

DOCKETED

Docket Number:	89-AFC-01C
Project Title:	Compliance - LUZ SEGS IX and X Projects Application for Certification
TN #:	233107
Document Title:	Petition For Modification to SEGS VIII and IX BESS
Description:	Petition For Modification to SEGS VIII and IX to add a Battery Energy Storage System (BESS)
Filer:	John Heiser
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	5/26/2020 9:05:54 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 #:	229090
Document Title:	Petition for Modification SEGS VIII and IX 88AFC01C AND 89AFC01C BESS
Description:	Petition for Modification of SEGS VIII and IX (88-AFC-01C AND 89-AFC-01C) to add a Battery Energy Storage System (BESS) to the project.
Filer:	Amanda Johnson
Organization:	LSA
Submitter Role:	Applicant Consultant
Submission Date:	7/26/2019 9:41:02 AM
Docketed Date:	7/26/2019

PETITION FOR MODIFICATION

**SOLAR ENERGY GENERATING SYSTEMS (SEGS)
VIII AND IX**

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

BATTERY ENERGY STORAGE SYSTEM

LSA

July 2019

PETITION FOR MODIFICATION

**SOLAR ENERGY GENERATING SYSTEMS (SEGS)
VIII AND IX**

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

BATTERY ENERGY STORAGE SYSTEM

Submitted to:

California Energy Commission

Submitted by:

Luz Solar Partners VIII and IX, LLC

Prepared by:

LSA
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Project No. TGL1902

EXECUTIVE SUMMARY

LSA

July 2019

Pursuant to Section 1769 of the CEC Siting Regulations, Luz Solar Partners VIII and IX, LLC (also referred to herein as “Petitioner”) petitions the California Energy Commission (CEC) for approval to modify the Commission Decisions for the SEGS VIII and IX to reflect the addition of a Battery Energy Storage System (BESS) to the project. The proposed BESS will have a maximum capacity of up to 80 MW with a duration up to two hours.

The BESS is an energy storage and delivery system that is designed to be responsive to the flexibility needs of the electric grid. As California adds more intermittent renewable wind and solar resources to satisfy California's Renewables Portfolio Standard (RPS) mandates, BESS will serve a crucial role in achieving such mandates. The BESS is capable of storing excess electrical energy from the grid and delivering it back to the grid as electrical energy. The BESS, using Lithium Ion (Li-ion) batteries, has high energy density and fast charge/discharge capabilities. The BESS is ideally suited to provide grid flexibility required with integration of higher amounts of wind and solar generation.

This Petition for Modification (PTM) addresses the proposed addition of the BESS to the SEGS VIII and IX project and demonstrates that the proposed addition of the BESS will not result in a significant effect on the environment or to public health and safety. Additionally, the proposed modification will not result in a change or deletion of conditions in the project CEC Commission Decisions, and SEGS VIII and IX will continue to comply with all applicable laws, ordinances, regulations and standards (LORS).

Section 1.0 of this PTM describes the project background and provides an overview of the proposed modification. Section 2.0 provides a complete description of the proposed modification and the necessity for the proposed change. Section 3.0 provides an analysis of the potential environmental effects of the proposed modification, the project’s continued compliance with all applicable LORS, and the consistency of the modification with the Commission Decisions for SEGS VIII and IX. Section 4.0 provides an assessment of potential effects of the proposed modification on the public and property owners, and Section 5.0 provides a list of property owners within 1,000 feet of the project site.

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	ES-1
TABLE OF CONTENTS.....	i
FIGURES.....	ii
LIST OF ABBREVIATIONS AND ACRONYMS.....	iii
SECTION 1 INTRODUCTION.....	1-1
1.1 Background	1-1
1.2 Description of Proposed Modification	1-1
1.3 Summary of Environmental Impacts.....	1-3
1.4 Consistency of Amendment with License	1-3
SECTION 2 DESCRIPTION OF PROPOSED CHANGE	2-1
2.1 Proposed Project Modification	2-1
2.1.1 Battery Energy Storage System	2-1
2.1.2 Construction	2-3
2.1.3 Operations and Maintenance.....	2-5
2.2 Necessity of Proposed Change.....	2-5
SECTION 3 ENVIRONMENTAL ANALYSIS OF THE PROPOSED CHANGE.....	3-1
3.1 Resources	3-1
3.1.1 Air Quality.....	3-1
3.1.2 Biological Resources	3-1
3.1.3 Cultural Resources.....	3-2
3.1.4 Geology and Paleontological Resources.....	3-2
3.1.5 Hazardous Materials.....	3-2
3.1.6 Land Use	3-3
3.1.7 Noise.....	3-3
3.1.8 Public Health.....	3-3
3.1.9 Socioeconomics	3-4
3.1.10 Soils and Water Resources	3-4
3.1.11 Traffic and Transportation.....	3-5
3.1.12 Visual Resources	3-5
3.1.13 Waste Management	3-5
3.1.14 Worker Safety and Fire Protection	3-6
3.2 LORS	3-6
SECTION 4 POTENTIAL EFFECTS ON THE PUBLIC AND PROPERTY OWNERS.....	4-1
SECTION 5 LIST OF PROPERTY OWNERS.....	5-1

APPENDIX

A: LIST OF PROPERTY OWNERS WITHIN 1,000 FEET OF PROJECT SITE

FIGURES

FIGURE

Figure 1: Project Location..... 1-2

LIST OF ABBREVIATIONS AND ACRONYMS

AC	alternating current
AFC	Application for Certification
APN	Assessor's Parcel Number
BESS	Battery Energy Storage System
CAISO	California Independent System Operator
CEC	California Energy Commission
DC	Direct Current
GSU	Generator Step-up Unit
HVAC	Heating, Ventilation, and Air Conditioning
kV	Kilovolt
kVA	Kilovolt Ampere
Li-ion	Lithium Ion
LORS	Laws, Ordinances, Regulations, and Standards
MV	Medium Voltage
MVA	Mega Volt Amp
MW	Megawatt
MWh	Megawatt-hour
OEM	Original Equipment Manufacturer
PCS	Power Conservation System
PTM	Petition for Modification
RPS	Renewables Portfolio Standard
SCE	Southern California Edison
SEGS	Solar Electric Generating System
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan

SECTION 1 INTRODUCTION

1.1 BACKGROUND

The California Energy Commission (CEC) certified the Solar Electric Generating System (SEGS) VIII project in March 1989 (88-AFC-01C). SEGS VIII completed construction and went online in December 1989. The CEC certified the SEGS IX and X project in February 1990 (89-AFC-1C). SEGS IX completed construction and went online in October 1990, however, SEGS X was never built. The SEGS VIII and IX each generate a peak of 80 megawatts (MW) of solar thermal electricity to the Southern California Edison (SCE) transmission grid using fields of parabolic mirrors. Heat from the mirrors is concentrated on tubes of heat transfer fluid, which is circulated to steam boilers to produce electricity. In 2011, additional loops of mirrors were added within the SEGS VIII plant boundary and are in operation today.

SEGS VIII and IX are owned and operated by LUZ Solar Partners VIII and IX, LLC. For the purposes of this Petition for Modification (PTM), SEGS VIII and IX are referred to as a single project. The project is located near Harper Lake in San Bernardino County, California (refer to Figure 1).

Pursuant to Section 1769 of the CEC Siting Regulations, Luz Solar Partners VIII and IX, LLC (also referred to herein as “Petitioner”) petitions the CEC for approval to modify the Commission Decisions for the SEGS VIII and IX to reflect the addition of a Battery Energy Storage System (BESS) to the project.

1.2 DESCRIPTION OF PROPOSED MODIFICATION

The proposed modification to the SEGS VIII and IX certifications would be limited to the addition of a BESS to the SEGS VIII and IX project.

This Petition for Modification (PTM) addresses the proposed addition of the BESS to the project and will include the following:

- Demonstration that the proposed addition of the BESS will not result in a significant effect on the environment or to public health and safety;
- Demonstration that the proposed addition of the BESS to the project will not result in a change or deletion of conditions in the project CEC Commission Decisions; and
- Demonstration that the proposed addition of the BESS will not cause the project to not comply with any applicable laws, ordinances, regulations, or standards (LORS).

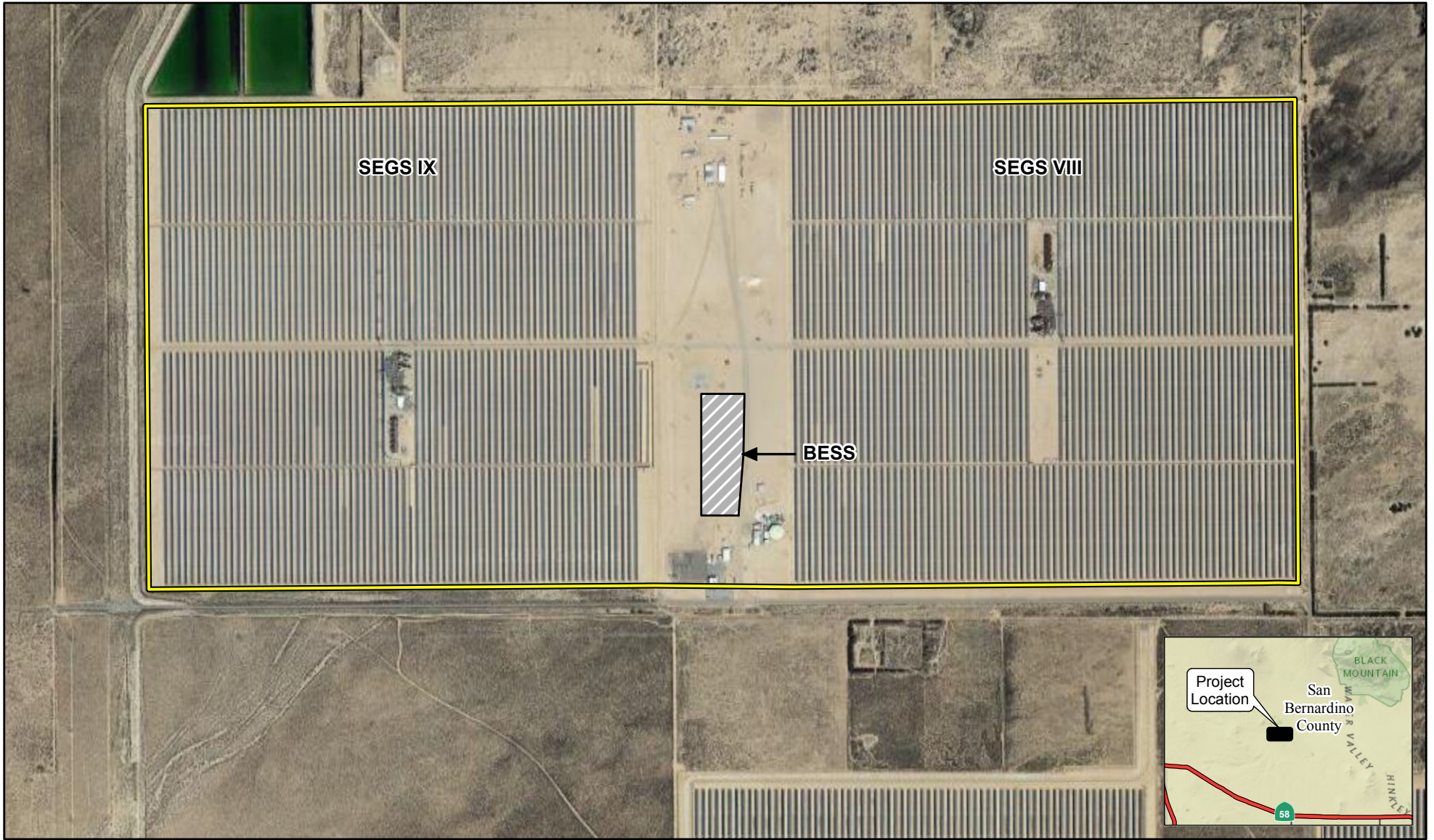


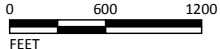


FIGURE 1

LSA

LEGEND

-  SEG8 Project Boundary
-  BESS



SOURCE: Luz Solar Partners VIII and IX, LLC (06/19), Google (09/15)
I:\TGL1902\GIS\MXD\ProjectLocationMap.mxd (7/26/2019)

SEG8 VIII and IX BESS
Project Location

1.3 SUMMARY OF ENVIRONMENTAL IMPACTS

Section 1769 (a)(1)(E) of the CEC Siting Regulations requires that an analysis be conducted to address impacts that the proposed modification to the certification may have on the environment and proposed measures to mitigate significant adverse impacts. Section 1769 (a)(1)(F) requires a discussion of the impacts of proposed modification on the facility's ability to comply with applicable LORS.

The proposed modification to the SEGS VIII and IX project will occur entirely within the existing project footprint within a previously disturbed area. The proposed modification to the SEGS VIII and IX certifications will not result in any additional impacts beyond those already identified in the original Commission Decisions and approved amendments. Section 3 herein discusses the potential impacts of the proposed modification on the environment, as well as the consistency of the proposed modification with LORS.

1.4 CONSISTENCY OF AMENDMENT WITH LICENSE

Section 1769 (a)(1)(D) of the CEC Siting Regulations requires a discussion of the consistency of each proposed project revision with the assumptions, rationale, findings, or other basis of the Commission Decision and whether the revision is based on new information that changes or undermines the basis of the Commission Decision. Also required is an explanation of why the modification to the certifications should be permitted.

Consistent with the CEC Siting Regulations Section 1769(a)(1)(A), Section 2 herein includes a description of the proposed modification, as well as the necessity for the modification. As set forth in the following sections, the proposed modification does not undermine the assumptions, rationale, findings, or other basis of the Commission Decisions for the project.

SECTION 2 DESCRIPTION OF PROPOSED CHANGE

Consistent with Sections 1769(a)(1)(A) and (B) of the Siting Regulations, this section includes a complete description of the proposed modification to the SEGS VIII and IX certifications as well as a discussion of the necessity for the proposed modification. Consistent with Section 1769(a)(1)(C) and (D) of the Siting Regulations, this section explains that the Petitioner was unaware of the need for the proposed modification prior to certification of SEGS VIII and IX, and that the proposed modification is not based on new information that changes or undermines the assumptions, rationale, findings, or other bases of the Commission Decisions.

2.1 PROPOSED PROJECT MODIFICATION

The Petitioner proposes to add a BESS to the SEGS VIII and IX project. As California adds more intermittent renewable wind and solar resources to satisfy California's Renewables Portfolio Standard (RPS) mandates, BESS will serve a crucial role in achieving such mandates. The BESS is an energy storage and delivery system that is designed to be responsive to the flexibility needs of the electric grid. The BESS is capable of storing excess electrical energy from the grid as electro-chemical energy and delivering it back to the grid as electrical energy. The BESS, using Lithium Ion (Li-ion) batteries, has high energy density and fast charge/discharge capabilities. The BESS is ideally suited to provide grid flexibility required with integration of higher amounts of wind and solar generation. In addition to charging and discharging at a constant rate, the BESS can provide one or more ancillary services to the California Independent System Operator (CAISO) controlled grid.

The proposed BESS will have a maximum capacity of up to 80 MW with a duration of two hours. Given the modularity of the design of the BESS, the system may be constructed in multiple phases starting with a system with a one-hour capacity.

The BESS will be installed on previously disturbed land within the existing footprint of the operating SEGS VIII and IX project, as shown on Figure 1. The total project area for the BESS within the project footprint is approximately 9 acres, with approximately 3 acres of total area occupied with BESS components. The BESS foundations would occupy less than one acre within the reserved footprint.

2.1.1 Battery Energy Storage System

The following describes the appurtenant BESS facilities and equipment.

Batteries: The individual Li-ion cells form the core of the BESS. Cells are assembled either in series or parallel connection and sealed to form the battery modules. The cells have an operating direct current (DC) voltage that ranges between 2 volts to 6 volts while the DC voltage range for the modules is between 32 volts to 96 volts. Several battery modules are installed in self-supporting racks and are electrically connected either in a series or parallel configuration to deliver the desired voltage and power rating. The rack-level operating DC voltage ranges between 400 volts and 1,100 volts. The racks are further connected in series or parallel configuration to deliver the BESS level energy and power rating.

Power Conversion System: The Power Conversion System (PCS) performs the critical role of converting the electric energy between alternating current (AC) and direct current (DC) during a battery charging cycle, and between DC and AC when the energy is transferred back to the grid during a battery discharge cycle. The energy conversion is enabled by a bi-directional inverter, which connects the DC battery system to the AC grid connected system. The AC voltage range for the PCS is between 300 volts and 1,500 volts.. In addition to the inverter, the PCS includes protection equipment, DC and AC circuit breakers, waveform filter equipment, and connection cabling system.

BESS Controller: The BESS controller is a multi-level control system implemented to provide a hierarchical system that controls the battery modules, PCS, medium voltage system up to the point of coupling with the existing SEGS VIII and IX solar generating units. The BESS controller is expected to be located in the existing control building on site.

Medium Voltage Transformer: The AC side output of the PCS is transformed to medium AC voltage in the range of 12 kV to 35 kV to increase the overall efficiency of the BESS and to protect the PCS in the event of electrical faults in the system. One or more PCS units may be connected to each of these transformers either in a two-winding or three-winding configuration. The medium voltage (MV) transformers may be mounted on a common skid with inverters and PCS.

BESS GSU Transformer: The MV side of all the MV transformers will be collected and consolidated through a network of MV cables and terminate at the MV switchgear. The BESS generator step-up unit (GSU) transformer, connected to MV switchgear on the MV side between 12 kV and 35 kV, will transform the BESS to 230 kV. The high voltage side of the transformer will be connected via an overhead transmission line to the existing on-site switchyard, which contains an open bay position for the new connection. Therefore, no expansion of the switchyard will be required to accommodate connection of the BESS. The new connection will include high voltage switchgear and metering.

BESS Containers/Enclosure: The individual batteries will be arranged in racks and assembled within BESS containers or within an enclosure constructed on-site. If in containers, each BESS container will have an energy storage rating of between 2 megawatt-hours (MWh) and 6 MWh. Each climate-controlled container will be up to 53 feet long, up to 10 feet high, and approximately 8 feet wide. Based on an average size of 4 MWh per container, 40 containers would be used for an 80 MW by 2-hour system. The heating, ventilation, and air conditioning (HVAC) tonnage sizing for each container (10-15 tons/MWh) is a function of the BESS use-case (the frequency and duration of the charge and discharge cycles as well as the average resting state of charge. If an enclosure is used to enclose the battery modules, a minimum of two HVAC units will be used to cool the enclosure to ensure redundancy.

Fire Protection System: The fire protection system will be designed to meet applicable codes and regulations for battery energy storage systems and will be developed in coordination with the San Bernardino Fire Department. Components of the system would include a fire system control panel that will control the fire system by continuously monitoring the detection devices and manage the alarms in case of any fire event. System detectors will include both smoke detectors and aspirating hazard detection systems. Strobes and sirens will buzz and flash inside and outside the enclosure when any fire event or release condition has been initiated. The fire suppression system will include

storage tanks, piping and nozzles to suppress a fire event. The fire suppression agent such as NOVEC 1230, or equivalent, will be utilized in the system. In the case of containerized BESS, each container will be armed with its own individual fire suppression system.

2.1.2 Construction

BESS construction activities will include limited site preparation and grading, installation of foundations/supports, setting battery modules, wiring and electrical system installation, and assembly of the accessory components including transformers. The battery modules will be assembled inside individual containers or within an enclosure, depending on the selected BESS manufacturer.

The following table summarizes the maximum area and depth for concrete pad and pier foundation types of the various components of the BESS for both enclosure or container based system options.

BESS Component	Type of Foundation	Area (square feet)	Max Depth (feet)
Battery Modules (Container Installation)	Piers	1,100	20
	Pad	13,200	2
Battery Modules (Enclosure Installation)	Pad	14,700	2
PCS and Medium Voltage Transformers	Piers	1,000	20
	Pad	10,400	2
Main Power Transformer	Pad	500	4
Cable Trench	N/A	3,500	3
Transmission Line Poles & Switchgear	Piers	100	20

As previously discussed, both pier and pad foundation approaches can be used for the battery module containers or the PCS and MV transformers. The table above provides the maximum area of impact (all pad foundations with an enclosure) and the deepest foundation potential (piers).

For piers supporting containers and PCS/MV transformers, spacing would be typically 8 feet wide by approximately 8 feet to 15 feet long.

2.1.2.1 Construction Schedule and Sequence

Construction of the BESS is expected to occur over a period of 4 to 6 months and commissioning completed in approximately three weeks. Pending all approvals necessary to move forward with the installation of the BESS, construction could start as early as the first quarter of 2020 with commissioning and commercial operation in the second or third quarter of 2020.

The sequence of construction activities for the BESS would generally occur as follows:

1. Pre-construction land survey
2. Equipment staging
3. Preparation of equipment foundations
4. Grading
5. Site compaction and gravel as necessary
6. Excavating footings and pads
7. Pour-in-place concrete footings, pad foundations, and/or piers
8. Install below-ground conduit banks
9. Install PCS, power distribution systems, and pad-mounted transformers
10. Install below-ground and above-ground conduit
11. Install safety features and security lighting
12. Cleanup and demobilize project site
13. Conduct operator orientation and training

Construction of the proposed modification may occur in a single phase for the proposed maximum capacity of 80 MW or in two phases of 40 MW each. If construction occurs in two phases, the initial phase will comprise of site preparation for the entire BESS component area to limit ground-disturbing activities during the second phase. The second phase would occur approximately one year later.

2.1.2.2 Construction Personnel and Equipment

Construction personnel would consist of approximately 15 to 20 workers and supervisors at any given time, depending on the construction activities.

The following equipment would be used during construction and commissioning of the BESS:

- Excavator (2)
- Backhoe (2)
- Dozer (1)
- Roller/Compactor (1)
- Dump truck (2)
- Concrete mixer (3)
- Flatbed-mounted utility crane (1)
- Portable generator and welding equipment (1)
- Forklift (1)
- Pickup trucks (4)
- Utility line trucks (2)

2.1.2.3 Construction Traffic and Parking

Estimated trip generation would include the following:

- One-time mobilization and demobilization of heavy equipment (excavator and backhoe) at the start and end of earthwork or other construction stage, as needed

- One-time delivery of the major BESS equipment components
- Construction personnel daily trips

All construction parking will be located onsite within the existing SEGS VIII and IX project footprint.

2.1.3 Operations and Maintenance

2.1.3.1 Dispatch and Operations

The BESS controller will control the operation of the storage system in coordination with CAISO and the existing SEGS VIII and IX units to ensure the overall electrical coordination.

2.1.3.2 System Maintenance

Maintenance activities will include annual inspections of the complete BESS including fire protection, HVAC, PCS inverters and MV transformers. Inspection of the battery modules are typically performed by isolating each inverter block to allow the remainder of the BESS system to continue operating.

The primary BESS components are designed for a 25 year plant life. Individual battery cells will be augmented or replaced on a periodic basis as needed. Battery cells that have reached their useful life that are replaced will be removed from the site and sent to the original equipment manufacturer (OEM), or a third-party for recycling, or to a licensed recycling facility identified in the project's Waste Management Plan.

2.2 NECESSITY OF PROPOSED CHANGE

Sections 1769 (a)(1)(B) and 1769 (a)(1)(C) of the CEC Siting Regulations require a discussion of the necessity for the proposed modification to the project and whether this modification is based on information that was known by the Petitioner during the certification proceeding.

The proposed modification is necessary to provide energy storage capability and enable SEGS VIII and IX to be more responsive to the flexibility needs of the electric grid. As described in Section 2.1 above, the BESS, using Li-ion batteries, has high energy density and fast charge/discharge capabilities. The BESS is ideally suited to provide grid flexibility required with integration of higher amounts of wind and solar generation. In addition to charging and discharging at a constant rate, the BESS can provide one or more ancillary services to the CAISO controlled grid.

Given the evolution of power markets in California, the need for the proposed modification was identified after the original Commission Decisions were issued. At the time of project licensing, California's energy generation capacity was mostly comprised of energy generated by fossil fuels. With the shift in power generation to more sustainable and renewable energy resources, there is a growing imbalance between generation and demand during certain times of the day. A BESS is ideally suited to span the gaps between renewable energy generation and demand. Additionally, BESS technology has evolved to be economically and technically feasible in recent years.

SECTION 3 ENVIRONMENTAL ANALYSIS OF THE PROPOSED CHANGE

The proposed modification will not result in any potentially significant impacts to the environment or public health and safety. The proposed modification will not require deletions or changes to the existing Conditions of Certification. Moreover, the project will remain in compliance with all applicable LORS.

3.1 RESOURCES

3.1.1 Air Quality

Minimal short-term air quality impacts are possible during construction of the foundation and installation of the BESS. Grading activities will be minimal as the entire project site, including the proposed BESS area, was graded during original project construction. The construction of the foundation will take two to three months to complete. The installation of the pre-fabricated BESS will be accomplished by skilled site personnel over a period of approximately four weeks, with no change expected in the normal activity or emissions from the facility. Minor dust emissions and vehicle exhaust are possible. Fugitive dust control measures specified in the project Dust Control Plan will be implemented during construction and installation of the BESS. Further, the project will ensure that minimal vehicle idling occurs, thereby minimizing vehicle exhaust. Diesel-fueled construction equipment will comply with the California Air Resources Board's regulations. Furthermore, all equipment used onsite is required to be in proper working order, including properly tuned engines. These measures, coupled with the short-term nature of construction, will result in less than significant impacts to air quality during construction.

There are no new emissions associated with operation of the BESS. Therefore, the proposed modification will not significantly affect air quality during operation of the BESS.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for air quality.

3.1.2 Biological Resources

The proposed modification will occur entirely within the existing project footprint. The project site perimeter is entirely fenced preventing wildlife (i.e., desert tortoise) from entering the site. No sensitive biological resources or habitats occur onsite. Additionally, per the existing Conditions of Certification, the normal contractor orientation program for the project includes worker environmental awareness training. This training provides information on the possible presence of desert tortoise and the proper response to a sighting, per the project's existing Conditions of Certification. With the implementation of the existing Conditions of Certification and because the project site is currently developed and used for existing SEGS VIII and IX operations, the proposed modification will not significantly affect biological resources.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for biological resources.

3.1.3 Cultural Resources

No cultural resources were identified within the project boundary during construction of the existing SEGS VIII and IX project and the proposed modification will occur entirely onsite within previously disturbed project footprint. Foundations for the BESS structures will be a combination of poured concrete pads and piers. Concrete pad foundations will be no more than 4 feet deep. Piers are expected to be no more than 20 feet deep and spaced approximately 8 to 15 feet apart. If the excavation depth for the concrete pad or piers extend into soils beyond what was previously disturbed onsite, a cultural monitor will be onsite during the excavation. With implementation of the existing cultural resources conditions of certification, impacts to cultural resources are expected to be less than significant.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for cultural resources.

3.1.4 Geology and Paleontological Resources

The proposed modification will not cause geological hazards, or impacts to paleontological or geological resources beyond those analyzed by the CEC during certification.

No paleontological resources were identified within the project boundary during construction of the existing SEGS VIII and IX project and the proposed modification will occur entirely onsite within previously disturbed project footprint. Foundations for the BESS structures will be a combination of poured pads and piers. If the excavation depth for the concrete pad or piers extend into soils beyond what was previously disturbed during construction of the original project, existing paleontological resources conditions of certification will be implemented. Therefore, impacts to paleontological resources are expected to be less than significant.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for geology or paleontological resources.

3.1.5 Hazardous Materials

The proposed BESS will contain Li-ion batteries. The batteries in the BESS are totally enclosed and environmental exposure to hazardous materials is not expected. Regardless, SEGS VIII and IX will update the existing project Safety Plan (included in the Public Health conditions of certification for SEGS VIII and IX) to include Li-ion batteries in the hazardous material list and provide proper handling procedures and personal protective equipment per the material safety data sheet for Li-ion batteries. Therefore, potential hazardous materials handling impacts are expected to be less than significant with implementation of the conditions of certification adopted in the Commission Decisions.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification related to hazardous materials.

3.1.6 Land Use

The proposed modification will be located entirely within the existing project site and does not alter the analysis of potential impacts to land use set forth in the Commission Decisions. The proposed modification would not result in any change to the land use associated with the project site, and is consistent with existing zoning and applicable land use plans, policies, and regulations; and would not affect farmlands. Therefore, the project modifications would not result in potential impacts to land use.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for land use.

3.1.7 Noise

There are no sensitive receptors located within a mile of the project site. Construction of the proposed BESS would result in temporary noise increases due to limited use of heavy construction equipment over a short period of time. However, construction noise would not result in substantial increase in ambient noise levels. With implementation of the Noise Conditions of Certification adopted in the Commission Decisions, construction noise impacts are expected to be less than significant.

The BESS would add a minimal new source of noise to the site during operation. The source of the noise would be the HVAC system for Li-ion battery. The battery itself is low in noise. The proposed modification would not generate significant noise levels at or beyond the project boundary. The project with the proposed modification would continue to comply with the San Bernardino County code standards for noise. This code establishes noise performance standards for noise from any source, as it affects adjacent properties. Additionally, the project will continue to meet noise requirements established in the Final Commission Decision with the proposed modification. Therefore, the proposed modification will not cause a significant adverse noise impact.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for noise.

3.1.8 Public Health

There will be no off-site consequences as a result of the installation of the BESS, and no changes to the potential public health impacts analyzed in the Commission Decisions. As discussed in Section 3.1.1, there will be no new sources of emissions associated with the proposed modification. The proposed modification will not have a significant impact on Public Health.

The BESS would comprise lithium ion cells that are arranged into a module, where multiple modules are placed into a rack, and racks are placed into an enclosure. There are physical, electrical, and control designs at each level that mitigate safety risks. The BESS would be designed and operated in accordance with applicable industry best practices and regulatory requirements, including fire safety standards. As described in Section 2.1.1 of this PTM, each BESS enclosure will have its own self-contained fire detection and suppression system. The BESS enclosure's HVAC system will be sized to maintain the advised temperature range and account for the heat dissipation from the batteries

when being charged or discharged. Additionally, emergency response plans are in place for the existing project and fire protection and emergency response capabilities are available from local fire and emergency response services. The Fire Protection Element of the existing Safety Plan for the project will be updated, through consultation with the San Bernardino County Fire Department, to incorporate the proposed modification. See Section 3.1.14, Worker Safety and Fire Protection, for additional information related to fire protection.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for public health.

3.1.9 Socioeconomics

The proposed modification will require construction contractors and labor for the installation of the BESS. At peak construction there will be approximately 15 to 20 workers for a 6 month period. There will be no increased staff required for the operational phase of the project. Therefore, there will be no potential impacts to utilities and public services, schools, or housing needs as a result of the proposed modification, and no significant socioeconomic impacts.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for Socioeconomics.

3.1.10 Soils and Water Resources

Construction associated with the foundations needed for installation of the BESS is expected to result in land disturbance of less than one acre if pier foundation are used and potentially more than one acre if concrete pad foundations are used. If land disturbance is more than one acre, a General Storm Water Permit for construction related activities will be obtained. Additionally, a Storm Water Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasure (SPCC) Plan would be developed and implemented for the proposed modification. Any excess excavated soil will be disposed of in accordance with existing soils management plan and final grading will comply with the existing Erosion and Sedimentation Control Plan.

The new BESS area will increase the amount of impervious surface area of the project site. The increased runoff volume from this small increase in impervious surface area is not expected to change the performance of site drainage during large-flow events. As specified in the existing civil engineering conditions of certification for the project, an erosion and sediment control plan will be implemented for the proposed modification. Therefore, there will be no significant impacts to soil and water resources.

Water usage during construction (for dust control) is estimated to be 2.3 million gallons. The proposed BESS does not consume water during normal operations. If the final design includes water for fire suppression, water would only be used during a fire event.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for soils and water resources.

3.1.11 Traffic and Transportation

The temporary nature and limited number of vehicles associated with construction of the proposed modification will have little impact on existing traffic and transportation within the project area. All project deliveries during construction will continue to comply with all applicable Conditions of Certification.

The project owner will ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for construction-related transport of hazardous materials, and that federal and state regulations for the transport of hazardous materials are observed. Therefore, there will be no significant impacts to traffic and transportation.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for traffic and transportation.

3.1.12 Visual Resources

The proposed modification will not substantially degrade the existing visual character or quality of the site, or its surrounding. The BESS structures will be located in the middle of the project site between SEGS VIII and IX and will be up to 12 feet high for battery modules mounted in containers or up to 20 feet high to the peak roof elevation for battery modules arranged in an enclosure. The existing mirrors that occupy the majority of the site are approximately 22 feet high and the tallest existing structure in the area of each of the generation units is 88 feet high. The existing control building in the area of the proposed BESS is a two-story building, approximately 30 feet high. Therefore, the BESS would not visually dominate the site, nor would it create a visual point of interest due to the size in relation to the other plant facilities. The proposed modification will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Therefore, the proposed modification will not have a significant impact to visual resources.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for visual resources.

3.1.13 Waste Management

The proposed modification will not change or affect waste management practices or the types or quantities of waste generated by the construction or operation of the project. All waste generated during construction and operation will comply with the facility's existing Waste Management Plan. The proposed project modification consists of installing the modular components of the BESS. There would be no demolition activities. The waste materials generated during construction would include miscellaneous building materials. During operation, individual battery cells that have reached their useful life will be removed from the site and sent to the OEM for recycling or to a licensed recycling facility. Therefore, the proposed modification will not have a significant waste management impact.

The proposed modification to the project would not result in any necessary changes or deletions to the Conditions of Certification for waste management.

3.1.14 Worker Safety and Fire Protection

The proposed modification will not change or increase impacts analyzed by the CEC, and the proposed modification does not affect the Commission Decision's conditions, findings or conclusions regarding worker safety and fire protection. All workers will undergo proper worker safety training consistent with the CEC license requirements. As described in Section 2.1.1 of this PTM, the proposed BESS structures are supplied with fire suppression, which will automatically activate in the event of an emergency. Further, each Li-ion module will be monitored and can be shut down individually to prevent a runaway thermal condition. Additionally, the Fire Protection Element of the existing Safety Plan (as specified in the existing safety and fire protection conditions of certification) will be updated to incorporate the proposed modification. The updated plan will be provided to the San Bernardino Fire Department for review and comment. With implementation of the existing conditions of certification, the proposed modification will not result in significant impacts to worker safety and fire protection.

The proposed modification to the project would not result in any necessary changes or deletions to the Condition of Certification for worker safety and fire protection.

3.2 LORS

The Commission Decisions certifying SEGS VIII and IX concluded that the project is in compliance with all applicable laws, ordinances, regulations, and standards (LORS). The project, as modified with the proposed change in this PTM, will continue to comply with all applicable LORS.

SECTION 4 POTENTIAL EFFECTS ON THE PUBLIC AND PROPERTY OWNERS

This section addresses potential effects of the SEGS VIII and IX proposed modification set forth in this PTM on nearby property owners, the public, and parties in the application proceeding, pursuant to Section 1769(a)(1)(I) of the CEC Siting Regulations.

The SEGS VIII and IX project, as modified, will not differ in potential effects on adjacent land owners as compared with the previously approved project. SEGS VIII and IX would continue to have no significant environmental effects and would remain in compliance with applicable LORS. Therefore, the proposed change set forth in this PTM will have no adverse effects on nearby property owners, the public, or other parties to the application proceeding.

SECTION 5 LIST OF PROPERTY OWNERS

As required by the Section 1769(a)(1)(H) of the CEC Siting Regulations, a list of property owners potentially affected by the proposed change is provided herewith. A list of property owners within 1,000 feet of the project site boundary is included as Appendix A. Fewer properties are potentially affected by the proposed change than the owners listed in the AFCs because the proposed change does not affect the natural gas or electrical transmission lines.

APPENDIX A

LIST OF PROPERTY OWNERS WITHIN 1,000 FEET OF PROJECT SITE

List of Property Owners Within 1,000 Feet of Project Site

APN	OWNER NAME	MAILING ADDRESS	CITY, STATE, ZIP CODE
049009101	COOLEY, SCOTT M SEP PROP TR 02/12/97	15900 KENNEDY RD	LOS GATOS CA 95032
049009109	TRIANGLE H 049009109 TRUST	15900 KENNEDY RD	LOS GATOS CA 95032
049010119	SOUTHERN CALIFORNIA EDISON COMPANY		
049010154	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049010154	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049010155	ALL AMERICAN VENTURES INC	43450 HARPER LAKE RD	HINKLEY CA 92347
049010155	ALL AMERICAN VENTURES INC	43450 HARPER LAKE RD	HINKLEY CA 92347
049010156	ALL AMERICAN VENTURES INC	43450 HARPER LAKE RD	HINKLEY CA 92347
049010156	ALL AMERICAN VENTURES INC	43450 HARPER LAKE RD	HINKLEY CA 92347
049010156	ALL AMERICAN VENTURES INC	43450 HARPER LAKE RD	HINKLEY CA 92347
049011114	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049012143	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049012144	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049012146	ABENGOA SOLAR LLC	1901 AVENUE OF THE STARS STE	LOS ANGELES CA 90067
049012147	ABENGOA SOLAR LLC	3030 N CENTRAL AVE STE 808	PHOENIX AZ 85012
049013117	ABENGOA SOLAR LLC	3030 N CENTRAL AVE STE 808	PHOENIX AZ 85012
049018365	ABENGOA SOLAR LLC	1901 AVENUE OF THE STARS STE	LOS ANGELES CA 90067
049018449	ABENGOA SOLAR LLC	1901 AVENUE OF THE STARS STE	LOS ANGELES CA 90067
049022332	ALL AMERICAN VENTURES INC	43450 HARPER LAKE RD	HINKLEY CA 92347
049022333	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049022333	HIGH DESERT LAND ACQUISITION LLC	700 UNIVERSE BLVD	JUNO BEACH FL 33408
049022334	ABENGOA SOLAR LLC	1901 AVENUE OF THE STARS STE	LOS ANGELES CA 90067
049022338	ABENGOA SOLAR LLC	1901 AVENUE OF THE STARS STE	LOS ANGELES CA 90067