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February 17, 2014

Mr. Robert Oglesby
Executive Director
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

**Re: Alamos Energy Center (13-AFC-01)
Data Adequacy Supplement**

Dear Mr. Oglesby:

AES Southland Development, LLC (AES-SD) herein submits its Data Adequacy Supplement for the Alamos Energy Center Application for Certification. AES-SD hereby attest under penalty of perjury under the laws of the State of California that the information set forth in the enclosed Application for Certification Data Adequacy Supplement for the Alamos Energy Center is true and accurate to the best of my knowledge and belief.

AES-SD looks forward to working with the California Energy Commission staff, commissioners and others to make AEC a successful project for all.

Sincerely,

Stephen O'Kane
Vice-President
AES Southland Development, LLC

Cc: J. Didlo/AES
J. Harris/ESH
J. Salamy/CH2M HILL
S. Madams/CH2M HILL

Data Adequacy Supplement

In support of the

Application for Certification

for the

**Alamitos Energy Center
(13-AFC-01)**

Submitted to:

California Energy Commission

Submitted by:

AES Southland Development, LLC

With Technical Assistance by:



Sacramento, California

February 17, 2014

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1.0 Introduction

This Data Adequacy Supplement (“Supplement”) to AES Southland Development, LLC’s (AES-SLD) Application for Certification (AFC) for the Alamos Energy Center (AEC) (13-AFC-01) provides information in response to the California Energy Commission (“CEC” or “Commission”) Staff data adequacy review of the AFC. This Supplement provides additional information to support a determination by the Commission that the AFC contains adequate data to begin a power plant site certification proceeding under Title 20 of the California Code of Regulations and the Warren-Alquist Energy Resources Conservation and Development Act.

The format for this Supplement follows the order of the AFC and provides additional information and responses to CEC Staff’s information requests for several disciplines. Only sections for which CEC Staff requested additional information related to data adequacy are addressed in this Supplement. If the response calls for additional appended material, it is included at the end of each subsection. Appended material is identified by the prefix “DA” indicating an item submitted in response to a Staff Data Adequacy comment, a number referring to the applicable AFC chapter, and a sequential identifying number. For example, the attachment in response to a Transmission System Engineering comment would be Attachment DA3.0-1, because the AFC section describing electrical transmission is Section 3.0. Tables are also numbered in this way. Appended material is paginated separately from the remainder of the document.

Each subsection contains data adequacy comments or information requests, with numbers and summary titles and, in parentheses, the citation from Appendix B (Information Requirements for an Application) of Title 20, California Code of Regulations indicating a particular information requirement for the AFC. Each item follows with the CEC Staff comment on data adequacy for this item, under the heading “Information required to make AFC conform with regulations” followed by AES-SLD’s response to the information request and the information requested.

2.0 Project Description

After the AEC AFC was filed, the Applicant received additional information from the Long Beach Water Department (LBWD) relating to the existing offsite LBWD sewer line downstream of the first point of interconnection. The LBWD indicated that upgrading of the 4,000 feet of the sewer line was not required. During an inspection of the line, LBWD determined that flow restrictions were due to an obstruction, which was subsequently cleared. Therefore, the Applicant is removing the 4,000 feet of sewer line upgrade from the AEC project description.

3.0 Transmission System Engineering

1. Post Project One Line Diagram (Appendix B (b)(2)(C))

A detailed description of the design, construction, and operation of any electric transmission facilities, such as power lines, substations, switchyards, or other transmission equipment, which will be constructed or modified to transmit electrical power from the proposed power plant to the load centers to be served by the facility. Such description shall include the width of rights of way and the physical and electrical characteristics of electrical transmission facilities such as towers, conductors, and insulators. This description shall include power load flow diagrams which demonstrate conformance or nonconformance with utility reliability and planning criteria at the time the facility is expected to be placed in operation and five years thereafter; and

Information required to make the AFC conform with regulations:

Resubmit Figs. 3.1-1a, 3.1-1b with the sizes and ratings of 13.8 kV bus duct connectors and any short overhead conductors between the high side of Generator Step-up transformers and 230 kV Disconnect switch.

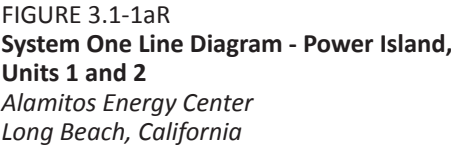
Resubmit Fig. 3.1-1c with the ratings of 230 kV Buses and 230 kV Breakers of SCE 230 kV switchyard connecting the 230 kV overhead Gen Tie lines of new generating units.

Submit three sets of pre and post-project physical layout drawings of the plant (similar to Fig. 2.1-2) according to the Table 2.2-1 project schedule with three major milestone dates which are: second quarter of 2019, third quarter of 2022, and fourth quarter of 2025.

Response: Revised Figures 3.1-1aR and 3.1-1bR show the sizes and ratings of the 13.8 kilovolt (kV) bus duct connectors and overhead conductors between the high side of the generator step-up transformer and the 230 kV disconnect switch.

Revised Figure 3.1-1cR shows the ratings of 230 kV buses and 230 kV breakers of Southern California Edison (SCE) 230 kV switchyard where the AEC generating units interconnect with SCE switchyard.

Attachment DA3.0-1 includes three sets of the five physical layout figures at select stages of AEC's construction. Figure DA3.0-1a shows the existing site and electrical interconnections prior to construction. Figure DA3.0-1b, representing the second quarter 2016, shows the existing site with Unit 7 demolition completed and the rerouting of the Alamitos Generating Station Units 5 and 6 interconnection line completed. Note that all three of Units 5 and 6 interconnection towers are replaced by transmission towers that will ultimately be used by AEC's Blocks 1, 2 and 3. Figure DA3.0-1c, representing the second quarter 2019, shows AEC Blocks 1 and 2 interconnected to the SCE switchyard using the transmission towers installed previously. The interconnection line for Units 5 and 6 is not shown on this figure as these units are scheduled for demolition starting in August 2018. Figure DA3.0-1d, representing third quarter 2022, shows AEC Block 3 interconnected to the SCE switchyard, again using the transmission towers previously constructed. Figure DA3.0-1e, representing the fourth quarter 2025, shows AEC Block 4 interconnected to the SCE switchyard.



IS061013112817SAC Figure_3.1-1aR.ai tdaus 02.07.2014

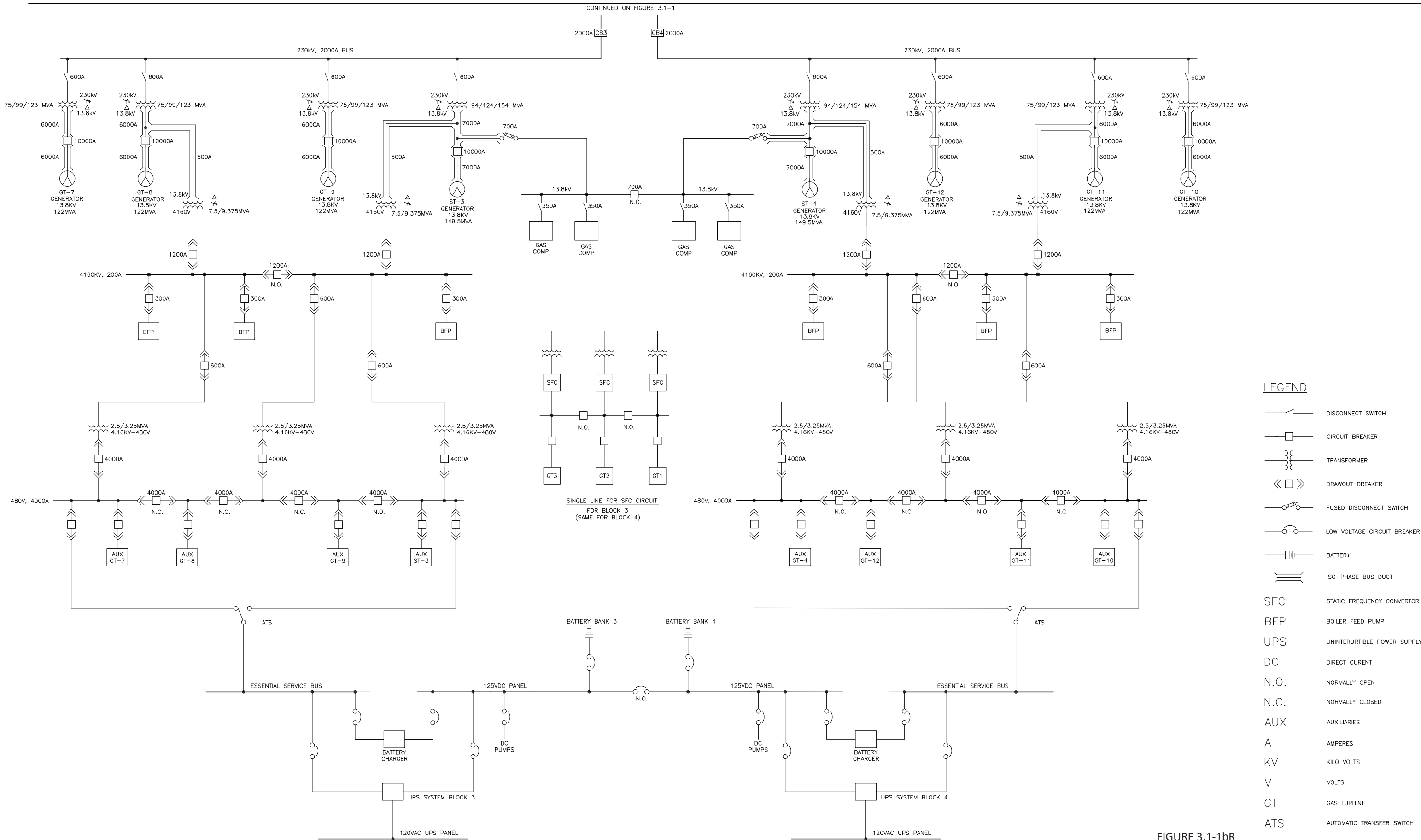


FIGURE 3.1-1bR
**System One Line Diagram - Power Island,
 Units 3 and 4**
 Alamitos Energy Center
 Long Beach, California

- Notes:
1. Breakers shown in SCE switching station are existing. Breaker ratings are per SCE drawing #597417-37.
 2. Total project size is 1902.867 MW @ 95% PF (Net Capacity).
 3. The 230 kV overhead tie lines are proposed to be 1033.5 KCMIL ACSS conductor rated 1924 Amp = 766 MVA at 230 kV.

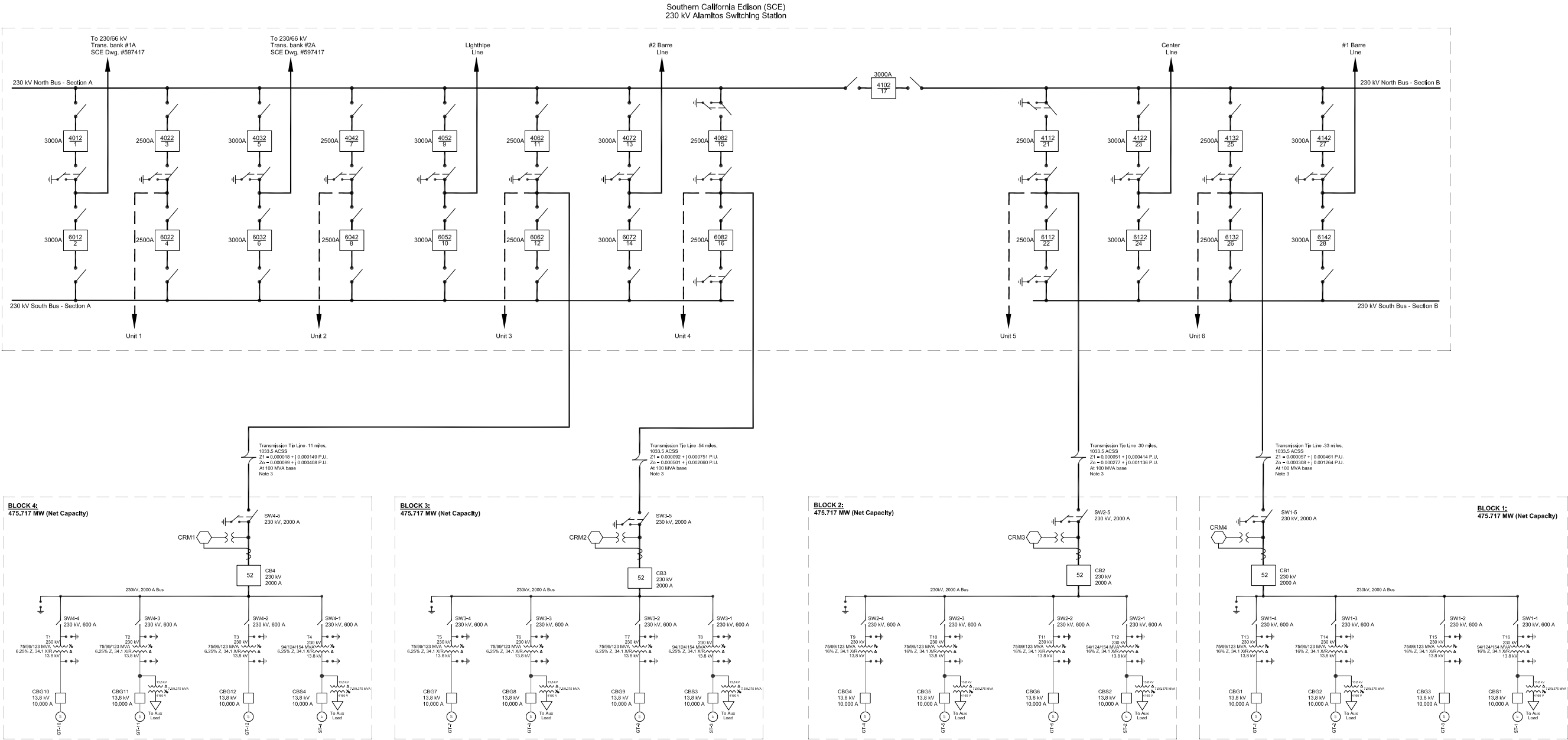


FIGURE 3.1-1cR
System One Line Diagram – Power Block
to Switchyard
Alamitos Energy Center
Long Beach, California

Attachment DA3.0-1

Site Layout Figures

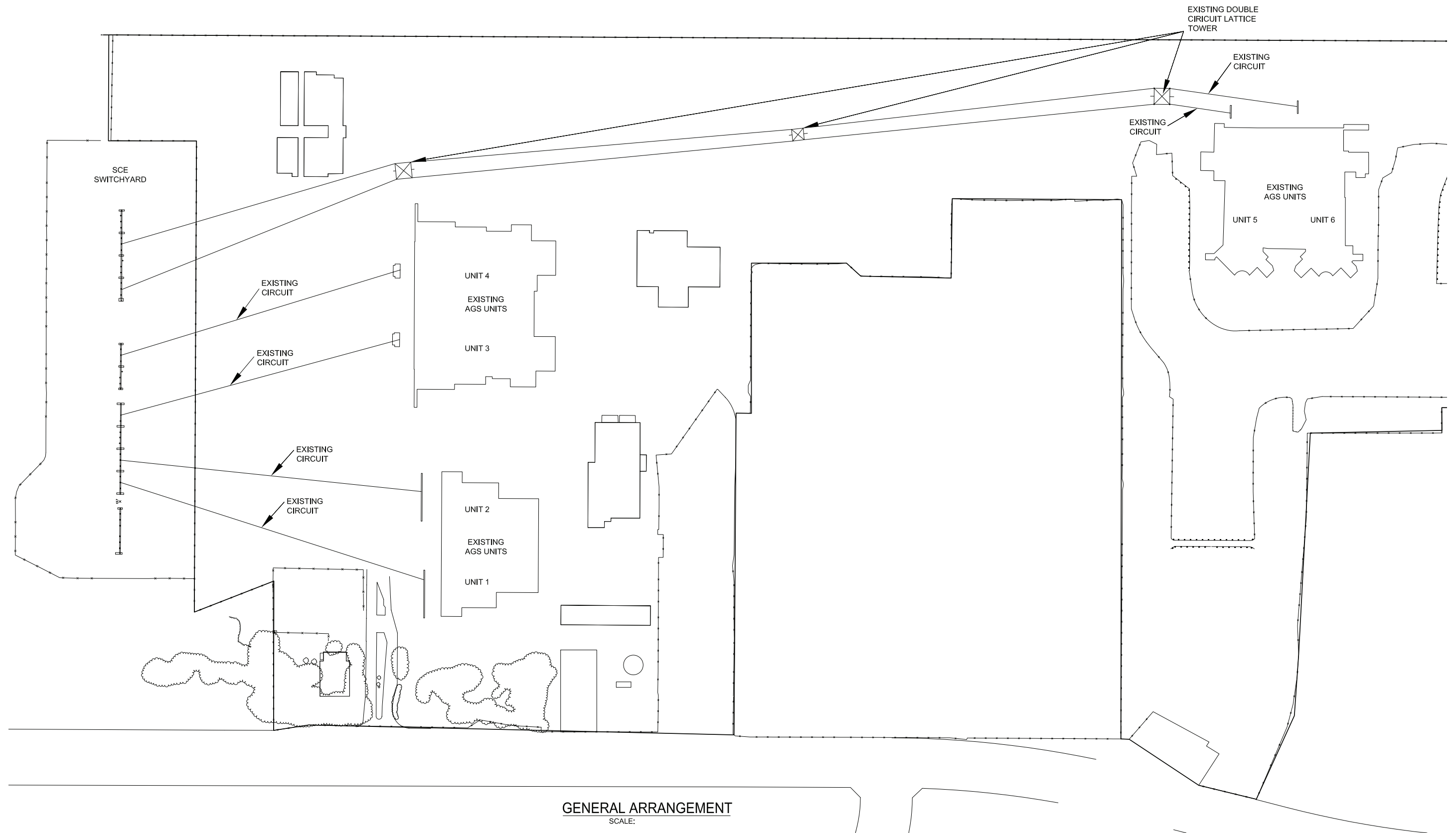


FIGURE DA3.0-1a
Existing Transmission Arrangement
 Alamos Energy Center
 Long Beach, California

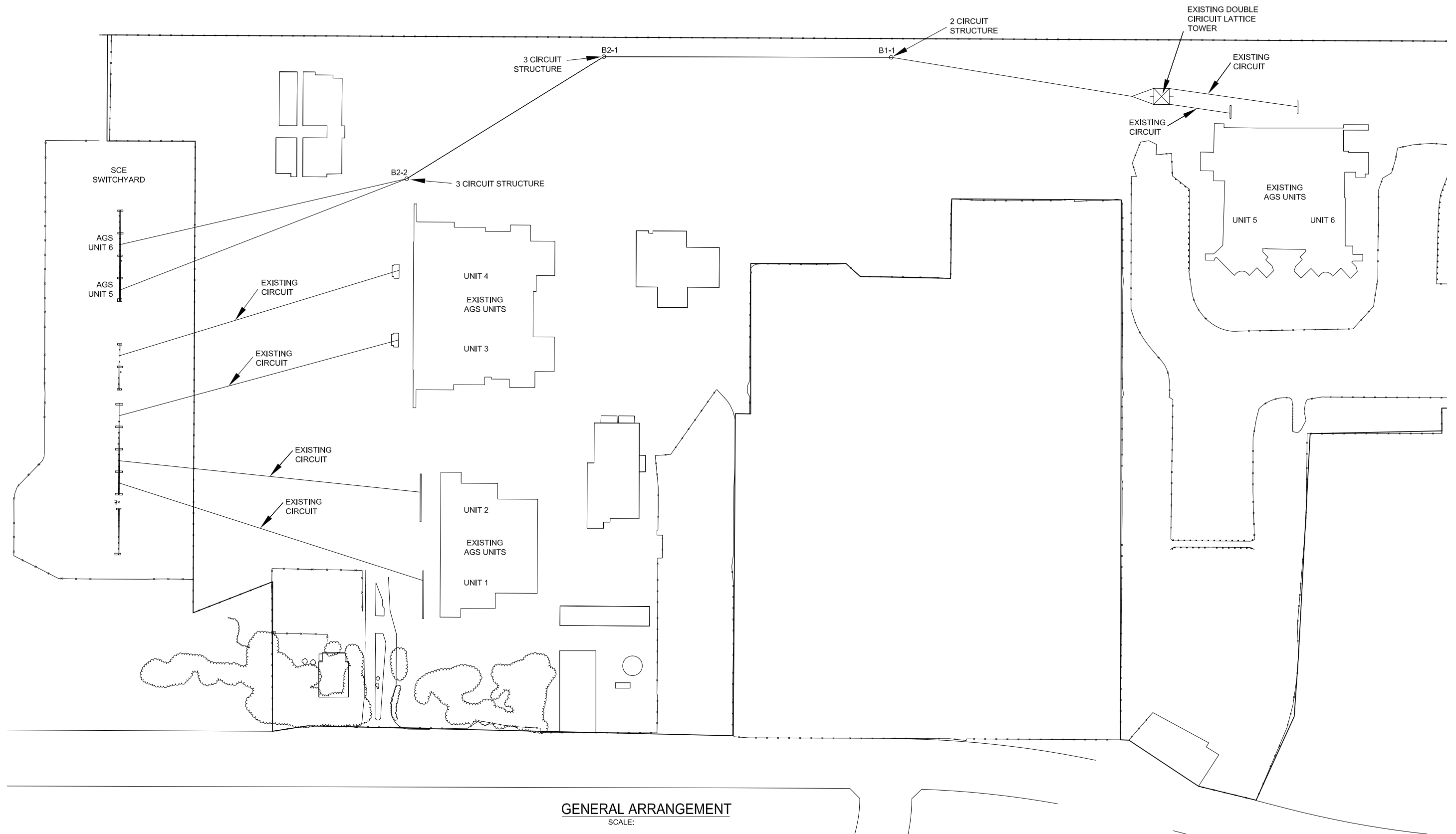


FIGURE DA3.0-1b
General Arrangement Second Quarter 2016
 Alamos Energy Center
 Long Beach, California

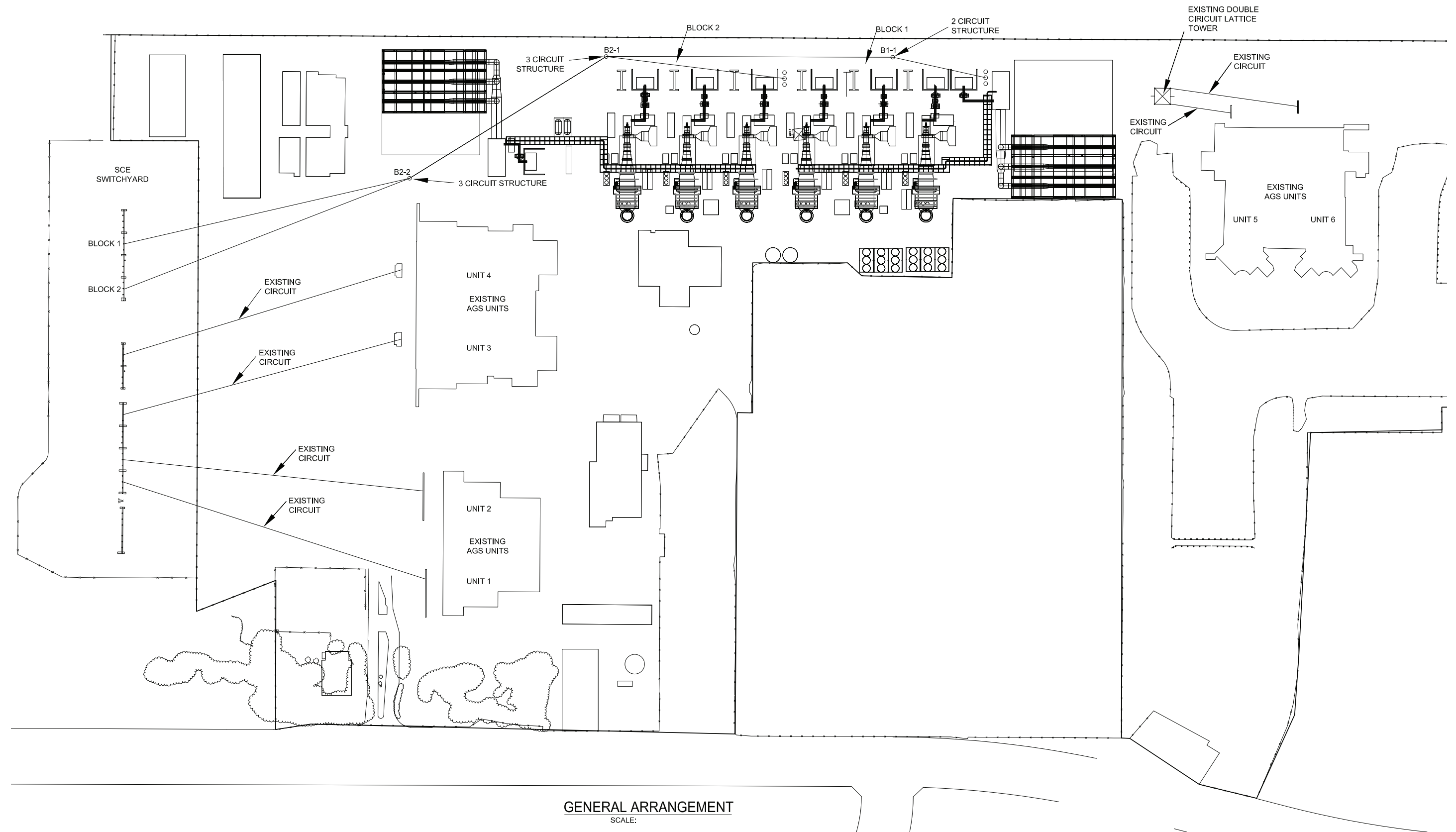


FIGURE DA3.0-1c
General Arrangement Second Quarter 2019
 Alamos Energy Center
 Long Beach, California

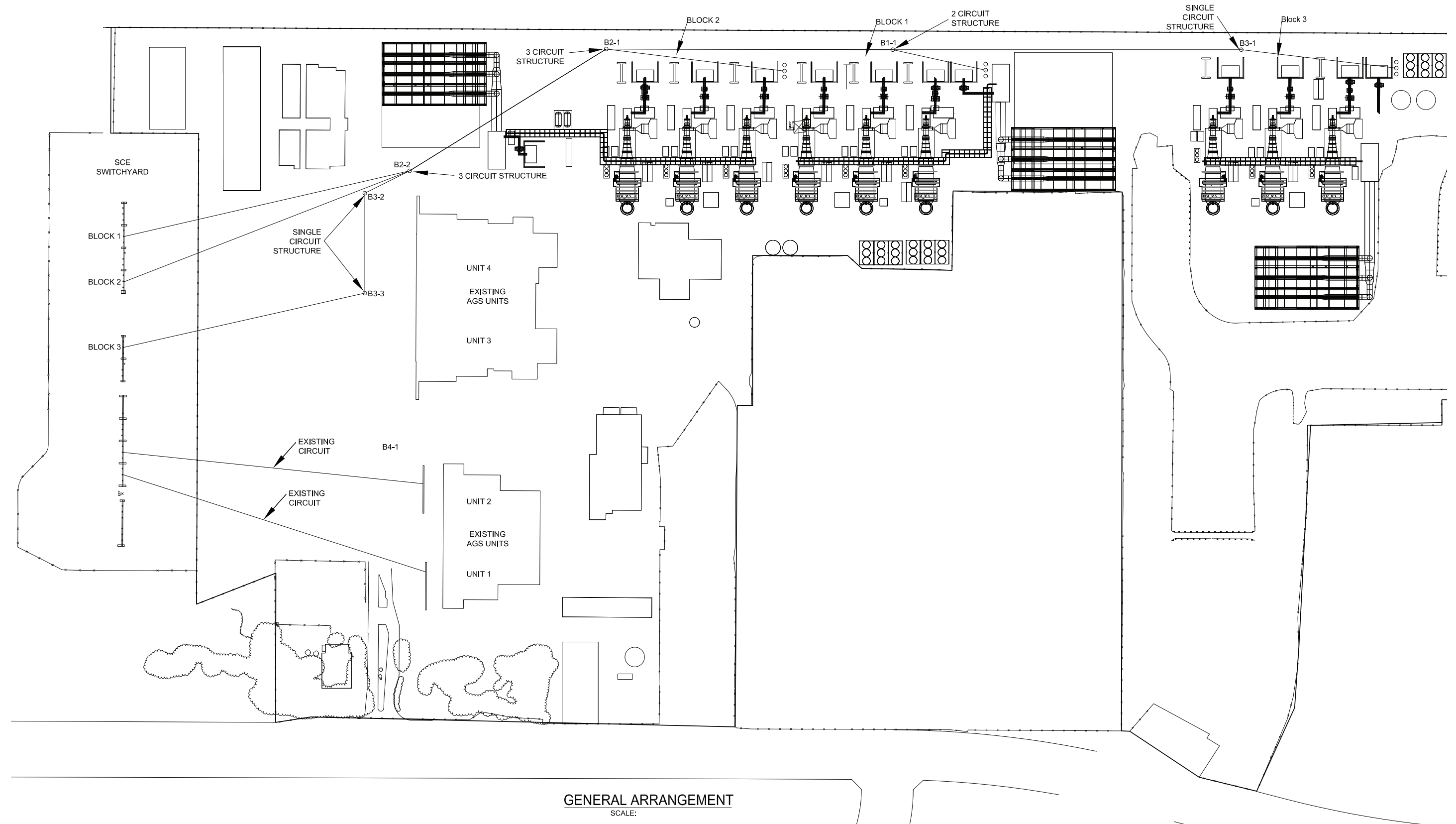


FIGURE DA3.0-1d
General Arrangement Third Quarter 2022
 Alamos Energy Center
 Long Beach, California

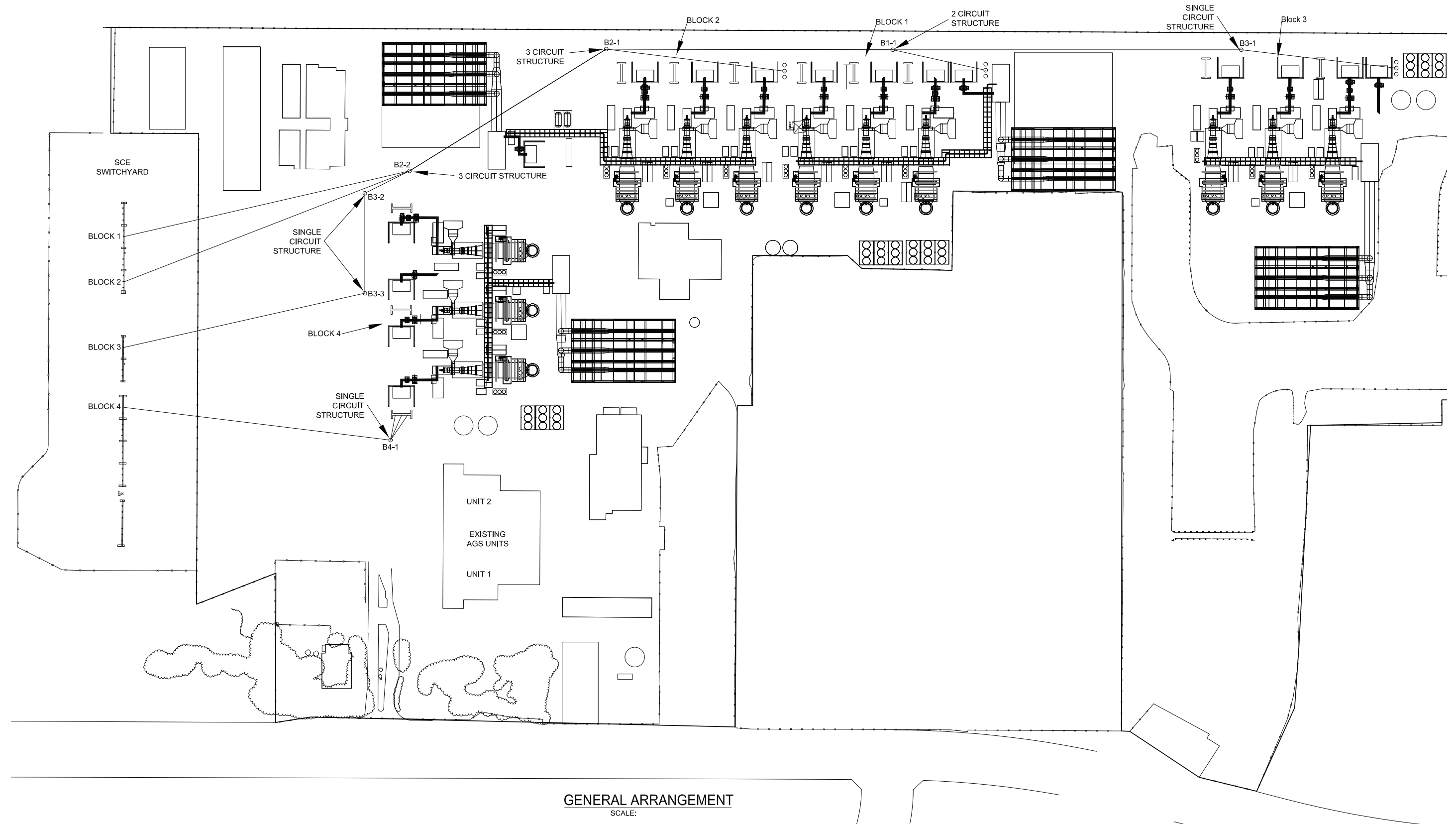


FIGURE DA3.0-1e
General Arrangement Fourth Quarter 2025
 Alamos Energy Center
 Long Beach, California

5.1 Air Quality

2. Compliance Determination (Appendix B (g)(8)(A))

The information necessary for the air pollution control district where the project is located to complete a Determination of Compliance.

Information required to make the AFC conform with regulations:

Provide the permit application completeness letter from the South Coast Air Quality Management District.

Response: The South Coast Air Quality Management District (District) has requested additional information for the air permit application to be deemed complete. A letter containing the requested information was submitted to the District on February 7, 2014, a copy of which was docketed with the CEC on February 10, 2014 (TN201688). Applicant will transmit a copy of the District's completeness letter to the CEC upon receipt from the District.

5.2 Biological Resources

3. Description and Results of Field Studies and Seasonal Surveys (Appendix B (g) (13) (D))

A description and results of all field studies and seasonal surveys used to provide biological baseline information about the project site and associated facilities. Include copies of the California Natural Diversity Database records and field survey forms completed by the applicant's biologist(s). Identify the date(s) the surveys were completed, methods used to complete the surveys, and the name(s) and qualifications of the biologists conducting the surveys.

Information required to make the AFC conform with regulations:

Please provide a description of the biological resources survey methods and survey area. Please provide the biological resources survey dates and names of surveyors. Please state whether the resumes provided are for the field surveyors, as required.

Response: A site reconnaissance survey of the existing Alamitos Generating Station was conducted by CH2M HILL biologists, Sharook Madon, Ph.D. and Melissa Fowler, on September 29, 2011 (biological resources staff resumes are provided in Appendix 5.2E of the AFC). The site was assessed for biological resources, including suitable habitat with the potential to support special-status plant and wildlife species, and wetland habitats. Methodologies for plant and wildlife surveys are provided in the subsequent sections. California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) reporting forms were not required to be completed because no special-status plant or wildlife species were documented within the project boundaries.

Botanical Surveys. According to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*, botanical surveys should be completed before any project-related activities may modify vegetation, such as clearing, mowing, or ground-breaking activities (CDFG, 2009). In addition, protocols outlined in these guidelines are to be adhered to when:

- "Natural (or naturalized) vegetation occurs on the site, and it is unknown if special status plant species or natural communities occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
- Special status plants or natural communities have historically been identified on the project site; or
- Special status plants or natural communities occur on sites with similar physical and biological properties as the project site." (CDFG, 2009)

AEC will be constructed entirely within the existing Alamitos Generating Station fenceline and no natural vegetation occurs within the project area. Vegetation within the project area primarily consists of landscaping plants and non-native species that are treated with herbicides and removed as necessary. Power generating facilities have been on the site since 1955, and special-status plants or natural communities have not been documented within the project area. The AEC site and adjacent laydown area are located within an existing developed, operational industrial site that does not provide any physical or biological properties available for special-status/rare plants or natural communities. Because none of the appropriate criteria outlined in CDFW's protocols were met for the project site and laydown area, a site pedestrian survey was conducted by qualified biologists, and vegetation located within the project area was recorded. More specifically, considering the long-term industrial development and the ongoing management and maintenance of the site, establishing transects within the project area was not feasible or appropriate. The biologists surveyed around the tank containment berms, retention basins, intake channels, the open paved and gravel areas, and along the fence line of the Alamitos Generating Station.

CH2M HILL biologists used the applicable CNDDDB RareFind as a checklist (see Appendix 5.2B in the AFC) to record any special-status plant species, if observed. None were observed within the fence line of Alamitos Generating Station. The RareFind report and species list were generated for all offsite CNDDDB occurrences that have been documented within 1 mile of the project area.

Wildlife Surveys. Perimeter landscaping and additional areas, which include the fuel oil storage containment areas, retention basins, the open paved and gravel areas, and along the fence line of Alamitos Generating Station were surveyed for wildlife species and nesting birds. CH2M HILL's biologists used the applicable CNDDDB RareFind report as a checklist to record special-status wildlife species observed onsite. The RareFind report and list were generated for all offsite CNDDDB occurrences that have been documented within 1 mile of the project area. The qualifications for the biologists conducting the biological surveys are provided in Appendix 5.2E of the AFC.

Supplemental Surveys for the Proposed New Process/Sanitary Wastewater Pipeline.

As noted in Section 2.0 Project Description above, after the AEC AFC was filed, the Applicant received additional information from the Long Beach Water Department (LBWD) relating to the existing offsite LBWD sewer line downstream of the first point of interconnection. The LBWD indicated that upgrading of the 4,000 feet of the sewer line was not required. During an inspection of the line, LBWD determined that flow restrictions were due to an obstruction, which was subsequently cleared. Therefore, the Applicant has removed the 4,000 feet of sewer line upgrade from the AEC project description.

In the interest of a complete response, the Applicant provides the following summary of the surveys and methods employed in the AFC. Supplemental reconnaissance surveys of the pipeline alignment were conducted on July 19, 2013, and January 31, 2014, by CH2M HILL biologist, Melissa Fowler (biologist qualifications are provided in Appendix 5.2E of the AFC). The survey on January 31, 2013 included a 100-foot buffer of the proposed pipeline alignment. As stated in the AFC, a new 1,000-foot-long, 6-inch pipeline would have connected the AEC to the existing Long Beach Water Department (LBWD) sewer system. The new, offsite pipeline would have commenced at the west side of the project site near the intersection of Studebaker Road and the northern intake channel. The pipeline would have crossed under Studebaker Road then turn south along Studebaker Road to the intersection with Loynes Drive. The pipeline would have then turned west and crossed over the Los Cerritos Channel (affixed to the bridge). After crossing the Channel, the pipeline would have turned north on East Vista Street to connect into the existing system in the residential subdivision. Again, as noted in Section 2.0, the additional 4,000 feet of sewer pipeline upgrade is no longer part of the AEC project description.

No special-status wildlife species or plants were observed during the reconnaissance surveys. Wildlife observed during the surveys included American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), bufflehead (*Bucephala albeola*), gull (*Larus* spp.), and rock pigeon (*Columba livia*). Vegetation included landscape plants and non-native species, such as fan palm (*Washingtonia robusta*), gum tree (*Eucalyptus* spp.), great bougainvillea (*Bougainvillea spectabilis*), iceplant (*Carpobrotus edulis*), mustard (*Brassica* spp.), and tree tobacco (*Nicotiana glauca*).

4. Description and Results of Field Studies and Seasonal Surveys (Appendix B (g) (13) (D))

Current biological resources surveys conducted using appropriate field survey protocols during the appropriate season(s). State and federal agencies with jurisdiction shall be consulted for field survey protocol guidance prior to surveys if a protocol exists.

Information required to make the AFC conform with regulations:

Survey methods are unknown. Please provide a description of the biological resources surveys including dates surveys were conducted, methods, and survey area.

Response: Survey methods, timing and survey area are discussed in the previous response to *Description and Results of Field Studies and Seasonal Surveys (Appendix B (g) (13) (D))*, presented above.

5. Impacts to Jurisdictional or Non-jurisdictional Wetlands (Appendix B (g)(13)(D)(iii))

If the project or any related facilities could impact a jurisdictional or non-jurisdictional wetland, provide completed Army Corps of Engineers wetland delineation forms and/or determination of wetland status pursuant to Coastal Act requirements, name(s) and qualifications of biologist(s) completing the delineation, the results of the delineation and a table showing wetland acreage amounts to be impacted.

Information required to make the AFC conform with regulations:

Manmade features without connection to traditional navigable water are not usually considered jurisdictional unless they support listed species. However, sufficient information was not provided for staff to determine whether these features are potentially jurisdictional. Please provide results of a wetland delineation as requested in Appendix B (g) (13) (D) (iii) of the Siting Regulations or provide documentation from the USACE and CDFW that the wetland and water features on the golf course are not of concern.

Response: No jurisdictional wetlands or waters are expected to be impacted by the AEC. The offsite pipeline, which has been removed from the Project Description, would have terminated approximately 110 feet from the intersection of Loynes Drive and East Vista Street. No project features would have been constructed within the golf course; therefore, no impacts to the manmade water features would have occurred.

6. Educational Programs to Enhance Employee Awareness (Appendix B (g) (13) (F) (v))

Educational programs to enhance employee awareness during construction and operation to protect biological resources.

Information required to make the AFC conform with regulations:

Please provide a description of a proposed worker awareness/educational program.

Response: A site-specific Worker Environmental Awareness Program (WEAP) will be used to educate site personnel, construction workers and operators regarding best management practices (BMPs) that will be implemented during demolition and construction. The WEAP will be administered by the designated biologist. The WEAP will include an oral, video/PowerPoint, and/or written materials presentation that reviews BMPs for trash disposal, lighting, dust, and surface water runoff. The WEAP will also include appropriate contact information, procedures, and guidelines for reporting encounters with biological resources, such as wildlife observations. The WEAP will be subject to review and approval of the CEC's Compliance Project Manager and will be substantially similar to the WEAP's prepared for other Brownfield repowering projects approved by the Commission.

7. Compliance and Monitoring Programs (Appendix B (g) (13) (G))

A discussion of compliance and monitoring programs to ensure the effectiveness of impact avoidance and mitigation measures incorporated into the project.

Information required to make the AFC conform with regulations:

Please provide a description of how implementation of the proposed mitigation measure will be monitored for effectiveness.

Response: As with all Commission approved projects, the Conditions of Certification approved by the Commission require and thus ensure the effectiveness of impact avoidance and mitigation measures. Typical Mitigation Measures are presented in Section 5.2.5. Based on past California Energy Commission (CEC) compliance construction monitoring, WEAP training is highly effective in educating the construction

workforce of the legal/regulatory importance of protecting biological resources during construction. In addition, all site personnel and construction workers will be required to sign a form stating they have completed the WEAP training and will adhere to the conditions of the training program.

5.3 Cultural Resources

8. Literature Searches (Appendix B (g)(2)(A))

A summary of the ethnology, prehistory, and history of the region with emphasis on the area within no more than a 5-mile radius of the project location.

Information required to make the AFC conform with regulations:

1. *The AFC does not provide a summary of local prehistory (defined per Appendix B as within 5 miles of the project location). The AFC gives passing mention to prehistoric sites at Redondo Beach, but they are more than 20 miles (mi) from the Alamitos project site. The AFC's ethnohistory briefly describes the village Puuvunga and site CA-LAN-2616. No fewer than 11 prehistoric site types are mentioned in Table 5.3-2, as opposed to the three mentioned on p. 5.3-20. All of this information should be summarized in the prehistoric setting with appropriate citations. The revised prehistoric setting may be prepared as a standalone supplement to the AFC, and need not be submitted under confidential cover if archaeological resource locations are kept general. Be sure that the prehistoric setting discusses differences in archaeological resource types over time and space; if the records search and other data are silent on these matters or simply unavailable please explicitly indicate this situation in the supplement.*

Response: Out of an abundance of caution due to the types of resources discussed, the local prehistory is being submitted as confidential.

9. Literature Searches (Appendix B (g)(2)(B))

The results of a literature search to identify cultural resources within an area not less than a 1-mile radius around the project site and not less than one-quarter (0.25) mile on each side of the linear facilities. Identify any cultural resources listed pursuant to ordinance by a city or county, or recognized by any local historical or archaeological society or museum.

Literature searches to identify the above cultural resources must be completed by, or under the direction of, individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed.

Copies of California Department of Parks and Recreation (DPR) 523 forms (Title 14 CCR §4853) shall be provided for all cultural resources (ethnographic, architectural, historical, and archaeological) identified in the literature search as being 45 years or older or of exceptional importance as defined in the National Register Bulletin Guidelines (36 CFR 60.4(g)).

A copy of the USGS 7.5' quadrangle map of the literature search area delineating the areas of all past surveys and noting the California Historical Resources Information System (CHRIS) identifying number shall be provided.

Copies also shall be provided of all technical reports whose survey coverage is wholly or partly within .25 mile of the area surveyed for the project under Section (g)(2)(C), or which report on any archaeological excavations or architectural surveys within the literature search area.

Information required to make the AFC conform with regulations:

- The records search extends 0.8 mi south of the southernmost proposed parking/laydown area rather than the required 1.0 mi. Per 20 CCR 1704(a)(1) and Appendix B(g)(2)(B), the records search requirements extend to the project site and related facilities. Please provide records search results and map for the 0.2-mi-wide, undocumented area.
- The records search radius for the proposed process/sanitary wastewater pipeline corridor is not reported. Confidential Appendix 5.3B, p. 3-1, states that the records search radius for this proposed

project component was 0.5 mi. As this appendix is not available to the public, please confirm that the records search for the proposed pipeline included a 0.5-mi radius.

- The records search for the proposed pipeline was conducted in 2013, about 2 years after the records search for the project site and laydown areas. Appendix 5.3C does not contain pages from the most recent Historic Resources Inventory or Archeological Determinations of Eligibility. Instead, Appendix 5.3C only contains copies of these listings from 2011. These listings are updated on a quarterly basis; please consult and copy the latest listings in connection with the pipeline records search.
- The AFC does not contain information on Study LA-10527, which is mapped in Appendix 5.3E. Appendix 5.3C is missing DPR 523 forms for P-19-279, -187657(see LA-05890) (4 of 10 pages), and P-30-1546. Appendix 5.3C is missing reports LA-3114, -2794, -09839 (Appendix C), and -10483; and OR-1599, -1897, -1958, and -3828. Studies OR-1608–1610, -1643, -1644, -1816, and -1858 are not mapped. Please provide copies of these records and reports.

Response: Staff requested that a 0.25-mile radius be used for the archival research of the offsite laydown area adjacent to the Alamitos Generating Station, consistent with the assessment for the Huntington Beach Energy Project.

The buffer for the wastewater pipeline corridor literature search was 0.5 mile around the proposed disturbance area. As noted in Section 2.0 Project Description above, after the AEC AFC was filed, the Applicant received additional information from the Long Beach Water Department (LBWD) relating to the existing offsite LBWD sewer line downstream of the first point of interconnection. The LBWD indicated that upgrading of the 4,000 feet of the sewer line was not required. During an inspection of the line, LBWD determined that flow restrictions were due to an obstruction, which was subsequently cleared. Therefore, the Applicant has removed the 4,000 feet of sewer line upgrade from the AEC project description.

There are no listings in the California Historical Resources Information System (HRI) that were identified from the literature search conducted for the wastewater pipeline. Therefore, no copies of the most recent HRI pages were made at that time. However, as these pages have been requested by Staff, they are provided confidentially in Attachment DA5.3-1.

Study LA-10527 was included in the original submittal in Appendix 5.3 C (filed as confidential). It is also included in Attachment DA5.3-1 of this document. The following DPR 523 forms are included in confidential Attachment DA5.3-2 of this document: P-19-279, -187657, and P-30-1546. The following reports are included in confidential Attachment DA5.3-3: LA-3114, -2794, -09839 and -10483; and OR-1599, 1608–1610, -1643, -1644, -1816, -1858 -1897, -1958, and -3828. Many of these reports are not mapped by the information center as the reports do not include sufficient project location information. The reports and DPR forms presented in confidential Attachments DA5.3-1, DA5.3-2, and DA5.3-3 have been submitted under a repeated request for confidential designation.

10. Summary of Local Paleoenvironments (Appendix B (g)(2)(C))

The results of new surveys or surveys less than 5 years old shall be provided if survey records of the area potentially affected by the project are more than five (5) years old. Surveys to identify new cultural resources must be completed by (or under the direction of) individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed.

New pedestrian archaeological surveys shall be conducted inclusive of the project site and project linear facility routes, extending to no less than 200' around the project site, substations and staging areas, and to no less than 50' to either side of the right-of-way of project linear facility routes. New historic architecture field surveys in rural areas shall be conducted inclusive of the project site and the project linear facility routes, extending no less than 0.5 mile out from the proposed plant site and from the routes of all above-ground linear facilities. New historic architecture field surveys in urban and suburban areas shall be

conducted inclusive of the project site, extending no less than one parcel's distance from all proposed plant site boundaries. New historic architecture field reconnaissance ("windshield survey") in urban and suburban areas shall be conducted along the routes of all linear facilities to identify, inventory, and characterize structures and districts that appear to be older than 45 years or that are exceptionally significant, whatever their age.

A technical report of the results of the new surveys, conforming to the Archaeological Resource Management Report (ARMR) format (CA Office of Historic Preservation Feb 1990), which is incorporated by reference, shall be separately provided and submitted (under confidential cover if archaeological site locations are included).

Information included in the technical report shall also be provided in the Application for Certification, except that confidential information (archaeological sites or areas of religious significance) shall be submitted under a request for confidentiality pursuant to Title 20, California Code of Regulations, § 2501 et seq. At a minimum, the technical report shall include the following:

Information required to make the AFC conform with regulations:

Please conduct an historic architectural field survey extending no less than one parcel's distance from all proposed plant site boundaries and provide a technical report with the results of the new surveys as specified in Appendix B(g)(2)(C).

Response: An architectural field survey was conducted on February 3, 2014 extending no less than one parcel's distance from all proposed plant site boundaries, to record the segment of the San Gabriel River that is adjacent to the project area and is part of the AES property, and the Haynes Generating Station on the adjacent parcel across the river. The following technical report summarizes the survey results.

Segment of San Gabriel River and levees

The San Gabriel River forms the eastern physical boundary of the Alamitos Generating Station. The property line extends to the eastern bank of the San Gabriel River. The segment of the river in the project area is approximately 5,208 feet long and 301 feet wide. The river drains the San Gabriel River Watershed, which is located in eastern Los Angeles County. The watershed is roughly bound by the San Gabriel Mountains to the north, most of San Bernardino/Orange County to the east, the area where the San Gabriel River separates from the Los Angeles River to the west, and the Pacific Ocean to the south. "The watershed drains into the San Gabriel River from the San Gabriel Mountains flowing 58 miles south until its confluence with the Pacific Ocean. ...Channel flows pass through different sections in the San Gabriel river, diverting from the riverbed into four different spreading grounds, held behind several rubber dams for controlled flow and ground water recharge, and controlled through 10 miles of concrete channel bottom from below Whittier Narrows Dam to past Coyote Creek" (LACDPW, 2014a). The project segment of the river is bounded by the East 7th Street (State Highway 22) crossing to the north, by the Alamitos Generating Station to the west, by the Haynes Generating Station to the east, and by the Westminster Boulevard crossing to the south. 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). The banks of the river in this segment are protected by earthen levees armored with riprap, and they contain concrete outfalls to serve the two generating stations. The river is spanned by a suspended pipe structure at approximately the midpoint of this segment.

The San Gabriel River from the Whittier Narrows Dam to the Pacific Ocean, which includes the project segment of the river and its levees, was altered as part of the "general comprehensive plan for flood control and other purposes in the basins of the Los Angeles and San Gabriel rivers and Ballona Creek (as set forth in House Document 838, 76th Congress, third session). The comprehensive plan was approved on August 18, 1941 by act of Congress, Public Law 228, 77th Congress, first session" (USACE, 2012). The U.S. Army Corps of Engineers (USACE) Los Angeles District and the Los Angeles County Flood Control District (LACFCD) entered into a Project Cooperation Agreement on August 7, 1995, as required by Public Law 99-622. The Los Angeles

County Department of Public Works (LACDPW) is responsible for operating and maintaining most of the San Gabriel River Levee System (USACE, 2012).

This segment, which is just below the confluence with Coyote Creek and the concrete channel part of the river, is part of Reach 7 of the river, known as the “zone of tidal influence” (LACDPW, 2006). Reach 7 is the final stretch of river, approximately 3.5 miles, from below Coyote Creek to the Pacific Ocean (LACDPW, 2006).

Historically, the San Gabriel River would flood and overflow its banks during heavy rains. Records indicate that there were 17 floods between 1815 and 1938 (Salazar, 2013). With the rapid increase in population in the twentieth century, controlling the river and addressing the recurrent flooding became a concern. The 1914 flood caused \$10 million in damages and, in response, the Los Angeles County Flood Control District (LACFCD) was formed in 1915. Taxpayers approved bond issues in 1917 and 1924 to build dams, but not enough funds were raised for the necessary infrastructure downstream of the dams (LACDPW, 2014b). Severe floods happened again in 1934 and 1938. In the 1938 flood, “115 people lost their lives, thousands more were evacuated, over 6000 homes were damaged or destroyed, and 108,000 acres - one third of Los Angeles - was flooded” (Cram, 2012). The disaster prompted a request for federal assistance. The LACFCD requested funding from the Works Progress Administration to channelize the Los Angeles and San Gabriel rivers. They also received funding through the federal Flood Control Act. The Flood Control Act of 1936 redefined the role of the USACE, allowing them to oversee permanent future flood control plans for the Los Angeles, Rio Hondo, and San Gabriel rivers. The Act also authorized \$70 million in federal dollars for flood control (LACDPW, 1996). In 1941, Congress approved the Los Angeles County Drainage Area plan and authorized \$230 million for construction of a comprehensive flood control system (LACDPW, 1996). The flood control plan had three major components: (1) channelize, straighten, and deepen the rivers; (2) install debris basins in foothills to protect against debris flows during storm events; and (3) construct dams in the mountains to impound storm runoff and permit controlled release of those waters (State of California Resources Agency, 2001). The USACE took the lead implementing the massive project.

By the time the project was completed in 1960, most of the Los Angeles River was encased in concrete, and the San Gabriel River was surrounded by levees. Documentation was not found for the completion date of the levees in this segment of the river, but it appears that Reach 7 was the last section completed. The Whittier Narrows Dam, north of this segment, was completed in 1957, so it is likely that the levees here were constructed after that, in the late 1950s to 1960 (LACDWP, 1996). A photo of Alamitos Generating Station from 1958 shows what appears to be a natural bank covered in vegetation, without a high levee or riprap. This is further proof of the post-1958 date of the levees. The outfalls were likely constructed at the same time as the power generation plants that they serve - 1956 -69 for AES Alamitos and 1962-67 for Haynes Generating Station (AGS, 2010; Los Angeles Department of Water and Power [LADWP], 2010).

The overall linear resource of the San Gabriel River watershed system has not been evaluated for the NRHP 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 levees have had minor alterations through maintenance over the years but retain good integrity of location, design, setting, materials, workmanship, feeling, and association. They are not eligible for the NRHP or CRHR as they are not associated with events that have made a significant contribution to the broad patterns of our history and are not associated with the lives of significant persons in our past. They are typical earthen levees armored with riprap and do not embody distinctive characteristics or possess high artistic values.

The segment of the San Gabriel River in the project area and its levees have 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.

Haynes Generating Station

Haynes Generating Station (HGS) is an electric power generating facility owned by Los Angeles Department of Water and Power (LADWP). It is located east of the project site, directly across the San Gabriel River, on the adjacent parcel. 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 the project site, 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 (a 2 MW 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).

Units 1, 2, 5, and 6 are steam boiler units. The CCGS consists of one steam turbine (Unit 8) and two natural-gas-fired combustion turbine generators (Units 9 and 10). The height of the primary structures for the CCGS equipment ranges from approximately 75 feet for the CCGS to approximately 150 feet for the six older units (including decommissioned Units 3 and 4). The combustion turbine 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 ten of the generator units are located in the southwest quadrant of the HGS property and occupy approximately 15 acres of the site (LADWP, 2010). In 2011, LADWP commenced construction of a repowering project to replace Units 5 and 6 with six peaking turbines. These peaking units became operational in June 2013 (LADWP, 2013).

For many years, HGS operated 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 that 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 its own outfall.

LADWP recently approved the “Haynes Generating Station Units 5 & 6 Repowering Project.” According to the April 2010 Final Environmental Impact Report (EIR) (SCH#2005061111), the repowering project uses dry cooling, thus “Eliminating the need to use ocean water for cooling on this project and reducing the use of ocean water for generator cooling at [Haynes Generating Station] HnGS.” (LADWP, 2010, p. 1-3.)

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.

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 alterations, including the addition of Units 8, 9, and 10 in 2004; the decommissioning of Units 3 and 4; the physical alteration of Unit 6; and the removal of four large aboveground storage tanks in the north end of the property. Although the design has been affected by these changes, the property retains integrity of location, setting, materials, workmanship, feeling, 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.

References

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State of California Resources Agency. 2001. *Common Ground: from the Mountains to the Sea - Watershed and Open Space Plan, San Gabriel and Los Angeles Rivers*. Available online at: http://www.rmc.ca.gov/plans/common_ground/Common%20Ground.pdf. Accessed February 10, 2014.

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U.S. Army Corps of Engineers (USACE). 2012. San Gabriel River 1 Levee System, Los Angeles And Orange Counties, California Nld System Id # 3805010031, Periodic Inspection Report No 1, Generalized Executive Summary. Periodic Inspection Report Prepared By The URS Group, Inc. for The U.S. Army Corps Of Engineers, Los Angeles District. August 2012. Available online at: <http://www.spl.usace.army.mil/Portals/17/docs/LeveeSafetyProgram/SanGabrielRiver1.pdf>. Accessed February 10, 2014.

11. Literature Searches (Appendix B (g)(2)(C)(i))

The summary from Appendix B (g)(2)(A) and the literature search results from Appendix B (g)(2)(B);

Information required to make the AFC conform with regulations:

1. *Appendix 5.3B does not provide a summary of local prehistory (defined per Appendix B as within 5 mi of the project location). Appendix 5.3B gives passing mention to prehistoric sites at Redondo Beach, but they are more than 20 miles from the Alamitos project site. The ethnohistory briefly describes the National Register-listed village Puuvunga and site CA-LAN-2616. No fewer than 11 prehistoric site types are mentioned in Table 2, as opposed to the three mentioned on p. 3-2. All of this information should be summarized in the prehistoric setting with appropriate citations. The revised prehistoric setting may be prepared as a standalone supplement to the report, and need not be submitted under confidential cover if archaeological resource locations are kept general. If possible, be sure that the prehistoric setting discusses differences in archaeological resource types over time and space; if the records search and other data are silent on these matters or simply unavailable please explicitly indicate this situation in the supplement.*

Response: See Response to No. 8, which is the same request as No. 11.

12. Copies of DPR 523(A) Forms (Appendix B (g)(2)(C)(iii))

Copies of all new and updated DPR 523(A) forms. If a cultural resource may be impacted by the project, also include the appropriate DPR 523 detail form for each such resource;

Information required to make the AFC conform with regulations:

Please provide DPR forms for all properties of historic age (45 years or older) within the architectural survey area as defined in Appendix B (g) (2) (C).

Response: A DPR 523 Primary Record and Linear Resource form was prepared for the segment of the San Gabriel River that is adjacent to the project site. A DPR 523 Primary Record and Building, Structure, Object form was prepared for the Haynes Generating Station on the adjacent parcel. These forms are presented in Attachment DA5.3-4.

13. Figure that Depicts the Locations of all Previously Known and Newly Identified Cultural Resources (Appendix B (g)(2)(C)(iv))

A map at a scale of 1:24,000 U.S. Geological Survey quadrangle depicting the locations of all previously known and newly identified cultural resources compiled through the research required by Appendix B (g)(2)(B) and Appendix B (g)(2)(C) (ii); and

Information required to make the AFC conform with regulations:

Appendix 5.3E maps are not set to a scale of 1:24,000; they simply use the imagery from the 1:24,000 topographic quadrangle. As stated earlier concerning the records searches, several studies are not mapped in Appendices 5.3C and 5.3E. Please map all previously identified cultural resources and cultural resource studies on topographic maps set at 1:24,000 scale.

Response: A figure showing all previously identified cultural resources and resource studies on a topographic base set at a 1:24,000 scale is presented as Figure DA5.3-1, which is being filed confidentially.

Attachment DA5.3-4
DPR Forms for the San Gabriel River and
Haynes Generating Station

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. 2nd 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. 2nd 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.

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 and 4, the physical alteration of Unit 6, the removal of four large aboveground storage tanks in the north end of the property, the addition of Units 11-16, and the decommissioning of Units 5 and 6. 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

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

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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 Alamos 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.

CONTINUATION SHEET

Primary #

HRI#

Trinomial

Page 7 of 10

*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.

*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

\\Z:\GIS\GIS\PROJECTS\ALAMITOS\MAPFILES\CULTURAL\WEC_CULTURAL_SURVEY\AREA_HHS_AERIAL.MXD KMINO 2/10/2014 3:33:25 PM

CH2MHILL

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

Primary #
HRI#
Trinomial

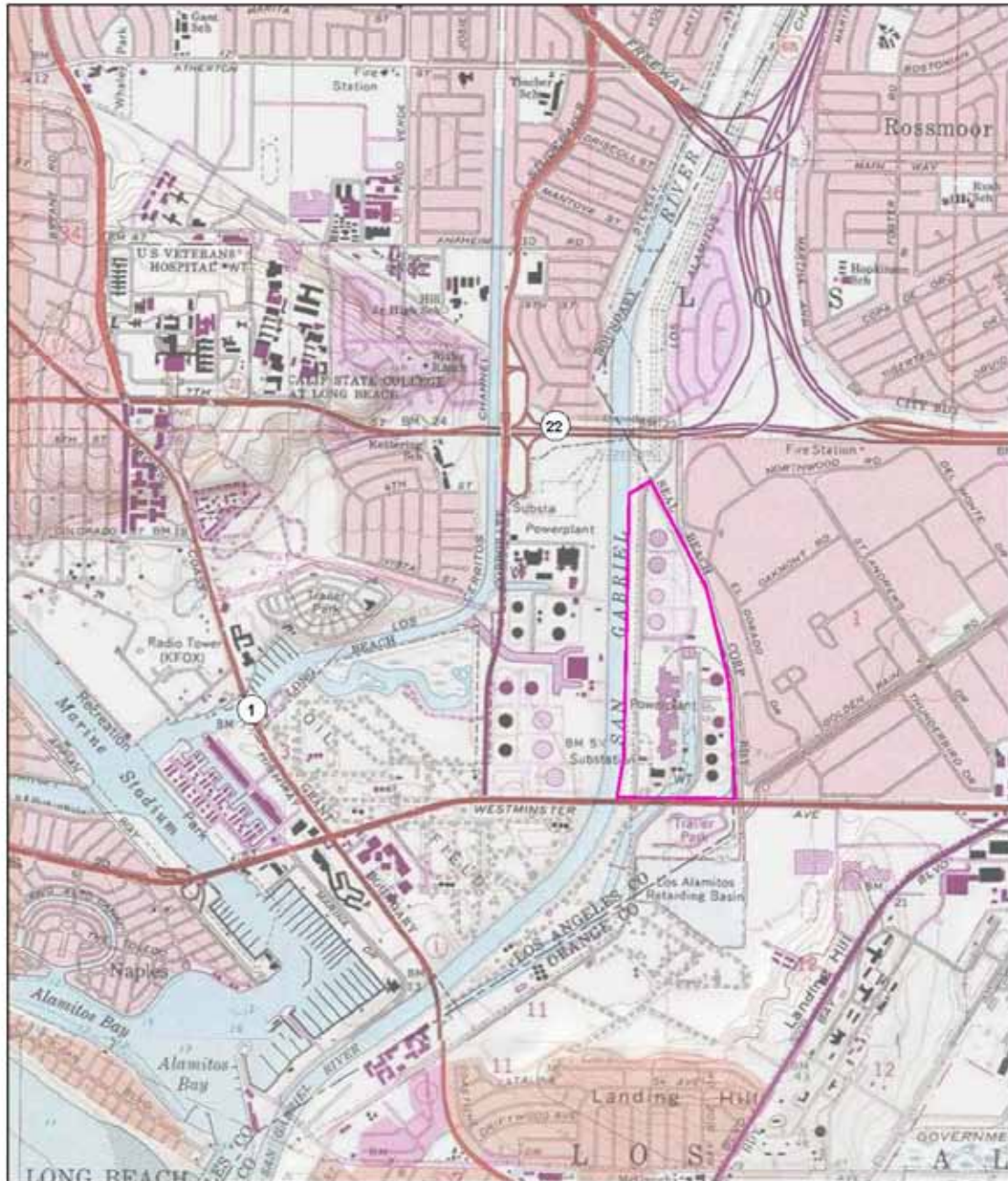
Page 10 of 10

*Resource Name or #: Haynes Generating Station

*Recorded by: Lori D. Price

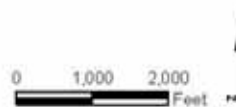
*Date: February 12, 2014

☑ 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

\\Z:\NSAC\GIS\PROJ\ALAMITOS\MAPFILES\CULTURAL\WEC_CULTURAL_SURVEY\AREA_HGIS_TOPO.MXD KMINO 2/10/2014 3:32:22 PM

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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

Page 1 of 10

*Resource Name or #: San Gabriel River segment and levees

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: N/A

City: Long Beach

Zip:

d. UTM: Zone: 11; North end at center of river 398356.377125; 398356.377125. South end at center of river 398298.293319; 398298.293319

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)

The San Gabriel River drains the San Gabriel River Watershed, which is located in eastern Los Angeles County. The watershed is roughly bound by the San Gabriel Mountains to the north, most of San Bernardino/Orange County to the east, the area where the San Gabriel River separates from the Los Angeles River to the west, and the Pacific Ocean to the south. "The watershed drains into the San Gabriel River from the San Gabriel Mountains flowing 58 miles south until its confluence with the Pacific Ocean. ...Channel flows pass through different sections in the San Gabriel river, diverting from the riverbed into four different spreading grounds, held behind several rubber dams for controlled flow and ground water recharge, and controlled through 10 miles of concrete channel bottom from below Whittier Narrows Dam to past Coyote Creek" (LACDPW 2014a). This segment of the river is bounded by the East 7th Street (State Highway 22) crossing to the north, by the Alamitos Generating Station to the west, by the Haynes Generating Station to the east, and by the Westminster Boulevard crossing to the south. 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). The banks of the river in this segment are protected by earthen levees armored with riprap, and they contain concrete outfalls to serve the two generating stations. The river is spanned by a suspended pipe structure at approximately the midpoint of this segment. (see continuation sheet.)

*P3b. Resource Attributes: HP22 – river

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

P5a. Photo or Drawing



P5b. Description of Photo:
View looking northwest at AES Alamitos from San Gabriel River bike path, February 3, 2014

*P6. Date Constructed/Age and

Sources: ☒ Historic

☐ Prehistoric ☐ Both

c. 1957 to 1960

Source: L.A. County Dept of Public Works

*P7. Owner and Address:

AES Alamitos, LLC
690 N. Studebaker Road, Long Beach, CA 90803

*P8. Recorded by:

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

*P9. Date Recorded: February 10, 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 10, 2014 ☒ Continuation ☐ Update

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

The San Gabriel River channel from the Whittier Narrows Dam to the Pacific Ocean, which includes this segment of the river and its levees, was altered as part of the "general comprehensive plan for flood control and other purposes in the basins of the Los Angeles and San Gabriel rivers and Ballona Creek (as set forth in House Document 838, 76th Congress, third session). The comprehensive plan was approved on August 18, 1941 by act of Congress, Public Law 228, 77th Congress, first session" (USACE 2012). The USACE Los Angeles District and the Los Angeles County Flood Control District (LACFCD) entered into a Project Cooperation Agreement on August 7, 1995, as required by Public Law 99-622. The Los Angeles County Department of Public Works (LACDPW) is responsible for operating and maintaining most of the San Gabriel River Levee System (USACE 2012).

This segment, which is just below the confluence with Coyote Creek and the concrete channel part of the river, is part of Reach 7 known as the "zone of tidal influence" (LACDPW 2006). Reach 7 is the final stretch of river, approximately 3.5 miles, from below Coyote Creek to the Pacific Ocean. The total length of the river is approximately 73 miles (LACDPW 2006).

Historically, the San Gabriel River would flood and overflow its banks during heavy rains. Records indicate that there were 17 floods between 1815 and 1938 (Salazar 2013). With the rapid increase in population in the twentieth century, controlling the river and addressing the recurrent flooding became a concern. The 1914 flood caused \$10 million in damages and in response, the LACFCD was formed in 1915. Taxpayers approved bond issues in 1917 and 1924 to build dams, but there were not enough funds for the necessary infrastructure downstream of the dams (LACDPW 2014b). Severe floods happened again in 1934 and 1938. In the 1938 flood, "115 people lost their lives, thousands more were evacuated, over 6000 homes were damaged or destroyed, and 108,000 acres - one third of Los Angeles - was flooded" (Cram 2012). The disaster prompted a request for federal assistance. The LACFCD requested funding from the Works Progress Administration to channelize the Los Angeles and San Gabriel rivers. They also received funding through the federal Flood Control Act. The Flood Control Act of 1936 redefined the role of the U.S. Army Corps of Engineers (USACE), allowing them to oversee permanent future flood control plans for the Los Angeles, Rio Hondo, and San Gabriel rivers. The Act also authorized \$70 million in federal dollars for flood control (LACDPW 1996). In 1941 Congress approved the Los Angeles County Drainage Area plan and authorized \$230 million for construction of a comprehensive flood control system (LACDPW 1996). The flood control plan had three major components: (1) channelize, straighten, and deepen the rivers; (2) install debris basins in foothills to protect against debris flows during storm events; and (3) construct dams in the mountains to impound storm runoff and permit controlled release of those waters (State of California Resources Agency 2001). The USACE took the lead implementing the massive project.

By the time the project was completed in 1960, most of the Los Angeles River was encased in concrete, and the San Gabriel River was surrounded by levees. Documentation was not found for the completion date of the levees in this segment of the river, but it appears that Reach 7 was the last section completed. The Whittier Narrows Dam, north of this segment, was completed in 1957, so it is likely that the levees here were constructed after that, in the late 1950s (LADWP 1996). A photo of AES Alamitos from 1958 shows what appears to be a natural bank covered in vegetation, without a high levee or riprap. The outfalls were likely constructed at the same time as the power generation plants that they serve - 1956 -69 for AES Alamitos and 1962-67 for Haynes Generating Station (AES 2010, LADWP 2010).

The overall linear resource of the San Gabriel River watershed system has not been evaluated for the NRHP 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 levees retain good integrity, but are not eligible for the NRHP or CRHR. The levees are not associated with events that have made a significant contribution to the broad patterns of our history and are not associated with the lives of significant persons in our past. They are typical earthen levees armored with riprap and do not embody distinctive characteristics or possess high artistic values.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
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***D7. References:**

- AES. 2010. Alamitos Generating Station Tour Information. On file at Alamitos Generating Station.
- Cram, Justin. 2012. KCET website. "Los Angeles Flood of 1938: Cementing the River's Future." February 28, 2012.
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- Los Angeles County Department of Public Works (LACDPW), et al. 1996. Los Angeles River Master Plan. June 1996.
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- Los Angeles County Department of Public Works (LACDPW). 2006. *A Common Thread Rediscovered – San Gabriel River Corridor Master Plan*. Prepared and produced by Moore Iacofano Goltsman, Inc. June 2006.
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- State of California Resources Agency. 2001. *Common Ground: from the Mountains to the Sea - Watershed and Open Space Plan, San Gabriel and Los Angeles Rivers* http://www.rmc.ca.gov/plans/common_ground/Common%20Ground.pdf Accessed February 10, 2014.
- U.S. Army Corps of Engineers (USACE). 2012. *San Gabriel River 1 Levee System, Los Angeles And Orange Counties, California Nld System Id # 3805010031, Periodic Inspection Report No 1, Generalized Executive Summary*. Periodic Inspection Report Prepared By The URS Group, Inc. for The U.S. Army Corps Of Engineers, Los Angeles District. August 2012..
<http://www.spl.usace.army.mil/Portals/17/docs/LeveeSafetyProgram/SanGabrielRiver1.pdf> Accessed February 10, 2014.

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Alamitos Generating Station, view looking northwest, September 1958. Note vegetated banks of river and lack of riprap. (Photo from the Edison Archive. Courtesy of The Huntington Library, San Marino, CA)



Aerial view of Alamitos Generating Station, view looking southwest, taken August 26, 1972. Armored levees and outfalls are in place. (Photo by Joseph Fadler, from the Edison Archive. Courtesy of The Huntington Library, San Marino, CA)

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View looking northeast from AES Alamitos. West bank levee is in middle of photo with San Gabriel River to the right. September 2011.



View looking east from AES Alamitos. West bank levee is near bottom of photo with San Gabriel River in center of photo. Haynes Generating Station outfalls are visible in east bank levee. September 2011.

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View looking southeast from AES Alamitos at outfall for units 5 & 6 and west side of west bank levee. September 2011.



View looking southwest at AES Alamitos outfall for units 1 & 2 and east side of west bank levee. February 2014.

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View looking northwest with outfall for Haynes Generating Station and east bank levee in foreground. February 2014.



View looking northwest at pipeline suspended across San Gabriel River. February 2014.



Legend
 Property Boundary

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



San Gabriel River Segment
Alamitos Energy Center
Long Beach, California

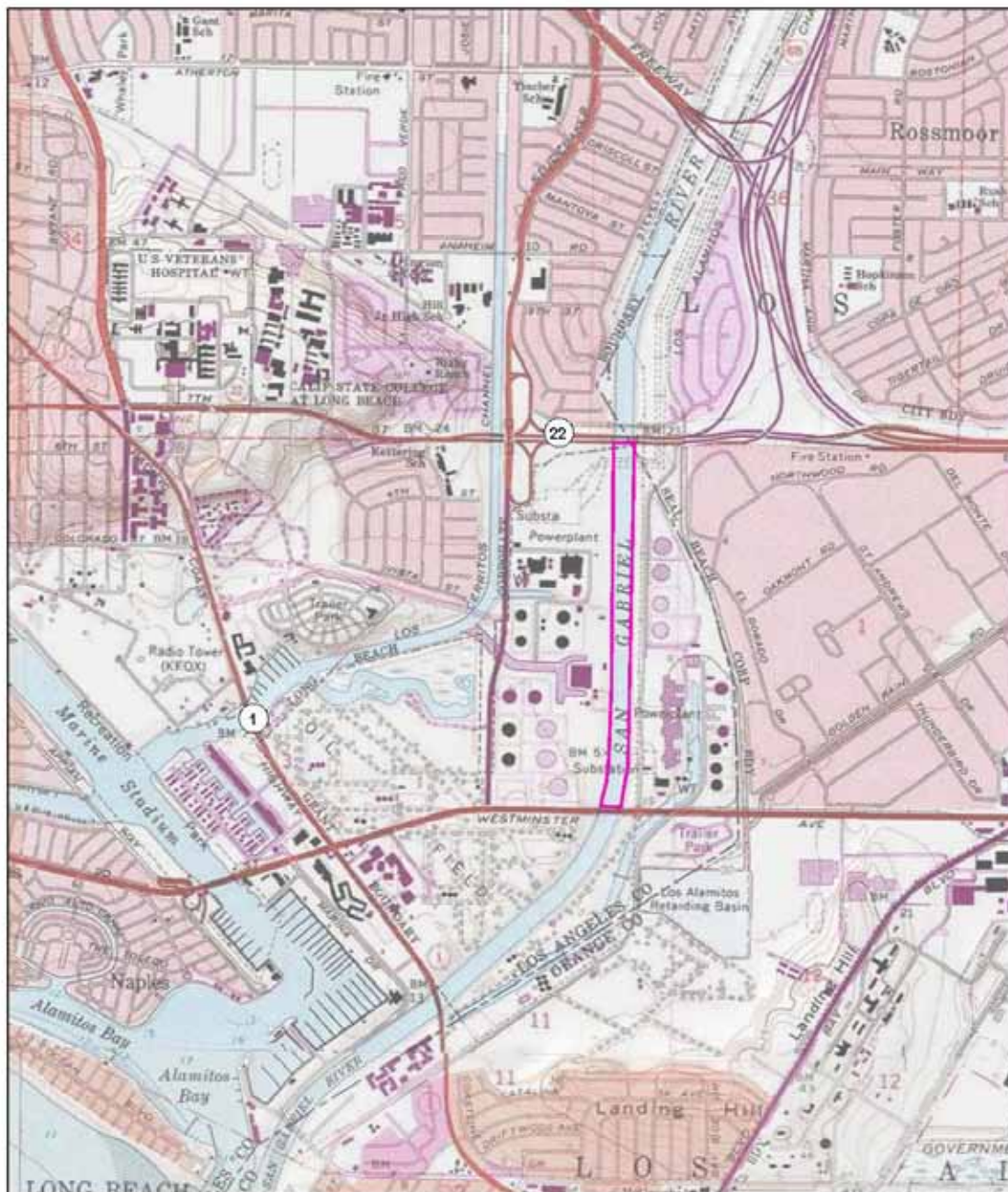
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CH2MHILL

***Recorded by: Lori D. Price**

***Date:** February 10, 2014

☒ Continuation
 ☐ Update



Legend

 Property Boundary

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

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San Gabriel River Segment

Alamitos Energy Center
Long Beach, California

-CH₂MHILL

L1. Historic and/or Common Name: Same

L2a. Portion Described: ☐ Entire Resource ☒ Segment ☐ Point Observation **Designation:** portion of Reach 7 of San Gabriel River

b. Location of point or segment: Segment of the San Gabriel River between the East 7th Street (State Highway 22) crossing to the north, the Alamitos Generating Station to the west, the Haynes Generating Station to the east, and the Westminster Boulevard crossing to the south.

UTMs: North end at center of river 398356.377125; 398356.377125. South end at center of river 398298.293319; 398298.293319.

L3. Description: This segment of the river remains a natural, soft bottom channel. It has earthen levees along both banks that are armored with riprap, and concrete outfalls have been built through the levees on both banks to accommodate the power plants on either side. It is spanned by concrete bridges that carry State Hwy 22 and Westminster Blvd at each end of the segment. There is also a metal pipe suspended on a cable system across the river at approximately the midpoint of this segment.

L4. Dimensions: (In feet for historic features and meters for prehistoric features) Measurements extrapolated from map

a. Top Width: unknown

b. Bottom Width: 301.588

c. Height or Depth: unknown

d. Length of Segment: 5,207.888

L5. Associated Resources: N/A

L4e. Sketch of Cross-Section (include scale) **Facing:**

L6. Setting: This segment of the river has large industrial facilities (power generation plants) on each bank. The east bank has a paved bike path (the San Gabriel River Bike Trail) on top of the levee. The land on both banks is flat. The Los Cerritos Channel is located to the west, on the west side of the AES Alamitos Generating Station.

L7. Integrity Considerations: Most of the length of the San Gabriel River has been modified from a natural river to a flood control structure, with flood control and debris basins, dams, channelization, levees, and 10 miles of concrete lined channel. This segment of the river retains the levees and outfalls much as they were initially built in the mid-twentieth century. Although they have been modified somewhat through ongoing maintenance and upgrades, such as replacing the riprap, the structures retain good integrity.

L8a. Photograph, Map or Drawing



L8b. Description of Photo, Map, or Drawing View northeast from AES Alamitos showing river and levees, September 2011.

L9. Remarks: The overall linear resource of the San Gabriel River watershed system has not been evaluated for the NRHP 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.

L10. Form Prepared by:

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L11. Date: February 10, 2014