

DOCKETED

| | |
|-------------------------|--|
| Docket Number: | 13-AFC-01 |
| Project Title: | Alamitos Energy Center |
| TN #: | 202978 |
| Document Title: | Alamitos Energy Center Data Request Set 3 Response |
| Description: | N/A |
| Filer: | Jerry Salamy |
| Organization: | CH2M HILL |
| Submitter Role: | Applicant Consultant |
| Submission Date: | 8/25/2014 11:36:35 AM |
| Docketed Date: | 8/25/2014 |



CH2M HILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA
95833-2937
Tel: 916.920.0300
Fax: 916.920.8463

August 25, 2014

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

Subject: Alamos Energy Center (13-AFC-01)
Data Response Set 3 – Responses to CEC Staff Data Requests 69 and 70

Dear Mr. Winstead:

Attached please find the Alamos Energy Center's Data Response Set 3, including responses to Data Requests 69 and 70. This Data Response Set was prepared in response to California Energy Commission Staff Data Requests 69 and 70 for the Application for Certification for the Alamos Energy Center's (13-AFC-01) dated July 29, 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 that reads "Jerry Salamy". The signature is fluid and cursive.

Jerry Salamy
AFC Project Manager

Attachment

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

Alamitos Energy Center

(13-AFC-01)

Data Responses, Set 3 (Responses to Data Requests 69 to 70)

Submitted to
California Energy Commission

Prepared by
AES Southland Development, LLC

With Assistance from

CH2MHILL®

Suite 600
Sacramento, CA 95833

August 25, 2014

Contents

| Section | Page |
|---|-------------|
| Introduction | 1 |
| Transmission System Engineering (69–70) | 2 |

Introduction

Attached are AES Southland Development, LLC's (AES or the Applicant) responses to the California Energy Commission (CEC) Data Request, Set 3 regarding the Alamos Energy Center (AEC) (13-AFC-01) Application for Certification (AFC). This submittal includes a response to data requests 69 and 70.

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.

Transmission System Engineering (69–70)

INTRODUCTION

Staff has reviewed the California Independent System Operator (California ISO) letters of May 24 and August 1, 2012 addressed to the applicant. The letters responded to the applicant's request dated March 9, 2012 to the California ISO to review the Alamos Energy Center (AEC) project in order to determine if the total generating capability and electrical characteristics of the project would be substantially unchanged in accordance with section 25.1 of the California ISO tariff. In their May 24, 2012, initial review after performing a System Impact Study (SIS) with a Western Electric Coordinating Council (WECC) 2012 heavy summer load flow case, the AEC repowering project did not meet the criteria to forgo the interconnection process due to its higher short circuit duty impacts on six downstream Southern California Edison (SCE) substations. However, the August 1, 2012, California ISO letter stated that the applicant worked with SCE and the California ISO to change the proposed generation step-up (GSU) transformer impedances to resolve the short circuit duties in SCE substations. Based on the revised GSU transformer impedances, generator data and new interconnection configuration at the SCE Alamos West and East 230 kV switchyard buses, the California ISO agreed that in accordance of section 25.1.2.1 of the California ISO tariff, the AEC would forgo the California ISO interconnection process as the total generation capability and electrical characteristics are substantially unchanged. However, the letter also stated the generating capability of the AEC project as 1,893 MW net output (representing 98 percent of the existing Alamos Generating Station plant capacity), which is not consistent with the 1,936 MW net generating capacity submitted in the proposed AEC Application of Certification (AFC) to the Energy Commission.

In addition, the applicant has not yet submitted the project switchyards' one line diagrams with updated percentage impedances of the GSU transformers and the SCE 230 kV switchyard with any changes in configuration of its buses, circuit breakers with associated disconnect switches, and transmission outlets after decommissioning and disconnecting all existing Alamos Generating Station (AGS) generator units, The complete descriptions of interconnection facilities are required in order to analyze the AEC's continuing compliance with applicable laws, ordinances, regulations and standards (LORS).

BACKGROUND

The California ISO letter of August 1, 2012, informed the applicant that the California ISO analysis found the total generating capability of the repowered AEC project "substantially unchanged" and resulted in 1,893 MW net generating output (representing 98 percent of the existing Alamos Generating Station plant capacity), which is not consistent with 1,936 MW net generating capacity of the proposed AEC project as applied for in the AFC to the Energy Commission (The August 1, 2012 California ISO letter to the applicant, page 2).

DATA REQUEST

69. Please provide a letter or study report from the California ISO or SCE that analyzes the AEC repower project at 1,936 MW or is otherwise consistent with the AFC.

Response: AFC Appendix 3A provides documentation of the California ISO's assessment of the AEC, and includes the Applicant's interconnection request and correspondence with the California Independent System Operator ("CAISO"). As explained below, the nominal generating capacity for the AEC proposed in the AFC is consistent with the generating capacity assessed by the CAISO in the Applicant's Interconnection Request.

The Interconnection Request submitted by the Applicant contemplated a generating capacity of 1,902 megawatts (“MW”) net, based on an ambient temperature of 85° Fahrenheit (“F”) and a relative humidity of 45.86 percent (AFC Appendix 3A, Interconnection Request Appendix 1, TN # 201620-39), as required by the CAISO. The nominal 1,936 MW net generating capacity described in the AFC was calculated based on an ambient temperature of 65.3 °F and a relative humidity of 86.6 percent, as required by the Commission’s regulations.

A review of the heat and mass balances for the AEC presented in AFC Appendix 2A (TN # 201620-34 - Case 7) confirms that at an ambient temperature of 85 ° Fahrenheit (F) and a relative humidity of 45.86 percent, each power block will produce approximately 474.914 MWs net or approximately 1,900 MWs net for all four power blocks (1,899.7 MWs). Therefore, there is no inconsistency between the AFC being analyzed by the CEC or the interconnection request assessed by the CAISO. Any slight differences in the generating capacity are due to differences in the CAISO regulatory requirements compared to the requirements in the Commission’s regulations, thermal cycle simulation software and inputs used for the interconnection study and AFC.

BACKGROUND

In reply to staff’s earlier inquiry, the applicant’s representative informed staff that the final percentage impedances of the generator step-up (GSU) power transformers etc. would be coordinated by the applicant and be analyzed by California ISO/SCE during final engineering of the interconnection facilities (i. e. AEC four switchyards and the East and West busses of the SCE Alamos 230 kV switchyard) as required under the Large Generator Interconnection Agreement (LGIA) (Email dated April 23, 2014 from Robert Smith of the AES).

DATA REQUEST

70. On completion of pre-LGIA final analysis of the interconnecting facilities by California ISO/SCE, please provide the following:
- a. The final analysis report including the short circuit study report.
 - b. The electrical one-line diagrams, figures 3.1-1a and 3.1-1b for four Alamos switchyards with all updates including final percentage impedances of the GSU transformers.

The electrical one-line diagram of the East and West busses of the SCE Alamos 230 kV switchyard, figure 3.1-1c with all updates, including configuration of buses and circuit breakers with associated disconnect switches, their types and/or ampere ratings, and leveled transmission outlets, considering decommissioning and disconnection of all the existing AGS generator units.

Response: The Applicant expects the final interconnection analysis will be available after final design of AEC is completed, which is expected to occur post-licensing. The Applicant will provide the results of the pre-LGIA final analysis once it has received the analysis; however, the analysis is not necessary for a Commission decision on the AFC.