

DOCKETED

Docket Number:	13-AFC-01
Project Title:	Alamitos Energy Center
TN #:	202163
Document Title:	Responses to CEC Staff Query 1â€™ Transmission and Project Description
Description:	N/A
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Submission Date:	4/21/2014 3:43:10 PM
Docketed Date:	4/21/2014



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April 21, 2014

Mr. Keith Winstead
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Alamitos Energy Center (13-AFC-01)
Staff Query 1– Transmission and Project Description

Dear Mr. Winstead:

As requested, please find responses to CEC Staff requests associated with the Alamitos Energy Center (13-AFC-01) submitted on March 25, 2014 and April 1, 2014.

March 25, 2014, Transmission Informal Staff Query

- The KVA rating of the transformer shall be based on its capacity at ONAN cooling stage. When fans and/or pumps are added to the transformer (forced cooling), its rating shall be increased by the percentage as indicated in Table 1. Please resubmit Figures 3.1-1aR thru Figure 3.1-1cR with adequate minor correction of the generator step-up transformer MVA ratings based on Section 4.2.2 of ANSI/IEEE Standard C57.12.10-2010. Along with the corrected ratings of the GSU (Generator Step-Up) transformers, please also provide in the figures the percentage impedance of the respective GSU transformer for its base MVA rating with a comment that the transformer oil temperature will not exceed 65 degree C as stated in the IEEE Standard.*

Response: Revised one line drawings including updated transformer ratings, impedances, and temperature are provided as Figures 3.1-1aR2 and 3.1-1bR2. Figure 3.1-1cR2 required no updates. Ratings conform to Section 4.2.2 of ANSI/IEEE Standard C57.12.10-2010.

April 1, 2014, Project Description Informal Staff Queries

- Pages 1-1 and 1-2 of the application for certification (AFC) state that existing emergency services would be reused. Please describe the emergency services.*

Response: The emergency services described on pages 1-1 and 1-2 of the AEC AFC include fire water piping, storage tanks, and electric fire water pumps.

- According to Figure 2.1-2 of the AFC, AES proposes to reuse (retain) the following buildings and structures. Please confirm.*

- 16. Existing Water Tank (typical reuse)
- 27. Existing Car Port (reuse)
- 28. Existing Service Water Tank (reuse)
- 29. Existing Fire Water Pump Skid (reuse)
- 32. Control/Water Treatment (reuse)
- 33. Maintenance/Warehouse Building (reuse)
- 34. Existing Schoolhouse (remain)
- 38. Existing Administration Building (reuse)
- 39 and 40. Reshape north and south basins

Response: The existing equipment identified above will be reused for AEC

3. *Page 2-17 of the AFC states, "New onsite fire water piping and hydrants will be constructed at the facility as necessary." Does AES know where the fire water piping and hydrants would be built? How deep would AES need to excavate to install fire water piping and hydrants?*

Response: The precise location of the fire water piping will be determined during the final design of the facility. However, the approximate location of the fire water piping and hydrants will be near the power blocks to provide adequate fire suppression consistent with California Fire Codes. Trenching for installation of fire water piping and hydrants will typically be 6 to 7.5 feet below final grade.

4. *Page 2-24 of the AFC states that the generator step-up transformers would be set on concrete pads. Are these existing concrete pads? Would the pads need to be buttressed by pile foundations?*

Response: The generator step-up transformer foundations will be new installations and designs will be completed during the final design of the project. Consistent with the recommendations contained in the Preliminary Geotechnical Report (Appendix 5.4A of the AFC), for planning purposes it is assumed that piles driven to approximately 50 feet deep will be used.

5. *Page 2-26 of the AFC discusses two new water tanks. Would the tanks be placed on foundations, at grade, or partially below grade?*

Response: The two new water tank foundations will be new installations and designs will be completed during the final design of the project. These tanks will be supported on deep pile foundations with the reinforced concrete pile cap installed at grade.

6. *Page 2-37 of the AFC states that bare conductors would be installed below ground surface in a grid pattern. Where would the conductors be installed? How deep would they be installed and by what method?*

Response: The grounding grid is expected to be installed between 12 and 36 inches below grade, throughout the entire AEC site. However, the exact depth and location of the grounding grid will be determined during the final design of the project.

7. *Page 5.14-8 of the AFC states that hazardous waste would be temporarily stored in containers. Would this be on the project site? Where?*

Response: The construction contractor will establish a temporary construction hazardous waste storage facility within the construction parking/laydown areas shown on Figure 1.1-3 of the AFC.

8. *The AFC states, "Major structures would require piles, and pile driving is expected to reach depths of up to 50 feet" (p. 5.3-33). Which structures would be considered "major" and therefore be supported on piles?*

Response: The major structures include the combustion turbines, heat recovery steam generators, steam turbine generator, transformers, air cooled condenser structural supports and tanks.

9. *Page 5.4-17 of the AFC states that piles supporting heavy structures would be 14 inches in diameter. Does the applicant have an estimated number of piles driven/piles per square foot for the supported structures?*

Response: The number of piles to be driven will be determined during final design.

10. *Page 5.4-17 also states, "the major power generating structures will be supported on deep pile foundations or on mat foundations when combined with in situ ground improvement." Has the applicant settled on pile-supported foundations? If not, how deep would ground disturbance be for in-situ ground improvement?*

Response: The foundation design for major structures will be determined during final design. Therefore, the extent of in-situ ground improvements is not known at this time.

If you have any questions about this matter, please contact me at (916) 286-0207 or Ms. Sarah Madams at (916) 286-0249.

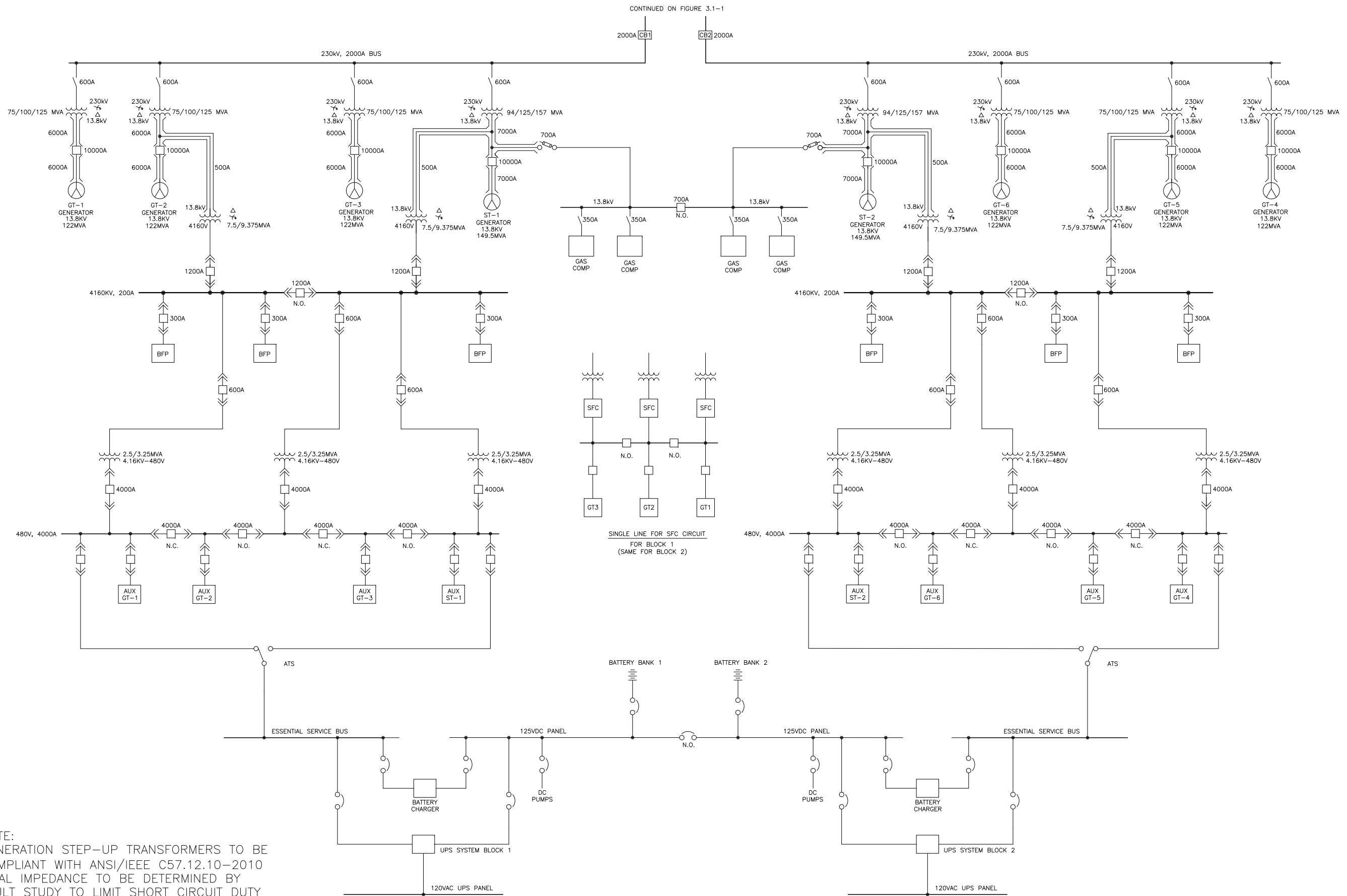
Sincerely,

CH2M HILL

A handwritten signature in black ink that reads "Jerry Salamy". The signature is written in a cursive style with a long, sweeping tail on the "y".

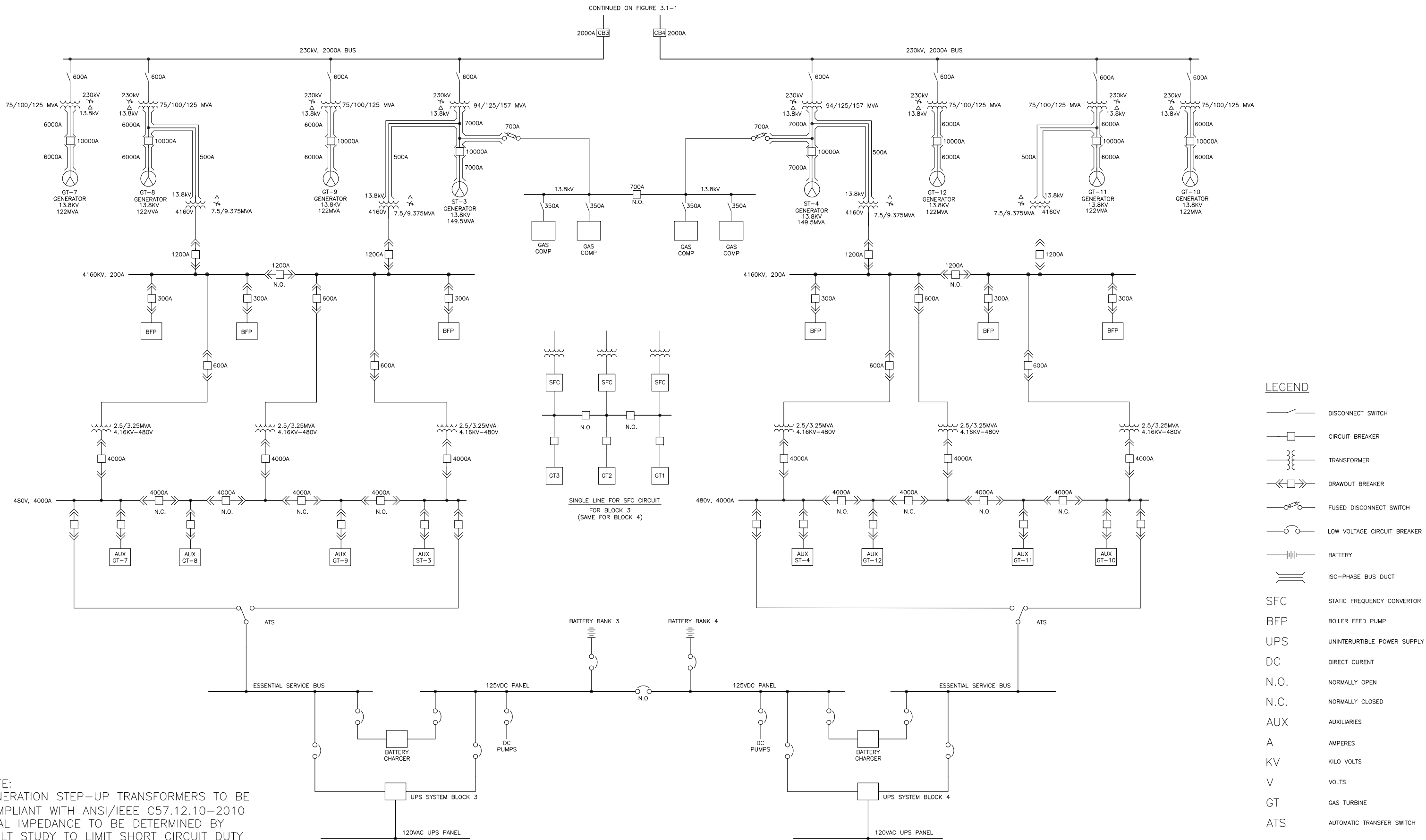
Jerry Salamy
AFC Project Manager

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



NOTE:
GENERATION STEP-UP TRANSFORMERS TO BE
COMPLIANT WITH ANSI/IEEE C57.12.10-2010
FINAL IMPEDANCE TO BE DETERMINED BY
FAULT STUDY TO LIMIT SHORT CIRCUIT DUTY
ON SCE 230KV ALAMITOS BUS.

FIGURE 3.1-1aR2
System One Line Diagram - Power Island,
Units 1 and 2
Alamitos Energy Center
Long Beach, California



NOTE:
GENERATION STEP-UP TRANSFORMERS TO BE COMPLIANT WITH ANSI/IEEE C57.12.10-2010 FINAL IMPEDANCE TO BE DETERMINED BY FAULT STUDY TO LIMIT SHORT CIRCUIT DUTY ON SCE 230kV ALAMITOS BUS.

FIGURE 3.1-1bR2
System One Line Diagram - Power Island,
Units 3 and 4
Alamitos Energy Center
Long Beach, California