DOCKETED	
Docket Number:	89-AFC-01C
Project Title:	Compliance - LUZ SEGS IX and X Projects Application for Certification
TN #:	233112
Document Title:	Data Request Set 1 Responses for SEGS VIII & IX BESS Petition
Description:	Data Request Set 1 Responses for SEGS VIII & IX BESS Petition
Filer:	John Heiser
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	5/26/2020 9:15:47 AM
Docketed Date:	5/26/2020

DOCKETED	
Docket Number:	88-AFC-01C
Project Title:	Compliance - Application for Certification for LUZ Solar Electric Generating Systems Cogeneration Unit VIII
TN #:	229725
Document Title:	Data Request Responses, Set 1, for Petition for Modification SEGS VIII and IX
Description:	Responses to the data requests, Set 1, received from the CEC dated August 26, 2019 for the Solar Energy Generating Systems (SEGS) VIII and IX Petition for Post Certification Change to add Battery Energy Storage System (BESS). - Data Request Responses, Set 1, for Petition for Modification SEGS VIII and IX, 88-AFC-01C AND 89-AFC-01C BESS.
Filer:	Amanda Johnson
Organization:	LSA
Submitter Role:	Applicant Consultant
Submission Date:	9/12/2019 9:56:41 AM
Docketed Date:	9/12/2019

DATA REQUEST RESPONSES

SOLAR ENERGY GENERATING SYSTEMS (SEGS) VIII AND IX

(88-AFC-01C AND 89-AFC-01C)

BATTERY ENERGY STORAGE SYSTEM

LSA

September 2019

This following are the responses to the data requests, Set 1, received from the California Energy Commission (CEC) in a letter dated August 26, 2019 for the Solar Energy Generating Systems (SEGS) VIII and IX Petition for Post Certification Change to add Battery Energy Storage System (BESS). Attachment A of this document contains the CEC Data Request letter.

Data Request A1: ***Please provide a detailed description of the existing facilities and their proposed changes, in reference to planning, design and construction of the proposed battery storage system. Please describe how the proposed BESS will be charged directly from the SEGS VIII and IX facilities and/or how the BESS will connect to the California Independent System Operator (California ISO)-controlled grid.***

RESPONSE

The primary modifications to the existing facilities include the following:

- The existing interconnection agreement for each of the SEGS VIII and IX facilities will be utilized by the new BESS. The interconnection capacity will not be increased with the modification to add the BESS. The existing generator interconnect agreement with Southern California Edison will be modified to incorporate the BESS, as currently allowed by the California ISO as a behind-the-meter application.

- The BESS system will make use of the existing SEGS VIII and IX switchyard, common 230kV project substation bus, and 230kV generation tie-line all of which currently interconnects SEGS VIII and IX to the 230kV Kramer substation. With the addition of the BESS, the existing on-site switchyard will be modified to add a new breaker, new switches, and new metering. The switchyard will be further modified such that the BESS will share the generator-tie line between the BESS, SEGS VIII and IX plants.

- The existing on-site control room is the central point of control of the SEGS VIII and IX units. This control room will be modified to add a BESS controller interface such that existing on-site personnel can monitor the operation of the BESS in conjunction with monitoring the existing SEGS VIII and IX units.

- The combined BESS and SEGS VIII and IX system will have the ability to have concurrent generator discharge and energy storage charging (while SEGS VIII and IX are operating) that will net out at the point of interconnection under the common interconnection agreement. The BESS will also have the ability to charge from CAISO grid when the SEGS VIII and IX plants are not operating.

Data Request A2: ***Please provide one-line diagrams of the BESS with detailed information on how it would be interconnected with the existing SEGS VII and SEGS IX plant substations.***

RESPONSE

See attached Figure 1, One-Line Diagram.

Data Request A3: ***Please provide detailed schematic diagrams of the SEGS VIII and SEGS IX and their interconnections to the proposed BESS and to the California ISO - controlled grid. Please indicate the feeder ratings such as DC voltages, conductor type and size and current carrying capacity, and fuse/breaker coordination information.***

RESPONSE

See attached Figure 2 and 3 that show an aerial view of the existing plant high voltage electrical transmission systems and the proposed location of the modification to the on-site switchyard to accommodate the BESS. The BESS system will connect to the existing plant switchyard by adding a new breaker and switches connecting to a common bus with the existing SEGS VIII and IX units. Please refer to the Figure 1, One-Line Diagram, for voltages, ratings, and configuration of the combined BESS and SEGS VIII and IX units.

Data Request A4: ***The application states that the "[t]he BESS controller is expected to be located in the existing control building on site" and will control "the battery modules, PCS, medium voltage system up to the point of coupling with the existing SEGS VIII and IX solar generating units." Please describe in greater detail the control scheme that would be used to operate and dispatch the proposed BESS. Please include in the discussion a description of any common or shared equipment, infrastructure, or staffing between the BESS and the SEGS VIII and IX facilities.***

RESPONSE

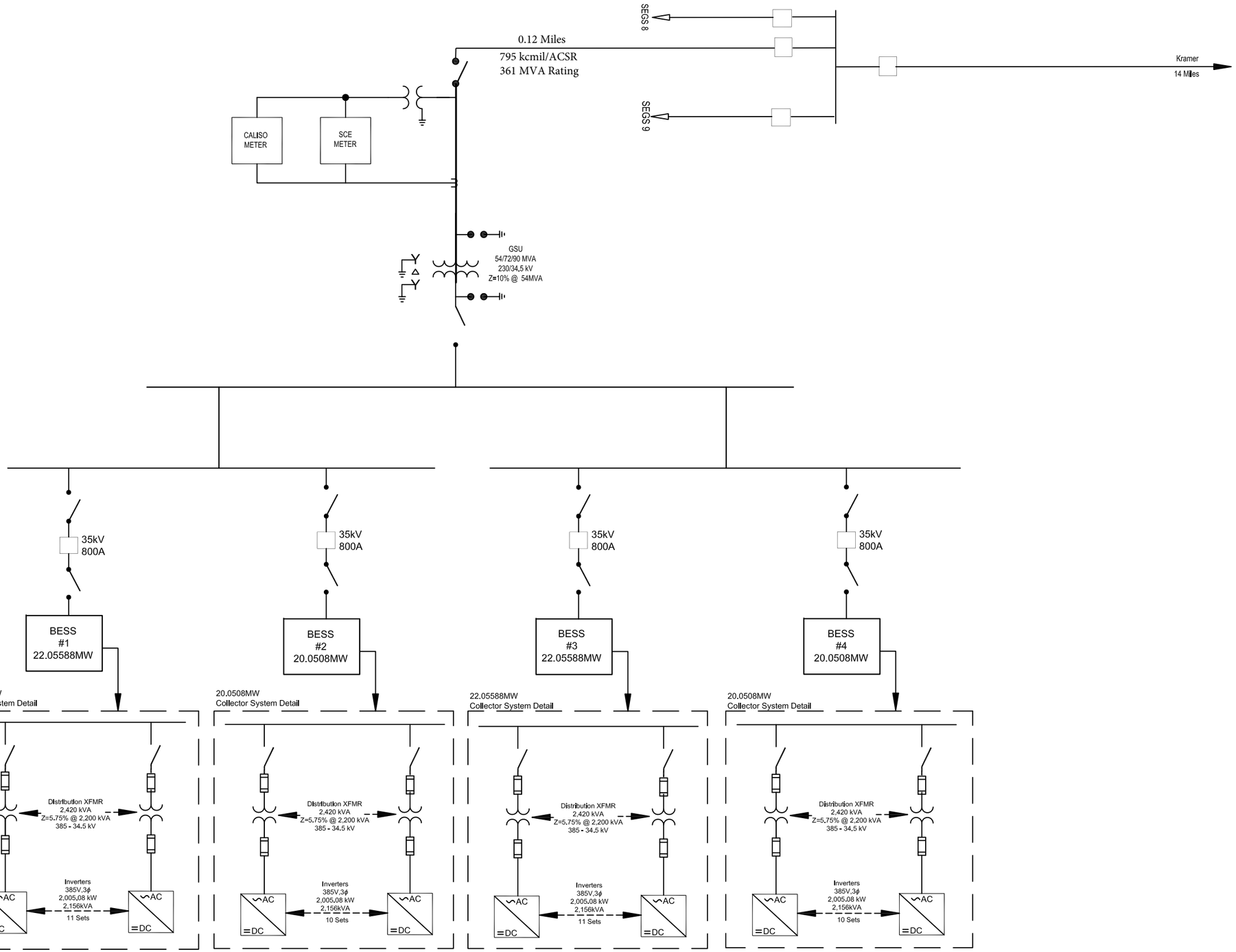
The BESS system will incorporate a third party integration system that will monitor and control the operation of the BESS in concert with the SEGS VIII and IV operations. The BESS controller will include an operator interface located in the SEGS VIII and IX control room. The BESS controller will provide the following functions:

- Monitor and control all BESS devices including batteries, Power Conversion Systems (PCSs), meters and balance of plant (BOP) such as fire suppression system, HVAC units and safety systems.

- Track battery module(s) state of charge and degradation statistics in managing overall BESS state of health.
- Connect to CAISO Automatic Dispatch System server for market dispatch instructions.
- Connect to CAISO EMS Servers for Automatic Generation Control (AGC) signals and overall plant telemetry feedback.
- Provide interface to existing plant wide supervisory control and data acquisition (SCADA) system.
- Coordinate output of the combined system to not exceed the capacity allowed by the interconnection agreement as there will be periods when BESS discharge will be limited by the SEGS VIII and IX operation.

A description of the common facilities, equipment, and infrastructure is provided in the response to Data Request A1 above.

Existing on-site staff that operate the SEGS VIII and IX units will also operate and perform maintenance activities for the new BESS system.



NOTES

1. THIS IS A PRELIMINARY SINGEL-LINE DIAGRAM AND REPRESENTS ONE PROPOSED ARRANGEMENT. AS A PRELIMINARY SINGLE-LINE DIAGRAM IT IS NOT FOR CONSTRUCTION AND IS SUBJECT TO CHANGE BASED UPON THE DETAILED DESIGN.

TERRA-GEN	TERRA-GEN	JOB NUMBER	REV
	SEGS VIII BESS & SEGS IX BESS		1
	Figure 1: One Line Diagram	DRAWING NUMBER	SEGB-1

Figure 2: SEGS Configuration – Overall Plant View

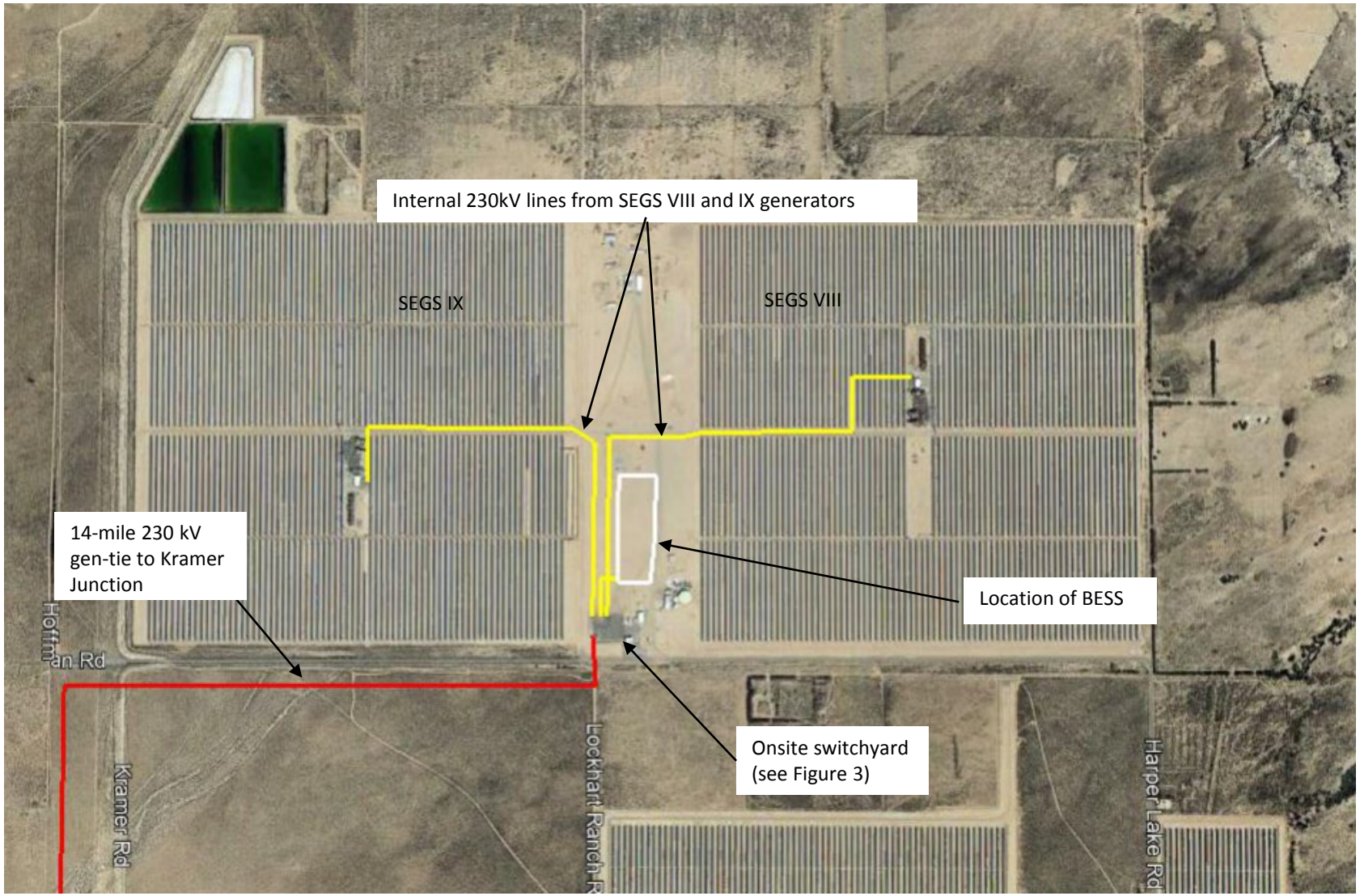
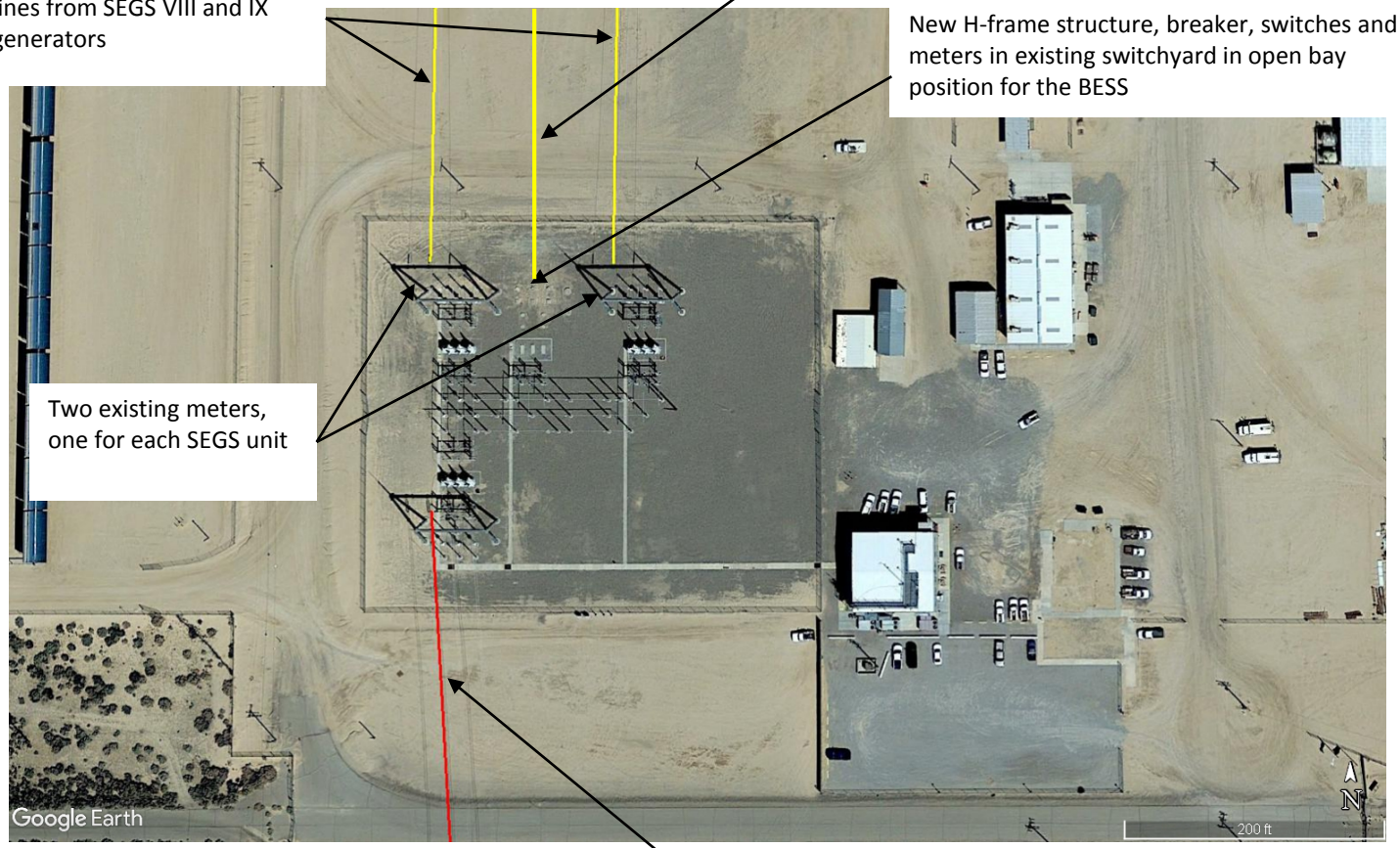


Figure 3: SEGS Electrical Configuration – Onsite Switchyard View



ATTACHMENT A

DATA REQUEST LETTER FROM CALIFORNIA ENERGY COMMISSION

DOCKETED	
Docket Number:	88-AFC-01C
Project Title:	Compliance - Application for Certification for LUZ Solar Electric Generating Systems Cogeneration Unit VIII
TN #:	229535
Document Title:	Letter to Dan Thompson VP Origination Development TerraGen
Description:	Solar Energy Generating Systems VII & IX Petition for Post Certification Change to Add a Battery Energy Storage System Data Request Set 1 (88-AFC-01C & 89-AFC-01C)
Filer:	Susan Fleming
Organization:	Energy Commission
Submitter Role:	Public Agency
Submission Date:	8/26/2019 10:58:55 AM
Docketed Date:	8/26/2019

CALIFORNIA ENERGY COMMISSION

August 26, 2019

Dan Thompson
Vice President Origination and Development
Terra-Gen
11455 El Camino Real, Suite 160
San Diego, CA 92130

SOLAR ENERGY GENERATING SYSTEMS VIII & IX PETITION FOR POST CERTIFICATION CHANGE TO ADD A BATTERY ENERGY STORAGE SYSTEM DATA REQUEST SET 1 (88-AFC-01C & 89-AFC-01C)

Dear Mr. Thompson:

California Energy Commission (CEC) staff requests the information specified in the enclosed data requests regarding the proposal to add battery storage at the Solar Energy Generating Systems (SEGS) VIII & IX site. The information requested is necessary to understand whether the proposal falls within the CEC's jurisdictional licensing authority.

These data requests, numbered A1 through A4, are also relevant to the technical area of Transmission System Engineering. Written responses to the enclosed data requests are due as soon as possible.

If you have any questions regarding the enclosed data requests, please call me at (916) 653-8236 or email me at John.Heiser@energy.ca.gov.

Sincerely,

John Heiser
Compliance Project Manager

Enclosure (Data Request Packet)
cc: Docket (88-AFC-01C)

POST-CERTIFICATION PETITION FOR SOLAR ENERGY GENERATING SYSTEM VIII & IX BATTERY ENERGY STORAGE SYSTEM (88-AFC-01C & 89-AFC-01C)

CEC Staff's Data Requests Set 1, A1 – A4

BACKGROUND

On July 26, 2019, LUZ Solar Partners submitted an application requesting to install a Battery Energy Storage System (BESS) located on the Solar Energy Generating Systems (SEGS) VIII and IX site. In order to determine if the BESS is a change in project design, operation, or performance requirements for SEGS VII and IX, staff needs to understand the proposed BESS charging and discharging methods. Please provide the following information.

DATA REQUESTS

A1. Please provide a detailed description of the existing facilities and their proposed changes, in reference to planning, design and construction of the proposed battery storage system. Please describe how the proposed BESS will be charged directly from the SEGS VIII and IX facilities and/or how the BESS will connect to the California Independent System Operator (California ISO)-controlled grid.

A2. Please provide one-line diagrams of the BESS with detailed information on how it would be interconnected with the existing SEGS VIII and SEGS IX plant substations.

A3. Please provide detailed schematic diagrams of the SEGS VIII and SEGS IX and their interconnections to the proposed BESS and to the California ISO - controlled grid. Please indicate the feeder ratings such as DC voltages, conductor type and size and current carrying capacity, and fuse/breaker coordination information.

A4. The application states that the "[t]he BESS controller is expected to be located in the existing control building on site" and will control "the battery modules, PCS, medium voltage system up to the point of coupling with the

existing SEGS VIII and IX solar generating units." Please describe in greater detail the control scheme that would be used to operate and dispatch the proposed BESS. Please include in the discussion a description of any common or shared equipment, infrastructure, or staffing between the BESS and the SEGS VIII and IX facilities.