15,121
LAURINE C MAXELL MD	Hospital	395,913.12	3,739,241.40	17,852	15,121
CHIN MED HEALING CENTER	Hospital	395,913.12	3,739,241.40	17,852	15,121
PROHEALTH PARTNERS A MEDICAL GROUP INC	Hospital	395,913.12	3,739,241.40	17,852	15,121
JOSEPH AU MD	Hospital	395,913.12	3,739,241.40	17,852	15,121
FELIX, DEBBIE FAMILY DAY CARE	Daycare	395,053.15	3,736,350.78	17,865	15,134

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Receptor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
SMALL FAMILY CHILD CARE	Daycare	397,791.96	3,740,237.22	17,866	15,135
LAGOON PLAYGROUP	Daycare	394,972.33	3,736,500.42	17,867	15,136
LOS ALAMITOS CHILD DEVELOPMENT CENTER-LEE SITE	Daycare	399,811.78	3,739,967.23	17,868	15,137
RICHARD HENRY LEE ELEMENTARY	School	399,811.78	3,739,967.23	17,868	15,137
KINDER CARE #1626, BELMONT	Daycare	395,326.69	3,738,618.73	17,870	15,139
KINDER CARE #1626 BELMONT SHORE	Daycare	395,326.69	3,738,618.73	17,870	15,139
KINDER CARE #1626 BELMONT SHORE	Daycare	395,326.69	3,738,618.73	17,870	15,139
KINDER CARE	School	395,326.69	3,738,618.73	17,870	15,139
LONG BEACH MONTESSORI SCHOOL	Daycare	395,725.50	3,739,249.16	17,874	15,143
LONG BEACH MONTESSORI SCHOOL	School	395,725.50	3,739,249.16	17,874	15,143
LINGLE FAMILY DAY CARE	Daycare	396,349.34	3,739,818.45	17,876	15,145
BAYSHORE NURSERY SCHOOL, INC	Daycare	395,242.41	3,735,330.87	17,877	15,146
MARSHALL, PATSY FAMILY DAY CARE	Daycare	396,349.64	3,739,845.71	17,878	15,147
LOS ALAMITOS CHILD DEVELOPMENT CTR-ROSSMOOR SITE	Daycare	400,383.96	3,739,747.55	17,879	15,148
ROSSMOOR ELEMENTARY	School	400,383.96	3,739,747.55	17,879	15,148
MOSKOVITZ FAMILY CHILD CARE	Daycare	397,402.68	3,740,358.39	17,881	15,150
GAUGER-MAHAWNAH MED CORP	Hospital	395,139.26	3,738,644.89	17,882	15,151
ST. PAUL'S LUTHERAN CHURCH & PRESCHOOL	Daycare	397,436.72	3,740,458.20	17,883	15,152
MEMORIAL PEDIATRICS	Hospital	395,095.34	3,738,688.18	17,884	15,153
GRZESIK FAMILY CHILD CARE	Daycare	396,351.71	3,740,036.55	17,885	15,154
ALLSTAR HEALTH CARE SERVICES, INC	Hospital	395,059.92	3,738,696.50	17,886	15,155
MARSHALL FAMILY CHILD CARE	Daycare	396,910.82	3,740,374.16	17,887	15,156
WALL, DEBORAH FAMILY DAY CARE	Daycare	395,773.66	3,739,709.95	17,888	15,157
EDGEWATER PRESCHOOL	Daycare	395,370.95	3,739,300.28	17,889	15,158
UNDERWOOD, EMILY A.	Daycare	399,701.18	3,740,424.28	17,890	15,159
SHELTON FAMILY CHILD CARE	Daycare	394,546.43	3,737,221.88	17,891	15,160
APPLE TREE THERAPEUTIC INCLUSIVE PRESCHOOL	Daycare	395,003.25	3,738,848.69	17,892	15,161
ARTHRITIS ASSOC OF LONG BEACH MED GRP	Hospital	395,850.20	3,739,867.01	17,893	15,162
BEL VISTA CONVALESCENT HOSPITAL	Hospital	394,854.98	3,738,629.95	17,894	15,163
BEL VISTA CONVALESCENT HOSPITAL	Hospital	394,854.98	3,738,629.95	17,894	15,163
BEL VISTA CONVALESCENT HOSPITAL	Hospital	394,854.98	3,738,629.95	17,894	15,163
BEL VISTA CONVALESCENT HOSPITAL	Nursing	394,854.98	3,738,629.95	17,894	15,163
JAMES C REITZ MED INC	Hospital	394,456.07	3,737,424.57	17,898	15,167
DOUGLASS, MARIA & JOHN FAMILY DAY CARE	Daycare	396,826.35	3,740,536.75	17,899	15,168
SAV ON DRUGS #9412	Hospital	395,837.64	3,739,994.28	17,900	15,169
PALO VERDE CHRISTIAN CHURCH NURSERY SCHOOL	Daycare	397,441.45	3,740,779.93	17,901	15,170
CLARIN FAMILY CHILD CARE	Daycare	394,364.75	3,737,426.22	17,902	15,171
PRISK ELEMENTARY	School	396,737.12	3,740,611.27	17,903	15,172
STANFORD MIDDLE	School	396,448.07	3,740,501.23	17,904	15,173
PEREZ FAMILY CHILD CARE	Daycare	394,294.38	3,737,143.16	17,905	15,174
DIMONDALE ADOLESCENT CARE FACILITY #4	Daycare	394,765.54	3,738,915.04	17,906	15,175
EMERSON PARKSIDE ACADEMY CHARTER	School	397,690.51	3,740,946.54	17,907	15,176
ST HEDWIG ELEMENTARY SCHOOL	School	400,899.31	3,740,036.71	17,908	15,177
BROOKS COLLEGE	College	394,790.29	3,738,974.70	17,909	15,178
EVANS FAMILY DAY CARE	Daycare	395,267.19	3,739,668.90	17,910	15,179
ST JOSEPH ELEMENTARY SCHOOL	School	397,216.86	3,740,883.79	17,911	15,180
GOLDSMITH, DARLENE DIANE	Daycare	400,888.06	3,740,175.05	17,912	15,181
WILSON HIGH	School	394,306.45	3,738,232.03	17,913	15,182
MEDINA FAMILY CHILD CARE	Daycare	394,199.50	3,737,853.00	17,914	15,183
CARDENAS FAMILY CHILD CARE	Daycare	394,459.92	3,738,690.43	17,915	15,184
LOS ALTOS UNITED METHODIST PRESCHOOL	Daycare	396,723.66	3,740,890.71	17,916	15,185
SANCHEZ FAMILY CHILD CARE	Daycare	394,201.91	3,738,070.19	17,917	15,186
KING FAMILY CHILD CARE	Daycare	394,308.67	3,738,546.88	17,918	15,187
BIXBY ELEMENTARY	School	395,286.09	3,740,118.90	17,919	15,188
NORRIS FAMILY DAY CARE	Daycare	396,513.89	3,740,957.34	17,920	15,189
FREMONT ELEMENTARY	School	393,900.53	3,737,431.68	17,921	15,190
HEWITT, ROSA FAMILY DAY CARE	Daycare	395,676.13	3,740,532.47	17,922	15,191
MURILLO FAMILY CHILD CARE	Daycare	395,654.73	3,740,546.65	17,923	15,192

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
CLINISHARE HOME HEALTH AGENCY	Hospital	394,463.42	3,739,235.77	17,924	15,193
STEVENSON FAMILY CHILD CARE	Daycare	397,698.97	3,741,380.42	17,925	15,194
BELMONT HEIGHTS UNITED METHODIST CHURCH NURSERY S	Daycare	393,821.93	3,737,093.54	17,926	15,195
FOLLETT DAY CARE	Daycare	397,620.84	3,741,425.32	17,927	15,196
BELMONT SHORE CHILDREN'S CENTER	Daycare	393,859.67	3,736,038.56	17,928	15,197
BELMONT SHORE CHILDREN'S CENTE	School	393,859.67	3,736,038.56	17,928	15,197
CENTERS FOR FAMILY MEDICINE-A MEDICAL CORP	Hospital	400,642.54	3,740,830.98	17,930	15,199
SHADE FAMILY CHILD CARE	Daycare	393,851.86	3,736,020.89	17,931	15,200
ALAMITOS-BELMONT REHABILITATION HOSP	Hospital	393,773.73	3,737,435.95	17,932	15,201
ALAMITOS BELMONT REHAB HOSPITA	Hospital	393,773.73	3,737,435.95	17,932	15,201
ALAMITOS BELMONT REHAB HOSPITA	Nursing	393,773.73	3,737,435.95	17,932	15,201
OUR LADY OF REFUGE SCHOOL	School	395,212.02	3,740,303.28	17,935	15,204
MILLIKAN SENIOR HIGH	School	397,098.86	3,741,347.57	17,936	15,205
NAZARENE PRE SCHOOL	Daycare	395,252.09	3,740,372.27	17,937	15,206
NAZARENE CHRN SCH OF LONG BCH	School	395,252.09	3,740,372.27	17,937	15,206
LONG BEACH YOUTH HOME	Daycare	394,072.37	3,738,741.02	17,939	15,208
EMPRESS REHABILITATION CENTER	Hospital	393,904.99	3,738,289.12	17,940	15,209
EMPRESS REHABILITATION CENTER	Hospital	393,904.99	3,738,289.12	17,940	15,209
EMPRESS REHABILITATION CENTER	Nursing	393,904.99	3,738,289.12	17,940	15,209
SHORELINE HEALTHCARE CENTER	Hospital	394,012.91	3,738,641.17	17,943	15,212
SHORELINE HEALTHCARE CENTER	Hospital	394,012.91	3,738,641.17	17,943	15,212
SHORELINE HEALTHCARE CENTER	Nursing	394,012.91	3,738,641.17	17,943	15,212
ZEPEDA FAMILY CHILD CARE	Daycare	393,903.34	3,738,369.05	17,946	15,215
BRYANT ELEMENTARY	School	394,036.86	3,738,741.74	17,947	15,216
PIONEER MEDICAL GROUP LONG BEACH	Hospital	395,033.92	3,740,251.66	17,948	15,217
FRIENDLY HILLS-LONG BEACH	Hospital	395,033.92	3,740,251.66	17,948	15,217
ACE HOME HEALTH CARE INC	Hospital	400,851.76	3,740,830.39	17,950	15,219
MA'AE FAMILY CHILD CARE	Daycare	394,062.59	3,738,888.89	17,951	15,220
AKPAMGBO FAMILY CHILD CARE	Daycare	395,516.98	3,740,705.41	17,952	15,221
BETHANY PRE-SCHOOL	Daycare	395,044.71	3,740,310.19	17,953	15,222
BETHANY SCHOOL	School	395,044.71	3,740,310.19	17,953	15,222
VAN DUREN FAMILY DAY CAR	Daycare	394,547.67	3,739,744.04	17,955	15,224
FORNEY FAMILY CHILD CARE	Daycare	394,915.19	3,740,180.05	17,956	15,225
EAST LONG BEACH URGENT CARE CENTER	Hospital	394,290.00	3,739,380.37	17,957	15,226
OAK MIDDLE	School	400,423.75	3,741,128.71	17,958	15,227
TALBERT MEDICAL GROUP-PLAZA	Hospital	397,456.44	3,741,583.37	17,959	15,228
BROWN, KATHRYN FAMILY DAY CARE	Daycare	394,712.96	3,740,011.39	17,960	15,229
PLANCARTE DE ROBLES FAMILY CHILD CARE	Daycare	394,029.48	3,738,991.05	17,961	15,230
RIFFEL, NORMA FAMILY DAY CARE	Daycare	394,771.25	3,740,122.66	17,962	15,231
GRIFFIN FAMILY CHILD CARE	Daycare	393,939.62	3,738,893.43	17,963	15,232
TUCKER ELEMENTARY	School	394,824.46	3,740,232.41	17,964	15,233
WOMANKIND	Hospital	397,636.29	3,741,683.18	17,965	15,234
SPRING FAMILY MEDICAL GROUP	Hospital	397,636.29	3,741,683.18	17,965	15,234
TANAKA FAMILY CHILD CARE	Daycare	398,440.65	3,741,728.78	17,967	15,236
JOHNSON & JOHNSON-HERNANDEZ FAMILY CHILD CARE	Daycare	393,757.17	3,738,455.34	17,968	15,237
JEFFERSON LEADERSHIP ACADEMIES	School	393,599.41	3,737,957.34	17,969	15,238
KID WORKS CHILDRENS CENTER	Daycare	393,504.73	3,736,634.35	17,970	15,239
ROSSMOOR-LOS ALAMITOS MEDICAL GROUP	Hospital	401,162.40	3,740,827.16	17,971	15,240
GRIFFIN FAMYI CHILD CARE	Daycare	393,913.24	3,739,030.70	17,972	15,241
JOHNSON, JANN	Daycare	401,666.74	3,740,426.31	17,973	15,242
CARLOS ARGUEDAS MD	Hospital	397,214.13	3,741,688.68	17,974	15,243
THOMAS L PERCER MD	Hospital	397,214.13	3,741,688.68	17,974	15,243
PATRICIA A MACIOG	Hospital	397,214.13	3,741,688.68	17,974	15,243
CARLOS ARGUEDAS MD	Hospital	397,214.13	3,741,688.68	17,974	15,243
US MEDICAL GROUP INC	Hospital	397,214.13	3,741,688.68	17,974	15,243
NANCY F GODFREY MD	Hospital	397,214.13	3,741,688.68	17,974	15,243
HEALTH CARE PARTNERS	Hospital	397,214.13	3,741,688.68	17,974	15,243
JOHN R PROSSER MD INC	Hospital	397,214.13	3,741,688.68	17,974	15,243

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
LEYVA FAMILY CHILD CARE	Daycare	395,506.86	3,740,938.84	17,982	15,251
HELEN MAHONEY MD	Hospital	401,232.12	3,740,825.81	17,983	15,252
MILLENIUM SURGERY CENTER	Hospital	401,232.12	3,740,825.81	17,983	15,252
SUSAN E SKLAR MD INC	Hospital	401,232.12	3,740,825.81	17,983	15,252
PATIENT PREFERRED DERMATOLOGY MEDICAL	Hospital	401,232.12	3,740,825.81	17,983	15,252
WEST COAST SURGERY CENTER	Hospital	401,232.12	3,740,825.81	17,983	15,252
ABC PEDIATRICS MEDICAL CENTER	Hospital	401,232.12	3,740,825.81	17,983	15,252
PREFERRED SURGICAL CENTER	Hospital	401,232.12	3,740,825.81	17,983	15,252
CASA YOUTH SHELTER	Daycare	401,025.73	3,740,975.99	17,990	15,259
MARLORA POST ACUTE REHAB HOSP	Hospital	393,721.22	3,738,643.78	17,991	15,260
MARLORA POST ACUTE REHABILIT HOSPITAL	Hospital	393,721.22	3,738,643.78	17,991	15,260
MARLORA POST ACUTE REHAB HOSP	Nursing	393,721.22	3,738,643.78	17,991	15,260
YANO FAMILY CHILD CARE	Daycare	398,364.38	3,741,829.44	17,994	15,263
LOS ALAMITOS MEDICAL CENTER LABORATORY	Hospital	401,223.46	3,740,846.18	17,995	15,264
LOS ALAMITOS MEDICAL CENTER	Hospital	401,223.46	3,740,846.18	17,995	15,264
LOS ALAMITOS MEDICAL CENTER D/P SNF	Hospital	401,223.46	3,740,846.18	17,995	15,264
SAV ON PHARMACY #6154	Hospital	397,183.88	3,741,706.12	17,998	15,267
COAST UROLOGICAL MEDICAL GROUP INC	Hospital	401,252.62	3,740,845.88	17,999	15,268
JACQUELYN VANDER WALL MD INC	Hospital	401,252.62	3,740,845.88	17,999	15,268
LOS ALAMITOS OBG GYN MEDICAL GROUP	Hospital	401,252.62	3,740,845.88	17,999	15,268
CHARLES M MAPLE, DO	Hospital	401,252.62	3,740,845.88	17,999	15,268
CECILIA CHU MD INC	Hospital	401,252.62	3,740,845.88	17,999	15,268
MARCY L ZWELLING-AAMOT MD	Hospital	401,252.62	3,740,845.88	17,999	15,268
LOS ALAMITOS CARDIOVASCULAR	Hospital	401,252.62	3,740,845.88	17,999	15,268
DIALYSIS MEDICAL GROUP	Hospital	401,285.37	3,740,824.94	18,006	15,275
LOS ALAMITOS HEMODIALYSIS CENTER	Hospital	401,285.37	3,740,824.94	18,006	15,275
LOS ALAMITOS HEMODIALYSIS CENTER	Hospital	401,285.37	3,740,824.94	18,006	15,275
DIALYSIS MEDICAL GROUP	Hospital	401,285.37	3,740,824.94	18,006	15,275
MAHER A A AZER MD INC	Hospital	401,285.37	3,740,824.94	18,006	15,275
MONTESSORI GREENHOUSE SCHOOL	Daycare	401,595.88	3,740,563.68	18,011	15,280
MONTESSORI GREENHOUSE	School	401,595.88	3,740,563.68	18,011	15,280
LABORATORY CORPORATION OF AMERICA	Hospital	401,287.91	3,740,824.91	18,013	15,282
LABORATORY CORPORATION OF AMERICA	Hospital	401,287.91	3,740,824.91	18,013	15,282
PATRICIA A MACIOG MD	Hospital	395,854.72	3,741,208.93	18,015	15,284
BONDOC TERESA ROZON	Hospital	395,854.72	3,741,208.93	18,015	15,284
SAWSAN F SELEM MD	Hospital	395,854.72	3,741,208.93	18,015	15,284
REAGAN STREET SURGERY CENTER	Hospital	401,028.80	3,741,027.31	18,018	15,287
REAGAN STREET SURGERY CENTER	Hospital	401,028.80	3,741,027.31	18,018	15,287
SAV-ON EXPRESS #9505	Hospital	394,232.88	3,739,718.68	18,020	15,289
CAMPBELL FAMILY CHILD CARE	Daycare	393,386.24	3,736,816.13	18,021	15,290
PAIGNE FAMILY MEDICAL CLINIC	Hospital	393,680.64	3,738,644.23	18,022	15,291
DARRYL R BROWN MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
MARK M CHUNG MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
JAMES Y GER MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
M H MAZNAVI MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
LAWRENCE G WALDROP MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
HAROLD M LIN MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
NICOLAS A DIKIO MD	Hospital	401,283.05	3,740,845.88	18,023	15,292
ASSOCIATES IN UROLOGY	Hospital	401,283.05	3,740,845.88	18,023	15,292
DARRYL R BROWN MD INC	Hospital	401,283.05	3,740,845.88	18,023	15,292
PACIFIC SHORES MEDICAL GROUP	Hospital	401,283.05	3,740,845.88	18,023	15,292
CARDIOVASCULAR CARE INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
CARDIOLOGY CARE INC A MEDICAL CORP	Hospital	401,302.07	3,740,845.69	18,033	15,302
ROBERT A MINOW MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
BARRY SAMSAMY MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
ROBERT MELIKIAN MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
SOUTHERN CALIFORNIA UROLOGY, INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
MIR M MADANI MD	Hospital	401,302.07	3,740,845.69	18,033	15,302

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
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Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
MICHAEL P TABIBIAN MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
TEJANI MD INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
ALAMITOS INF & GYN MED	Hospital	401,302.07	3,740,845.69	18,033	15,302
ASSOCIATES IN INTERNAL MDCN	Hospital	401,302.07	3,740,845.69	18,033	15,302
LOS ALAMITOS INTERNAL MEDICAL GRP INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
ROBERT G PUGACH MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
PROHEALTH PARTNERS, A MEDICAL GRP INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
MORRIS SILVER MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
PROHEALTH PARTNERS, A MED GRP, INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
ALAMITOS DERMATOLOGICAL MEDICAL	Hospital	401,302.07	3,740,845.69	18,033	15,302
JOHN P COLE MD	Hospital	401,302.07	3,740,845.69	18,033	15,302
WATSON A DE SA MD INC	Hospital	401,302.07	3,740,845.69	18,033	15,302
PHASES; AN EARLY LEARNING COMPREHENSIVE	Daycare	393,392.04	3,737,448.77	18,052	15,321
SARAH SANDELL MD FACP & SUSAN SLEEP MD	Hospital	401,144.94	3,740,977.60	18,053	15,322
GUEVARA FAMILY CHILD CARE	Daycare	393,748.11	3,738,894.93	18,054	15,323
CHIROPRACTIC & PHYSICAL THERAPY REHAB	Hospital	393,430.69	3,737,842.84	18,055	15,324
LOS ALAMITOS SURGERY CENTER	Hospital	401,145.13	3,740,996.30	18,056	15,325
LOS ALAMITOS SURGERY CENTER	Hospital	401,145.13	3,740,996.30	18,056	15,325
SIAMAK ROUZROCH MD	Hospital	393,913.49	3,739,281.51	18,058	15,327
BIO-DIAGNOSTICS LABORATORIES	Hospital	393,913.49	3,739,281.51	18,058	15,327
JULIE ANN SHERMAN DO	Hospital	393,913.49	3,739,281.51	18,058	15,327
SOPHIA ANH TRAN MD	Hospital	393,913.49	3,739,281.51	18,058	15,327
MA-TERESA GALARPE-PASTOR MD INC	Hospital	393,913.49	3,739,281.51	18,058	15,327
ALAMITOS WEST HEALTHCARE CENTER	Hospital	401,395.67	3,740,822.84	18,063	15,332
ALAMITOS WEST CONVALESCENT HOSPITAL	Hospital	401,395.67	3,740,822.84	18,063	15,332
ALAMITOS WEST CONV HOSP	Nursing	401,395.67	3,740,822.84	18,063	15,332
ST JOSEPH HOSPICE & PALLIATIVE CARE INC	Hospital	401,145.32	3,741,015.01	18,066	15,335
COMMUNITY HOSPITAL OF LONG BEACH	Hospital	393,916.40	3,739,314.45	18,067	15,336
COMMUNITY HOSPITAL OF LONG BEACH	Hospital	393,916.40	3,739,314.45	18,067	15,336
LONG BEACH COMMUNITY HOSPITAL D/P-SNF	Hospital	393,916.40	3,739,314.45	18,067	15,336
LONG BEACH COMMUNITY HOSP-RT DEPT NICU	Hospital	393,916.40	3,739,314.45	18,067	15,336
LONG BEACH COMM MED CTR HOME HEALTH	Hospital	393,916.40	3,739,314.45	18,067	15,336
LONG BEACH COMMUNITY MEDICAL CENTER	Hospital	393,916.40	3,739,314.45	18,067	15,336
CATHOLIC HEALTHCARE WEST SOUTHER CA	Hospital	393,916.40	3,739,314.45	18,067	15,336
LONG BEACH COMMUNITY MEDICAL CENTER	Hospital	393,916.40	3,739,314.45	18,067	15,336
FAMILY HEALTH CARE OF LONG BEACH	Hospital	396,780.77	3,741,714.60	18,075	15,344
LOS ALAMITOS LITTLE LAMB CHRISTIAN CHILD CARE CTR.	Daycare	401,598.49	3,740,694.26	18,076	15,345
CAREMORE MEDICAL GROUP INC	Hospital	393,915.85	3,739,379.46	18,077	15,346
GEORGE M JAYATILAKA MD INC	Hospital	393,915.85	3,739,379.46	18,077	15,346
ANDREW J MANOS INC	Hospital	393,915.85	3,739,379.46	18,077	15,346
CHISATO OBA MD, INC	Hospital	393,915.85	3,739,379.46	18,077	15,346
MILLER CHILDRENS HOSPITAL OUTPATIENT	Hospital	393,915.85	3,739,379.46	18,077	15,346
NICHOLAS S C LEE MD	Hospital	393,915.85	3,739,379.46	18,077	15,346
HEZEKIAH N MOORE, MD	Hospital	393,915.85	3,739,379.46	18,077	15,346
THOMAS M NORUM, MD, INC	Hospital	393,915.85	3,739,379.46	18,077	15,346
CURTIS FOSTER MEDICAL OFFICE	Hospital	393,915.85	3,739,379.46	18,077	15,346
RON V ROQUE MD INC	Hospital	393,915.85	3,739,379.46	18,077	15,346
ALAN HELLER MD	Hospital	393,915.85	3,739,379.46	18,077	15,346
DANIEL M O'TOOLE, MD INC	Hospital	393,285.98	3,737,039.26	18,088	15,357
PROHEALTH PARTNERS,A MEDICAL GROUP,INC	Hospital	393,285.98	3,737,039.26	18,088	15,357
WOMEN'S HEALTH & REPRODUCTIVE CENTER	Hospital	393,285.98	3,737,039.26	18,088	15,357
DIANA R BRYANT MD	Hospital	393,285.98	3,737,039.26	18,088	15,357
CLAYTON DEJONG MD	Hospital	393,285.98	3,737,039.26	18,088	15,357
LAWRENCE P CUTNER MD FACOG	Hospital	393,284.22	3,736,881.97	18,093	15,362
DR TAMARA MAHER	Hospital	401,147.19	3,741,072.36	18,094	15,363
WOMEN'S HEALTH & REPRODUCTIVE CENTER	Hospital	401,147.19	3,741,072.36	18,094	15,363
CONSTANCE S SHIH MD INC	Hospital	401,147.19	3,741,072.36	18,094	15,363
R A KAPLAN MD & J J WIDELITZ MD	Hospital	401,147.19	3,741,072.36	18,094	15,363

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
COAST INTERNAL MEDICAL ASSOCIATES	Hospital	401,147.19	3,741,072.36	18,094	15,363
GASTROENTEROLOGY CONSULTANTS A MED GRP	Hospital	401,147.19	3,741,072.36	18,094	15,363
NANCY D KIMBER MD	Hospital	401,147.19	3,741,072.36	18,094	15,363
ARMISHAW CLINICAL LABORATORIES	Hospital	401,147.19	3,741,072.36	18,094	15,363
CERRITOS WEIGHT CONTROL MED	Hospital	401,147.19	3,741,072.36	18,094	15,363
MEMORIAL MEDICAL GROUP	Hospital	401,147.19	3,741,072.36	18,094	15,363
LIZA HERTZ MD	Hospital	401,147.19	3,741,072.36	18,094	15,363
SHACKEROFF/HETZLER & ASSOC	Hospital	401,147.19	3,741,072.36	18,094	15,363
MEMORIAL SPORTS AND INTERNAL MEDICINE	Hospital	401,147.19	3,741,072.36	18,094	15,363
PETTERSON FAMILY CHILD CARE	Daycare	397,465.15	3,741,921.81	18,107	15,376
JOHN DOUGLAS FRENCH CENTER/ALZHEIMER	Hospital	401,489.71	3,740,842.48	18,108	15,377
ROSSMOOR PLAYSCHOOL	Daycare	401,027.91	3,741,185.82	18,109	15,378
COLOCHO FAMILY CHILD CARE	Daycare	395,181.01	3,740,943.05	18,110	15,379
PERKINS FAMILY CHILD CARE	Daycare	393,306.36	3,737,841.06	18,111	15,380
MALLIK, BHARATI	Daycare	401,727.85	3,740,696.10	18,112	15,381
REGENCY OAKS SKILLED NURSING CARE	Hospital	393,777.23	3,739,345.17	18,113	15,382
REGENCY OAKS CARE CENTER	Hospital	393,777.23	3,739,345.17	18,113	15,382
REGENCY OAKS CARE CENTER	Nursing	393,777.23	3,739,345.17	18,113	15,382
MANN ELEMENTARY	School	393,181.30	3,736,867.58	18,116	15,385
SOUTHERN CALIFORNIA PERMANENTE	Hospital	393,816.40	3,739,446.20	18,117	15,386
SO CALIF PERMANENTE MED GRP LABORATORY	Hospital	393,816.40	3,739,446.20	18,117	15,386
CALIF INST OF EYE SURGERY & VISION	Hospital	393,816.40	3,739,446.20	18,117	15,386
COUNTRY VILLA BELMONT HEIGHTS	Hospital	393,715.60	3,739,277.69	18,120	15,389
COUNTRY VILLA BELMONT HEIGHTS	Hospital	393,715.60	3,739,277.69	18,120	15,389
COUNTRY VILLA BELMONT HEIGHTS	Nursing	393,715.60	3,739,277.69	18,120	15,389
TENDERCARE HOSPICE & HOME HEALTH INC	Hospital	401,449.68	3,741,018.19	18,123	15,392
ELEOPOULOS FAMILY CHILD CARE	Daycare	397,304.01	3,742,028.78	18,124	15,393
ROSSMOOR CHILDREN'S CENTER	Daycare	401,857.19	3,740,695.40	18,125	15,394
JACK RUBIN MD	Hospital	401,588.46	3,740,950.51	18,126	15,395
GEISEL FAMILY DAY CARE	Daycare	397,104.68	3,742,003.67	18,127	15,396
MANN CHILD DEVELOPMENT CENTER	Daycare	393,098.53	3,736,839.33	18,128	15,397
PRUM KUNTHY MD	Hospital	393,302.58	3,738,410.00	18,129	15,398
RONALD J PHILIPP DO	Hospital	394,206.54	3,740,202.78	18,130	15,399
RONALD J PHILIPP DO	Hospital	394,206.54	3,740,202.78	18,130	15,399
LISA HERTZ, MD	Hospital	401,796.31	3,740,817.12	18,132	15,401
DEMAREST FAMILY CHILD CARE	Daycare	393,408.44	3,738,802.96	18,133	15,402
MAYFLOWER PRE SCHOOL	Daycare	401,777.50	3,740,837.60	18,134	15,403
RUIZ FAMILY CHILD CARE	Daycare	393,090.03	3,737,665.89	18,135	15,404
QUINTANA FAMILY CHILD CARE	Daycare	394,378.21	3,740,473.85	18,136	15,405
CUBBERLEY ELEMENTARY	School	397,947.49	3,742,208.24	18,137	15,406
LOS ALAMITOS ELEMENTARY	School	401,593.53	3,741,073.45	18,138	15,407
TINER, JEANNIE	Daycare	403,489.59	3,737,855.98	18,139	15,408
MADI, IMAN	Daycare	403,550.62	3,736,490.13	18,140	15,409
FUNK, DARLENE & LEONARD FAMILY DAY CARE	Daycare	395,267.37	3,741,300.96	18,141	15,410
MARINA MONTESSORI SCHOOL	Daycare	394,375.10	3,740,536.65	18,142	15,411
MARINA MONTESSORI	School	394,375.10	3,740,536.65	18,142	15,411
BLATHERS FAMILY CHILD CARE	Daycare	393,099.22	3,738,146.86	18,144	15,413
HUNG VAN ONG MD	Hospital	401,043.38	3,732,401.46	18,145	15,414
JANNATPOUR FAMILY CHILD CARE	Daycare	396,280.77	3,741,907.69	18,146	15,415
YMCA GLB LOS ALTOS BRANCH BUFFUM SITE	Daycare	394,379.78	3,740,615.86	18,147	15,416
BUFFUM ELEMENTARY	School	394,379.78	3,740,615.86	18,147	15,416
GRIFFIN FAMILY CHILD CARE	Daycare	394,287.45	3,740,522.72	18,149	15,418
GREAT BEGINNINGS INC.	Daycare	392,946.75	3,737,445.19	18,150	15,419
FHP HEALTH IN MOTION MOBILE VAN	Hospital	401,592.18	3,741,188.22	18,151	15,420
BELL FAMILY CHILD CARE	Daycare	393,350.86	3,739,097.86	18,152	15,421
LOS ALAMITOS HIGH	School	400,941.40	3,741,646.35	18,153	15,422
CHRISTENSEN FAMILY DAY CARE	Daycare	394,540.70	3,740,833.14	18,154	15,423
TURNER FAMILY CHILD CARE	Daycare	392,995.92	3,737,983.75	18,155	15,424



**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
PHYSIOTHERAPY ASSOCIATES	Hospital	401,592.58	3,741,226.57	18,156	15,425
CORONADO HEAD START CHILD CARE CENTER	Daycare	393,203.28	3,738,830.94	18,157	15,426
FRIENDLY HILLS MED CENTER-LOS ALAMITOS	Hospital	402,076.71	3,740,833.89	18,158	15,427
PHARMACOLOGY RESEARCH INSTITUTE	Hospital	402,076.71	3,740,833.89	18,158	15,427
HARRIMAN JONES MEDICAL GROUP	Hospital	402,076.71	3,740,833.89	18,158	15,427
WILLARD PRE-SCHOOL	Daycare	392,997.59	3,738,358.87	18,161	15,430
WILLARD ELEMENTARY	School	392,997.59	3,738,358.87	18,161	15,430
RICHARDSON FAMILY CHILD CARE	Daycare	392,895.22	3,737,940.17	18,163	15,432
OAK TREE CHILDREN'S CENTER	Daycare	393,313.56	3,739,278.05	18,164	15,433
OAKTREE PRESCHOOL	School	393,313.56	3,739,278.05	18,164	15,433
YBARRA, ANGELA	Daycare	403,741.03	3,737,759.89	18,166	15,435
SIMPLY KARE CHILD DEVELOPMENT CENTER	Daycare	393,107.25	3,738,862.77	18,167	15,436
SIMPLY KARE CHILD DEVELOPMENT CENTER	Daycare	393,107.25	3,738,862.77	18,167	15,436
TOOMBS FAMILY CHILD CARE	Daycare	398,257.21	3,742,480.05	18,169	15,438
NASIR TEJANI MD INC	Hospital	397,469.42	3,742,436.20	18,170	15,439
OLIVER LEE MASON MD	Hospital	397,469.42	3,742,436.20	18,170	15,439
ROBERT M MILLER MD INC	Hospital	397,469.42	3,742,436.20	18,170	15,439
ANTON DAHLMAN MD	Hospital	397,469.42	3,742,436.20	18,170	15,439
PETER C TRAFAS MD	Hospital	397,469.42	3,742,436.20	18,170	15,439
TURLEY FAMILY CHILD CARE	Daycare	395,750.53	3,741,884.94	18,175	15,444
DENOS, JENNIFER	Daycare	403,727.50	3,735,914.61	18,176	15,445
HARRELSON, SHERI	Daycare	403,728.74	3,735,911.74	18,177	15,446
TORRES FAMILY CHILD CARE	Daycare	393,104.73	3,738,977.90	18,178	15,447
WAY, GAIL & LEE	Daycare	403,599.42	3,735,292.01	18,179	15,448
OFISA FAMILY CHILD CARE	Daycare	392,793.22	3,737,893.43	18,180	15,449
CARVER ELEMENTARY	School	395,534.36	3,741,828.35	18,181	15,450
JAHN FAMILY CHILD CARE	Daycare	393,805.76	3,740,312.50	18,182	15,451
GONZALEZ FAMILY CHILD CARE	Daycare	393,109.75	3,739,086.29	18,183	15,452
BIENVENIDO C REYES MD	Hospital	392,709.53	3,737,445.00	18,184	15,453
ANSARI, YASMEEN FAMILY DAY CARE	Daycare	395,205.19	3,741,642.09	18,185	15,454
PEREZ FAMILY DAY CARE	Daycare	393,661.78	3,740,138.46	18,186	15,455
LOS ALTOS HOSP	Hospital	397,248.15	3,742,492.15	18,187	15,456
CREATIVE MINDS CHRISTIAN ACADE	School	392,860.36	3,738,450.47	18,188	15,457
RODRIGUEZ-MACIAS FAMILY CHILD CARE	Daycare	393,019.51	3,738,956.34	18,189	15,458
BUSSEY FAMILY CHILD CARE	Daycare	393,108.45	3,739,196.33	18,190	15,459
MULLIKIN MEDICAL CENTER LONG BEACH	Hospital	394,891.51	3,741,482.93	18,191	15,460
PEREZ FAMILY CHILD CARE	Daycare	393,705.16	3,740,275.26	18,192	15,461
TRAN-BELLEBILLE, PATRICIA	Daycare	403,911.75	3,737,833.96	18,193	15,462
RALPHS PHARMACY #58	Hospital	397,309.89	3,742,574.21	18,194	15,463
BAO QUOC LE MD INC	Hospital	392,846.12	3,738,651.03	18,195	15,464
YMCA GLB LOS ALTOS - NEWCOMB SCHOOL	Daycare	400,146.31	3,742,362.76	18,196	15,465
NEWCOMB ELEMENTARY	School	400,146.31	3,742,362.76	18,196	15,465
BROADWAY BY THE SEA	Hospital	392,548.70	3,736,792.86	18,198	15,467
HACIENDA CONVALESCENT HOSPITAL	Hospital	392,548.70	3,736,792.86	18,198	15,467
BROADWAY BY THE SEA	Nursing	392,548.70	3,736,792.86	18,198	15,467
ANDREWS, EMILIE	Daycare	403,963.94	3,736,087.62	18,201	15,470
LE CAM FAMILY CHILD CARE	Daycare	397,160.73	3,742,614.81	18,202	15,471
OHIO HEAD START	Daycare	392,591.03	3,737,849.09	18,203	15,472
EDGEWATER CONVALESCENT HOSPITAL	Hospital	392,537.07	3,737,450.11	18,204	15,473
EDGEWATER CONV HOSPITAL	Hospital	392,537.07	3,737,450.11	18,204	15,473
EDGEWATER CONV HOSPITAL	Nursing	392,537.07	3,737,450.11	18,204	15,473
CARROLL FAMILY CHILD CARE	Daycare	397,799.53	3,742,716.65	18,207	15,476
SNOW FAMILY CHILD CARE	Daycare	392,696.32	3,738,412.99	18,208	15,477
EASTWOOD ELEMENTARY	School	404,059.59	3,736,641.99	18,209	15,478
HALBEISEN, CINDY FAMILY DAY CARE	Daycare	397,799.65	3,742,727.42	18,210	15,479
SHARON CHRISTA MCAULIFFE MIDDLE	School	401,714.69	3,741,632.32	18,211	15,480
Z MEDICAL CLINIC	Hospital	392,639.96	3,738,251.59	18,212	15,481
WESTMINSTER NURSERY SCHOOL	Daycare	404,057.56	3,736,440.31	18,213	15,482

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
HUNTINGTON ACADEMY	Daycare	392,836.94	3,738,962.83	18,214	15,483
HUNTINGTON ACADEMY	School	392,836.94	3,738,962.83	18,214	15,483
THOMAS, ANNIE AND LAVONA	Daycare	392,910.40	3,739,179.21	18,216	15,485
OLSTEN HEALTH SERVICES	Hospital	394,932.31	3,741,733.22	18,217	15,486
OLSTEN HEALTH SERVICES	Hospital	394,932.31	3,741,733.22	18,217	15,486
MARSHALL MIDDLE	School	396,596.59	3,742,619.01	18,219	15,488
QUIGLEY FAMILY CHILD CARE	Daycare	397,799.66	3,742,846.91	18,220	15,489
GRANNIES	Daycare	403,952.96	3,738,651.95	18,221	15,490
CARLSON, JOAN	Daycare	402,985.69	3,740,565.60	18,222	15,491
ALLEN FAMILY CHILD CARE	Daycare	396,554.95	3,742,637.21	18,223	15,492
LAUREL HIGH (CONTINUATION)	School	401,598.32	3,741,905.17	18,224	15,493
NEWBY FAMILY DAY CARE	Daycare	398,183.25	3,742,914.12	18,225	15,494
WILLIS FAMILY CHILD CARE	Daycare	392,810.31	3,739,301.14	18,226	15,495
COLLABORATIVE NEUROSCIENCE NETWORK LLC	Hospital	404,169.88	3,737,898.27	18,227	15,496
DAVID A MINNA MD	Hospital	402,847.39	3,740,805.72	18,228	15,497
TENET HOMECARE OF SOUTHERN CALIFORNIA	Hospital	404,230.59	3,737,501.28	18,229	15,498
TENET HOMECARE OF SOUTHERN CALIFORNIA	Hospital	404,230.59	3,737,501.28	18,229	15,498
LONG BEACH DEPARTMENT OF HEALTH	Hospital	393,731.58	3,740,825.00	18,231	15,500
PUBLIC HEALTH CLINIC LABORATORY	Hospital	393,731.58	3,740,825.00	18,231	15,500
CITY OF LONG BEACH DEPT OF HLTH AND	Hospital	393,731.58	3,740,825.00	18,231	15,500
HANNA FAMILY CHILD CARE	Daycare	392,387.33	3,738,008.04	18,234	15,503
LEE ELEMENTARY	School	392,707.47	3,739,178.63	18,235	15,504
HOLY CROSS LUTHERAN ECEC	Daycare	402,087.42	3,741,629.43	18,236	15,505
HOLY CROSS LUTHERAN SCHOOL	School	402,087.42	3,741,629.43	18,236	15,505
CHAVEZ FAMILY CHILD CARE	Daycare	392,391.74	3,738,174.15	18,238	15,507
KHmero MEDICAL CLINIC	Hospital	392,400.29	3,738,257.14	18,239	15,508
SIGNAL HILL CARE CENTER	Hospital	392,793.06	3,739,459.55	18,240	15,509
TURNER, KARLA	Daycare	404,307.83	3,736,348.99	18,241	15,510
MIRACLE LAND CHILD DEVELOPMENT CENTER	Daycare	402,143.21	3,741,628.86	18,242	15,511
MIRACLE LAND CHILD DEVELOPMENT CENTER	Daycare	402,143.21	3,741,628.86	18,242	15,511
ST CORNELIUS ELEM SCHOOL	School	395,886.83	3,742,522.78	18,244	15,513
ST. LUKE'S PRESCHOOL	Daycare	396,165.77	3,742,640.50	18,245	15,514
MC BEE, PATRICIA ANN	Daycare	404,304.97	3,736,190.76	18,246	15,515
WALKER FAMILY CHILD CARE	Daycare	392,847.32	3,739,660.91	18,247	15,516
INTERCOMMUNITY CARE CENTER	Hospital	393,759.40	3,741,045.34	18,248	15,517
INTERCOMMUNITY CARE CENTER	Hospital	393,759.40	3,741,045.34	18,248	15,517
INTERCOMMUNITY SANITARIUM	Hospital	393,759.40	3,741,045.34	18,248	15,517
INTERCOMMUNITY CARE CENTER	Hospital	393,759.40	3,741,045.34	18,248	15,517
INTERCOMMUNITY CARE CENTER	Hospital	393,759.40	3,741,045.34	18,248	15,517
INTERCOMMUNITY CARE CENTER	Nursing	393,759.40	3,741,045.34	18,248	15,517
LONG BEACH CHRISTIAN DAY CARE CENTER	Daycare	396,052.94	3,742,641.73	18,254	15,523
LONG BEACH CENTER-ABILITY FIRST	Daycare	393,724.92	3,741,023.53	18,255	15,524
BURBANK CHILD DEVELOPMENT CENTER	Daycare	392,203.15	3,737,536.65	18,256	15,525
WILLOW LAKE NURSING CARE CENTER	Hospital	393,768.62	3,741,076.62	18,257	15,526
LONG BEACH CARE CENTER, INC	Hospital	393,768.62	3,741,076.62	18,257	15,526
LONG BEACH CARE CENTER, INC	Nursing	393,768.62	3,741,076.62	18,257	15,526
GRAND VIEW CARE CENTER	Hospital	393,844.38	3,741,161.68	18,260	15,529
BURBANK ELEMENTARY	School	392,193.92	3,737,505.04	18,261	15,530
PSL (PREFERRED SPECIALTY LABORATORY)	Hospital	402,254.74	3,741,624.55	18,262	15,531
LAURELCREST SCHOOL FOR GIRLS	School	396,267.02	3,742,740.82	18,263	15,532
AREYAN FAMILY CHILD CARE	Daycare	397,245.99	3,742,997.08	18,264	15,533
GONZALEZ FAMILY CHILD CARE	Daycare	396,852.16	3,742,921.46	18,265	15,534
FIRST FOURSQUARE CHURCH PRESCH	School	392,337.85	3,738,456.35	18,266	15,535
OUR SAVIOUR'S LUTHERAN PRESCHOOL	Daycare	392,157.95	3,737,353.22	18,267	15,536
OUR SAVIORS LUTHERAN INFANT CENTER	Daycare	392,157.95	3,737,353.22	18,267	15,536
BARBARA AND RAY ALPERT JEWISH COMMUNITY CENTER	Daycare	393,692.29	3,741,054.65	18,269	15,538
M L H LAB	Hospital	403,709.48	3,734,001.45	18,270	15,539
HARRIS FAMILY CHILD CARE	Daycare	392,189.06	3,737,973.17	18,271	15,540

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
WEST COAST DIALYSIS CENTER INC	Hospital	393,894.36	3,741,322.48	18,272	15,541
COAST NEPHROLOGY MEDICAL GROUP, INC	Hospital	393,894.36	3,741,322.48	18,272	15,541
WEST COAST DIALYSIS CENTER	Hospital	393,894.36	3,741,322.48	18,272	15,541
PHYSICIANS REFERENCE LABORATORY	Hospital	403,711.77	3,733,977.31	18,275	15,544
INTERNATIONAL MOLECULAR DIAGNOSTICS,	Hospital	403,711.77	3,733,977.31	18,275	15,544
CAZAREZ DE ROEDER, ERIKA	Daycare	404,462.02	3,737,558.26	18,277	15,546
CRAIN FAMILY CHILD CARE	Daycare	393,060.05	3,740,309.10	18,278	15,547
QUIRKE FAMILY CHILD CARE	Daycare	398,814.54	3,743,147.63	18,279	15,548
REID SENIOR HIGH	School	393,626.51	3,741,068.69	18,280	15,549
LONG BEACH UNIFIED SCHOOL DISTRICT ROP	School	393,626.51	3,741,068.69	18,280	15,549
BETHANY PRESCHOOL INFANT CARE CENTER	Daycare	392,107.41	3,737,708.03	18,282	15,551
BETHANY PRESCHOOL	Daycare	392,107.41	3,737,708.03	18,282	15,551
CITY CHRISTIAN SCHOOL	School	392,107.41	3,737,708.03	18,282	15,551
LONG BEACH PHYSICAL THERAPY/MA	Hospital	393,845.01	3,741,331.91	18,285	15,554
GLOVER, PATRICIA ANN	Daycare	404,047.91	3,739,390.71	18,286	15,555
CYPRESS EARLY LEARNING CENTER	Daycare	402,489.29	3,741,622.78	18,287	15,556
NTM MEDICAL CLINIC	Hospital	392,226.01	3,738,661.51	18,288	15,557
KHMER HEALTH GROUP	Hospital	392,226.01	3,738,661.51	18,288	15,557
GARNER FAMILY CHILD CARE	Daycare	392,088.88	3,738,087.83	18,290	15,559
METIVIER, SUZANNE	Daycare	404,127.53	3,739,363.27	18,291	15,560
GHERARDINI, YOLANDA	Daycare	404,375.61	3,735,263.91	18,292	15,561
DRIVER, DAWN	Daycare	402,477.55	3,741,714.82	18,293	15,562
DU BOW, LAURA	Daycare	403,704.87	3,733,669.66	18,294	15,563
CAROL PARK MEDICAL	Hospital	392,003.80	3,737,855.71	18,295	15,564
GODOY FAMILY CHILD CARE	Daycare	392,092.47	3,738,405.85	18,296	15,565
KLUVERS, ANNELIES	Daycare	404,635.68	3,736,530.93	18,297	15,566
MEMORIAL OCCUPATIONAL AND REHABILITATION CENTER	Hospital	393,430.10	3,741,081.03	18,298	15,567
ALLERGY ASTHMA & RESPIRATORY CARE MED	Hospital	393,430.10	3,741,081.03	18,298	15,567
HARRIMAN JONES MEDICAL GROUP	Hospital	393,430.10	3,741,081.03	18,298	15,567
WEST COAST CLINICAL TRIALS LLC	Hospital	393,430.10	3,741,081.03	18,298	15,567
UNILAB	Hospital	393,430.10	3,741,081.03	18,298	15,567
HARRIMAN JONES - BELLFLOWER	Hospital	393,430.10	3,741,081.03	18,298	15,567
HEALTHCARE PARTNERS MEDICAL GROUP	Hospital	393,430.10	3,741,081.03	18,298	15,567
REYNALDO B CASTILLO MD	Hospital	392,143.54	3,738,658.95	18,305	15,574
ROSE FAMILY MEDICAL CTR	Hospital	392,143.54	3,738,658.95	18,305	15,574
PERDOMO FAMILY CHILD CARE	Daycare	392,400.64	3,739,412.28	18,307	15,576
KELLER ELEMENTARY	School	398,523.69	3,743,334.54	18,308	15,577
VIVANCO FAMILY CHILD CARE	Daycare	398,621.40	3,743,343.64	18,309	15,578
KATELLA WELLNES CENTER	Hospital	403,407.73	3,740,793.37	18,310	15,579
EVERSGERD, JANE	Daycare	402,983.37	3,732,598.91	18,311	15,580
LAVOY-KEEFE, BEVERLEE	Daycare	404,649.49	3,737,785.97	18,312	15,581
YOUNG LIFE ENRICHMENT - RIVIERA HOUSE	Daycare	404,517.97	3,735,416.00	18,313	15,582
CAROUSEL PRESCHOOL	Daycare	391,880.64	3,737,397.59	18,314	15,583
CAROUSEL PRE-SCHOOL	School	391,880.64	3,737,397.59	18,314	15,583
WELLS HOUSE	Hospital	391,859.90	3,737,022.33	18,316	15,585
WELLS HOUSE	Hospital	391,859.90	3,737,022.33	18,316	15,585
7TH ST MEDICAL GROUP	Hospital	391,921.40	3,737,860.13	18,318	15,587
CAREER ACADEMY OF BEAUTY	College	404,569.93	3,738,329.00	18,319	15,588
ALAMITOS ASSOCIATES IN OB/GYN INC	Hospital	403,450.83	3,740,792.93	18,320	15,589
LEOMBRUNI, MARISSA	Daycare	404,451.68	3,735,131.51	18,321	15,590
BURCHAM ELEMENTARY	School	396,073.38	3,743,003.78	18,322	15,591
DIONNE FAMILY CHILD CARE	Daycare	395,892.71	3,742,944.90	18,323	15,592
CARAMELLA FAMILY CHILD CARE	Daycare	395,309.38	3,742,700.58	18,324	15,593
BATH FAMILY CHILD CARE	Daycare	395,078.53	3,742,575.71	18,325	15,594
CRESS FAMILY CHILD CARE	Daycare	391,831.95	3,737,355.01	18,326	15,595
HONG MAI MD	Hospital	392,040.82	3,738,660.75	18,327	15,596
HONG T MAI MD INC	Hospital	392,040.82	3,738,660.75	18,327	15,596
MACY MEDICAL CLINIC	Hospital	392,029.44	3,738,664.05	18,329	15,598

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Receptor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
SEQUOIA PRESCHOOL	Daycare	404,779.50	3,736,959.85	18,330	15,599
SEQUOIA ELEMENTARY	School	404,779.50	3,736,959.85	18,330	15,599
HENRY ELEMENTARY	School	397,243.68	3,743,370.77	18,332	15,601
BURG-TOMLINSON FAMILY DAY CARE	Daycare	396,277.67	3,743,136.57	18,333	15,602
MONTGOMERY, LINDA	Daycare	404,511.06	3,735,105.55	18,334	15,603
ABILITY HOME CARE SOUTH BAY	Hospital	391,824.01	3,737,661.13	18,335	15,604
MED-CITY MEDICAL CLINIC	Hospital	391,914.55	3,738,262.95	18,336	15,605
SINGING FOUNTAINS PRESCH CTR EL DORADO COMM CHURCH	Daycare	400,813.11	3,742,964.33	18,337	15,606
SINGING FOUNTAIN PRESCHOOL & INFANT CARE	Daycare	400,813.11	3,742,964.33	18,337	15,606
HENRICO V MUNGAL, MD	Hospital	391,996.44	3,738,661.88	18,339	15,608
COLONIAL MANOR CONVALESCENT	Hospital	391,790.24	3,737,592.07	18,340	15,609
COLONIAL CARE CENTER	Hospital	391,790.24	3,737,592.07	18,340	15,609
COLONIAL CARE CENTER	Nursing	391,790.24	3,737,592.07	18,340	15,609
HEALING ARTS MEDICAL CENTER	Hospital	403,580.16	3,740,791.62	18,343	15,612
KYEREMAA FAMILY CHILD CARE	Daycare	392,309.42	3,739,645.41	18,344	15,613
LLOYD, BECKY & STEVEN	Daycare	404,844.09	3,737,076.86	18,345	15,614
A CHILD'S ADVENTURE PRESCHOOL AND DAYCARE CENTER	Daycare	402,411.37	3,742,061.95	18,346	15,615
A CHILD'S ADVENTURE (ACA) CAWTHON ELEM SCHOOL	Daycare	402,411.37	3,742,061.95	18,346	15,615
COMPREGARE MEDICAL ASSOCIATES	Hospital	391,888.54	3,738,430.99	18,348	15,617
HARVARD HEALTH CARE	Hospital	391,888.54	3,738,430.99	18,348	15,617
INTEDIV CORPORATION	Hospital	391,888.54	3,738,430.99	18,348	15,617
KINTAUDI & ASSOCIATES MEDICAL GROUP INC	Hospital	391,888.54	3,738,430.99	18,348	15,617
DAVILA, GENOVEVA	Daycare	404,707.38	3,735,580.31	18,352	15,621
HALE, PHYLLIS	Daycare	404,804.89	3,737,852.28	18,353	15,622
MONTESSORI GREENHOUSE SCHOOL	Daycare	404,597.78	3,738,830.65	18,354	15,623
MONTESSORI GREENHOUSE SCHOOL	Daycare	404,597.78	3,738,830.65	18,354	15,623
MONTESSORI GREENHOUSE	School	404,597.78	3,738,830.65	18,354	15,623
MONTESSORI WESTERN TEACHER TRAINING PROGRAM	College	404,597.78	3,738,830.65	18,354	15,623
WATSON, SYLVIA	Daycare	404,677.33	3,735,366.52	18,358	15,627
SUAREZ AND GARCIA FAMILY CHILD CARE	Daycare	391,784.45	3,738,087.79	18,359	15,628
SILVA, MARIA MADALENA	Daycare	404,449.42	3,739,339.75	18,360	15,629
PADILLA-SULLIVAN FAMILY DAY CARE	Daycare	398,607.47	3,743,583.07	18,361	15,630
TED FISHER HEAD START CENTER	Daycare	404,680.79	3,735,204.40	18,362	15,631
LOOK WHO'S LEARNING PRESCHOOL	Daycare	404,396.89	3,739,539.70	18,363	15,632
SOLOMAN, KATRINA	Daycare	404,840.68	3,738,006.35	18,364	15,633
PEDIATRIC MEDICAL CENTER	Hospital	393,433.41	3,741,490.56	18,365	15,634
HAWES FAMILY CHILD CARE	Daycare	391,678.44	3,737,688.47	18,366	15,635
OLE' KING COLE DEVELOPMENTAL CENTER	Daycare	391,698.13	3,737,859.18	18,367	15,636
ROBERT C. CAWTHON ELEMENTARY	School	402,490.59	3,742,121.99	18,368	15,637
LONG BEACH ADULT DAY HEALTH CARE CTR	Hospital	391,647.95	3,737,461.12	18,369	15,638
MONTESSORI CHILDREN'S CENTER OF HUNTINGTON BEACH	Daycare	403,298.88	3,732,549.07	18,370	15,639
LEARNING CTR. P.S./BOYS & GIRLS CLUBS OF H.V.	Daycare	403,298.88	3,732,549.07	18,370	15,639
LEARNING CTR. P.S./BOYS & GIRLS CLUBS OF H.V.	Daycare	403,298.88	3,732,549.07	18,370	15,639
GRACE LUTHERAN SCHOOL	School	403,298.88	3,732,549.07	18,370	15,639
HANSON, DINA	Daycare	404,592.20	3,739,159.82	18,374	15,643
HORACIO F ARIZA MD	Hospital	391,829.02	3,738,662.51	18,375	15,644
RICHARD KEECH MD DBA GAGA MEDICAL CLNC	Hospital	391,829.02	3,738,662.51	18,375	15,644
PREMIUM CARE FAMILY MEDICAL GROUP	Hospital	391,829.02	3,738,662.51	18,375	15,644
YUTH FAMILY CHILD CARE	Daycare	391,791.88	3,738,519.29	18,378	15,647
OLMEDO, PATRICIA	Daycare	404,847.93	3,735,680.41	18,379	15,648
POWELL, DANA	Daycare	403,706.86	3,732,986.28	18,380	15,649
EDWARD C RUTH MD	Hospital	404,469.96	3,739,617.60	18,381	15,650
ST CHRISTOPHER CONVALESCENT HOSPITAL	Hospital	392,110.20	3,739,636.56	18,382	15,651
COURTYARD CARE CENTER	Hospital	392,110.20	3,739,636.56	18,382	15,651
COURTYARD CARE CENTER	Hospital	392,110.20	3,739,636.56	18,382	15,651
COURTYARD CARE CENTER	Nursing	392,110.20	3,739,636.56	18,382	15,651
GRACE FIRST PRESBYTERIAN CHURCH PRESCHOOL	Daycare	398,260.09	3,743,698.65	18,386	15,655
RAINBOW AFTER-SCHOOL CARE & PRE-K PROGRAM	Daycare	402,482.82	3,731,677.19	18,387	15,656

**Alamitos Energy Center**  
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**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
RAINBOW AFTER-SCHOOL CARE & PRE-K PROGRAM	Daycare	402,482.82	3,731,677.19	18,387	15,656
HARBOUR VIEW ELEMENTARY	School	402,482.82	3,731,677.19	18,387	15,656
HOR B CHHAY, MD	Hospital	391,756.73	3,738,663.33	18,390	15,659
MIDTOWN MEDICAL PLAZA	Hospital	392,016.95	3,739,465.45	18,391	15,660
CASTILLO FAMILY DAY CARE	Daycare	392,209.61	3,739,903.67	18,392	15,661
WAY OUT MINISTRIES; CHRSTN ACD	School	400,805.77	3,743,233.17	18,393	15,662
TAYLOR FAMILY CHILD CARE	Daycare	391,897.05	3,739,181.44	18,394	15,663
VAN HORN, MICHELLE	Daycare	404,887.65	3,735,464.33	18,395	15,664
RILEY FAMILY CHILD CARE	Daycare	391,581.93	3,738,014.30	18,396	15,665
KENNETH CARRELL MD INC	Hospital	396,677.78	3,743,557.86	18,397	15,666
JOHN KREGZDE MD	Hospital	396,677.78	3,743,557.86	18,397	15,666
ROLAND A SCHAUMLOFFEL MD	Hospital	396,677.78	3,743,557.86	18,397	15,666
BOURGEOIS, LINDA	Daycare	404,947.78	3,738,316.98	18,400	15,669
CAMACHO FAMILY CHILD CARE	Daycare	392,031.64	3,739,642.52	18,401	15,670
BEST CARE MEDICAL GROUP	Hospital	400,818.99	3,743,285.01	18,402	15,671
MILLSPAUGH, DOTTIE	Daycare	404,970.58	3,738,313.58	18,403	15,672
HAWAIIAN STATE PRESCHOOL	Daycare	401,134.63	3,743,161.61	18,404	15,673
HAWAIIAN ELEMENTARY	School	401,134.63	3,743,161.61	18,404	15,673
DEMILLE MIDDLE	School	398,514.60	3,743,790.05	18,406	15,675
REGENCY HOSPICE INC	Hospital	404,790.32	3,739,061.14	18,407	15,676
REGENCY HOSPICE	Hospital	404,790.32	3,739,061.14	18,407	15,676
VALLEY VIEW INTERNAL MEDICINE INC	Hospital	404,790.32	3,739,061.14	18,407	15,676
ULTIMATE CARE, INC	Hospital	404,790.32	3,739,061.14	18,407	15,676
LION OF JUDAH COMPREHENSIVE REHAB CTRS	Hospital	404,790.32	3,739,061.14	18,407	15,676
MAOF HAWAIIAN GARDENS PRESCHOOL	Daycare	400,805.37	3,743,316.84	18,412	15,681
PRATHER, JEANNE	Daycare	403,690.73	3,732,770.70	18,413	15,682
WOODRUFF COMMUNITY HOSP PULMONARY LAB	Hospital	396,677.08	3,743,610.16	18,414	15,683
WOODRUFF COMMUNITY HOSPITAL INC	Hospital	396,677.08	3,743,610.16	18,414	15,683
WOODRUFF COMMUNITY HOSPITAL INC	Hospital	396,677.08	3,743,610.16	18,414	15,683
WOODRUFF COMMUNITY HOSPITAL	Hospital	396,677.08	3,743,610.16	18,414	15,683
FURGESON ELEMENTARY SCHOOL--STATE PRESCHOOL	Daycare	400,426.57	3,743,460.88	18,418	15,687
ABC UNIFIED SCHOOL DISTRICT FURGESON	Hospital	400,426.57	3,743,460.88	18,418	15,687
VENN W. FURGESON ELEMENTARY	School	400,426.57	3,743,460.88	18,418	15,687
SIEBERT FAMILY CHILD CARE	Daycare	392,106.99	3,739,913.39	18,421	15,690
GERALD W MILLER MD, A PROF CORP	Hospital	396,677.32	3,743,632.34	18,422	15,691
SRIVIDYA VENKATARAMAN MD INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
MAURICE A BELL MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
MINOU P TRAN, MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
PROHEALTH PARTNERS A MEDICAL GROUP INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
ALLERGY AND ASTHMA CARE CENTER	Hospital	396,677.32	3,743,632.34	18,422	15,691
DR DANONS OFFICE	Hospital	396,677.32	3,743,632.34	18,422	15,691
WOODRUFF MEDICAL GROUP, INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
ARIE WILDERHORN MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
BIXBY-KNOLL MEDICAL GP	Hospital	396,677.32	3,743,632.34	18,422	15,691
PROFESSIONAL PATHOLOGY MED GROUP INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
B V SURY MD FACP	Hospital	396,677.32	3,743,632.34	18,422	15,691
WOODRUFF FAMILY FOOT CARE	Hospital	396,677.32	3,743,632.34	18,422	15,691
PROHEALTH PARTNERS A MEDICL GROUP INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
JOSEPH RIZZA MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
DERCK DOBALIAN MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
ANDREW E STANITSAS DO A MEDICAL CORP	Hospital	396,677.32	3,743,632.34	18,422	15,691
BIRINDER S BRARA MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
LAWRENCE J ZIPSER, PT, INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
CYNTHIA MILLER-DOBALIAN MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
RONLOV-ROSALES MEDICAL GROUP INC	Hospital	396,677.32	3,743,632.34	18,422	15,691
NATIONAL CYTO PATH LABORATORIES	Hospital	396,677.32	3,743,632.34	18,422	15,691
RAYMOND A SLEIMAN MD	Hospital	396,677.32	3,743,632.34	18,422	15,691
SPENCER FAMILY CHILD CARE	Daycare	391,799.77	3,739,214.57	18,445	15,714

**Alamitos Energy Center**  
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**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
GAVIOTA HEAD START	Daycare	391,588.72	3,738,500.67	18,446	15,715
DOMINGUEZ, IRMA	Daycare	402,944.79	3,742,028.29	18,447	15,716
ST MARIA GORETTI ELEM SCHOOL	School	397,499.31	3,743,800.30	18,448	15,717
PETERSON, KIMBERLEE	Daycare	403,020.25	3,741,967.93	18,449	15,718
HARRIMAN JONES MEDICAL GROUP	Hospital	396,677.67	3,743,665.30	18,450	15,719
ALLTON, LEE A.	Daycare	405,177.18	3,737,278.41	18,451	15,720
LOLA BEAUTY COLLEGE	College	404,776.26	3,739,304.14	18,452	15,721
HEALTH AND HOPE FAMILY MEDICAL CLINIC	Hospital	391,600.78	3,738,668.27	18,453	15,722
STANLEY CONV HOSP	Hospital	405,112.55	3,735,753.26	18,454	15,723
STANLEY HEALTHCARE CENTER	Hospital	405,112.55	3,735,753.26	18,454	15,723
STANLEY CONVALESCENT HOSPITAL	Hospital	405,112.55	3,735,753.26	18,454	15,723
STANLEY CONV HOSP	Hospital	405,112.55	3,735,753.26	18,454	15,723
STANLEY HEALTHCARE CENTER	Nursing	405,112.55	3,735,753.26	18,454	15,723
GULFSTREAM AEROSPACE LB	Hospital	394,092.53	3,742,495.65	18,459	15,728
ROBINS NEST	Hospital	403,260.83	3,741,811.76	18,460	15,729
DE LEON HOME - CYPRESS	Hospital	403,260.83	3,741,811.76	18,460	15,729
ROBINS NEST	Hospital	403,260.83	3,741,811.76	18,460	15,729
ROBINS NEST	Hospital	403,260.83	3,741,811.76	18,460	15,729
SANCHEZ FAMILY CHILD CARE	Daycare	401,115.99	3,743,319.95	18,464	15,733
INSTITUTE OF NETWORK TECHNOLOGY	College	392,680.73	3,741,085.00	18,465	15,734
GONZALEZ, ROSARIO	Daycare	405,109.50	3,735,574.09	18,466	15,735
HERRICK, JEANNA	Daycare	403,441.86	3,741,659.36	18,467	15,736
MOLINA MEDICAL CENTERS	Hospital	391,524.68	3,738,669.14	18,468	15,737
METZGER, LAURA	Daycare	403,719.28	3,732,581.00	18,469	15,738
WILLOW URGENT CARE	Hospital	392,634.87	3,741,066.18	18,470	15,739
WALNUT CONVALESCENT HOSPITAL	Hospital	391,488.03	3,738,568.72	18,471	15,740
SKYLIGHT CONVALESCENT HOSPITAL	Hospital	391,488.03	3,738,568.72	18,471	15,740
SKYLIGHT CONVALESCENT HOSPITAL	Hospital	391,488.03	3,738,568.72	18,471	15,740
SKYLIGHT CONVALESCENT HOSPITAL	Nursing	391,488.03	3,738,568.72	18,471	15,740
MONTESSORI ACADEMY OF LONG BEACH	Daycare	396,678.75	3,743,764.80	18,475	15,744
MONTESSORI ACADEMY OF LONG BEA	School	396,678.75	3,743,764.80	18,475	15,744
EMERGENCY MEDICAL GROUP	Hospital	404,752.84	3,734,286.64	18,477	15,746
MONTOYA, LORENA	Daycare	405,280.99	3,737,258.03	18,478	15,747
TEMPLE BETH DAVID PRE SCHOOL	Daycare	405,258.87	3,736,179.34	18,479	15,748
WESTERLY SCHOOL OF LONG BEACH	School	392,939.02	3,741,501.81	18,480	15,749
EASTGATE MEDICAL CENTER	Hospital	404,780.96	3,739,647.78	18,481	15,750
LAS FLORES MEDICAL CLINIC INC	Hospital	400,817.60	3,743,517.33	18,482	15,751
HAWAIIAN HOUSE	Hospital	401,284.61	3,743,321.05	18,483	15,752
TRUJILLO FAMILY CHILD CARE	Daycare	396,363.96	3,743,726.70	18,484	15,753
MACIAS FAMILY CHILD CARE	Daycare	401,296.02	3,743,321.25	18,485	15,754
GRACE CHRISTIAN SCHOOL	School	403,606.13	3,741,604.12	18,486	15,755
CREATIVE ARTS	Daycare	391,493.27	3,738,918.10	18,487	15,756
CREATIVE ARTS SCHOOL	School	391,493.27	3,738,918.10	18,487	15,756
PARKCREST EARLY CHILDHOOD SCHOOL	Daycare	396,809.43	3,743,891.73	18,489	15,758
SYSAWANG FAMILY CHILD CARE	Daycare	391,300.79	3,738,165.91	18,490	15,759
FRANCO FAMILY CHILD CARE	Daycare	391,597.92	3,739,309.77	18,491	15,760
VANGUARD MEDICAL CENTER INC	Hospital	399,077.24	3,744,010.66	18,492	15,761
VANGUARD MEDICAL CENTER INC	Hospital	399,077.24	3,744,010.66	18,492	15,761
CORDOVA FAMILY CHILD CARE	Daycare	395,710.84	3,743,587.10	18,494	15,763
VARELA FAMILY CHILD CARE	Daycare	400,328.44	3,743,774.38	18,495	15,764
JIMENEZ FAMILY CHILD CARE	Daycare	400,400.49	3,743,754.61	18,496	15,765
GALICIA FAMILY CHILD CARE	Daycare	391,389.93	3,738,754.07	18,497	15,766
GUYTON FAMILY CHILD CARE	Daycare	391,148.56	3,736,829.97	18,498	15,767
MARGARET LANDELL ELEMENTARY	School	402,413.91	3,742,804.54	18,499	15,768
HAWAIIAN GARDENS HEALTH CENTER	Hospital	401,426.05	3,743,391.53	18,500	15,769
CALDERON FAMILY CHILD CARE	Daycare	395,546.05	3,743,588.27	18,501	15,770
REBELLON, EDILMA FAMILY DAY CARE	Daycare	396,449.47	3,743,896.90	18,502	15,771
ALVARADO (JUAN BAUTISTA) ELEMENTARY	School	391,809.48	3,740,070.53	18,503	15,772



**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
A CHILD'S ADVENTURE - LANDELL	Daycare	402,414.42	3,742,854.93	18,504	15,773
DONALD J GRECO MD INC	Hospital	402,702.05	3,731,268.16	18,505	15,774
REDMAN, BRIGITT	Daycare	403,101.21	3,742,324.01	18,506	15,775
WESTMINSTER LUTHERAN CHURCH PRE SCHOOL	Daycare	405,448.91	3,736,154.63	18,507	15,776
WESTMINSTER LUTHERAN CHURCH	Daycare	405,448.91	3,736,154.63	18,507	15,776
WESTMINSTER LUTH PRESCH/DAY CA	School	405,448.91	3,736,154.63	18,507	15,776
WHITTIER HEAD START	Daycare	391,498.69	3,739,394.60	18,510	15,779
WHITTIER ELEMENTARY	School	391,498.69	3,739,394.60	18,510	15,779
WILLIAMS FAMILY CHILD CARE	Daycare	401,202.20	3,743,564.35	18,512	15,781
ANDREYKA, LORI	Daycare	405,189.94	3,739,073.01	18,513	15,782
PACIFICARE WELLNESS COMPANY	Hospital	404,409.51	3,740,798.17	18,514	15,783
BERNTSEN FAMILY CHILD CARE	Daycare	391,064.84	3,737,164.57	18,515	15,784
ALOHA MEDICAL - MAY WANG	Hospital	399,916.33	3,744,003.71	18,516	15,785
HYE QUALITY HOME HEALTH	Hospital	392,733.44	3,741,599.22	18,517	15,786
HAVEN HOME HEALTH	Hospital	392,733.44	3,741,599.22	18,517	15,786
MC NEELY, ALICE	Daycare	403,754.34	3,741,716.10	18,519	15,788
PARHAM FAMILY CHILD CARE	Daycare	391,294.30	3,738,932.09	18,520	15,789
UNICARE FAMILY MEDICAL GROUP INC	Hospital	400,158.25	3,743,985.32	18,521	15,790
PIPER FAMILY CHILD CARE	Daycare	391,081.14	3,737,925.19	18,522	15,791
PENNACLE FOUNDATION GROUP HOME	Daycare	397,078.25	3,744,133.79	18,523	15,792
CLARK FAMILY CHILD CARE	Daycare	391,081.48	3,737,955.63	18,524	15,793
SHAHID FAMILY CHILD CARE	Daycare	391,001.86	3,736,981.66	18,525	15,794
MC LAUGHLIN FAMILY CHILD CARE	Daycare	397,976.87	3,744,240.42	18,526	15,795
HAWAIIAN GARDENS HEAD START	Daycare	401,469.20	3,743,518.80	18,527	15,796
HAVEN HOSPICE	Hospital	392,727.99	3,741,678.22	18,528	15,797
LOS ANGELES HAVEN HOSPICE INC	Hospital	392,727.99	3,741,678.22	18,528	15,797
VU HONG CUNG MD	Hospital	391,175.92	3,738,673.11	18,530	15,799
PEREZ FAMILY CHILD CARE	Daycare	401,202.03	3,743,670.52	18,531	15,800
B RIFAT MD INC	Hospital	405,551.44	3,736,002.96	18,532	15,801
BRISTOL PARK MEDICAL INC	Hospital	405,551.44	3,736,002.96	18,532	15,801
MULLIKIN MEDICAL CENTER - MILTON	Hospital	405,551.44	3,736,002.96	18,532	15,801
QUALITY REFERENCE LABORATORY	Hospital	404,226.45	3,741,256.16	18,535	15,804
LITTLE SCHOOL OF THE WEST OF CYPRESS PARK COMM CH	Daycare	403,994.08	3,741,601.16	18,536	15,805
BREMER, CHARLENE	Daycare	405,474.23	3,735,380.16	18,537	15,806
PETRA CHRISTIAN ACADEMY	School	404,785.54	3,733,493.87	18,538	15,807
YMCA GLB WEINGART-LAKEWOOD YMCA SITE	Daycare	396,578.77	3,744,130.33	18,539	15,808
LEXINGTON JUNIOR HIGH	School	402,274.31	3,743,161.26	18,540	15,809
WHITTIER CHILD DEVELOPMENT CENTER	Daycare	391,313.29	3,739,373.88	18,541	15,810
VILLAGE VIEW ELEMENTARY	School	404,043.02	3,732,340.42	18,542	15,811
NICHOLAS A DIKIO MD	Hospital	400,570.18	3,743,981.01	18,543	15,812
LOYAL BARKER ELEMENTARY	School	405,558.38	3,738,242.11	18,544	15,813
SAV ON PHARMACY #6102	Hospital	403,514.14	3,731,745.74	18,545	15,814
FRANKLIN CLASSICAL MIDDLE	School	390,927.10	3,737,655.49	18,546	15,815
PHYSICIAN'S LABORATORY INSTITUTE	Hospital	392,432.85	3,741,480.25	18,547	15,816
LONG BEACH DAY NURSERY - EAST BRANCH	Daycare	395,877.18	3,743,959.24	18,548	15,817
LONG BEACH DAY NURSERY - EAST BRANCH	Daycare	395,877.18	3,743,959.24	18,548	15,817
COSTCO #242-PATIENT CARE CENTER	Hospital	392,130.24	3,741,070.93	18,550	15,819
CENTRAL MEDICAL DIAGNOSTIC LABORATORY INC	Hospital	404,153.88	3,741,478.78	18,551	15,820
LENNEAR FAMILY CHILD CARE	Daycare	390,925.79	3,737,762.06	18,552	15,821
KHAMIS, NAJWA JOSEPH	Daycare	402,537.87	3,743,025.13	18,553	15,822
MEMORIAL PEDIATRICS	Hospital	405,194.40	3,734,285.74	18,554	15,823
RIVAS FAMILY CHILD CARE	Daycare	401,203.07	3,743,770.97	18,555	15,824
SUWAT SUWANICH MD	Hospital	390,934.65	3,737,872.00	18,556	15,825
CHUNG MIN LEE MD	Hospital	400,623.57	3,743,995.35	18,557	15,826
LINCOLN CHILD DEVELOPMENT CENTER	Daycare	391,029.06	3,738,474.38	18,558	15,827
HEALTHY KIDS COALITION CLINIC AT	Hospital	391,029.06	3,738,474.38	18,558	15,827
LINCOLN ELEMENTARY	School	391,029.06	3,738,474.38	18,558	15,827
HEALTH CENTER	Hospital	400,645.12	3,743,995.13	18,561	15,830

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
SIGNAL HILL YOUTH CENTER	Daycare	391,646.93	3,740,274.65	18,562	15,831
CHAMANARA, FATEMEH	Daycare	403,517.39	3,742,231.03	18,563	15,832
TRI-CITY REGIONAL MEDICAL CENTER	Hospital	399,903.39	3,744,220.29	18,564	15,833
TRI-CITY REGIONAL MEDICAL CENTER	Hospital	399,903.39	3,744,220.29	18,564	15,833
TRI-CITY REG MED CTR PULMONARY LAB	Hospital	399,903.39	3,744,220.29	18,564	15,833
SAV ON DRUGS #9463	Hospital	396,686.29	3,744,226.13	18,567	15,836
NEW HORIZON MEDICAL CORPORATION	Hospital	399,903.50	3,744,230.74	18,568	15,837
VLADIMIR SAMONTE MD	Hospital	399,903.50	3,744,230.74	18,568	15,837
JOHN MAGRANN MD	Hospital	399,903.50	3,744,230.74	18,568	15,837
FHP CHARTER MEDICAL CENTER	Hospital	399,903.50	3,744,230.74	18,568	15,837
MULLIKIN MEDICAL CENTER-LAKEWOOD	Hospital	396,688.93	3,744,234.98	18,572	15,841
CHILDTIME CHILDREN'S CENTER INC.	Daycare	405,577.72	3,738,530.15	18,573	15,842
CHILDTIME CHILDREN'S CENTER INC.	Daycare	405,577.72	3,738,530.15	18,573	15,842
CHILDTIME CHILDREN'S CENTER INC.	Daycare	405,577.72	3,738,530.15	18,573	15,842
ROSSIER PARK ELEMENTARY SCHOOL	School	405,677.50	3,737,975.21	18,576	15,845
GARDEN PARK ELEMENTARY	School	405,677.50	3,737,975.21	18,576	15,845
FARIAS, MISAILDA	Daycare	405,385.85	3,739,261.62	18,578	15,847
WILLOW LANE PRE SCHOOL	Daycare	405,615.19	3,735,521.50	18,579	15,848
MICHAEL C CHAN MD	Hospital	399,903.72	3,744,251.34	18,580	15,849
TRI-CITY WOMENS CENTER	Hospital	399,903.72	3,744,251.34	18,580	15,849
AMABLE MEDICAL CLINIC	Hospital	399,903.72	3,744,251.34	18,580	15,849
HANAA N HANNA MD	Hospital	399,903.72	3,744,251.34	18,580	15,849
LOWELL SY ERENSTOFT, MD	Hospital	399,903.72	3,744,251.34	18,580	15,849
NICHOLAS S C LEE MD INC	Hospital	399,903.72	3,744,251.34	18,580	15,849
ENCLADE FAMILY CHILD CARE	Daycare	390,894.83	3,738,050.04	18,586	15,855
PETER T HAN MD	Hospital	396,689.25	3,744,264.45	18,587	15,856
MARY BUTLER ELEMENTARY	School	391,413.43	3,739,926.33	18,588	15,857
SAV-ON DRUGS #9589	Hospital	400,854.26	3,743,994.21	18,589	15,858
HILTON D. BELL INTERMEDIATE	School	405,580.64	3,738,696.90	18,590	15,859
MULLIKIN MEDICAL CENTER	Hospital	403,494.56	3,742,355.83	18,591	15,860
VISTA SCHOOL	Daycare	403,748.30	3,742,122.83	18,592	15,861
LONG BEACH CITY COLLEGE CHILD DEVELOPMENT-PCC	Daycare	391,201.59	3,739,477.57	18,593	15,862
SAV ON DRUGS #9557	Hospital	391,197.75	3,739,474.76	18,594	15,863
ENDERS ELEMENTARY	School	405,584.16	3,738,796.42	18,595	15,864
ACACIA ADULT DAY SERVICES	Hospital	403,559.22	3,742,355.81	18,596	15,865
KHEMARA FAMILY MEDICAL CLINIC INC	Hospital	391,054.07	3,739,109.55	18,597	15,866
OC KIDS	Daycare	403,904.29	3,742,001.45	18,598	15,867
OC KIDS	Daycare	403,904.29	3,742,001.45	18,598	15,867
HUOT FAMILY CHILD CARE	Daycare	391,508.86	3,740,288.27	18,600	15,869
CLINICA MERCED MEDICAL OFFICE INC	Hospital	401,049.47	3,743,994.08	18,601	15,870
CALVARY CHAPEL PACIFIC COAST-LITTLE LIGHT P/S	Daycare	405,771.15	3,735,898.03	18,602	15,871
ALOHA HEAD START/STATE PRESCHOOL	Daycare	399,725.33	3,744,403.74	18,603	15,872
YMCA OF GREATER LONG BEACH ALOHA SITE	Daycare	399,725.33	3,744,403.74	18,603	15,872
ALOHA ELEMENTARY	School	399,725.33	3,744,403.74	18,603	15,872
SMITH FAMILY CHILD CARE	Daycare	400,610.36	3,744,186.90	18,606	15,875
COHEN FAMILY DAY CARE	Daycare	398,216.04	3,744,558.56	18,607	15,876
ZIEMER, NATALIE	Daycare	403,683.02	3,742,312.08	18,608	15,877
HALL FAMILY CHILD CARE	Daycare	399,020.60	3,744,527.17	18,609	15,878
TEDESCO, BLANCA	Daycare	404,575.68	3,732,683.14	18,610	15,879
PARRA, ALMA	Daycare	405,893.36	3,737,098.48	18,611	15,880
KAPLAN, FLORENCE	Daycare	403,727.60	3,731,643.00	18,612	15,881
POLENA, CHARLOTTE	Daycare	405,619.51	3,734,932.12	18,613	15,882
UNITED CLINICAL LABORATORY	Hospital	392,026.15	3,741,285.45	18,614	15,883
MARIO O LOPEZ MD INC	Hospital	390,736.01	3,737,916.13	18,615	15,884
FIELD FAMILY DAY CARE	Daycare	397,901.81	3,744,569.53	18,616	15,885
FOCUS DIAGNOSTICS INC	Hospital	404,517.71	3,741,346.43	18,617	15,886
SIGNAL HILL HEAD START	Daycare	391,509.36	3,740,443.93	18,618	15,887
MISTOFSKY, JEANETTE	Daycare	405,466.90	3,734,382.96	18,619	15,888

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
BETHANY BIBLE FELLOWSHIP BETHANY CHRISTIAN PRE.	Daycare	405,915.79	3,736,800.48	18,620	15,889
BETHANY CHRISTIAN ACADEMY	School	405,915.79	3,736,800.48	18,620	15,889
WESTMINSTER SCHOOL DISTRICT-FINLEY STATE PRESCHOOL	Daycare	405,915.47	3,736,639.06	18,622	15,891
FINLEY ELEMENTARY	School	405,915.47	3,736,639.06	18,622	15,891
TUTOR TIME CHILD CARE/LEARNING CENTER	Daycare	404,558.28	3,741,346.03	18,624	15,893
TUTOR TIME CHILD CARE/LEARNING CENTER	Daycare	404,558.28	3,741,346.03	18,624	15,893
TUTOR TIME CHILD CARE/LEARNING CENTER	Daycare	404,558.28	3,741,346.03	18,624	15,893
JOHNSON MIDDLE	School	405,915.14	3,736,347.92	18,627	15,896
TALBERT MEDICAL GROUP INC/TALBERT MED	Hospital	390,655.16	3,737,613.88	18,628	15,897
FHP LONG BEACH MEDICAL	Hospital	390,655.16	3,737,613.88	18,628	15,897
CONNER FAMILY CHILD CARE	Daycare	397,502.70	3,744,585.86	18,630	15,899
DICKERSON, CARLOITA	Daycare	405,709.40	3,738,892.84	18,631	15,900
MORGAN, VICKIE	Daycare	405,701.87	3,734,920.52	18,632	15,901
NEHA MEDICAL GROUP	Hospital	390,780.25	3,738,678.59	18,633	15,902
CLEGG PRESCHOOL	Daycare	405,609.56	3,734,567.12	18,634	15,903
STACEY MIDDLE	School	405,609.56	3,734,567.12	18,634	15,903
CLEGG ELEMENTARY	School	405,609.56	3,734,567.12	18,634	15,903
WARDELL, DEBRA	Daycare	404,315.25	3,741,765.93	18,637	15,906
ST. ANTHONY PRESCHOOL	Daycare	390,603.08	3,737,607.50	18,638	15,907
ST ANTHONY ELEMENTARY SCHOOL	School	390,603.08	3,737,607.50	18,638	15,907
ABC UNIFIED SCHOOL DIST-FEDDE JR HIGH	Hospital	400,390.60	3,744,385.35	18,640	15,909
PHARIS F. FEDDE MIDDLE	School	400,390.60	3,744,385.35	18,640	15,909
BURTON BRAND MD	Hospital	400,811.35	3,744,255.78	18,642	15,911
JACQUELINE B AGUILUZ DO INC	Hospital	400,811.35	3,744,255.78	18,642	15,911
MONROE ELEMENTARY	School	397,906.76	3,744,676.90	18,644	15,913
VILLAGE ROAD MEDICAL GRP	Hospital	395,756.32	3,744,267.01	18,645	15,914
ANTONINI FAMILY CHILD CARE	Daycare	396,715.05	3,744,539.55	18,646	15,915
ABC DEVELOPMENT PRESCHOOL #4	Daycare	402,340.48	3,743,556.10	18,647	15,916
ABC DEVELOPMENT PRESCHOOL #4	Daycare	402,340.48	3,743,556.10	18,647	15,916
KELLIE'S ACADEMY FOR KIDS, CHILD DEV. CTR.	Daycare	404,511.50	3,732,356.35	18,649	15,918
CARDEN DEVELOPMENTAL PRESCHOOL	Daycare	404,511.50	3,732,356.35	18,649	15,918
NORTH HUNTINGTON BEACH COMMUNITY NURSERY SCHOOL	Daycare	404,511.50	3,732,356.35	18,649	15,918
KELLIE'S ACADEMY FOR KIDS, CHILD DEV. CTR.	Daycare	404,511.50	3,732,356.35	18,649	15,918
KELLIE'S ACADEMY FOR KIDS, CHILD DEV. CTR.	Daycare	404,511.50	3,732,356.35	18,649	15,918
CARDEN CONSERVATORY	School	404,511.50	3,732,356.35	18,649	15,918
CLAPHAN, SHARON	Daycare	405,997.83	3,737,660.02	18,655	15,924
GRAVES FAMILY CHILD CARE	Daycare	390,897.55	3,739,286.05	18,656	15,925
BRIDGES FAMILY CHILD CARE	Daycare	390,626.98	3,738,142.85	18,657	15,926
A. E. ARNOLD ELEMENTARY	School	402,413.70	3,743,526.82	18,658	15,927
MONTESSORI CHILDREN'S WORLD	Daycare	405,922.65	3,735,565.09	18,659	15,928
MONTESSORI CHILDRENS WORLD	School	405,922.65	3,735,565.09	18,659	15,928
CASEY FAMILY CHILD CARE	Daycare	390,513.60	3,737,547.64	18,661	15,930
SURF CITY CHRISTIAN CHILD DEVELOPMENT PRESCHOOL	Daycare	404,211.04	3,731,882.47	18,662	15,931
ST JUDE HERITAGE HLTH FDNTN-BRISTOL PK	Hospital	403,409.60	3,731,071.54	18,663	15,932
HOY FAMILY CHILD CARE	Daycare	390,834.06	3,739,279.48	18,664	15,933
HUNTINGTON BEACH DIALYSIS	Hospital	403,515.87	3,731,163.13	18,665	15,934
HUNTINGTON BEACH DIALYSIS	Hospital	403,515.87	3,731,163.13	18,665	15,934
GAGE, NICOLE	Daycare	402,288.43	3,743,672.30	18,667	15,936
ST ANTHONY HIGH SCHOOL	School	390,519.13	3,737,808.89	18,668	15,937
LAUFER, MARGIE	Daycare	402,700.33	3,743,416.46	18,669	15,938
HOLLMAN FAMILY DAY CARE	Daycare	398,312.25	3,744,783.78	18,670	15,939
LONG BEACH HARBOR (UCLA)	Hospital	390,873.15	3,739,481.32	18,671	15,940
SAV-ON DRUGS #9491	Hospital	404,849.79	3,732,681.99	18,672	15,941
GOMEZ, LINDA	Daycare	405,903.76	3,738,795.80	18,673	15,942
ANDERSON, MARGARET	Daycare	405,844.09	3,739,046.24	18,674	15,943
NGUON FAMILY CHILD CARE	Daycare	390,581.95	3,738,419.57	18,675	15,944
CHRIST SECOND BAPTIST CHURCH	Daycare	390,687.85	3,738,916.83	18,676	15,945
HARRISON-IMEL FAMILY CHILD CARE	Daycare	399,492.87	3,744,717.38	18,677	15,946

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
GLENN, JANET	Daycare	405,283.28	3,733,395.65	18,678	15,947
DIAZ GINNY	Daycare	405,232.62	3,733,277.82	18,679	15,948
PELLEGRINO FAMILY DAY CARE	Daycare	401,320.60	3,744,225.46	18,680	15,949
CHANG, DANIELLE	Daycare	404,785.94	3,732,514.79	18,681	15,950
STEVENS, APRIL	Daycare	404,285.48	3,742,083.51	18,682	15,951
SAV ON DRUGS #9575	Hospital	404,047.32	3,742,355.63	18,683	15,952
PIERRE FAMILY CHILD CARE	Daycare	390,393.74	3,737,383.15	18,684	15,953
TAYLOR FAMILY CHILD CARE	Daycare	390,848.27	3,739,634.12	18,685	15,954
BRYANT, MELODY	Daycare	405,780.82	3,734,434.74	18,686	15,955
EVELYN, BONNIE	Daycare	405,937.14	3,738,965.74	18,687	15,956
MARINA FAMILY MEDICAL GROUP INC	Hospital	404,948.78	3,732,681.96	18,688	15,957
VILLA MARIA CARE CENTER	Hospital	390,455.75	3,738,143.86	18,689	15,958
VILLA MARIA CARE CENTER	Hospital	390,455.75	3,738,143.86	18,689	15,958
VILLA MARIA CARE CENTER	Nursing	390,455.75	3,738,143.86	18,689	15,958
STEVENSON CHILD DEVELOPMENT CENTERS/PRESCHOOL	Daycare	390,395.47	3,737,644.77	18,692	15,961
STEVENSON ELEMENTARY	School	390,395.47	3,737,644.77	18,692	15,961
KIDDIES CASTLE MONTESSORI SCHOOL	Daycare	406,193.28	3,737,542.35	18,694	15,963
KIDDIES CASTLE MONTESSORI SCL	School	406,193.28	3,737,542.35	18,694	15,963
LONG BEACH CITY COLLEGE	Hospital	394,946.34	3,744,154.54	18,696	15,965
LONG BEACH CITY COLLEGE-HTECH	Hospital	394,946.34	3,744,154.54	18,696	15,965
LONG BEACH CITY COLLEGE	College	394,946.34	3,744,154.54	18,696	15,965
MEDICAL CLINIC	Hospital	390,543.09	3,738,680.35	18,699	15,968
ALVAREZ FAMILY CHILD CARE	Daycare	401,076.39	3,744,388.34	18,700	15,969
EDWARDS AND WILLIAMS FAMILY CHILD CARE	Daycare	399,578.68	3,744,801.39	18,701	15,970
COAST HEALTH CARE MEDICAL CLINIC	Hospital	390,747.58	3,739,479.91	18,702	15,971
BIENESTAR HUMAN SERVICES INC	Hospital	390,739.97	3,739,480.00	18,703	15,972
MOTLEY FAMILY CHILD CARE	Daycare	390,901.41	3,739,955.64	18,704	15,973
FRANK VESSELS ELEMENTARY	School	404,651.19	3,741,760.97	18,705	15,974
EDU CARE PRESCHOOL	Daycare	395,901.58	3,744,568.06	18,706	15,975
SOUZA, AUDREY & HUERTA, CHERYL	Daycare	405,867.04	3,739,444.86	18,707	15,976
SCHROEDER PRESCHOOL	Daycare	405,723.63	3,734,039.73	18,708	15,977
SCHROEDER ELEMENTARY	School	405,723.63	3,734,039.73	18,708	15,977
ORION HOME HEALTH AGENCY	Hospital	391,215.39	3,740,687.27	18,710	15,979
BARBER, DANIELLE	Daycare	405,644.03	3,733,817.18	18,711	15,980
YMCA GLB FAIRFIELD 3RD STREET PRESCHOOL	Daycare	390,291.78	3,737,341.83	18,712	15,981
PACIFICA HIGH	School	406,173.24	3,738,341.63	18,713	15,982
HAY, JILL	Daycare	405,643.79	3,733,793.08	18,714	15,983
MARINA HIGH	School	405,131.27	3,732,783.58	18,715	15,984
WATTS FAMILY CHILD CARE	Daycare	397,254.03	3,744,916.83	18,716	15,985
GABA, ROSE	Daycare	406,057.61	3,738,964.55	18,717	15,986
OXFORD HEALTH CARE	Hospital	390,268.63	3,737,314.50	18,718	15,987
SOUTHERN PAU	School	390,267.19	3,737,410.30	18,719	15,988
FHC MEDICAL CENTER	Hospital	390,268.69	3,737,540.94	18,720	15,989
WORLD MEDICAL CLINIC	Hospital	390,268.69	3,737,540.94	18,720	15,989
SALAZAR, PHYLLIS SUZETTE	Daycare	405,835.70	3,739,738.75	18,722	15,991
BILODEAU FAMILY CHILD CARE	Daycare	395,189.71	3,744,383.51	18,723	15,992
YOUNG HORIZONS CHILD DEVELOPMENT CENTERS	Daycare	390,269.51	3,737,611.65	18,724	15,993
YOUNG HORIZONS INFANT CHILD DEVELOPMENT CENTER	Daycare	390,269.51	3,737,611.65	18,724	15,993
CERYANCE, MARGARET	Daycare	405,363.08	3,733,124.24	18,726	15,995
MCCULLEY , JANET FAMILY DAY CARE	Daycare	390,803.42	3,739,926.33	18,727	15,996
CLINICA FAMILIAR DE GALVAN	Hospital	390,638.53	3,739,481.79	18,728	15,997
P C H WALK-IN MEDICAL CLINIC	Hospital	390,638.53	3,739,481.79	18,728	15,997
SHORELINE FAMILY MEDICAL CLINIC	Hospital	390,638.53	3,739,481.79	18,728	15,997
MIZRAHI, ANGELA	Daycare	404,343.26	3,742,282.61	18,731	16,000
COOK FAMILY CHILD CARE	Daycare	397,749.32	3,745,006.56	18,732	16,001
WILKERSON, ELIZABETH	Daycare	404,171.68	3,742,492.26	18,733	16,002
PACIFIC LEARNING CENTER CHARTER	School	390,276.46	3,737,995.93	18,734	16,003
MELBOURNE HEAD START/STATE PRESCHOOL	Daycare	401,209.30	3,744,492.80	18,735	16,004

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
ELLA P. MELBOURNE ELEMENTARY	School	401,209.30	3,744,492.80	18,735	16,004
TUNE, BERNADETTE	Daycare	406,366.75	3,736,864.23	18,737	16,006
MC WILLIAMS, ROBIN	Daycare	405,836.77	3,739,846.54	18,738	16,007
ABC DEVELOPMENT PRESCHOOL #3	Daycare	404,248.28	3,742,419.86	18,739	16,008
ABC DEVELOPMENT PRESCHOOL #3	Daycare	404,248.28	3,742,419.86	18,739	16,008
MACARTHUR ELEMENTARY	School	396,877.66	3,744,924.39	18,741	16,010
INTERIM HEALTH CARE	Hospital	394,597.80	3,744,159.66	18,742	16,011
LAKEWOOD HIGH	School	396,072.15	3,744,749.67	18,743	16,012
DR OWL PEDIATRICS	Hospital	405,927.66	3,734,270.88	18,744	16,013
G P MEDICAL CLINIC	Hospital	390,278.74	3,738,194.10	18,745	16,014
ATLANTIC & 10TH STREET MEDICAL CLINIC	Hospital	390,278.74	3,738,194.10	18,745	16,014
ATLANTIC MULTI CARE MEDICAL GROUP	Hospital	390,278.74	3,738,194.10	18,745	16,014
FAMILY HEALTH SERVICES MED CLINIC	Hospital	390,278.98	3,738,215.02	18,748	16,017
BOWERS FAMILY CHILD CARE	Daycare	397,200.38	3,744,995.68	18,749	16,018
CLAYTON, ELIZABETH	Daycare	404,918.22	3,732,288.84	18,750	16,019
JULIET MORRIS ELEMENTARY	School	404,248.77	3,742,467.71	18,751	16,020
JONES FAMILY CHILD CARE	Daycare	390,438.04	3,739,031.63	18,752	16,021
LONG BEACH UNIFIED SCHOOL DISTRICT	Hospital	390,277.19	3,738,279.42	18,753	16,022
STEPPING STONES LEARNING CENTER AND INFANT CARE	Daycare	402,363.89	3,743,985.27	18,754	16,023
STEPPING STONES LEARNING CENTER AND INFANT CARE	Daycare	402,363.89	3,743,985.27	18,754	16,023
KARING PEDIATRICS MEDICAL GROUP	Hospital	390,276.48	3,738,327.94	18,756	16,025
ASSOCIATES-INTERNAL MED	Hospital	390,276.48	3,738,327.94	18,756	16,025
PEDERSON, ANGELA	Daycare	406,085.79	3,739,249.62	18,758	16,027
FALK, LINDA	Daycare	405,441.55	3,733,103.16	18,759	16,028
CYPRESS ADULT DAY HLTH CARE CTR	Hospital	402,375.30	3,743,985.15	18,760	16,029
ST MARY MED CTR H C DEPT	Hospital	390,277.02	3,738,375.50	18,761	16,030
RORY J FRIEDMAN DPM	Hospital	390,277.02	3,738,375.50	18,761	16,030
GEORGE M JAYATILAKA MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
LONG BEACH DIALYSIS CENTER	Hospital	390,277.02	3,738,375.50	18,761	16,030
CHUNG H TSI MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
ASSOCIATES IN UROLOGY	Hospital	390,277.02	3,738,375.50	18,761	16,030
PRO HEALTH PARTNERS A MEDICAL GROUP	Hospital	390,277.02	3,738,375.50	18,761	16,030
EJIKE ONYEADOR MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
GASTROINTESTINAL ASSOCIATES	Hospital	390,277.02	3,738,375.50	18,761	16,030
GRETA A WANYIK MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
WESTERN HOME MED OF CALIFORNIA	Hospital	390,277.02	3,738,375.50	18,761	16,030
CARLTON H WATERS MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
PULMONARY DISEASE INSTITUTE	Hospital	390,277.02	3,738,375.50	18,761	16,030
PROHEALTH PARTNERS A MEDICAL GROUP INC	Hospital	390,277.02	3,738,375.50	18,761	16,030
ROVZAR & SINKOWITZ MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
PROHEALTH PARTNERS MEDICAL GROUP INC	Hospital	390,277.02	3,738,375.50	18,761	16,030
DOUGLAS K ULMER MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
LONG BEACH DIALYSIS CENTER, LLC	Hospital	390,277.02	3,738,375.50	18,761	16,030
PROHEALTH PARTNERS A MEDICAL GROUP INC	Hospital	390,277.02	3,738,375.50	18,761	16,030
GREATER LONG BEACH GENITO URINARY	Hospital	390,277.02	3,738,375.50	18,761	16,030
REPRODUCTIVE ASSOCIATES MEDICAL GROUP	Hospital	390,277.02	3,738,375.50	18,761	16,030
PANKAJ K KASHYAP MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
JYOTI S DATTA MD FCCP	Hospital	390,277.02	3,738,375.50	18,761	16,030
MICHAEL P SHALLMAN MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
PROHEALTH PARTNERS, A MEDICAL GRP INC	Hospital	390,277.02	3,738,375.50	18,761	16,030
CARDIOVASCULAR ASSOCS	Hospital	390,277.02	3,738,375.50	18,761	16,030
ST MARY MEDICAL CENTER VNA	Hospital	390,277.02	3,738,375.50	18,761	16,030
ROBERT L BARMMEYER MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
PROHEALTH PARTNERS A MEDICAL GROUP INC	Hospital	390,277.02	3,738,375.50	18,761	16,030
QUEST DIAGNOSTICS	Hospital	390,277.02	3,738,375.50	18,761	16,030
DOUGLAS A SMITH MD	Hospital	390,277.02	3,738,375.50	18,761	16,030
PROHEALTH PARTNERS,A MEDICAL GROUP,INC	Hospital	390,277.02	3,738,375.50	18,761	16,030
RENALDO LI-PERDOMO MD	Hospital	390,281.10	3,738,398.92	18,793	16,062

**Alamitos Energy Center**  
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**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
ELENA G EZPELETA MD	Hospital	390,281.39	3,738,424.61	18,794	16,063
NELSON, PAM	Daycare	404,172.61	3,742,584.80	18,795	16,064
HARBOR HEALTH CARE, INC - REDWOOD DIVISION	Hospital	403,287.05	3,743,394.95	18,796	16,065
GARCIA FAMILY CHILD CARE	Daycare	401,054.79	3,744,627.50	18,797	16,066
OXFORD HIGH	School	403,580.04	3,743,159.99	18,798	16,067
OLSON, JOYCE	Daycare	403,349.98	3,743,350.26	18,799	16,068
VAN PHAC VO MD	Hospital	390,300.86	3,738,683.14	18,800	16,069
HARBOUR PHYSICAL THERAPY	Hospital	403,969.53	3,731,088.43	18,801	16,070
KENYON FAMILY CHILD CARE	Daycare	397,291.23	3,745,075.18	18,802	16,071
ESCOTO FAMILY CHILD CARE	Daycare	396,533.27	3,744,958.23	18,803	16,072
SCHROCK FAMILY CHILD CARE	Daycare	390,496.92	3,739,520.20	18,804	16,073
DAILEY FAMILY CHILD CARE	Daycare	400,311.15	3,744,908.09	18,805	16,074
TIT S LI MD & NGA W WONG MD, INC	Hospital	406,038.05	3,734,270.74	18,806	16,075
BOEING COMPANY C-17 MEDICAL SVCS,THE	Hospital	392,400.85	3,742,688.30	18,807	16,076
GRIFFEN, LAURA	Daycare	405,681.57	3,733,378.07	18,808	16,077
KUBOVEC, CHRISTINA	Daycare	406,488.55	3,736,348.63	18,809	16,078
FAMILY PLANNING ASSOCIATES MED GRP INC	Hospital	403,640.07	3,743,204.70	18,810	16,079
GLENN,NORMA FAMILY DAY CARE	Daycare	395,919.74	3,744,837.53	18,811	16,080
FIRST LUTHERAN CHRISTIAN PRESCHOOL & DAY CARE CTR	Daycare	390,157.17	3,738,211.04	18,812	16,081
PATTON ELEMENTARY	School	406,189.81	3,739,253.04	18,813	16,082
BODIMETRIC HEALTH SERVICES INC	Hospital	403,714.42	3,743,160.53	18,814	16,083
SNYDER FAMILY DAY CARE	Daycare	396,605.05	3,745,032.55	18,815	16,084
UNDERWOOD FAMILY CHILD CARE	Daycare	396,226.50	3,744,955.54	18,816	16,085
KEMPF FAMILY CHILD CARE	Daycare	396,305.31	3,744,975.92	18,817	16,086
A LOVE 4 LEARNING ACADEMY	Daycare	390,025.51	3,737,353.46	18,818	16,087
ST JOSEPH MEDICAL CLINIC	Hospital	390,025.51	3,737,353.46	18,818	16,087
DE SILVA WICKRAMARATNE	Daycare	395,794.38	3,744,849.04	18,820	16,089
JACKSON FAMILY CHILD CARE	Daycare	398,195.41	3,745,236.89	18,821	16,090
ST MARY MEDICAL CENTER	Hospital	390,131.11	3,738,371.48	18,822	16,091
ST MARY MEDICAL CENTER-LABORATORY	Hospital	390,131.11	3,738,371.48	18,822	16,091
SAINT MARY MEDICAL CENTER D P	Hospital	390,131.11	3,738,371.48	18,822	16,091
CATHOLIC HEALTHCARE WEST/ST MARY MEDICAL CENTER	Hospital	390,131.11	3,738,371.48	18,822	16,091
ST MARY MED CTR HEMODIALYSIS U	Hospital	390,131.11	3,738,371.48	18,822	16,091
PULMONARY LABORATORY-SMMC	Hospital	390,131.11	3,738,371.48	18,822	16,091
ST MARY MEDICAL CENTER VNA HOSPICE	Hospital	390,131.11	3,738,371.48	18,822	16,091
CANNICK FAMILY CHILD CARE	Daycare	400,199.57	3,745,025.23	18,829	16,098
VIERSTRA, WENDY A.	Daycare	404,899.19	3,741,964.21	18,830	16,099
POLYTECHNIC HIGH	School	390,291.45	3,739,188.36	18,831	16,100
RAFIQ FAMILY CHILD CARE	Daycare	398,327.51	3,745,263.68	18,832	16,101
TUCKER, ALICIA & JAMES	Daycare	406,085.81	3,734,094.53	18,833	16,102
CONCHITA GOINGS MD	Hospital	400,802.68	3,744,883.30	18,834	16,103
SAV-ON PHARMACY #6145	Hospital	406,535.03	3,735,912.72	18,835	16,104
HILL FAMILY CHILD CARE	Daycare	401,393.70	3,744,674.36	18,836	16,105
CIRCLE VIEW ELEMENTARY	School	405,589.89	3,732,960.83	18,837	16,106
BALTAZAR FAMILY CHILD CARE	Daycare	390,836.24	3,740,688.12	18,838	16,107
LIFE CARE SOLUTIONS	Hospital	405,429.73	3,741,255.56	18,839	16,108
LIFECARE SOLUTIONS WEST INC	Hospital	405,429.73	3,741,255.56	18,839	16,108
ADVANCED HEALTH SOULTIONS MED GRP INC	Hospital	390,290.31	3,739,309.82	18,841	16,110
SUKDEB MONDAL MD	Hospital	390,290.31	3,739,309.82	18,841	16,110
GONZALEZ FAMILY CHILD CARE	Daycare	390,397.20	3,739,671.63	18,843	16,112
WESTMINSTER SCHOOL DISTRICT-FRYBERGER	Daycare	406,626.81	3,737,254.92	18,844	16,113
FRYBERGER ELEMENTARY	School	406,626.81	3,737,254.92	18,844	16,113
MONTESSORI ON ELM PRESCHOOL + KINDERGARTEN	Daycare	390,036.71	3,738,214.96	18,846	16,115
MONTESSORI ON ELM PRESCHOOL + KINDERGARTEN	Daycare	390,036.71	3,738,214.96	18,846	16,115
DAVID R SINGER MD/PROHEALTH PARTNERS	Hospital	390,046.39	3,738,284.30	18,848	16,117
STAGGERS, VIRGINIA B.	Daycare	405,224.19	3,741,624.66	18,849	16,118
REDEEMER LUTHERAN PRESCHOOL	Daycare	405,118.45	3,732,131.06	18,850	16,119
MARY, DARCY	Daycare	404,946.76	3,742,029.98	18,851	16,120



**Alamitos Energy Center**  
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**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Receptor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
GONZALEZ FAMILY CHILD CARE	Daycare	390,211.53	3,739,187.06	18,852	16,121
AUCHARD FAMILY CHILD CARE	Daycare	398,225.77	3,745,349.69	18,853	16,122
CENTRALIA CONVALESCENT CENTER	Hospital	395,696.52	3,744,940.74	18,854	16,123
BRITTANY HOUSE	Hospital	395,696.52	3,744,940.74	18,854	16,123
CENTRALIA CONVALESCENT CENTER	Hospital	395,696.52	3,744,940.74	18,854	16,123
HUNTER FAMILY CHILD CARE	Daycare	398,985.94	3,745,322.26	18,857	16,126
KRANZ, RHONDA	Daycare	406,151.85	3,739,906.20	18,858	16,127
IRENE P LEECH MD INC	Hospital	390,008.28	3,738,390.01	18,859	16,128
YOUNG J KWON MD	Hospital	390,008.28	3,738,390.01	18,859	16,128
GUNTHER R BAUER MD	Hospital	390,008.28	3,738,390.01	18,859	16,128
SURGICAL SUITE OF SOUTHERN CALIFORNIA	Hospital	390,008.28	3,738,390.01	18,859	16,128
ED RAMIREZ MD	Hospital	390,008.28	3,738,390.01	18,859	16,128
PHYSIOTHERAPY ASSOCIATES LONG BEACH	Hospital	390,004.21	3,738,366.60	18,864	16,133
ST MARY MEDICAL CENTER FAMILY CLINIC LONG BEACH	Hospital	390,004.21	3,738,366.60	18,864	16,133
C A R E CLINIC	Hospital	390,004.21	3,738,366.60	18,864	16,133
WOMENS HEALTH CARE SERVICES	Hospital	390,004.21	3,738,366.60	18,864	16,133
PACIFIC SHORES MEDICAL GROUP	Hospital	390,004.21	3,738,366.60	18,864	16,133
METRO-SOUTH PROVIDER	Hospital	390,004.21	3,738,366.60	18,864	16,133
LIVING HOPE CLINICAL FOUNDATION	Hospital	390,004.21	3,738,366.60	18,864	16,133
ANDY TUAN HO MD INC	Hospital	406,628.74	3,735,895.31	18,871	16,140
ST. TIMOTHY LUTHERAN PRESCHOOL DAY CARE	Daycare	396,686.91	3,745,216.71	18,872	16,141
ST. TIMOTHY LUTHERAN INFANT CENTER	Daycare	396,686.91	3,745,216.71	18,872	16,141
ST TIMOTHY LUTHERAN SCHOOL	School	396,686.91	3,745,216.71	18,872	16,141
FH LONG BEACH	Hospital	389,871.45	3,737,084.39	18,875	16,144
ATLANTIC HEAD START	Daycare	390,297.53	3,739,607.15	18,876	16,145
POOLE FAMILY CHILD CARE	Daycare	390,399.81	3,739,899.25	18,877	16,146
VILLA HERMOSA CARE CENTER	Hospital	390,707.63	3,740,641.72	18,878	16,147
ALVAREZ, MARIA & VAZQUEZ, MARCO	Daycare	406,604.30	3,735,601.85	18,879	16,148
SIMPFENDERFER FAMILY CHILD CARE	Daycare	397,248.29	3,745,324.70	18,880	16,149
HARRIS FAMILY CHILD CARE	Daycare	390,397.68	3,739,933.83	18,881	16,150
PARKER-BURTON FAMILY CHILD CARE	Daycare	400,804.00	3,745,009.41	18,882	16,151
ROOSEVELT ELEMENTARY	School	390,137.53	3,739,149.55	18,883	16,152
WILLIAMS FAMILY CHILD CARE	Daycare	390,501.18	3,740,222.43	18,884	16,153
FLEETHAVEN CHRISTIAN	School	394,204.43	3,744,351.63	18,885	16,154
FOURTH DIMENSION MEDICAL CLINIC	Hospital	390,294.90	3,739,708.64	18,886	16,155
NEW LIFE MEDICAL GROUP	Hospital	390,294.90	3,739,708.64	18,886	16,155
SUMMERFELT FAMILY CHILD CARE	Daycare	397,416.09	3,745,370.11	18,888	16,157
BANCROFT MIDDLE	School	395,502.62	3,744,943.82	18,889	16,158
SON-HA & DIEM-CHI A MEDICAL CORP	Hospital	390,213.73	3,739,488.89	18,890	16,159
MORAKOD LIM MD INC	Hospital	390,213.73	3,739,488.89	18,890	16,159
JONATHAN NGUYEN MD	Hospital	390,213.73	3,739,488.89	18,890	16,159
MANCILLA FAMILY CHILD CARE	Daycare	396,075.12	3,745,137.82	18,893	16,162
MCGHEE FAMILY CHILD CARE	Daycare	390,606.23	3,740,535.41	18,894	16,163
SHIPP, SHONNIE	Daycare	405,018.53	3,742,107.23	18,895	16,164
8TH STREET EARLY HEAD START	Daycare	389,884.14	3,738,074.34	18,896	16,165
COMMUNITY ADULT DAY HEALTH CARE CENTER	Hospital	390,298.57	3,739,807.20	18,897	16,166
LONG BEACH CHILD DEVELOPMENT CENTER	Daycare	390,506.32	3,740,338.41	18,898	16,167
LONG BEACH CHILD DEVELOPMENT CENTER	Daycare	390,506.32	3,740,338.41	18,898	16,167
INFINITE HEALTH SOLUTIONS ADHC	Hospital	389,943.63	3,738,502.70	18,900	16,169
CLEVELAND ELEMENTARY	School	397,602.98	3,745,424.18	18,901	16,170
WARD FAMILY CHILD CARE	Daycare	400,347.19	3,745,202.40	18,902	16,171
LE GRUE, BLANCA	Daycare	403,687.69	3,743,525.58	18,903	16,172
WATSON-NUNLEY FAMILY CHILD CARE	Daycare	399,906.16	3,745,327.12	18,904	16,173
RICHARDS FAMILY CHILD CARE	Daycare	390,300.38	3,739,965.07	18,905	16,174
GARIBAY FAMILY CHILD CARE	Daycare	390,406.21	3,740,234.93	18,906	16,175
ST IRENAEUS PARISH SCHOOL	School	403,640.41	3,743,614.16	18,907	16,176
QUALITY HOME HEALTH SERVICES	Hospital	406,400.50	3,739,657.10	18,908	16,177
QUALITY HOME HEALTH SERVICES	Hospital	406,400.50	3,739,657.10	18,908	16,177

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
LAWTON FAMILY CHILD CARE	Daycare	396,689.74	3,745,360.85	18,910	16,179
J AND P HOMES/EUDORA	Daycare	405,300.03	3,741,856.57	18,911	16,180
12TH STREET HEAD START	Daycare	389,891.55	3,738,606.04	18,912	16,181
RENAISSANCE CAREER ACADEMY INFANT DEVELOPMENT CTR.	Daycare	389,794.72	3,738,019.87	18,913	16,182
RENAISSANCE HIGH SCHOOL FOR THE ARTS	School	389,794.72	3,738,019.87	18,913	16,182
ST BONAVENTURE	School	405,322.12	3,732,064.00	18,915	16,184
WILLOW HEAD START/STATE PRESCHOOL	Daycare	399,761.31	3,745,413.56	18,916	16,185
WILLOW ELEMENTARY	School	399,761.31	3,745,413.56	18,916	16,185
ALL AMERICAN HOME	Hospital	405,375.53	3,741,798.76	18,918	16,187
SANTA CRUZ MEDICAL CLINIC	Hospital	389,867.92	3,738,646.90	18,919	16,188
CLINICA MEDICA SAN MARTIN	Hospital	389,867.92	3,738,646.90	18,919	16,188
ABR HOME HEALTH INC	Hospital	391,126.77	3,741,699.23	18,921	16,190
ABR HOME HEALTH INC	Hospital	391,126.77	3,741,699.23	18,921	16,190
BOWERS AMBULANCE SERVICE	Hospital	390,079.28	3,739,487.59	18,923	16,192
WESTMINSTER HIGH	School	406,726.21	3,735,353.58	18,924	16,193
JUAREZ, OLGA	Daycare	406,166.54	3,733,529.06	18,925	16,194
LONG BEACH CENTER FOR CHILD DEVELOPMENT	Daycare	390,356.12	3,740,290.04	18,926	16,195
LONG BEACH CENTER FOR CHILD DEVELOPMENT	Daycare	390,356.12	3,740,290.04	18,926	16,195
PARK MONTESSORI SCHOOL, THE	School	404,042.43	3,743,380.02	18,928	16,197
CHILDREN'S CLINIC AT INTERNATIONAL, THE	Hospital	389,714.52	3,737,885.39	18,929	16,198
INTERNATIONAL ELEMENTARY	School	389,714.52	3,737,885.39	18,929	16,198
HUNTER FAMILY DAY CARE	Daycare	390,107.01	3,739,692.73	18,931	16,200
POTTS FAMILY CHILD CARE	Daycare	390,173.97	3,739,890.44	18,932	16,201
KIM FAMILY CHILD CARE	Daycare	390,197.63	3,739,963.09	18,933	16,202
CALVARY SCHOOL OF WESTMINSTER	School	406,919.59	3,736,710.40	18,934	16,203
YMCA-GLB-TWAIN SITE	Daycare	395,010.90	3,744,951.13	18,935	16,204
TWAIN ELEMENTARY	School	395,010.90	3,744,951.13	18,935	16,204
ALFERES, MARY	Daycare	405,776.14	3,741,281.92	18,937	16,206
CRESPO FAMILY CHILD CARE	Daycare	390,097.61	3,739,757.52	18,938	16,207
KIM, HAEJIN	Daycare	403,763.92	3,743,668.37	18,939	16,208
HAWKINS FAMILY CHILD CARE	Daycare	401,374.80	3,745,051.64	18,940	16,209
CAREY FAMILY CHILD CARE	Daycare	390,561.95	3,740,876.72	18,941	16,210
N.O.C. R.O.P. CYPRESS SCHOOL	Daycare	404,833.60	3,742,633.00	18,942	16,211
CYPRESS HIGH	School	404,833.60	3,742,633.00	18,942	16,211
ARTESIA HIGH SCHOOL CHILDREN'S CENTER	Daycare	400,817.96	3,745,254.51	18,944	16,213
WESTMINSTER SCHOOL DIST. SCHMITT STATE PRESCHOOL	Daycare	406,963.96	3,736,707.11	18,945	16,214
SCHMITT ELEMENTARY	School	406,963.96	3,736,707.11	18,945	16,214
FELICIANO FAMILY CHILD CARE	Daycare	401,448.27	3,745,047.39	18,947	16,216
HEALTH VIEW HOME HEALTH	Hospital	389,659.04	3,738,024.29	18,948	16,217
HEALTHVIEW HOME HEALTH INC	Hospital	389,659.04	3,738,024.29	18,948	16,217
NOLAN, JOAN	Daycare	405,512.44	3,741,797.09	18,950	16,219
BORDEAU, CARLA KAY	Daycare	405,572.51	3,741,717.25	18,951	16,220
JOHNSON, DIANE	Daycare	406,403.88	3,733,792.58	18,952	16,221
CENTERS FOR FAMILY MEDICINE	Hospital	406,132.30	3,740,754.10	18,953	16,222
ALPHA THERAPEUTIC CORPORATION	Hospital	389,876.05	3,739,241.66	18,954	16,223
BURNETT ELEMENTARY	School	390,234.42	3,740,294.61	18,955	16,224
BURTON FAMILY CHILD CARE	Daycare	401,709.91	3,744,977.83	18,956	16,225
PLINY FISK HASKELL MIDDLE	School	399,385.77	3,745,617.46	18,957	16,226
KAKOVITCH, SWEDLANA	Daycare	405,792.72	3,741,420.28	18,958	16,227
HARRIS, TERESA	Daycare	405,172.96	3,742,337.71	18,959	16,228
JOHN WESLEY INTERNATIONAL BARBER AND BEAUTY COLLEGE	College	389,593.12	3,737,918.19	18,960	16,229
DANIEL FAMILY CHILD CARE	Daycare	397,104.56	3,745,628.86	18,961	16,230
SAINT ALBERT MEDICAL CLINIC INC	Hospital	389,910.65	3,739,491.44	18,962	16,231
PACIFIC COAST DOCTORS MEDICAL CLINIC	Hospital	389,910.65	3,739,491.44	18,962	16,231
ODYSSEY HEALTHCARE OPERATING A LP DBA	Hospital	406,513.69	3,739,949.25	18,964	16,233
ODYSSEY HEALTHCARE OF ORANGE COUNTY	Hospital	406,513.69	3,739,949.25	18,964	16,233
PACIFIC COAST HOSPICE	Hospital	406,513.69	3,739,949.25	18,964	16,233
ODYSSEY HEALTHCARE OPERATING A, LP DBA	Hospital	406,513.69	3,739,949.25	18,964	16,233

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Receptor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
BRIGHT STAR LEARNING CENTER	Daycare	406,157.53	3,733,128.15	18,968	16,237
BRIGHT STAR LEARNING CENTER	Daycare	406,157.53	3,733,128.15	18,968	16,237
BRIGHT STAR LEARNING CENTER	Daycare	406,157.53	3,733,128.15	18,968	16,237
JUBILEE HOME HEALTH SERVICES INC	Hospital	393,122.11	3,744,031.92	18,971	16,240
SOUTH COAST HOME HEALTH SERVICES INC	Hospital	393,122.11	3,744,031.92	18,971	16,240
ADMIRAL HOME HEALTH INC	Hospital	393,122.11	3,744,031.92	18,971	16,240
ADMIRAL HOME HEALTH, INC	Hospital	393,122.11	3,744,031.92	18,971	16,240
JUBILEE HOME HEALTH SERVICES	Hospital	393,122.11	3,744,031.92	18,971	16,240
INTERHEALTH MEDICAL LABORATORY	Hospital	407,029.04	3,737,527.51	18,976	16,245
SETH A KOGAN MD	Hospital	390,550.32	3,741,078.16	18,977	16,246
BRENDA P JACOBS MD	Hospital	390,550.32	3,741,078.16	18,977	16,246
SARANG ADULT DAY HEALTH CARE CENTER	Hospital	403,520.03	3,743,994.08	18,979	16,248
SANAR HEALTH SERVICE CORP	Hospital	389,598.40	3,738,155.01	18,980	16,249
PALMS STATE PRESCHOOL	Daycare	401,325.51	3,745,187.77	18,981	16,250
PALMS ELEMENTARY	School	401,325.51	3,745,187.77	18,981	16,250
LITTLE LIGHTHOUSE EDUCATIONAL CHILDCARE CENTER, INC	Daycare	389,596.16	3,738,180.41	18,983	16,252
LITTLE LIGHTHOUSE EDUCATIONAL CHILDCARE CENTER, INC	Daycare	389,596.16	3,738,180.41	18,983	16,252
DERMATOLOGY ASSOCIATES OF SOUTHERN CALIFORNIA	Hospital	389,596.34	3,738,195.95	18,985	16,254
CALVARY CHAPEL CHRISTIAN SCHOOL	Daycare	403,561.72	3,743,980.03	18,986	16,255
CALVARY CHAPEL CHRISTIAN SCHOO	School	403,561.72	3,743,980.03	18,986	16,255
PINE HEAD START	Daycare	389,596.60	3,738,218.77	18,988	16,257
TRAN, XUAN HONG	Daycare	407,066.74	3,736,709.28	18,989	16,258
FIRST BAPTIST CHURCH SCHOOL	School	389,599.95	3,738,288.50	18,990	16,259
FIRST BAPTIST CHURCH OF LAKEWOOD PRESCHOOL	Daycare	395,582.82	3,745,322.23	18,991	16,260
FIRST BAPTIST CHURCH OF LAKEWO	School	395,582.82	3,745,322.23	18,991	16,260
OLINGER, DIXIE	Daycare	406,320.00	3,733,391.46	18,993	16,262
TASCON FAMILY CHILD CARE	Daycare	401,709.45	3,745,055.46	18,994	16,263
NICHOLS FAMILY DAY CARE	Daycare	390,102.71	3,740,200.06	18,995	16,264
CHILDRENS CLINIC ON PINE FAMILY	Hospital	389,597.14	3,738,374.47	18,996	16,265
CEDAR HEALTH FAMILY MEDICAL	Hospital	389,597.14	3,738,374.47	18,996	16,265
ORELLANA FAMILY DAY CARE	Daycare	395,624.98	3,745,352.19	18,998	16,267
MARIA GUEVARA FAMILY CLINIC	Hospital	389,597.17	3,738,377.32	18,999	16,268
MARIA N GUEVARA, MD	Hospital	389,597.17	3,738,377.32	18,999	16,268
CONSOLIDATED MEDICAL BIOANALYSIS INC	Hospital	406,408.92	3,740,385.87	19,001	16,270
PACIFIC COAST REFERENCE LABORATORY INC	Hospital	406,408.92	3,740,385.87	19,001	16,270
FELICIANO, JOYCE	Daycare	403,438.85	3,744,113.11	19,003	16,272
SAR FAMILY CHILD CARE	Daycare	390,099.32	3,740,235.29	19,004	16,273
SAINT NAZARENE MEDICAL CLINIC INC	Hospital	390,305.16	3,740,711.02	19,005	16,274
ATLANTIC BURNETT MEDICAL CLINIC	Hospital	390,305.16	3,740,711.02	19,005	16,274
MONTESSORI SCHOOL-EUREKA	Daycare	395,486.53	3,745,325.19	19,007	16,276
GRZESKOWIAK, JUDITH	Daycare	405,517.25	3,742,026.20	19,008	16,277
LONG BEACH CITY COLLEGE CDC	Daycare	395,099.80	3,745,197.00	19,009	16,278
RV PHYSICIAN LABORATORY SERVICES	Hospital	398,696.84	3,745,786.36	19,010	16,279
CERRITOS REFERENCE LABORATORIES INC	Hospital	398,696.84	3,745,786.36	19,010	16,279
A/E MEDICAL LABORATORY CORPORATION	Hospital	398,696.84	3,745,786.36	19,010	16,279
NEW CITY	School	389,603.67	3,738,610.64	19,013	16,282
FOSTER, LOIS FAMILY DAY CARE	Daycare	390,461.60	3,741,082.35	19,014	16,283
YOUNG HORIZONS/EL JARDIN DE LA FELICIDAD	Daycare	389,460.95	3,737,677.43	19,015	16,284
BETHANY LUTHERAN CHURCH PRESCHOOL	Daycare	395,100.09	3,745,222.66	19,016	16,285
WESTMINSTER SCHOOL DISTRICT/WILLMORE SCHOOL	Daycare	406,989.54	3,735,295.50	19,017	16,286
WILLMORE ELEMENTARY	School	406,989.54	3,735,295.50	19,017	16,286
ELIZABETH DICKERSON ELEMENTARY	School	405,411.57	3,742,236.76	19,019	16,288
HUNTINGTON POINTE SURGERY CENTER	Hospital	406,718.68	3,734,193.65	19,020	16,289
GOLDENWEST SURGICENTER	Hospital	406,718.68	3,734,193.65	19,020	16,289
ALL STAR HOME	Hospital	404,649.94	3,743,156.51	19,022	16,291
DICKERSON, KRISTIN	Daycare	402,217.66	3,744,927.60	19,023	16,292
WOMEN'S HEART MATTERS HEALTHY HEART CENTER	Hospital	389,401.98	3,736,967.40	19,024	16,293
KAVEH, ROBAB	Daycare	404,493.22	3,743,329.54	19,025	16,294

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
CARDINAL MEDICAL GRP	Hospital	389,474.65	3,738,203.38	19,026	16,295
ASHER CHIROPRACTIC CLINIC	Hospital	406,717.80	3,734,102.93	19,027	16,296
AGAPE FAMILY MEDICAL CENTER	Hospital	403,746.92	3,743,993.05	19,028	16,297
CLARA J. KING ELEMENTARY	School	403,233.63	3,744,375.99	19,029	16,298
HARRIS FAMILY CHILD CARE	Daycare	389,403.46	3,737,751.99	19,030	16,299
ST CYPRIAN ELEMENTARY SCHOOL	School	395,210.29	3,745,331.40	19,031	16,300
CERRITOS LANE PRESCHOOL	Daycare	400,107.72	3,745,692.86	19,032	16,301
CERRITOS LANE PRESCHOOL	Daycare	400,107.72	3,745,692.86	19,032	16,301
CERRITOS LANE PRE-SCHOOL	School	400,107.72	3,745,692.86	19,032	16,301
SPRING VIEW MIDDLE	School	405,524.53	3,731,741.21	19,035	16,304
CYPRESS LEARNING TREE	Daycare	403,921.99	3,743,881.32	19,036	16,305
SIMON, INGRID	Daycare	402,190.43	3,744,992.21	19,037	16,306
TWAIN CHILD DEVELOPMENT CENTER	Daycare	394,994.12	3,745,267.87	19,038	16,307
PHYSITECH PHYSICAL THERAPT	Hospital	392,666.93	3,743,911.22	19,039	16,308
KAVEH, PARVIN	Daycare	404,561.67	3,743,329.48	19,040	16,309
HEALTHCARE PARTNERS MEDICAL GROUP	Hospital	389,346.20	3,736,970.90	19,041	16,310
SNYDER FAMILY CHILD CARE	Daycare	395,795.68	3,745,546.78	19,042	16,311
BRENA FAMILY CHILD CARE	Daycare	390,108.33	3,740,577.28	19,043	16,312
VARGAS, ANGIE FAMILY DAY CARE	Daycare	396,080.46	3,745,626.68	19,044	16,313
HOSPITAL SERVICES LABORATORY	Hospital	406,682.04	3,740,046.83	19,045	16,314
ARTESIA HIGH	School	400,599.77	3,745,600.26	19,046	16,315
WOO-SUNG AHN MD	Hospital	399,889.19	3,745,762.02	19,047	16,316
CENTRAL MEDICAL CLINIC INC	Hospital	399,889.19	3,745,762.02	19,047	16,316
BEILER FAMILY CHILD CARE	Daycare	394,396.93	3,745,020.98	19,049	16,318
GREEN FAMILY CHILD CARE	Daycare	397,700.55	3,745,893.65	19,050	16,319
RALPHS PHARMACY #250	Hospital	399,889.26	3,745,768.99	19,051	16,320
URBINA, JESSIE & CARRANZA, IRELI	Daycare	405,648.16	3,742,058.19	19,052	16,321
BETHANY LUTHERAN SCHOOL	School	395,110.15	3,745,330.92	19,053	16,322
ARTESIAN WELL PREPARTORY ACADE	School	389,476.30	3,738,564.23	19,054	16,323
CHILDS PACE - CERRITOS	Daycare	405,981.70	3,741,554.40	19,055	16,324
CHILDS-PACE CERRITOS	Daycare	405,981.70	3,741,554.40	19,055	16,324
CERRITOS ELEMENTARY	School	405,981.70	3,741,554.40	19,055	16,324
LONG BEACH MEDICAL CLINIC	Hospital	389,480.84	3,738,628.23	19,058	16,327
SISNEROS FAMILY CHILD CARE	Daycare	399,089.63	3,745,896.57	19,059	16,328
SCRIMPSHER, TAWNYA	Daycare	403,401.89	3,744,343.54	19,060	16,329
MURRAY FAMILY CHILD CARE	Daycare	397,979.86	3,745,938.82	19,061	16,330
MEMORIAL MED CTR OF LONG BEACH	Hospital	390,408.29	3,741,297.90	19,062	16,331
MEMORIAL HOME HEALTH CARE	Hospital	390,408.29	3,741,297.90	19,062	16,331
BURROUGHS ELEMENTARY	School	391,196.75	3,742,497.22	19,064	16,333
DREAM HOME CARE III	Daycare	391,645.32	3,743,031.89	19,065	16,334
SIERRA HOUSE	Hospital	401,697.97	3,745,294.50	19,066	16,335
SIERRA HOUSE ICF-DDN	Hospital	401,697.97	3,745,294.50	19,066	16,335
MARTYN, SUZY	Daycare	404,499.85	3,743,485.08	19,068	16,337
SOUTHEAST ROP	School	400,109.94	3,745,784.09	19,069	16,338
CYPRESS MONTESSORI ACADEMY	Daycare	403,093.85	3,744,590.04	19,070	16,339
MCGUIRE FAMILY CHILD CARE	Daycare	389,348.89	3,738,296.80	19,071	16,340
BERRY FAMILY CHILD CARE	Daycare	389,347.56	3,738,291.74	19,072	16,341
GUZMAN FAMILY CHILD CARE	Daycare	389,272.57	3,737,622.85	19,073	16,342
FLORES FAMILY CHILD CARE	Daycare	397,899.30	3,745,990.38	19,074	16,343
LONG BEACH BLVD HEAD START	Daycare	389,913.20	3,740,371.87	19,075	16,344
PREUSS, KIMBERLY	Daycare	404,113.37	3,743,878.12	19,076	16,345
LAUSCH FAMILY CHILD CARE	Daycare	389,264.96	3,737,622.62	19,077	16,346
MARINE VIEW MIDDLE	School	404,656.82	3,730,511.62	19,078	16,347
DREAM HOME CARE I	Daycare	391,849.11	3,743,338.28	19,079	16,348
COLLEGE VIEW ELEMENTARY	School	406,131.45	3,732,411.38	19,080	16,349
BENTLEY FAMILY CHILD CARE	Daycare	394,177.91	3,745,044.33	19,081	16,350
ABC DEVELOPMENT PRESCHOOL #5	Daycare	403,233.07	3,744,570.25	19,082	16,351
ABC DEVELOPMENT PRESCHOOL #5	Daycare	403,233.07	3,744,570.25	19,082	16,351

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Receptor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
MATTHEWS FAMILY CHILD CARE	Daycare	397,912.40	3,746,029.84	19,084	16,353
HEALTHCARE PARTNERS MEDICAL GROUP	Hospital	390,306.82	3,741,295.90	19,085	16,354
MOORE FAMILY CHILD CARE	Daycare	389,219.01	3,737,489.01	19,086	16,355
JOHN CRIVARO MD INC	Hospital	390,306.89	3,741,301.60	19,087	16,356
MEMORIAL WOMENS CTR FOR FAMLY PLANNING	Hospital	390,306.89	3,741,301.60	19,087	16,356
ATLANTIC UROLOGY MEDICAL GROUP	Hospital	390,411.89	3,741,500.74	19,089	16,358
INDEPENDENT PHYSICAL THERAPY	Hospital	390,411.89	3,741,500.74	19,089	16,358
SURGICAL INSTITUTE OF LONG BEACH	Hospital	390,411.89	3,741,500.74	19,089	16,358
OSTERGARD GYNECOLOGY & FEMALE UROLOGY	Hospital	390,411.89	3,741,500.74	19,089	16,358
LONG BEACH SURGICAL INSTITUTE	Hospital	390,411.89	3,741,500.74	19,089	16,358
IMPACT CENTER OF LONG BEACH	Hospital	390,411.89	3,741,500.74	19,089	16,358
CARY EDWARD FEIBLEMAN MD	Hospital	390,411.89	3,741,500.74	19,089	16,358
VAUGHN NIXON MD	Hospital	390,411.89	3,741,500.74	19,089	16,358
BREASTLINK MEDICAL GROUP INC	Hospital	390,411.89	3,741,500.74	19,089	16,358
PHILIP J DI SAIA MD	Hospital	390,411.89	3,741,500.74	19,089	16,358
REPRODUCTIVE PARTNERS ENDOCRINE LAB	Hospital	390,411.89	3,741,500.74	19,089	16,358
PARK MONTESSORI SCHOOL, THE	Daycare	401,116.86	3,745,600.26	19,100	16,369
KOONZE, IMELDA & CHARLIE	Daycare	406,922.16	3,734,110.46	19,101	16,370
MORRIS SILVER MD	Hospital	405,123.24	3,730,950.94	19,102	16,371
ARMANDO HOOL MD	Hospital	405,123.24	3,730,950.94	19,102	16,371
GODFREY FAMILY CHILD CARE	Daycare	389,789.70	3,740,219.85	19,104	16,373
PRATO, TINA	Daycare	403,091.11	3,744,694.96	19,105	16,374
MONTESSORI CHILDREN'S HOUSE	Daycare	402,317.29	3,745,126.52	19,106	16,375
MONTESSORI CHILDRENS HOUSE - C	School	402,317.29	3,745,126.52	19,106	16,375
BATES FAMILY CHILD CARE	Daycare	390,928.57	3,742,328.81	19,108	16,377
A CHILD'S ADVENTURE (ACA) SWAIN ELEMENTARY SCHOOL	Daycare	404,558.99	3,743,567.51	19,109	16,378
MARTIN B. TETZLAFF MIDDLE	School	401,139.84	3,745,615.86	19,110	16,379
PLANNED PARENTHOOD OF L A LAKEWOOD CTR	Hospital	395,968.01	3,745,775.24	19,111	16,380
MEMORIAL PROMPT CARE MED GRPOUP INC	Hospital	406,736.31	3,733,529.19	19,112	16,381
LONG BEACH DOCTORS HOSPITAL	Hospital	389,485.34	3,739,344.48	19,113	16,382
LONG BEACH DOCTOR'S HOSPITAL-RESP	Hospital	389,485.34	3,739,344.48	19,113	16,382
LONG BEACH DOCTORS HOSPITAL	Hospital	389,485.34	3,739,344.48	19,113	16,382
SENCION & MEZA-LUNA FAMILY CHILD CARE	Daycare	389,305.04	3,738,562.09	19,116	16,385
J & L DE LEON MEDICAL CORPORATION	Hospital	389,485.79	3,739,383.47	19,117	16,386
RATIONAL THERAPEUTICS INC	Hospital	390,477.55	3,741,697.79	19,118	16,387
ATLANTIC MEMORIAL HEALTHCARE CENTER	Hospital	390,322.36	3,741,434.25	19,119	16,388
AKINS POST ACUTE REHAB HOSPITAL	Hospital	390,322.36	3,741,434.25	19,119	16,388
ATLANTIC MEMORIAL HEALTHCARE CENTER	Nursing	390,322.36	3,741,434.25	19,119	16,388
PLATT FAMILY CHILD CARE	Daycare	389,228.19	3,738,170.09	19,122	16,391
MEMORIAL ORTHOPAEDIC SURGICL GROUP	Hospital	390,322.51	3,741,447.24	19,123	16,392
BLESSED SACRAMENT SCHOOL	Daycare	407,336.35	3,735,603.92	19,124	16,393
HERRBACH, HELEN FAMILY DAY CARE	Daycare	396,872.85	3,746,000.49	19,125	16,394
WASHINGTON MIDDLE	School	389,360.54	3,738,973.04	19,126	16,395
ROBERSON FAMILY CHILD CARE	Daycare	389,791.35	3,740,362.81	19,127	16,396
PHAN, HANH	Daycare	407,404.95	3,736,136.40	19,128	16,397
BOHN, BONNIE	Daycare	406,355.71	3,741,294.59	19,129	16,398
BIO MEDICAL LONG BEACH COMM HEMODIALYSIS UNIT	Hospital	389,128.19	3,736,987.70	19,130	16,399
BIO-MEDICAL DIALYSIS	Hospital	389,128.19	3,736,987.70	19,130	16,399
CHRISTINE P. SWAIN ELEMENTARY	School	404,629.98	3,743,567.75	19,132	16,401
DR KEN D LACROIX	Hospital	405,304.63	3,731,066.87	19,133	16,402
WESTRICK FAMILY CHLD CARE	Daycare	401,463.66	3,745,555.16	19,134	16,403
YOUNG HORIZONS	Daycare	389,497.04	3,739,588.49	19,135	16,404
ARIAS FAMILY CHILD CARE	Daycare	390,828.16	3,742,307.77	19,136	16,405
HARGROVE, KRISTIN	Daycare	406,668.18	3,740,704.14	19,137	16,406
MEMORIAL HOSP MED CTR	Hospital	390,309.20	3,741,502.87	19,138	16,407
CHILDRENS CLINIC, SERVING CHILDREN AND	Hospital	390,309.20	3,741,502.87	19,138	16,407
LONG BEACH MEMORIAL MC D/P	Hospital	390,309.20	3,741,502.87	19,138	16,407
LONG BEACH MEMORIAL MEDICAL CENTER	Hospital	390,309.20	3,741,502.87	19,138	16,407

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
LONG BEACH MEMORIAL MEDICAL CENTER	Hospital	390,309.20	3,741,502.87	19,138	16,407
MILLER CHILDREN'S HOSPITAL	Hospital	390,309.20	3,741,502.87	19,138	16,407
EARL & LORAIN MILLER CHILDREN'S HOSP	Hospital	390,309.20	3,741,502.87	19,138	16,407
REPRODUCTIVE PARTNERS MEDICAL GROUP IVP AND	Hospital	390,309.20	3,741,502.87	19,138	16,407
LONG BEACH MEMORIAL MC D/P	Nursing	390,309.20	3,741,502.87	19,138	16,407
PROHEALTH PARTNERS,A MEDICAL GROUP,INC	Hospital	389,497.75	3,739,649.67	19,147	16,416
RICHARD A BERKSON MD	Hospital	389,497.75	3,739,649.67	19,147	16,416
ALVAREZ FAMILY CHILD CARE	Daycare	389,564.03	3,739,897.16	19,149	16,418
BLACKSTON FAMILY CHILD CARE	Daycare	391,942.56	3,743,641.47	19,150	16,419
RAMIREZ, MARTHA	Daycare	404,979.71	3,743,300.27	19,151	16,420
CHESTNUT & 14TH ST MED CLINIC	Hospital	389,236.26	3,738,756.32	19,152	16,421
ADORACION A REYES MD	Hospital	389,236.26	3,738,756.32	19,152	16,421
ANAHEIM AND CHESTNUT MEDICAL CLINIC	Hospital	389,236.26	3,738,756.32	19,152	16,421
LONG BEACH COMPREHENSIVE HEALTH CENTER	Hospital	389,233.81	3,738,763.32	19,155	16,424
COASTAL CLUSTER HEALTH CENTERS	Hospital	389,233.81	3,738,763.32	19,155	16,424
LONG BEACH COMPREHENSIVE HEALTH CENTER	Hospital	389,233.81	3,738,763.32	19,155	16,424
MEMORIAL MEDICAL GROUP	Hospital	390,048.84	3,741,136.88	19,158	16,427
LONG BEACH INTERNAL MEDICAL GROUP	Hospital	390,048.84	3,741,136.88	19,158	16,427
LONG BEACH INTERNAL MEDICAL GROUP	Hospital	390,048.84	3,741,136.88	19,158	16,427
MARIO I BRAKIN MD	Hospital	390,048.84	3,741,136.88	19,158	16,427
CERTIFIED X-RAY MOBILE SERVICE	Hospital	389,483.87	3,739,765.24	19,162	16,431
PEDIATRIC ADOLESCENT HEMA ONCO ASSO	Hospital	390,043.76	3,741,136.30	19,163	16,432
ONCOLOGY HEMATOLOGY CONSULT MED GRP IN	Hospital	390,043.76	3,741,136.30	19,163	16,432
MILLER, JENNIFER	Daycare	405,723.03	3,742,449.84	19,165	16,434
JOHN P CARDIN JR MD	Hospital	390,326.30	3,741,666.56	19,166	16,435
SURGERY CENTER OF LONG BEACH	Hospital	390,326.30	3,741,666.56	19,166	16,435
GREATER LONG BEACH ENDOSCOPY CENTER	Hospital	390,326.30	3,741,666.56	19,166	16,435
JANINE K JENSEN MD	Hospital	390,326.30	3,741,666.56	19,166	16,435
SURGERY CENTER OF LONG BEACH	Hospital	390,326.30	3,741,666.56	19,166	16,435
JOHN P CARDIN JR MD	Hospital	390,326.30	3,741,666.56	19,166	16,435
PROHEALTH PARTNERS A MEDICAL GROUP INC	Hospital	390,326.30	3,741,666.56	19,166	16,435
TALBERT MEDICAL GROUP	Hospital	390,326.30	3,741,666.56	19,166	16,435
GREATER LONG BEACH ENDOSCOPY CENTER	Hospital	390,326.30	3,741,666.56	19,166	16,435
MEMO HOSP MECICAL CTR LB DIALYSIS CTR	Hospital	390,326.30	3,741,666.56	19,166	16,435
GOOD SAMARITAN FAMILY MEDICAL CLINIC	Hospital	389,484.28	3,739,800.12	19,176	16,445
OLUSEGUN Z SALAKO MD	Hospital	389,484.28	3,739,800.12	19,176	16,445
GENE RAY BOUCH	Hospital	390,312.11	3,741,645.49	19,178	16,447
MONE SANDHU MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
MONICA P LEFF MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
ADULT & PEDIATRIC DERMATOLOGY MEDICAL	Hospital	390,312.11	3,741,645.49	19,178	16,447
TRACY L KELVIE MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
MICHAEL COGAN MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
PAMELA R KUSHNER MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
LUN W HOM MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
MAURICE M LAM MD AND ASSOC	Hospital	390,312.11	3,741,645.49	19,178	16,447
RAYMOND I MATHEWS MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
MONICA P LEFF MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
SANDRA L MAKELA MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
DR CAROL GRABOWSKI	Hospital	390,312.11	3,741,645.49	19,178	16,447
LONG BEACH UROLOGICAL ASSOC	Hospital	390,312.11	3,741,645.49	19,178	16,447
S GAINER PILLSBURY JR MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
MEMORIAL RESEARCH MEDICAL CLINIC	Hospital	390,312.11	3,741,645.49	19,178	16,447
IRENE A MALEK MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
VANESSA M KALEB MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
WEST COAST ENDOCRINE CLINICAL LABORATORY	Hospital	390,312.11	3,741,645.49	19,178	16,447
CAROLINE RICKARD MD	Hospital	390,312.11	3,741,645.49	19,178	16,447
WOUND HEALING CENTER LABORATORY	Hospital	390,312.11	3,741,645.49	19,178	16,447
WEST ANAHEIM CHILD CARE CENTER	Daycare	389,183.54	3,738,694.15	19,199	16,468



**Alamitos Energy Center**  
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**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
MILES INC	Hospital	389,183.54	3,738,694.15	19,199	16,468
HOOVER MIDDLE	School	393,703.59	3,745,020.14	19,201	16,470
CUNNINGHAM, GINA & MICONI, DAVIDA	Daycare	402,861.38	3,745,036.67	19,202	16,471
FANTROY FAMILY CHILD CARE	Daycare	389,237.01	3,739,039.16	19,203	16,472
BEDWELL, TERESA	Daycare	406,132.72	3,741,954.83	19,204	16,473
PADILLA, VIRGINIA	Daycare	403,507.77	3,744,660.30	19,205	16,474
LONG BEACH DAY NURSERY - WEST BRANCH	Daycare	389,242.09	3,739,149.13	19,206	16,475
GOLDEN WEST COLLEGE CHILD DEVELOPMENT CTR.	Daycare	406,730.20	3,733,033.39	19,207	16,476
GOLDEN WEST COLLEGE CHILD DEVELOPMENT CTR.	Daycare	406,730.20	3,733,033.39	19,207	16,476
GLDEN WEST COLLEGE STUDENT HEALTH SVCS	Hospital	406,730.20	3,733,033.39	19,207	16,476
SALINAS FAMILY CHILD CARE	Daycare	400,914.62	3,745,895.13	19,210	16,479
REHAB USA	Hospital	404,405.98	3,743,984.51	19,211	16,480
SANDFORD FAMILY CHILD CARE	Daycare	389,752.16	3,740,702.18	19,212	16,481
COUCH, PAMELA	Daycare	404,264.06	3,744,114.91	19,213	16,482
JENYMEL'S HOME	Hospital	405,374.98	3,743,019.66	19,214	16,483
JENYMEL'S HOME	Hospital	405,374.98	3,743,019.66	19,214	16,483
GUETTLER FAMILY CHILD CARE	Daycare	397,326.64	3,746,242.72	19,216	16,485
COLUMBIA CONVALESCENT HOME	Hospital	390,192.51	3,741,609.78	19,217	16,486
MUNOZ, ANGELICA	Daycare	406,880.31	3,740,611.72	19,218	16,487
WESTMINSTER SCHOOL DISTRICT-WEBBER STATE PRESCHOOL	Daycare	407,539.76	3,735,646.67	19,219	16,488
WEBBER ELEMENTARY	School	407,539.76	3,735,646.67	19,219	16,488
AKL HOME CARE, INC	Hospital	388,938.73	3,736,950.26	19,221	16,490
LONG BEACH	Prison	388,936.93	3,737,013.40	19,222	16,491
LONG BEACH	Prison	388,936.93	3,737,013.40	19,222	16,491
SELTZER FAMILY DAY CARE	Daycare	397,318.01	3,746,264.99	19,224	16,493
TYES FAMILY CHILD CARE	Daycare	388,944.49	3,737,553.72	19,225	16,494
GRACE PRESCHOOL	Daycare	406,621.46	3,732,684.51	19,226	16,495
DAO, TOAN	Daycare	407,651.19	3,736,674.12	19,227	16,496
KLAPPROTH FAMILY DAY CARE	Daycare	393,824.71	3,745,197.19	19,228	16,497
FOSTER FAMILY CHILD CARE	Daycare	389,458.58	3,740,100.03	19,229	16,498
LOVE FAMILY CHILD CARE	Daycare	388,943.55	3,737,691.05	19,230	16,499
PADILLA FAMILY CHILD CARE	Daycare	388,943.57	3,737,692.64	19,231	16,500
CHOK P WAN MD	Hospital	389,488.99	3,740,207.16	19,232	16,501
PAK T YEE MD	Hospital	389,488.99	3,740,207.16	19,232	16,501
MEMORIAL DERMATOLOGICAL	Hospital	390,198.72	3,741,708.61	19,234	16,503
HOLIDAY HOUSE, LTD	Hospital	407,629.19	3,736,104.10	19,235	16,504
LIFE CARE HOMES	Hospital	407,629.19	3,736,104.10	19,235	16,504
HV GROUP HOME	Daycare	389,092.39	3,738,818.56	19,237	16,506
HARBOR VIEW CARE CENTER	Hospital	389,092.39	3,738,818.56	19,237	16,506
HARBOR VIEW ADOLESCENT CENTER	Hospital	389,092.39	3,738,818.56	19,237	16,506
SEASIDE CARE CTR	Hospital	389,092.39	3,738,818.56	19,237	16,506
HARBOR VIEW CARE CENTER	Nursing	389,092.39	3,738,818.56	19,237	16,506
REGENCY HIGH SCHOOL	School	389,092.39	3,738,818.56	19,237	16,506
CONIGLIO, THERESE	Daycare	405,611.98	3,731,084.77	19,243	16,512
HERITAGE MONTESSORI SCHOOL	Daycare	406,728.25	3,732,833.22	19,244	16,513
HERITAGE MONTESSORI	School	406,728.25	3,732,833.22	19,244	16,513
PACIFIC HEAD START	Daycare	389,489.62	3,740,260.73	19,246	16,515
YOU, MYUNG-JOO	Daycare	402,920.68	3,745,134.92	19,247	16,516
A-1 HEALTHCARE MANAGEMENT INC	Hospital	390,846.61	3,742,700.28	19,248	16,517
MADISON HOME HEALTH CARE	Hospital	390,846.61	3,742,700.28	19,248	16,517
JEFFERSON FAMILY CHILD CARE	Daycare	398,612.96	3,746,359.78	19,250	16,519
HUIZA FAMILY CHILD CARE	Daycare	397,392.14	3,746,323.12	19,251	16,520
POLO, ROSALBA FAMILY DAY CARE	Daycare	392,650.65	3,744,491.03	19,252	16,521
AGORAMURTHY, KARPAGAM	Daycare	403,565.69	3,744,746.86	19,253	16,522
COMMUNITY METHODIST NURSERY SCHOOL	Daycare	406,208.71	3,731,877.89	19,254	16,523
OCEANVIEW SCHOOL DISTRICT HEALTH SERV	Hospital	405,339.21	3,730,713.65	19,255	16,524
XAVIER FAMILY MED CLNC/A PROF CORP	Hospital	388,876.22	3,737,356.31	19,256	16,525
HA SON NGUYEN MD	Hospital	388,876.22	3,737,356.31	19,256	16,525

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Receptor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
MULLIKIN MEDICAL CENTER WESTMINSTER	Hospital	407,686.95	3,736,304.62	19,258	16,527
RALPHS PHARMACY #196	Hospital	392,227.49	3,744,174.79	19,259	16,528
AZRA A NISAR MD FAMILY MEDICAL PED	Hospital	389,506.29	3,740,386.09	19,260	16,529
DARNELL HOME HEALTH SERVICES	Hospital	390,813.68	3,742,703.51	19,261	16,530
DARNELL HH SRVS	Hospital	390,813.68	3,742,703.51	19,261	16,530
MORENO FAMILY DAY CARE	Daycare	397,089.10	3,746,309.29	19,263	16,532
PRAKASH BONDADE MD	Hospital	407,676.13	3,736,104.28	19,264	16,533
RAYMOND J MAURER MD	Hospital	407,676.13	3,736,104.28	19,264	16,533
TOAN QUOC TRAN MD	Hospital	407,676.13	3,736,104.28	19,264	16,533
ORELLANA FAMILY CHILD CARE	Daycare	389,698.16	3,740,857.19	19,267	16,536
EDISON CHILD DEVELOPMENT CENTER	Daycare	388,900.18	3,737,888.49	19,268	16,537
JAINOOR, CARMEN & MOHAMED FAMILY DAY CARE	Daycare	395,637.30	3,746,013.33	19,269	16,538
SIDES FAMILY DAY CARE	Daycare	397,074.00	3,746,318.64	19,270	16,539
GOUD, PATRICIA	Daycare	407,150.31	3,733,692.66	19,271	16,540
KENT FAMILY CHILD CARE	Daycare	389,394.44	3,740,146.11	19,272	16,541
SAV ON DRUGS #9458	Hospital	389,800.01	3,741,111.53	19,273	16,542
ALLIANCE HEALTH PACIFIC CLINIC	Hospital	389,505.73	3,740,447.92	19,274	16,543
ROSALES FAMILY CHILD CARE	Daycare	388,955.34	3,738,485.93	19,275	16,544
CYPRESS COLLEGE	College	404,852.55	3,743,768.03	19,276	16,545
GUTIERREZ FAMILY CHILD CARE	Daycare	389,082.41	3,739,160.18	19,277	16,546
SOLIMAN, SABAH	Daycare	405,646.55	3,742,919.98	19,278	16,547
PENA, LUCIA	Daycare	406,043.99	3,731,518.42	19,279	16,548
MILLER, LINDA	Daycare	402,846.06	3,745,273.84	19,280	16,549
EDISON ELEMENTARY	School	388,829.56	3,737,706.02	19,281	16,550
CASTRO FAMILY CHILD CARE	Daycare	388,835.13	3,737,966.95	19,282	16,551
PRECISION DIAGNOSTIC LABORATORY INC	Hospital	407,772.00	3,736,311.09	19,283	16,552
KHOSROW MAHDAVI MD	Hospital	407,772.00	3,736,311.09	19,283	16,552
CHERYL L EFFRON MD INC	Hospital	407,772.00	3,736,311.09	19,283	16,552
BARONE FAMILY CHILD CARE	Daycare	395,385.14	3,746,018.00	19,286	16,555
RAI - HOSPITAL CIRCLE - WESTMINSTER	Hospital	407,776.59	3,736,260.62	19,287	16,556
RAI CARE CENTERS OF SOUTHERN CALIFORNIA I, LLC	Hospital	407,776.59	3,736,260.62	19,287	16,556
ATLANTIC PROF SER/FRANK LOWE MD	Hospital	389,509.19	3,740,636.51	19,289	16,558
DATTARAY FAMILY DAY CARE	Daycare	392,342.78	3,744,392.46	19,290	16,559
FAMILY PLANNING ASSOCIATES MEDICAL	Hospital	389,903.08	3,741,471.42	19,291	16,560
MATTHEWS, TONIA FAMILY DAY CARE	Daycare	396,597.61	3,746,330.77	19,292	16,561
ANTONY, HARSHI	Daycare	403,263.60	3,745,079.15	19,293	16,562
HOA NGUYEN MD	Hospital	407,759.23	3,735,907.79	19,294	16,563
CHILDRENS CLINIC FAM HLTH CTR AT, THE	Hospital	388,763.35	3,737,358.57	19,295	16,564
CESAR CHAVEZ ELEMENTARY	School	388,763.35	3,737,358.57	19,295	16,564
L & S MEDICAL CARE	Hospital	389,494.21	3,740,657.29	19,297	16,566
CHILDS PACE-HOLDER	Daycare	405,648.88	3,743,027.40	19,298	16,567
HOLDER ELEMENTARY	School	405,648.88	3,743,027.40	19,298	16,567
ACTIVE ADULT DAY HEALTH CARE	Hospital	389,494.40	3,740,673.78	19,300	16,569
WILLOW MEDICAL LABORATORY	Hospital	389,510.15	3,740,719.25	19,301	16,570
YOUNG HORIZONS	Daycare	389,510.46	3,740,745.87	19,302	16,571
VENCOR HOSPITAL-ORANGE COUNTY	Hospital	407,822.19	3,736,253.84	19,303	16,572
KINDRED HOSPITAL-WESTMINSTER PULMO LAB	Hospital	407,822.19	3,736,253.84	19,303	16,572
KINDRED HOSPITAL WESTMINSTER	Hospital	407,822.19	3,736,253.84	19,303	16,572
KINDRED HOSPITAL-WESTMINSTER	Hospital	407,822.19	3,736,253.84	19,303	16,572
RICHARD S FLAGG MD INC	Hospital	407,822.16	3,736,250.67	19,307	16,576
COORDINATED HOSPICE	Hospital	407,822.16	3,736,250.67	19,307	16,576
COORDINATED HOME HEALTH SERVICES	Hospital	407,822.16	3,736,250.67	19,307	16,576
COLUMBIA PEDIATRICS MEDICAL GROUP INC	Hospital	389,919.72	3,741,594.86	19,310	16,579
KEE IN YANG	Hospital	389,919.72	3,741,594.86	19,310	16,579
GEORGE H TARRYK MD	Hospital	389,919.72	3,741,594.86	19,310	16,579
MEMORIAL CARDIOLOGY MED GR INC	Hospital	389,919.72	3,741,594.86	19,310	16,579
MAGELLA MEDICAL GROUP INC	Hospital	389,919.72	3,741,594.86	19,310	16,579
CURTIS LI MD	Hospital	389,919.72	3,741,594.86	19,310	16,579

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
VALERIUS MEDICAL GROUP AND RESEARCH CENTER OF	Hospital	389,919.72	3,741,594.86	19,310	16,579
LONG BEACH OBSTETRICS	Hospital	389,919.72	3,741,594.86	19,310	16,579
RAMOS FAMILY CHILD CARE	Daycare	401,106.86	3,746,100.97	19,318	16,587
LICERIO DE VALLE, VERONICA	Daycare	406,427.51	3,731,929.37	19,319	16,588
RANDALL-WALKER FAMILY CHILD CARE	Daycare	397,745.33	3,746,521.77	19,320	16,589
CERRITOS HOME CARE	Hospital	399,383.48	3,746,478.64	19,321	16,590
CERRITOS HOME CARE INC	Hospital	399,383.48	3,746,478.64	19,321	16,590
LONG BEACH MEMORIAL FAMILY MED DEPT	Hospital	390,070.30	3,741,898.07	19,323	16,592
MEMORIAL HOSPICE PROGRAM	Hospital	390,070.30	3,741,898.07	19,323	16,592
WESTMINSTER ADHC CENTER	Hospital	407,850.11	3,736,254.20	19,325	16,594
PHAM, MARGIE	Daycare	407,401.32	3,739,944.08	19,326	16,595
HAMILTON FAMILY CHILD CARE	Daycare	402,320.27	3,745,663.56	19,327	16,596
HELPING HANDS OF WESTMINSTER	Hospital	407,868.55	3,736,456.36	19,328	16,597
BEVERLY HEALTHCARE	Hospital	407,868.55	3,736,456.36	19,328	16,597
HELPING HANDS OF WESTMINSTER	Nursing	407,868.55	3,736,456.36	19,328	16,597
KENDRICK, BARBARA	Daycare	407,180.39	3,740,566.31	19,331	16,600
ALTON SCHOOL	School	404,389.57	3,744,369.38	19,332	16,601
BUCKLEY FAMILY CHILD CARE	Daycare	395,723.21	3,746,219.92	19,333	16,602
YMCA GLB MADISON SITE	Daycare	392,803.01	3,744,851.20	19,334	16,603
MADISON ELEMENTARY	School	392,803.01	3,744,851.20	19,334	16,603
COAST UROLOGICAL MEDICAL GROUP INC	Hospital	389,920.86	3,741,693.75	19,336	16,605
MARK J CASTELLANET CARDIO CARE SPECIAL	Hospital	389,920.86	3,741,693.75	19,336	16,605
ALAN M SHANBERG MD	Hospital	389,920.86	3,741,693.75	19,336	16,605
MARLENE ROCHA FAROOQ MD	Hospital	389,920.86	3,741,693.75	19,336	16,605
MUTH & WEBER OB/GYN MEDICAL GRP INC	Hospital	389,920.86	3,741,693.75	19,336	16,605
ASSOCIATES IN UROLOGY	Hospital	389,920.86	3,741,693.75	19,336	16,605
ARTHUR LORBER MD	Hospital	389,920.86	3,741,693.75	19,336	16,605
GARY RAMELLI MD	Hospital	389,920.86	3,741,693.75	19,336	16,605
COLUMBIA MEDICAL GROUP INC	Hospital	389,920.86	3,741,693.75	19,336	16,605
CHEEMA FAMILY CHILD CARE	Daycare	401,001.25	3,746,182.55	19,345	16,614
EXTENDED CARE HOSPITAL OF WESTMINSTER	Hospital	407,880.55	3,736,254.22	19,346	16,615
FHP SKILLED NURSING FACILITY	Hospital	407,880.55	3,736,254.22	19,346	16,615
EXTENDED CARE HOSP WESTMINSTER	Hospital	407,880.55	3,736,254.22	19,346	16,615
EXTENDED CARE HOSP WESTMINSTER	Nursing	407,880.55	3,736,254.22	19,346	16,615
BANKS FAMILY CHILD CARE	Daycare	393,314.02	3,745,207.34	19,350	16,619
MYRA GUEST HOME	Senior Facility	403,932.45	3,742,125.02	19,351	16,620
CYPRESS POINTE SENIOR COMMUNITY	Senior Facility	403,418.35	3,743,982.41	19,352	16,621
GENTLE MANOR	Senior Facility	401,905.62	3,741,688.22	19,353	16,622
AACRES CALIFORNIA	Senior Facility	399,359.78	3,744,990.76	19,354	16,623
HARRISON'S BOARD & CARE HMS	Senior Facility	400,950.42	3,740,438.75	19,355	16,624
HARRISON'S BOARD & CARE HMS	Senior Facility	400,787.02	3,740,972.93	19,356	16,625
SWEETEST HOMES 4 SENIORS	Senior Facility	399,619.43	3,737,942.49	19,357	16,626
COUNTRY VILLA	Senior Facility	400,232.27	3,737,432.20	19,358	16,627
SUNRISE SENIOR LIVING	Senior Facility	401,434.30	3,737,755.75	19,359	16,628
HERITAGE BOARD & CARE	Senior Facility	391,400.53	3,737,461.34	19,360	16,629
CROFTON MANOR INN	Senior Facility	391,831.37	3,737,591.61	19,361	16,630
PFCC PARTNERS	Senior Facility	389,564.79	3,736,959.39	19,362	16,631
ROBERT VALLIER	Senior Facility	390,860.60	3,737,468.06	19,363	16,632
SENIOR CORPS	Senior Facility	391,024.60	3,737,465.62	19,364	16,633
VILLA REDONDO	Senior Facility	393,283.31	3,736,734.57	19,365	16,634
SEA AND SUN CHILD CARE	Daycare	394,210.64	3,738,701.03	19,366	16,635
NIGHT & DAY CHILD CARE	Daycare	392,905.97	3,737,846.35	19,367	16,636
CLONTARF MANOR	Senior Facility	394,107.92	3,738,235.33	19,368	16,637
HACIENDA GRANDE ASSISTED	Senior Facility	393,715.17	3,739,324.48	19,369	16,638
ROYAL CARE SKILLED NURSING	Senior Facility	389,502.75	3,741,361.82	19,370	16,639
SERRA ANCILLARY CARE CORP	Senior Facility	390,395.21	3,740,917.52	19,371	16,640
AMBASSADOR SEA BREEZE MANOR	Senior Facility	389,689.18	3,742,406.24	19,372	16,641
NORTHSTAR LEARNING CENTER	Daycare	400,867.89	3,742,455.40	19,373	16,642

**Alamitos Energy Center**  
**Attachment DR-52**  
**HRA Sensitive Receptors**  
**May 2014**

Sensitive Receptor Name	Sensitive Recetor Type	Sensitive Receptor Location (meters)		Receptor Number	
		UTM_X	UTM_Y	Operation HRA	Construction HRA
AGAPE CHRISTIAN HOMES	Senior Facility	396,928.54	3,743,418.53	19,374	16,643
ALZHEIMER CARE IN LONG BEACH	Senior Facility	395,696.63	3,744,938.04	19,375	16,644
BACK TO BASICS LEARNING PROGRAM	Daycare	395,882.87	3,744,209.92	19,376	16,645
EVERLASTING HOME CARE	Senior Facility	395,696.95	3,743,666.90	19,377	16,646
OLIVE TREE HOME	Senior Facility	390,480.63	3,738,350.96	19,378	16,647
CHEZ BON GUEST HOME	Senior Facility	391,490.37	3,738,574.91	19,379	16,648
SCANDIA GUEST LODGE	Senior Facility	391,161.48	3,738,269.13	19,380	16,649
RUBY'S GUEST HOME	Senior Facility	391,999.35	3,737,455.44	19,381	16,650
MS GEE'S FAMILY HOME DAYCARE	Daycare	392,987.39	3,737,372.26	19,382	16,651
CIRCLE OASIS ASSISTED LIVING	Senior Facility	394,798.22	3,740,042.35	19,383	16,652
CALIFORNIA STATE UNIVERSITY, LONG BEACH	School	396,086.99	3,738,548.09	19,384	16,653
JOY'S OPEN ARMS	Senior Facility	406,615.95	3,733,797.84	19,385	16,654
MONTESSORI AT HOME	Daycare	403,421.13	3,732,306.90	19,386	16,655
GRISWOLD HOME CARE	Senior Facility	403,327.00	3,731,092.65	19,387	16,656
MEADOWLARK GARDENS	Senior Facility	404,978.29	3,731,675.27	19,388	16,657
EUROPEAN LOVING CARE II	Senior Facility	402,693.59	3,731,064.96	19,389	16,658
SWEETEST HOMES 4 SENIORS	Senior Facility	404,431.34	3,735,941.65	19,390	16,659
SWEETEST HOMES 4 SENIORS	Senior Facility	404,447.16	3,736,085.37	19,391	16,660
WESTMINSTER TERRACE	Senior Facility	407,661.70	3,735,901.96	19,392	16,661
EMERITUS AT VALLEY VIEW	Senior Facility	404,597.63	3,739,177.32	19,393	16,662
VALLEY VIEW GARDENS	Senior Facility	404,791.84	3,739,451.59	19,394	16,663
ROSIE THE RIVETER CHARTER SCHOOL	School	397,910.93	3,737,213.62	19,395	16,664

# Socioeconomics (59–60)

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## BACKGROUND: CONSTRUCTION WORKFORCE

Table 5.10-B from Appendix 5.10-B of the AFC presents the AEC 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

59. 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:** The supervisory labor estimates presented in AFC Appendix Table 5.10-B represent labor provided by the engineering procurement construction (EPC) contractor, Standard Occupational Classification Code 11-9021. The EPC supervisory staff will oversee work conducted by other contractors to ensure work is performed consistent with approved building plans. Craft labor supervisors are included as part of each craft labor category (i.e., the plumbers monthly labor includes plumbing supervisors).

## BACKGROUND: CALIFORNIA EDUCATION CODE, SECTION 17620 AND CALIFORNIA GOVERNMENT CODE, SECTIONS 65995-65997

California Education Code, Section 17620 authorizes the governing board of any school district to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities. Fees are calculated based on the square foot area of chargeable covered and enclosed space. Fees are imposed for industrial construction and construction is defined in Government Code Section 65995(d) as new construction and reconstruction of existing building for industrial, residential, or commercial.

As stated in the Project Description section in the AFC (page 2-1), existing water treatment facilities and administration and maintenance buildings would be reused for the AEC while the Socioeconomics section in the AFC (page 5.10-15) states that approximately 25,551 square feet of occupied structures (control room/water treatment building) would be assessed \$12,009 in school impact fees.

Based on the definition of construction in Government Code Section 65995 (d) and the proposed project as described in the AFC, staff requests the following:

## DATA REQUEST

60. Please identify the buildings, including the amount of covered and enclosed square footage AEC proposes to construct or reconstruct.

**Response:** Table DR-60 presents the covered and enclosed square footage for new or remodeled buildings. Please note that Table DR-60 does not include existing buildings or structures which will not be remodeled or altered.

**Table DR-60**  
**New and Altered Covered and Enclosed Structure Square Footage**

General Arrangement Number	Quantity	Description	Dimensions (LxWxH) (ft)	New or Altered	Approximate total Area (ft <sup>2</sup> )
4	12	CGT Turbine Enclosure	61 x 32 x 25	New	23,424
6	12	CTG Control/Lube Oil Skid	50 x 14.5 x 20	New	8,700
11	4	STG Enclosure	76 x 31 x 51	New	9,424
15	12	Control / Electrical Package	40 x 20 x 15	New	9,600
21	1	Fuel Gas Compressor / Conditioning Enclosure	288 x 75 x 25	New	21,600
22	4	Boiler Feed Pump Enclosure	30 x 30 x 15	New	3,600
23	4	CEMS	15 x 15 x 10	New	900
26	4	STG Control/Lube Oil Skid	27 x 12 x 10	New	1,296
32	1	Control / Water Treatment Building	167 x 153 x 24	Altered	25,551
				Total	104,095



# Traffic and Transportation (61–63)

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## BACKGROUND: CONSTRUCTION TRAFFIC DISTRIBUTION

Section 5.12.2.2.2 “Construction Traffic Distribution” provides assumptions of the distribution of workforce-related traffic for construction and demolition associated with the Alamitos Energy Center (AEC). The workforce distribution assumptions appear to be inconsistent with Traffic and Transportation Figure 5.12-5 Project Trip Distribution.

## DATA REQUEST

61. Please provide a discussion that resolves the inconsistency in the trip distribution estimates in the AFC and revise Section 5.12.2.2 and Figure 5.12-5.

**Response:** No inconsistency exists between AFC Section 5.12.2.2 and the trip distribution estimates presented in Figure 5.12-5. The two items detail two different aspects. The text represents where the workers would come from; however, the figure identifies the routes that would be used to reach the site. To reach the communities identified in Section 5.12.2.2, it was assumed that 8 percent of the trips would travel on PCH south of the site, 4 percent of the trips would travel on PCH north of the site, 25 percent of the trips would travel on SR 22 east of the site, and 63 percent of the trips would travel on I-405 north of the site.

## BACKGROUND: CONSTRUCTION PARKING AND LAYDOWN AREAS

Section 5.12.1 “Setting and Affected Environment” provides a discussion of the proposed on-site and off-site construction parking and laydown areas. The AFC states that construction of the AEC would require approximately 18-acres (8-acres of onsite and 10-acres of off-site) for parking and equipment laydown. The AFC also states that the Huntington Beach Energy Project (HBEP, 12-AFC-02) would be under construction at the same time and would be sharing the 10-acre offsite laydown area.

The AFC description of required parking and laydown areas appears to conflict with the description of the required acreage needed from the HBEP AFC. In the “Setting and Affected Environment” of the HBEP AFC it states that the construction of HBEP would require 16 acres of laydown area at the Alamitos Generating Station site. Based on the description of the parking and laydown acreage requirements for the AEC and HBEP, staff is concerned that there may be inadequate areas on-site to accommodate the two projects and overlapping construction schedules.

## DATA REQUEST

62. Please provide a discussion and corresponding figure that demonstrates adequate areas for construction parking and laydown for both the AEC and HBEP.

**Response:** The 10 acres of offsite laydown, erroneously referred to as 16 acres, will be used only for equipment storage. For the Huntington Beach Energy Project (HBEP), this 10 acre laydown area will be used to store equipment which must be removed from storage sites at the receiving port but construction at the HBEP site is not ready for installation of the equipment. The Applicant expects to use approximately half of the adjacent offsite laydown area for storage of HBEP equipment. Given that the Applicant estimates 18 deliveries of HBEP equipment to the laydown area adjacent to AEC, the laydown area will provide sufficient laydown for both projects.

The primary AEC laydown and parking areas are located in the northern portion of the site with additional parking areas throughout the site. The adjacent offsite laydown area is immediately south of AEC Block 3, creating an equipment storage location closer to where Block 3 will be constructed. The Applicant believes that sufficient laydown and parking existing at the site to facilitate construction, as shown in AFC Figure 2.1-1. Therefore, no revised figures have been provided.

## BACKGROUND: AIR COOLED CONDENSER

Staff plans to perform a plume vertical velocity analysis for the gas turbines and air cooled condensers (ACCs) for the Alamos Energy Center (AEC). This analysis is necessary to evaluate any potential vertical velocity plume impacts on any aircraft flying in the immediate vicinity of the project. Staff is requesting the applicant to provide exhaust parameters for the ACCs planned for AEC.

## DATA REQUEST

63. Please summarize the operating conditions for the ACCs, including heat rejection, exhaust temperature, and exhaust velocity. Please provide values to complete the table, and additional data as necessary for staff to determine how the heat rejection load varies with ambient conditions and operating scenarios. Also, please determine at what conditions ACC cells may be shut down. These data are needed to enable staff to model vertical velocities for the thermal plume. The ambient conditions included in this table correspond to those in AFC Table 5.1B.2 for gas turbines. In addition please provide the distance between cells and the distances between cells from all ACCs in order to determine if the individual plumes will merge.

Parameter	Air Cooled Condenser		
Number of Cells			
Cell Height			
Cell Diameter			
Ambient Temperature	28°F	65.3°F	107°F
Ambient Relative Humidity	76.33%	86.8%	10.73%
Duct Firing	No	No	No
Number of Cells in Operation			
Heat Rejection (MW/hr)			
Exhaust Temperature (F)			
Exhaust Velocity Per Cell (ft/s)			
Exhaust Flow Rate (lb/hr)			

**Response:** As explained in the *Notice of Need for Additional Time and Objection to California Energy Commission Staff's Data Request Set 1*, filed on May 15, 2014, the Applicant has requested an additional 90 days to complete this response.