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FACILITY DECOMMISSIONING PLAN

SOLAR ENERGY GENERATING SYSTEM (SEGS) III-VII
(87-AFC-01C)
SAN BERNARDINO COUNTY, CALIFORNIA

February 12, 2021

NextEra Energy Resources

EXECUTIVE SUMMARY

NextEra Energy Operating Services, as Agent for Luz Solar Partners III-VII (hereinafter Project Owner; NEER), submits this Facility Decommissioning Plan for the Solar Energy Generating System (SEGS) III-VII (87-AFC-01C) to the California Energy Commission (CEC). This Facility Decommissioning Plan fulfills the compliance requirement of Section 20 of the Conditions of Certification (COCs), as found in the Commission Final Decision for the SEGS III-VII.

NEER has owned and operated the SEGS III-VII facilities located at Kramer Junction off Highway 395 in Boron, California since 2005. When the facilities were operational, SEGS III-VII generated up to 150 megawatts of thermal solar energy. NEER previously suspended operation of the SEGS VI and VII facilities pursuant to a Cold Layup Plan for VI and VII that was submitted to the CEC in September 2018. In October 2019, NEER submitted a new Cold Layup Plan to suspend operation at all five units (SEGS III-VII).

Separately, NEER is now seeking to repower SEGS III-VII with solar photovoltaic (PV) panels and supporting facilities. The proposed PV Project will be under the local jurisdiction of the County of San Bernardino and will be permitted through San Bernardino County's Conditional Use Permit process.

Safe layup activities have been completed for SEGS III-VII per the Cold Layup Plan submitted in 2019 and provided as Appendix B. NEER will begin decommissioning activities as early as May 2021, pending approval of this Facility Decommissioning Plan. After decommissioning activities have been completed, the CEC license will be terminated, and the County of San Bernardino will assume jurisdiction for the redevelopment of the project site for the proposed PV Project.

Environmental analysis of the decommissioning activities in accordance with the existing COCs and proposed design measures, demonstrates that decommissioning will not result in environmentally significant, unmitigated adverse effects and will comply with applicable laws, ordinances, regulations, and standards (LORS). No new COCs or modifications to existing COCs are included.

Section 1.0 of this plan describes the Project background and provides an overview of the Facility Decommissioning Plan. Section 2.0 provides a summary of safe layup activities that have already occurred and additional safe layup activities that will occur prior to decommissioning. Section 3.0 provides a complete description of decommissioning activities, the plan for reuse of the site, identification of facilities to remain on site, facilities to be removed, and the decommissioning schedule. Section 4.0 provides an analysis of the potential environmental effects of decommissioning and the Project's compliance with all applicable LORS. Section 4.0 also includes a discussion of alternatives considered and why decommissioning of the existing facility and reuse of the site as a solar PV facility is the preferred alternative. The current CEC COCs for SEGS III-VII are included in Appendix A of this Facility Decommissioning Plan. The Cold Layup Plan previously submitted to the CEC is provided as Appendix B. Appendices C and D consist of supporting studies and documentation for air quality and biological resources.

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ACRONYMS AND ABBREVIATIONS

AQS	Air Quality Supervisor
BMP	best management practice
BRMIP	Biological Resources Mitigation Implementation Plan
CEC	California Energy Commission
CEQA	California Environmental Quality Act
COC	Condition of Certification
CPM	Compliance Project Manager
CUP	Conditional Use Permit
DCP	Dust Control Plan
GHG	greenhouse gas
HTF	heat transfer fluid
LORS	laws, ordinances, regulations, and standards
MCR	Monthly Compliance Report
MDAQMD	Mojave Desert Air Quality Management District
NEER	NextEra Energy Operating Services as Agent for Luz Solar Partners III-VII
Project	SEGS III-VII facility
Project Owner	NextEra Energy Operating Services as Agent for Luz Solar Partners III-VII
PV	photovoltaic
RE	Renewable Energy
RECE	Renewable Energy and Conservation Element
RWQCB	Regional Water Quality Control Board
SEGS	Solar Energy Generating System
SPCC	Spill Prevention Countermeasure Control
SWPPP	Stormwater Pollution Prevention Plan
USEPA	United States Environmental Protection Agency
WDR	Waste Discharge Requirements
WEAP	worker environmental awareness program

1.0 INTRODUCTION

1.1 BACKGROUND

NextEra Energy Operating Services, as Agent for Luz Solar Partners III -VII (hereinafter Project Owner; NEER), submits this Facility Decommissioning Plan for the Solar Energy Generating System (SEGS) III-VII (87-AFC-01C) to the California Energy Commission (CEC). This Decommissioning Plan fulfills the compliance requirement of Section 20 of the Conditions of Certification (COCs), as found in the Commission Final Decision for the SEGS III-VII. The COCs are provided as Appendix A.

NEER has owned and operated the SEGS III-VII facilities, located at 41100 U.S. Highway 395 in Boron, California, 1 mile north of the town of Kramer Junction in San Bernardino County, California, as shown in Figure 1, since 2005. When the facilities were operational, SEGS III-VII generated up to 150 megawatts of thermal solar energy. NEER previously suspended operation of the SEGS VI and VII facilities pursuant to a Cold Layup Plan for VI and VII that was submitted to the CEC in September 2018. In October 2019, NEER submitted a new Cold Layup Plan to suspend operation at all five units (SEGS III-VII), and this Cold Layup Plan is provided as Appendix B.

Safe Layup activities have been completed for SEGS III-VII per the Cold Layup Plan submitted in 2019 and provided as Appendix B. NEER will begin decommissioning activities as early as May 2021, pending approval of this Decommissioning Plan. After decommissioning activities have been completed, the CEC license will either be terminated or a CEC site boundary adjustment will be requested, and the County of San Bernardino will assume jurisdiction for the redevelopment of the portion of the Project site for the proposed photovoltaic (PV) Project[1]. The proposed PV Project will reuse existing project transmission equipment and some of the existing structures. The Project Owner has applied to obtain a Conditional Use Permit (CUP) for the proposed PV Project from the County of San Bernardino for the decommissioning of the existing SEGS III-VII solar thermal facilities and redevelopment at the same location, of a new PV solar facility.

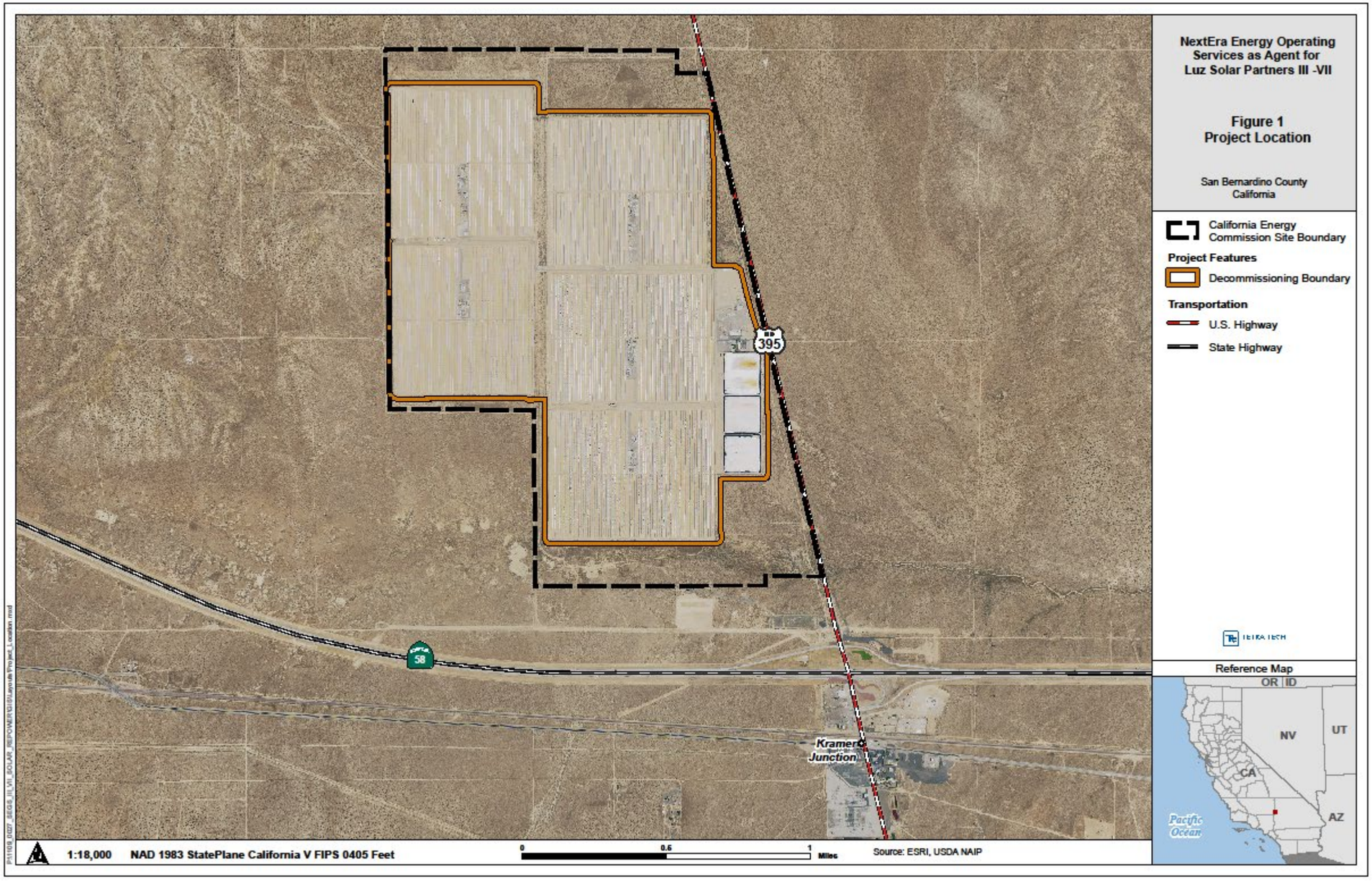
This Decommissioning Plan is being submitted for CEC approval of the decommissioning of the existing SEGS III-VII facilities. This plan describes the decommissioning activities, plans for continued use of facility land and equipment, provides an analysis of potential environmental impacts associated with the shutdown and decommissioning of SEGS III-VII, and proposes design measures.

1.2 DECOMMISSIONING PLAN

This Facility Decommissioning Plan is being submitted to CEC pursuant Section 20 of the COCs, as found in the Commission Final Decision for the SEGS III-VII. Section 20 of the COC includes the following direction for preparation of the Decommissioning Plan:

> Prior to commencing decommissioning activities for the [NEER]-SEGS III, IV, V, VI, or VII, [NEER] Engineering shall file a decommissioning plan with the California Energy Commission (CEC) Compliance Project Manager. The decommissioning plan shall:

[1] It is possible that the decommissioning activities for the evaporation ponds will require future monitoring as required by the Lahonton Regional Water Quality Control Board (RWQCB). See Section 4.10 for more detailed discussion. In such an event NEER will request that the CEC retain jurisdiction of only that portion of the site associated with the evaporation ponds until closed by the RWQCB. To allow construction of the PV facilities on the remainder of the site NEER will file a Petition To Amend the CEC site boundary line through the Petition To Amend process. Once closure of the evaporation ponds is completed, NEER will file a request for termination of the CEC License.


NextEra Energy Operating Services as Agent for Luz Solar Partners III -VII
Figure 1
Project Location
San Bernardino County
California
California Energy Commission Site Boundary
Project Features
Decommissioning Boundary
Transportation
U.S. Highway
State Highway
TETRA TECH
Reference Map
OR
ID
NV
UT
CA
AZ
Pacific Ocean
395
58
Kramer Junction
1:18,000
NAD 1983 StatePlane California V FIPS 0405 Feet
0
0.5
1
Miles
Source: ESRI, USDA NAIP

A. Identify and discuss the proposed decommissioning activities and schedule for the power plant site, transmission line corridor, and all appurtenant facilities constructed as a part of/or because of the Project;
B. Identify all applicable laws, ordinances, regulations, standards, (LORS) and local/regional plans applicable at that time;
C. Discuss how the specific proposed decommissioning activities will comply with those identified LORS and plans;
D. Contain an analysis of all decommissioning alternatives considered, including restoration of the site to its preconstruction, natural state; and
E. Discuss the reasons for selecting the preferred proposal.

1.3 PLAN OBJECTIVES

Consistent with Section 20 of the COCs, the objectives of this Facility Decommissioning Plan include:

- Describe decommissioning activities;
- Describe plans for continued use of facility land and equipment;
- Describe plans for reuse and recycling of equipment and materials;
- Describe procedures to be used to demolish and transport equipment and materials;
- Analyze potential environmental impacts of shutdown and decommissioning; and
- Where applicable, propose COCs to be implemented during decommissioning to further ensure that activities conform with applicable LORS.

1.4 DECOMMISSIONING AND REUSE OVERVIEW

The following initial decommissioning activities will take place to decommission SEGS III-VII:

- Drain any fluid systems not previously drained during cold layup, collect all contents, and dispose of or recycle per applicable LORS to ensure public health and safety, and protection of the environment.
- Categorize all wastes including any remaining heat transfer fluid (HTF), lubricating oils, fuels, water treatment chemicals, universal waste, and possible lead and asbestos containing materials, etc. These materials will be managed for proper containerization, profiling, and shipment off-site for disposal or recycling.
- Identify utility systems required for the future solar PV Project.
- Design and install temporary facilities for support of SEGS decommissioning and contractor personnel such as office trailers, temporary power, potable water and sanitary service.
- Equipment liquidation/sale, recycle or disposal activities.

Certain Project facilities and equipment will remain in place at the Project site to support future PV solar facilities. Certain other equipment will be decommissioned and placed into temporary storage (either the Project site or elsewhere) or permanently removed from the Project site. The planned disposition of the current Project facilities and equipment is discussed in Section 3.0 of this plan.

SEGS III-VII decommissioning activities are subject to the jurisdiction of the CEC until a Petition for Termination is approved and all open COCs are closed. For the future solar PV Project, NEER is concurrently pursuing a CUP for which the County of San Bernardino has local jurisdiction. The County of San Bernardino may take over jurisdiction of the decommissioning of the existing SEGS III-VII solar thermal facilities upon agreement with the CEC that the County will oversee the implementation of applicable COCs and proposed design measures to ensure that decommissioning activities will not result in a significant impact to the environment or public health and safety.

2.0 SAFE LAYUP

This section describes the measures that the Project Owner has taken to ensure safe and secure layup of SEGS III-VII in accordance with the Cold Layup Plan submitted to CEC in October 2019 and provided as Appendix B and additional safe layup activities that will occur as part of the decommissioning process.

2.1 PLANT STAFFING AND SECURITY

Select plant staff will remain on site throughout decommissioning activities. There will be existing security measures on site that restrict public access during decommissioning and layup. The entire site will continue to have the existing chain-link security fencing around the site with electronic gate access. Access to the facility will continue to require badge verification or manual gate entry after personnel identification is confirmed, preventing unaccompanied visitors from accessing the facility. All facility personnel, contractors and visitors will be logged in and out of the facility at the main office or at the main gate during normal business hours. Visitors and non-SEGS III-VII employees will be allowed entry only with approval from an authorized staff member at the facility.

In addition, at each point of access from a public road, an easily visible sign shall be posted indicating the facility name and other pertinent information as required.

2.2 SAFE POWER PLANT EQUIPMENT LOCKOUT

The safe layup of a power generation facility can prevent hazards to personnel and potential equipment damage due to the potential for accidental energization of equipment. The safe layup process previously conducted at SEGS III-VII pursuant the Cold Layup Plan submitted to CEC in October 2019 included the de-energization of certain control systems and the partial de-energization of others. If not specifically mitigated, these conditions could lead to equipment starting or closing unintentionally. Accordingly, the Project Owner locked out specific equipment according to the Project Lockout/Tagout Procedures to ensure unintentional operation did not occur.

Some of the major equipment that was locked out are listed below however, all equipment requiring lockout/tagout was appropriately locked out and de-energized before handling and removal:

- Generators
- Natural gas fired boilers
- Boiler feed water pump motors
- Condensate pump motors
- Cooling tower fan motors
- Large circulating water pumps
- Heat transfer fluid pumps
- Solar field
- Steam trains

Safe layup of SEGS III-VII mitigated the hazards associated with inadvertent energization during the layup process. All other maintenance work during the safe layup activities was conducted in accordance with Project Owner's existing safety and maintenance procedures.

2.3 REMOVAL OF HAZARDOUS MATERIALS

During the safe layup activities previously conducted for SEGS III-VII, Plant Operations coordinated removal of chemicals and hazardous wastes, except those that were required for routine activities associated with the layup process and disposal of wastewater from the power blocks. The following items were removed as part of the safe layup process:

- Hazardous wastes from all satellite accumulation areas were moved to the SEGS 90-day accumulation area and then properly disposed.
- Water treatment chemicals not needed to support the cold layup processes and stored in bulk totes and storage tanks were isolated by closing the discharge valve on each vessel. These materials were returned to the vendor where possible or disposed of in accordance with LORS. This included the following items:
    - Boiler chemical phosphate
    - Boiler chemical amine
    - Cooling tower acid
    - Cooling tower bleach
    - Cooling tower phosphate
- Equipment containing chemicals were drained and shut down to ensure public health and safety and to protect the environment. Drained chemicals were sent for recycling where feasible or disposed of in accordance with LORS.
- All unused chemicals and hazardous materials that can neither be used at other NEER facilities nor be returned to the vendor were sent offsite for recycling where feasible or disposed of in accordance with LORS.
- Ongoing hazardous waste generation during the cold layup period was limited to waste generated as a result of housekeeping and layup activities (e.g., oily rags and miscellaneous spent fluids/materials).

Table 2.1 lists the primary hazardous materials expected to be handled during the decommissioning process that were not previously removed during Cold Layup. These materials include HTF, lead acid batteries, diesel, hydraulic oil, lubricating oil, and mineral oil. Any additional operational chemicals listed as hazardous in the Spill Prevention Countermeasure Control (SPCC) plan, or otherwise used at the site, will also be removed as part of the terminal shutdown of the plant prior to decommissioning activities. Lead and asbestos containing structures and materials are not known to be present on site, but testing will be performed prior to the start of demolition.

Table 2.1: Hazardous Materials

Material	Site Use	Location	Decommissioning and Reuse Strategy
Lead acid batteries (sulfuric acid and lead) size of batteries approximately 10 cm x 5 cm x 7cm	Electrical power	Collectors	Remove prior to demolition
Lead	None known	Unknown (testing of structures and pipes will be conducted prior to demolition)	Perform testing prior to demolition. If lead containing materials are encountered, waste will be disposed of properly at a licensed facility.

Material	Site Use	Location	Decommissioning and Reuse Strategy
Asbestos	None known	Unknown (testing of structures and pipes will be conducted prior to demolition)	Perform testing prior to demolition. If structures or pipes containing asbestos are encountered, waste will be disposed of properly at a licensed facility.
Heat transfer fluid	Heat transfer from solar collectors to solar steam generator	Solar collector assemblies, storage tanks, ullage system	Drain remaining liquid from equipment prior to removal. Triple-rinse tanks and piping prior to processing and recycling. Product and rinsate fluid will be disposed of off-site.
Diesel No. 2	Fuel for pump engine/ generators	Near fire pump (maximum quantity 9,000 gallons)	
Hydraulic oil	Used in turbine starter system, turbine control valve actuators	Contained within equipment (maximum quantity on site 500 gallons)	
Lubricating oil	Used to lubricate rotating equipment	Contained within equipment (maximum quantity on site 30,000 gallons)	
Mineral oil	Used in transformers	Contained within transformers (maximum quantity on site 105,000 gallons)	

cm = centimeter

All residual materials and chemicals will be removed prior to demolition for recycling or for proper disposal at licensed facilities. Fuel, HTF, hydraulic fluids, and oils will be transferred directly to a tanker truck from the respective tanks and vessels. Storage tanks/vessels will be rinsed and rinsate will also be transferred to tanker trucks. Other items that are not feasible to remove at the point of generation, such as smaller containers of lubricants, paints, thinners, solvents, cleaners, batteries and sealants, will be kept in a locked utility building with integral secondary containment that meets local and State requirements for hazardous waste storage until removal for proper recycling or disposal. It is anticipated that all oils and batteries will be recycled at an appropriate facility to the extent feasible. Decommissioning personnel involved in handling these materials will be trained in proper handling. Containers used to store hazardous materials will be inspected regularly for any signs of failure or leakage. Additional procedures will be specified in the Hazardous Materials Business Plan for decommissioning and submitted to the required agency.

Transportation of the removed hazardous materials will comply with regulations for transporting hazardous materials, including those set by the United States Department of Transportation, United States Environmental Protection Agency, California Department of Toxic Substances Control, California Highway Patrol, and California State Fire Marshal. Table 2.2 lists the properties and toxicity of the primary hazardous waste materials that are expected to be removed.

Table 2.2: Hazardous Waste Properties and Toxicity

Material	Physical Description	Health Hazard	Flammability
Sulfuric acid	Oily, colorless liquid	Corrosive to skin, eyes, and digestive tract; respiratory tract irritant	Non-flammable
Diesel No. 2	Oily, light liquid	Skin irritant; hazardous if ingested; inhalation hazard	Combustible
Heat transfer fluid	Oily, dark liquid	Hazardous if ingested	Combustible
Hydraulic oil	Oily, dark liquid	Hazardous if ingested	Combustible

Material	Physical Description	Health Hazard	Flammability
Lubricating oil	Oily, dark liquid	Hazardous if ingested	Combustible
Mineral oil	Oily, clear liquid	Minor health hazard	Combustible

The SPCC plan for the site will be updated to cover spill prevention and countermeasures for handling of these materials during decommissioning. A site-specific Health and Safety Plan will document health and safety requirements for establishing and maintaining a safe working environment during the implementation of the planned Site activities. Additional procedures to decrease the potential release of contaminants to the environment and contact with stormwater will be specified in the Stormwater Pollution Prevention Plan (SWPPP), which will be updated for decommissioning activities, if necessary.

2.4 GENERATOR TIE-LINE

The existing 1.4-mile 115 kilovolt generator tie-line that connects SEGS III-VII to Southern California Edison's Kramer Junction Substation will remain in place and be utilized for the future solar PV Project. On-site transmission poles and conductors will remain in place.

2.5 NATURAL GAS SUPPLY LINE

The natural gas supply line is currently in place and has not yet been abandoned. During safe layup and decommissioning of SEGS III-VII, the natural gas pipeline serving SEGS III-VII will be cut and capped in place at the on-site isolation point located in the natural gas distribution yard. The pipeline will be abandoned in place in accordance with applicable LORS, unless it is deemed to be in the way of the proposed solar PV Project, in which case it will be removed.

3.0 DECOMMISSIONING AND REUSE OF FACILITIES REMAINING ON SITE

3.1 FACILITIES TO REMAIN IN PLACE

Some of the SEGS III-VII facilities may remain in place, including solar tracker foundations, underground utilities and installations, the switchyards and the off-site generator-tie line for future use by the proposed solar PV and battery energy storage system projects. A plot plan of existing facilities is included as Figure 2.

Facilities to remain in place are listed below.

- Electrical lines and poles (if they can be reused by the proposed solar PV project, otherwise they will be removed)
- Switchyards
- Administration Building
- Employee building
- Warehouse building
- Perimeter fencing
- Access gates
- On-site water wells
- Septic system for the Administration Building
- Electrical generation-tie line
- Generator Step-up Transformers
- Site access roads
- Parking lot
- Concrete foundations (may remain in place if they do not interfere with the proposed solar PV Project)
- Several support and miscellaneous buildings (e.g., sheds and mechanical shop, etc.)
- Water tanks to support construction of the solar PV project

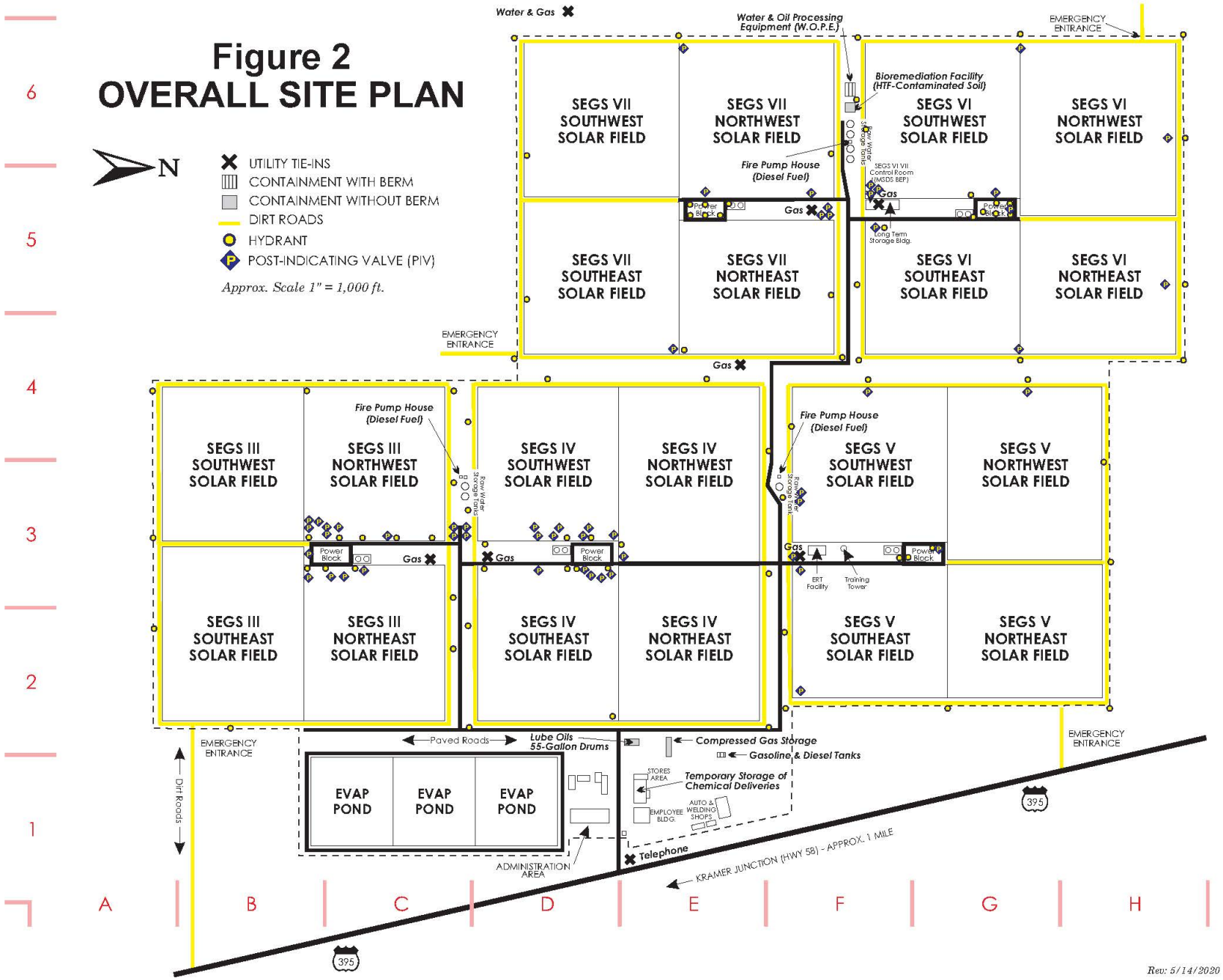
3.2 FACILITIES TO BE REMOVED

The following facilities are anticipated to be removed from the SEGS III-VII Project area:

- Cooling towers: This includes an evaporative cooling tower system.
- Power block: This includes storage tanks, a steam turbine generator, auxiliary transformers, heat exchangers, pumps, and other ancillary equipment.
- Parabolic mirrors, aboveground supports, aboveground HTF piping, and related equipment.
- Some of the support and miscellaneous buildings (e.g., sheds, mechanical shop, etc.) currently on site, which are not listed in the Section 3.1 list of facilities to remain, may be removed if they will not be reused for the proposed solar PV Project.

The facilities planned for removal will be disconnected from existing electrical, fuel, lubrication, and other lines and removed from their foundations. Above-ground demolition entails breakdown and removal of above-ground structures and facilities. Residual materials from these activities will be transported via heavy haul dump truck to one or more central recycling/staging areas where the debris will be processed for transport to an off-site recycler or a licensed disposal facility.

Figure 2
OVERALL SITE PLAN



The strategy for decommissioning consists of the use of mechanized equipment and trained personnel in the safe dismantling and removal of the following above-ground structures.

- Parabolic mirrors, supports and related equipment.
- Support and miscellaneous buildings using conventional dismantling, deconstruction techniques. Temporary or stationary facilities such as storage buildings, containers and small tanks will be detached, disassembled as minimally as possible and as required for safe transport, then hauled off for reuse or recycling.
- Storage tanks will be emptied of all remaining residues and products such as HTF, diesel, hydraulic oil, lubricating oil, and mineral oils, and other materials (where feasible) to reduce potential personnel and environmental exposure and to facilitate decommissioning. Hazardous material and petroleum containers and pipelines will be rinsed clean when feasible and the rinsate collected for off-site disposal. In general, these materials will be placed directly into tanker trucks or other transport vessels and removed from the site at the point of generation to reduce the need for hazardous material and waste storage at the site.
- Removal of the turbine generators, heaters, condensers and related equipment, transmission lines and towers that cannot be reused on site, and above-ground pipelines using conventional deconstruction equipment and techniques.

The three on-site evaporation ponds, the bioremediation unit, and the land treatment unit will be closed pursuant the Waste Discharge Requirements (WDR) issued by the Lahontan Regional Water Quality Control Board (RWQCB).

3.3 DECOMMISSIONING AND RECYCLING

Materials and equipment at the Project site that will not be reused for the proposed solar PV Project will be decommissioned, removed, and transported for recycling and salvage value to the greatest extent possible. This includes the cooling towers, power block, heaters, and water treatment facility, as well as other ancillary equipment. These materials will be transported off-site by the contractor to be sold for salvage value (e.g. any working equipment), or recycling/scrap value (e.g., metal scrap, piping, etc.).

The Project Owner intends to limit concrete and foundation removal to the extent practical. Where practical, concrete may be crushed to 2 inches minus size and backfilled into open pits and/or may be used as road base for the future solar PV Project as permitted by regulatory entities.

The natural gas pipeline serving SEGS III-VII will be cut and capped in place at the on-site natural gas distribution yard. The pipeline will be abandoned in place in accordance with applicable LORS.

Other underground utility lines and piping that will not be reused for the future solar PV Project will be cut and capped at or below the ground surface but not removed.

3.4 SCHEDULE

Decommissioning is scheduled to begin as early as May 2021, pending the approval of this Decommissioning Plan and market-driven business decisions, and would occur over approximately a 7- to 8-month duration. Decommissioning will be completed using traditional heavy construction equipment including but not limited to front-end loaders, track mounted and rubber-tired excavators, bull dozers, concrete crushers, dump trucks and heavy haul trucks. Although various types of decommissioning equipment will be utilized to dismantle each type of structure or equipment, dismantling will consist of dismantling of mirror panels to be removed, co-generation equipment removal, and concrete removal and crushing as needed to ensure that no concrete structure remains within 3 feet of final grade (i.e., floor slabs, below-ground walls, and footings) in areas that need to be cleared for the

proposed solar PV Project facilities. The Project Owner intends to limit the needs for underground utility removal to the maximum extent practical.

4.0 ENVIRONMENTAL ANALYSIS OF DECOMMISSIONING

An environmental analysis for each discipline area is provided below and the potential effects of decommissioning on the environment and public health and safety is addressed. This section identifies the LORS and local/regional plans and discusses how the decommissioning of SEGS III-VII will comply with those LORS and plans. Design Measures that are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS are also identified. Additionally, this section provides an analysis of decommissioning alternatives considered and the reasons for selecting the preferred proposal.

4.1 AIR QUALITY

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to air quality and GHG emissions that may result from the decommissioning of the Project. The Project Owner intends to replace the current solar thermal facilities with cleaner operating solar PV facilities. Solar PV does not require gas-fired heaters, exhaust tower or cooling tower operation. With the cessation of current Project operations, there is a reduction in emissions, which will be temporarily replaced with short-term emissions related to decommissioning. Decommissioning activities will result in short-term, minor, and localized air quality impacts from fugitive dust, tailpipe emissions from construction equipment used, waste/recycling truck trips, and construction worker commutes.

As indicated in the Air Quality Report (included as Appendix C), prior to the issuance of decommissioning permits or approvals, the Project Owner will develop a Dust Control Plan (DCP) per the requirements of Mojave Desert Air Quality Management District (MDAQMD) Rule 403.2. The DCP shall comply with MDAQMD rules to control fugitive dust by addressing objectives, key contacts, roles and responsibilities, dust sources, and control measures. The DCP follows control strategies as required by the MDAQMD's 2017 Dust Control Plan Guidance Document (MDAQMD 2017).

Additionally, on-road trucks shall comply with United States Environmental Protection Agency 2010 on-road emission standards or better, unless the contractor can reasonably demonstrate that such equipment is unavailable to the satisfaction of the MDAQMD.

As concluded in the Appendix C Air Quality Report, the emissions from the decommissioning Project would not exceed the significance thresholds for all criteria pollutants and GHG emissions. The annual emissions thresholds for all criteria pollutants would be less than significant for the Project. Further, the Project is not expected to generate any odors which would cause a public nuisance or impact a substantial population at any off-site location.

Compliance with the LORS applicable to air quality will ensure that the temporary and localized air quality impacts associated with the decommissioning of SEGS III-VII would be less than significant.

Table 4.1 lists the LORS applicable to air quality.

Table 4.1: LORS Applicable to Air Quality

LORS	Description	Comments
Federal		
40 Code of Federal Regulations Part 60 – New Source Performance Standards, Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Establishes emission standards for stationary compression ignition internal combustion engines, including emergency fire water pump and generator engines over a specific size.	No MDAQMD permits would be required for the decommissioning activities. If portable equipment requiring permits is used, that equipment will be registered through the CARB PERP.
Title V Permits	Sets forth permitting requirements for major sources of emissions across the country.	No MDAQMD permits would be required for the decommissioning activities and, the Title V permit for SEGS III-VII will be retired. The MDAQMD requires a signed original application to change ownership of an existing permitted unit. Name change can be made by the MDAQMD in response to a written letter.
State		
Title 17 CCR, Section 93115, Airborne Toxic Control Measure for Stationary Compression Ignition Engines	Establishes emission limits, operating limits, fuel use restrictions, monitoring and recordkeeping requirements for large (>50 hp) stationary compression ignition engines, including emergency fire water pump and generator engines.	No MDAQMD permits would be required for the decommissioning activities. If portable equipment requiring permits is used, that equipment would be registered through the CARB PERP.
California Health & Safety Code §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance.	The Project Owner would ensure the contractor would comply with this requirement.
California Health & Safety Code §2451, et seq. (Portable Equipment Registration Program – PERP)	Allows the permitting of portable equipment under a Statewide registration program.	If portable equipment requiring permits is used for the decommissioning and demolition activities, that equipment will be registered through the CARB PERP.
Title 13, CCR, Article 4.8, Chapter 9, Section 2449, Regulation for In-Use Off-Road Diesel-Fueled Fleets	Establishes requirements for diesel-fueled, mobile off-road vehicle fleets in order to reduce criteria pollutant emissions from engines greater than 25 hp, including requirements on excess idling, CARB assigned equipment identification numbers, and year-by-year fleet average requirements, as well as recordkeeping and reporting.	An AQS shall be responsible for determining the compliance status of all mobile off- road equipment that would be operated during decommissioning at the Project site, including verifying that all equipment is properly identified and that equipment fleets meet the appropriate annual reporting and compliance schedules.
Title 13, CCR, Division 3, Chapter 1, Section 2025, Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants for In-Use Heavy Duty Diesel-Fueled Vehicles.	Regulates diesel–fueled, on-highway vehicles over 14,000 pounds GVWR by establishing dates by which certain model year engines can no longer be operated in California, with separate requirements for medium-duty (14,000-26,000 GVWR) and heavy-duty (over 26,000 GVWR) vehicles, including recordkeeping and reporting for some vehicles.	The AQS shall be responsible for determining the compliance status of all mobile on-road vehicles over 14,000 GVWR that are used in any capacity during the decommissioning and demolition of the Project.

LORS	Description	Comments
Local – Mojave Desert Air Quality Management District (MDAQMD)		
Rule 201 – Permit to Construct, Rule 202 – Temporary Permit to Operate, Rule 203 – Permit to Operate	Rules 201, 202 and 203 require that permits be obtained for any equipment that emits air contaminants.	No MDAQMD permits would be required for the decommissioning activities. If portable equipment requiring permits is used, that equipment would be registered through the CARB PERP.
Rule 401 – Visible Emissions	Limits visible emissions from applicable equipment or processes to values no darker than Ringelmann #1 for periods greater than 3 minutes in any hour.	The Project Owner would ensure that the demolition contractor complies with this requirement.
Rule 402 – Nuisance	Prohibits emissions in quantities that would adversely affect public health, other businesses, or property.	The Project Owner would ensure that the demolition contractor complies with this requirement.
Rule 403.2 – Fugitive Dust	Limits fugitive PM emissions from transport, construction, handling and storage activities.	The Project Owner would ensure the contractor will use appropriate dust suppression mitigation to limit fugitive PM emissions consistent with the requirements outlined in Rule 403.2, including preparing a DCP that describes all applicable dust control measures that will be implemented.
Rule 404 – Particulate Matter Concentration	Limits PM emissions concentration from point sources.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment.
Rule 405 – Solid Particulate Matter Weight	Limits PM emissions based on process weight.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment
Rule 407 – Liquid and Gaseous Contaminants	Limits carbon monoxide emissions from combustion sources.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment
Rule 409 – Combustion Contaminants	Limits emissions of combustion contaminants.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment
Rule 431 – Sulfur Content of Fuels	Limits sulfur content of liquid and solid fuels.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment
Regulation II – Permits	Sets forth permitting requirements for large stationary sources	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment. The Title V permit will be retired.
Regulation XIII – New Source Review	Sets forth the preconstruction review requirements for new, modified or relocated facilities.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment

LORS	Description	Comments
Regulation XV – Emission Standards for Specific Toxic Air Contaminants	Sets limits on toxic air contaminants from stationary sources.	No MDAQMD permits would be required for the decommissioning activities. If portable equipment requiring permits is used for the decommissioning activities, that equipment will be registered through the CARB PERP.
Regulation XVI – Prevention of Significant Deterioration	Sets forth the pre-construction review of all new Major PSD Facilities and Major PSD Modifications requirements for stationary sources.	No MDAQMD permits would be required for the decommissioning activities. This requirement would not apply to PERP registered equipment

AQS = Air Quality Supervisor
CARB = California Air Resources Board
CCR = California Code of Regulations
hp = horsepower
GVWR = Gross Vehicle Weight Rating
LORS = laws, ordinances, regulations, and standards
MDAQMD = Mojave Desert Air Quality Management District
PERP = Portable Equipment Registration Program
PM = particulate matter
PSD = Prevention of Significant Deterioration
SEGS = Solar Energy Generating System

4.1.1 Applicable Project Conditions of Certification

The CEC Decision included Air Quality COC Requirements 1-35 to mitigate potential air quality impacts, but are not particularly relevant for decommissioning. The proposed decommissioning design measures D-AQ-1 through D-AQ-6 below are included to better address decommissioning activities to ensure compliance with LORS and that impacts are reduced to less than significant levels..

4.1.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-AQ-1 Prior to the issuance of decommissioning permits or approvals, the Project Owner shall develop a DCP per the requirements of Mojave Desert Air Quality Management District (MDAQMD) Rule 403.2. The DCP shall comply with MDAQMD Rules 403 and 403.2 to control fugitive dust, including particulate matter less than 10 microns in size, by addressing objectives, key contacts, roles and responsibilities, dust sources, and control measures. The Project owner shall submit the DCP and any modifications to the compliance project manager (CPM) within five working days of its submittal to the MDAQMD.

D-AQ-2 On-road trucks shall comply with United States Environmental Protection Agency (USEPA) 2010 on-road emission standards or better, unless the contractor can reasonably demonstrate that such equipment is unavailable to the satisfaction of the MDAQMD. The Project Owner shall submit to the CPM a Monthly Compliance Report (MCR) to demonstrate compliance.

D-AQ-3 The Project Owner shall ensure that all applicable portable equipment used by the demolition contractor shall be registered through the California Air Resources Board (CARB) Portable Equipment Registration Program. The Project Owner shall submit to the CPM an MCR to demonstrate compliance.

D-AQ-4 The Project Owner shall ensure that equipment used during decommissioning complies with Rule 401 to ensure visible emissions from applicable equipment will avoid visible emissions darker than Ringelmann #1 for periods greater than 3 minutes in any hour. The Project Owner shall submit and MCR to the CPM to demonstrate compliance.

D-AQ-5 Off-road construction equipment shall comply with the US Environmental Protection Agency's final Tier 4 exhaust emission standards.

D-AQ-6 The Project Owner shall ensure that the Air Quality Supervisor (AQS) performs oversight of compliance with the decommissioning design measures and applicable LORS during decommissioning activities. At least 60 days prior to the stare of decommissioning, the Project Owner shall submit to the CPM, for approval, the name and contact information for the AQS and/or AQS delegates. The Project Owner shall also submit an MCR to the CPM to demonstrate compliance.

4.2 BIOLOGICAL RESOURCES

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to biological resources that may result from the decommissioning of the Project. Decommissioning activities will take place within the existing Project footprint. The Project site perimeter is entirely fenced; however, desert tortoise fencing is not currently installed.

A biological resources survey report was prepared in January 2021 to support the decommissioning plan and the CUP process for the proposed solar PV Project. This report is included as Appendix D to this Decommissioning Plan. No desert tortoises have been observed on-site during operations, and no observations of desert tortoise or their sign were made within the facility during the biological survey conducted in December 2020 and documented in the January 2021 Biological Survey Report provided as Appendix D. As described in the Biological Resources Survey Report, within the interior developed portions of the site, existing structures and ornamental trees may provide habitat for nesting birds and raptors. The ornamental trees consisted of large pine trees (*Pinus* sp.) that line the north and east sides of the northernmost evaporation pond. Almost no vegetation was present under the existing solar panels within these areas other than sparse prickly Russian thistle (*Salsola tragus*) and non-native grasses and the soil was very compacted. The developed portions of the site were fenced but erosional features were sporadically present at the base of the fence and it was evident that larger mammals have been accessing the interior of the site on occasion and could potentially be present within the site. Overall, the interior site was developed and was not suitable for special-status plants or wildlife besides those described above.

Although bird nesting opportunities and wildlife movement are limited and restricted, implementation of the Project COCs and design measures will reduce potential impacts. The Biological Resources Mitigation Implementation Plan (BRMIP) will be updated to include preconstruction nesting bird surveys and protocol for measures to be implemented in the event of discovery of an active nest. In the event that active nests are discovered, a suitable buffer (distance to be determined by the designated biologist) shall be established around such active nests, and unless otherwise authorized after agency consultation, no construction within the buffer allowed, until the biologist has determined that the nest(s) is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest). The BRMIP will also be updated to include clearance surveys for desert tortoise, burrowing owls, and desert kit fox due to the existence of habitat for these species adjacent to the developed areas of the Project site. Surveys will be conducted within 14 days prior to demolition activities.

Additionally, a decommissioning design measure is proposed to require installation of desert tortoise fencing at the base of the existing perimeter fencing.

Adherence to the applicable biological resources COCs and design measures for the Project through termination of CEC jurisdiction of the Project and compliance with the LORS applicable to biological resources will ensure that potential impacts to biological resources will be less than significant.

Table 4.2 lists the LORS applicable to biological resources.

Table 4.2: LORS Applicable to Biological Resources

LORS	Description	Comments
Federal		
Migratory Bird Treaty Act: 16 USC Sections 703-721	Prohibits the take of protected migratory birds.	Structures and trees throughout the site provide potentially suitable nesting habitat for birds. To minimize potential impacts to birds from decommissioning, NEER will update the BRMIP as appropriate for decommissioning.
Endangered Species Act of 1973 Title 16, USC, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.	Designates and provides for the protection of threatened and endangered plant and animal species, and their critical habitat. The administering agency is the United States Fish and Wildlife Service.	According to the original 1988 California Energy Commission Decision for Certification for SEGS III-VII, biological resources in the Project region recognized as rare, threatened, endangered, or of special concern include the Mohave ground squirrel, desert tortoise, Barstow woolly sunflower. Biological Resources Requirement 5 contained in the Condition of Certification Decision addresses proper reporting of impacts to rare, threatened, or endangered species. No habitat for federally listed species occurs in the developed areas of the site.
State		
Native Plant Protection Act CDFW Code Sections 1900–1913	Prohibits taking of endangered and rare plants from the wild and requires that CDFW be notified at least 10 days in advance of any change in land use that will adversely impact listed plants.	Not applicable: decommissioning will be limited to previously disturbed and developed areas.
California Endangered Species Act of 1984, Fish and Game Code sections 2050 through 2098; California Code of Regulations Title 14, Division 1, Subdivision 3, Chapter 3, sections 670.2 and 670.5	Identifies and protects California's rare, threatened, and endangered species.	NEER will update the BRMIP as appropriate for decommissioning. Implementation of the revised BRMIP will avoid or reduce impacts to levels that are less than significant during decommissioning.
Fish and Game Code Section 3503.5	"It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."	NEER will comply with this requirement through implementation of the Project BRMIP as may be modified for decommissioning.

LORS	Description	Comments
Streambed Alteration Agreement: Fish and Game Code Section 1600 et seq.	Requires CDFW to review Project impacts to waters of the State (bed, banks, channel, or associated riparian areas), including impacts to wildlife and vegetation from sediments, diversions, and other disturbances.	Not applicable, as decommissioning activities will be restricted to developed Project site which contains no waters of the state or state jurisdictional streambed features.
Local		
San Bernardino County General Plan (2007) – Conservation Element	This General Plan contains general policies regarding the protection and preservation of habitat and sensitive plant and wildlife species.	Activities associated with decommissioning could further facilitate the introduction of weedy species as a result of ground disturbance, imported fill, or landscaping with nonnative species. Weedy plant species growth could suppress native vegetation and infest agricultural lands. However, the Project site is developed and there is little native vegetation in the immediate vicinity. Decommissioning activities will be restricted to developed Project site and therefore will not impact habitat.

BRMIP = Biological Resources Mitigation Implementation Plan
CDFW = California Department of Fish and Wildlife
LORS = laws, ordinances, regulations, and standards
NEER = NextEra Energy Operating Services as Agent for Luz Solar Partners III-VII
SEGS = Solar Energy Generating System
SWPPP = Stormwater Pollution Prevention Plan
USC = United States Code

4.2.1 Applicable Project Conditions of Certification

The CEC Decision included Biological Resources COC Requirements 1–7 to mitigate potential impacts to biological resources. Requirements 1, 2, 3, and 5c and 5e are not relevant for decommissioning. The following requirements from the existing Biological Resources COCs are relevant to decommissioning:

BIO-4 [NEER] shall designate a qualified biologist to advise on the implementation of these conditions of certification pertaining to on-site mitigation and to supervise or conduct mitigation, monitoring, and other compliance efforts. Minimum qualifications include (1) a bachelor's degree in biological science, zoology, botany, ecology, or a closely related field and (2) current certification of a nationally recognized biological society, such as the Ecological Society of America or Wildlife society or a minimum of three years' experience in field biology. [NEER] must demonstrate to the satisfaction of CEC Staff that the designated biologist has appropriate education and experience for the biological tasks described in the BRMIP developed for this project. CEC CPM approval of the designated biologist shall not be unreasonably withheld. The supervising construction or operation engineer shall act on the advice of the biologist to ensure conformance with the BRMIP and the terms and conditions of the CEC certification.

BIO-5 [NEER] shall submit a detailed BRMIP to the CEC CPM before the initiation of any clearing, earth moving, or other construction activities on SEGS VII. The BRMIP shall include details for designing and implementing the following measures:

a. For SEGS VII, if there is an indication of tortoises having been on the site, a final preconstruction site clearance shall be conducted, with emphasis on finding and relocating any desert tortoises that may have reinhabited the site;

b. For SEGS VII, a final preconstruction walk-through to verify that no foxes are inhabiting a den system on site and to collapse any dens found in order to preclude the potential for direct impacts on foxes during site clearing;

d. An employee education program to provide construction and operation employees with information to help them avoid impacts on the key species and resources addressed in this document. The program shall be designed to inform personnel about these Mojave Desert animals and plants and to cover both potential direct, on-the-job impacts, as well as the potential indirect impacts associated with the dwelling places and leisure activities of employees and their families. The latter are to be included because of the in-migration associated with the project and the possibility of significant impacts that may be inadvertently caused by the in-migrant employees, their families, or pets. The program should cover laws pertaining to desert wildlife and plants, the use of firearms, off-road recreational vehicle use, and other applicable regulations.

The program shall be administered to each new employee as part of his or her orientation and all staff members shall be required to review the information and be apprised of new information annually. Verification of the program's use can be accomplished by documenting its presentation date and content via statements signed by individual employees to whom the program has been presented.

BIO-6: [NEER] shall allow access by CEC, or its designated representative, to inspect or monitor conditions of biological resources, impacts, mitigation measures, and study areas prior to and during preconstruction, construction and operation activities on the SEGS site and adjacent areas. The access shall be provided upon request and at all times necessary to conduct biological field observations.

BIO-7: [NEER] shall implement the monitoring and mitigation measures contained in the approved BRMIP and CEC Decision.

4.2.2 Proposed Additional Decommissioning Design Measures

The following additional design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS and reduce potential impacts to less than significant levels.

D-BIO-1 If construction during the breeding bird season (typically January through July for raptors and February through August for other avian species) cannot be avoided, a pre-construction nesting bird survey shall be performed on and adjacent to the decommissioning site. If an active nest is found, an appropriate buffer should be established by the designated biologist based on the bird species occupying the nest and the type of project activities that are occurring. The buffer should be flagged in the field. The Designated Biologist will determine if any work can occur within the buffer.

D-BIO-2 The Project shall install desert tortoise fencing at the base of existing security fencing to exclude desert tortoise from the Project site. Desert tortoise fencing shall be installed according to United States Fish and Wildlife Service Recommended Specifications for Desert Tortoise Exclusion Fencing (USFWS 2005) and shall be maintained for the life of the proposed solar PV Project. The Designated Biologist or a monitor working under the direction

of the Designated Biologist, shall monitor the viability of the desert tortoise fencing during decommissioning activities, and the Project owner shall ensure that necessary repairs are made promptly. Any major damage, such as blowouts due to rain events shall be reported to the CEC CPM within two business days and accompanied by photos and a written report.

The Designated Biologist or a monitor working under the direction of the Designated Biologist shall conduct a pre-decommissioning desert tortoise survey of the area to be fenced within 14 days prior to the fence installation and shall also be on site during all fence installation activities. If a tortoise is found on the construction site during decommissioning activities, work shall be halted and the tortoise shall be allowed to leave the area on its own to a minimum distance necessary outside the area to ensure its safety. In the event that a tortoise is found, the CDFW and USFWS shall also be contacted for further guidance.

D-BIO-3 The BRMIP will be revised for specific circumstances related to project decommissioning to minimize or totally avoid impacts to biological resources.

D-BIO-4 The Project Owner shall ensure that all SEGS III-VII employees, contractors, and visitors that will be on site during decommissioning receive the worker environmental awareness program (WEAP) training.

4.3 CULTURAL RESOURCES

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to cultural resources that may result from the decommissioning of the Project. If the earth disturbing activities associated with decommissioning extend into soils beyond what was previously disturbed on-site, a cultural monitor will be available to be on site during the excavation, as outlined in the existing cultural resources COCs. Adherence to applicable cultural resources COCs and the decommissioning design measures for the Project through termination of CEC jurisdiction of the Project and compliance with the LORS applicable to cultural resources will ensure that potential impacts to cultural resources will be less than significant.

Table 4.3 lists the LORS applicable to cultural resources.

Table 4.3: LORS Applicable to Cultural Resources

LORS	Description	Comments
Federal		
None.	None.	None.
State		
California Code of Regulations, Title 14, section 4852	Defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.	Decommissioning will not adversely affect cultural resources as the site is disturbed.
Public Resources Code, Section 5000	Establishes the CRHR, establishes criteria for eligibility to the CRHR, and defines eligible resources.	Decommissioning will not adversely affect cultural resources. There are no registered historical resources on the site.
Local		
San Bernardino County General Plan (2007) – Conservation Element	The General Plan establishes a cultural resource sensitivity overlay map. Also, the General Plan establishes goals for identify and protect important cultural resources.	The Project's location is outside the cultural resource sensitivity area indicated on the overlay map. Also, decommissioning will take place on lands that were previously disturbed.

CFR = Code of Federal Regulations (
CRHR = California Register of Historical Resources
LORS = laws, ordinances, regulations, and standards

4.3.1 Applicable Project Conditions of Certification

The CEC Decision included Cultural Resources COC Requirements 1–8 to mitigate potential impacts to paleontological and cultural resources. Requirements 1, 2, and 3 are related to paleontological resources and are discussed in a subsequent section. Requirements 5(b),5(c), 6, 7, and 8 are not relevant for decommissioning. The following Requirements from the existing Cultural Resources COCs are relevant to decommissioning:

CUL-4 [NEER] shall submit the name and qualifications of its designated cultural resources specialist (e.g., someone with a graduate degree in anthropology, history, or cultural resource management and field experience) to the CEC CPM for review and approval. The CEC CPM must review the qualifications of and approve of in writing the [NEER] designated cultural resources specialist before any ground disturbance may begin. After CEC approval, the designated cultural resources specialist shall be on call during site preparation and construction activities for the [NEER] SEGS VII project.

CUL-5 The designated cultural resources specialist shall prepare and submit to the CEC CPM for review and approval, a monitoring and mitigation plan to minimize potential impacts to cultural resources. The plan shall include the following:

a. A provision that the designated cultural resources specialist conducts a records search at such places as the San Bernardino County Museum and the California Archaeological Inventory for identification of cultural resources which may be affected by construction and operation of [NEER] SEGS VII.

d. A provision that the designated cultural resources specialist be on call to inspect any potentially significant cultural resources found during ground clearance and excavation in areas of sensitivity identified in the monitoring and mitigation plan.

e. Specific measures proposed to mitigate impacts to particular types of cultural resources which may be discovered during earth moving activities.

f. A provision that if potentially significant cultural resources are encountered during construction activities, work in the immediate vicinity of the find shall be halted until the designated cultural resources specialist can determine the significance and sensitivity of the find. [NEER's] designated cultural resources specialist shall act in accordance with the procedures set forth in the monitoring and mitigation plan which has been approved by the CEC CPM prior to the start of construction.

   [NEER], or its designated representative, shall inform the CEC CPM within one working day of the discovery of any potentially significant resources and discuss the specific measure(s) proposed to mitigate potential impacts to the resources.

   The designated cultural resources specialist, representatives of [NEER] and the CEC CPM shall meet within seven working days of the notification of the CEC, if necessary, to discuss the disposition of any finds and any mitigation measures already implemented or to be implemented.

g. A provision that if human remains are encountered, work in the immediate vicinity shall stop and the county coroner and the CEC CPM shall be notified. Work in the vicinity of the find shall remain stopped until the coroner has determined if the remains are Native American in origin and any necessary mitigation measures have been implemented. If the remains are determined to be of Native American origin, the Native American Heritage Commission and appropriate Native American representatives shall be notified

immediately. Any necessary mitigation measures shall be discussed and agreed upon by the interested parties and approved by the CEC CPM.

h. A provision that the CEC CPM shall have access to the [NEER] SEGS Unit VII site to observe cultural resources monitoring and data recovery activities.

4.3.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS and to reduce impacts to less than significant levels.

D-CUL-1 If the earth-disturbing activities associated with decommissioning extend into soils beyond what was previously disturbed on-site during project construction, a cultural monitor will be available to be on site during the excavation, as outlined in the existing cultural resources COCs.

D-CUL-2 The Project Owner shall update, if necessary, the cultural resources WEAP training and present the WEAP training to all of its personnel and the personnel of its contractors and subcontractors who may be involved with ground clearance or earth moving, to develop an awareness of and sensitivity to potential project impacts on potentially significant cultural resources. This training shall include development of the ability to recognize potentially significant cultural resources.

D-CUL-3 The Project Owner shall update the Project cultural resources monitoring and mitigation plan to minimize potential impacts to cultural resources for decommissioning. The plan shall include the following:

a. A provision that the designated cultural resources specialist be on call to inspect any potentially significant cultural resources found during ground clearance and excavation in areas of sensitivity identified in the monitoring and mitigation plan.

b. Specific measures proposed to mitigate impacts to particular types of cultural resources which may be discovered during earth-moving activities.

c. A provision that if potentially significant cultural resources are encountered during decommissioning activities, work in the immediate vicinity of the find shall be halted until the designated cultural resources specialist can determine the significance and sensitivity of the find. The Project designated cultural resources specialist shall act in accordance with the procedures set forth in the monitoring and mitigation plan. The Project Owner, or its designated representative, shall inform the appropriate overseeing agency (CEC or County of San Bernardino [County]) within one working day of the discovery of any potentially significant resources and discuss the specific measure(s) proposed to mitigate potential impacts to the resources.

   The designated cultural resources specialist, representatives of the Project Owner, and the appropriate overseeing agency shall meet within seven working days of the notification of the CEC or County, if necessary, to discuss the disposition of any finds and any mitigation measures already implemented or to be implemented.

d. A provision that if human remains are encountered, work in the immediate vicinity shall stop and the County coroner and the jurisdictional agency (CEC or County) shall be notified. Work in the vicinity of the find shall remain stopped until the coroner has determined if the remains are Native American in origin and any necessary mitigation measures have been implemented. If the remains are determined to be of Native

American origin, the Native American Heritage Commission and appropriate Native American representatives shall be notified immediately. Any necessary mitigation measures shall be discussed and agreed upon by the interested parties and approved by the jurisdictional agency.

4.4 GEOLOGY AND PALEONTOLOGY

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to geology and paleontology that may result from the decommissioning of the Project. Decommissioning activities will take place within the existing Project footprint. A total of 243 vertebrate fossils were recovered from 20 discrete paleontologic localities within the area monitored during excavation for SEGS VI and VII (Reynolds 1988). The fossils were recovered during execution of the construction monitoring and data recovery program developed for SEGS III-VII in consultation with a qualified paleontologist approved by the San Bernardino County Museum and the Natural History Museum of Los Angeles County (Lander 1988).

The decommissioning activities will take place entirely on site within the previously disturbed Project footprint. If the excavation depth for decommissioning activities extends into soils beyond what was previously disturbed during construction of the original project, applicable paleontological resources COCs will be implemented. Adherence to the applicable geological and paleontological resources COCs and additional decommissioning design measures for the Project and compliance with the LORS applicable to these resources will ensure that potential impacts to geological and paleontological resources will be less than significant.

Table 4.4 lists the LORS applicable to geology and paleontology.

Table 4.4: LORS Applicable to Geology and Paleontology

LORS	Description	Comments
Federal		
None	None	None
State		
The CBC, 1998 edition, is based upon the UBC, 1997 edition.	The CBC is a series of standards that are used in project investigation, design (Chapters 16 and 18) and construction (including grading and erosion control as found in Appendix Chapter 33).The CBC supplements the UBC's grading and construction ordinances and regulations.	As no excavation during decommissioning is expected to go significantly below the depth of previous disturbance, basic grading and erosion control of soils will be implemented. Shoring is not anticipated to be needed.
California Public Resources Code 5097.5	This law protects paleontological resources and establishes criminal and civil penalties for violations.	As no paleontological resources were previously identified during project construction and operations, and decommissioning activities will occur within the existing disturbed site with excavation not expected to go below the depth of previous disturbance, impacts to paleontological resources are not anticipated. If paleontological resources are encountered, the Project will comply with the standard procedures for appropriate handling, identification and reporting of findings of paleontological resources.

LORS	Description	Comments
Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (Society of Vertebrate Paleontology, 2010)	Establishes procedures and standards for assessing and mitigating impacts to paleontological resources.	As no paleontological resources were previously identified during project construction and operations, and decommissioning activities will occur within the existing disturbed site with excavation not expected to go below the depth of previous disturbance, impacts to paleontological resources are not anticipated. Therefore, new procedures and standards for assessment and mitigation of impacts are not required. If paleontological resources are encountered, the Project will comply with the standard procedures for assessing and mitigating impacts to paleontological resources.
Local		
County of San Bernardino Development Code Section 82.20.030 (2009 edition)	This section of the Development Code sets forth the requirements of paleontological resource mitigation programs for projects in the County. These requirements include a field survey prior to grading, monitoring during grading, appropriate handling and identification of specimens, and reporting of findings.	As no paleontological resources were previously identified during project construction and operations, and decommissioning activities will occur within the existing disturbed site with excavation not expected to go below the depth of previous disturbance, impacts to paleontological resources are not anticipated. Therefore, field surveys and monitoring during decommissioning activities are not required. If paleontological resources are encountered, the Project will comply with the County requirements for appropriate handling, identification and reporting of findings of paleontological resources.
County of San Bernardino General Plan, Section V – Conservation Element	This section of the General Plan outlines several programs for protecting paleontological resources during development, including requirements for surveys, monitoring, recovery, curation, and reporting of paleontological resources.	As decommissioning activities will occur within the existing disturbed site with excavation not expected to go below the depth of previous disturbance, impacts to paleontological resources are not anticipated. Therefore, field surveys and monitoring during decommissioning activities are not required. If paleontological resources are encountered, the Project will comply with the County requirements for appropriate recovery, curation and reporting of paleontological resources.

CBC = California Building Code
LORS = laws, ordinances, regulations, and standards
UBC = Uniform Building Code

4.4.1 Applicable Project Conditions of Certification

The CEC Decision included Paleontological and Cultural Resources COC Requirements 1–8 to mitigate potential impacts to paleontological and cultural resources. Requirements 4 and 5 are related to cultural resources and are discussed in a previous section. Requirements 6, 7, and 8 are not relevant for decommissioning. The proposed additional decommissioning design measures D-PAL-1–D-PAL-3 below are included to better address decommissioning activities.

4.4.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-PAL-1 The Project Owner will have a paleontological specialist available on an as-needed basis, if the excavation depth for decommissioning activities extends into soils beyond what was previously disturbed during construction of the original project as outlined in the existing COCs.

D-PAL-2 The Project Owner shall update, if necessary, the paleontological resources WEAP training (as outlined in COC CUL-7) and present the WEAP training to all of its personnel and the personnel of its contractors and subcontractors who may be involved with ground clearance or earth moving, to develop an awareness of and sensitivity to potential Project impacts on potentially significant paleontological resources. This training shall include development of the ability to recognize potentially significant paleontological resources.

D-PAL-3 The Project Owner shall update the Project monitoring and mitigation plan (as outlined in D-CUL-3) to minimize potential impacts to paleontologic resources for decommissioning. The plan shall include the following elements:

a. A provision that if fossil resources are encountered during decommissioning activities, work in the immediate vicinity of the find shall be halted until the designated, on-call paleontologic specialist can determine the significance and sensitivity of the find. The designated, on-call paleontologic specialist shall act in accordance with the procedures set forth in the monitoring and mitigation plan which has been approved by the overseeing agency (CEC or County of San Bernardino [County]) prior to the start of construction.

c. The Project Owner, or its designated representative, shall inform the overseeing agency within one working day of the discovery of any potentially significant resources and discuss the specific measure(s) proposed to mitigate potential impacts to the resources.

d. The designated, on-call paleontologic specialist, representatives of the Project Owner, and the overseeing agency shall meet within seven working days of the notification, if necessary, to discuss the disposition of any finds and any mitigation measures already implemented or to be implemented.

e. A provision that all vertebrate fossil remains will be collected and any invertebrate fossil remains will be sampled. All fossil materials found shall be mapped, prepared, identified, and removed for analysis and duration in the retrievable storage collection at the San Bernardino County Museum, California.

4.5 HAZARDOUS MATERIALS

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to hazardous materials that may result from the decommissioning of the Project.

Decommissioning activities may entail the handling, recycling and disposal of hazardous materials. These materials are listed in Tables 2.1 and 2.2 in Section 2.3. Any other operational chemicals listed as hazardous will be removed as part of the decommissioning activities. The Project Owner will recycle unused chemicals and gases where feasible. Equipment containing chemicals will be drained and shut down to ensure public health and safety and to protect the environment.

Adherence to the applicable hazardous material COCs and decommissioning design measures for the Project through termination of CEC jurisdiction of the Project and compliance with the LORS applicable to hazardous materials will ensure that any impacts related to hazardous materials will be less than significant.

Table 4.5 lists the LORS applicable to hazardous materials.

Table 4.5: LORS Applicable to Hazardous Materials

LORS	Description	Comments
The SARA (42 USC §9601 et seq.)	Contains the Emergency Planning and Community Right to Know Act (also known as SARA Title III)	All materials on-site during decommissioning are being handled and will be removed according to approved plans during decommissioning including any applicable SARA Title III requirements.
The Clean Air Act, Section 112 (42 USC 7401 et seq. as amended)	Established a nationwide emergency planning and response program and imposed reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous air pollutants.	All materials located on-site during decommissioning are being handled and will be removed according to approved plans during decommissioning. If hazardous air pollutants trigger Section 112 reporting requirements, the reporting shall be completed.
State		
California Health & Safety Code §§ 25500–25543; 19 California Code of Regulations §§ 2720–2734	Directs facility owners, storing or handling acutely hazardous materials in reportable quantities, to develop a Risk Management Plan and submit it to appropriate local authorities, the United States Environmental Protection Agency, and the designated local Administering Agency for review and approval.	All materials on site during decommissioning are being handled and will be removed according to approved plans during decommissioning including the existing site plan, if applicable.
California Uniform Building Code	Requirements regarding the storage and handling of hazardous materials	All materials stored on site during decommissioning are being handled and will be removed according to approved plans during decommissioning.
Local		
The CUPA with responsibility to review Risk Management Plans and Hazardous Materials Business Plans is the San Bernardino County Fire Department's Hazardous Materials Division	Requires a Consolidated Hazardous Materials Permit. The County of San Bernardino has compliance codes that correspond with California Health and Safety Code Sections 25185, 25508 and 25280 that require CUPAs to inspect facilities that handle hazardous materials and/or generate hazardous wastes.	All materials on site during decommissioning are being handled and will be removed according to approved plans during decommissioning. The existing site CUPA permits and plans will be adhered to.

CUPA = Certified Unified Program Authority
LORS = laws, ordinances, regulations, and standards
SARA = Superfund Amendments and Reauthorization Act of 1986
USC = United States Code

4.5.1 Applicable Project Conditions of Certification

The CEC Decision included Waste Management COC Requirements 1–14 to mitigate potential waste management impacts. Requirements 1 and 5 are not related to hazardous materials. Requirements 2, 3,

7, 8, 9, 10, 11, 12, 13, and 14 are not relevant for decommissioning. The proposed additional decommissioning design measure D-HAZ-1 below is included to better address decommissioning activities.

4.5.2 Proposed Additional Decommissioning Design Measures

The following design measure is proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-HAZ-1 The Project Owner shall update the Hazardous Materials Business Plan for decommissioning, as applicable, to reflect hazardous materials not previously used at the site.

4.6 LAND USE

This section presents an analysis of LORS compliance and potential impacts and benefits related to Land Use that may result from the decommissioning of the Project.

The Project property has General Plan land use designations of RC, Resource Conservation and RL, Rural Living, which are consistent with the Renewable Energy and Conservation Element (RECE) of the County of San Bernardino General Plan because the Project is an existing commercial solar energy facility. Additionally, the decommissioning of the existing thermal power facility and the redevelopment of the proposed solar PV facility within the existing solar site and with no expansion of the existing footprint is also consistent with the RECE of the General Plan.

The proposed use and manner of development of the proposed solar PV Project are consistent with the goals, maps, policies, and standards of the County General Plan, RECE, and any applicable Community or Specific Plan. The proposed PV solar PV Project specifically implements the following goals, policies, and objectives from the RECE adopted August 8, 2017 (amended February 2019):

Goal LU 1: The County will have a compatible and harmonious arrangement of land uses by providing a type and mix of functionally well-integrated land uses that are fiscally viable and meet general social and economic needs of the residents.

Consistency: The Project site is in the same location as the thermal solar and will utilize existing infrastructure to the greatest extent possible. The facility is adjacent (north) to 1,750-acre Mojave Solar site. The Project is sufficiently separated from existing communities and rural residential areas such that adverse effects are avoided. The Project is not located within a quarter of a mile of any residential developments or single residences. The Project design includes setbacks from roads as well as fencing to shield the facility from public view. Decommissioning of the site will occur in compliance with Development Code Section 84.29.060, which requires removal of site facilities when operations cease. The requirement for a removal surety bond will be included in the Conditions of Approval to be adopted for the Project.

Goal CO 8: The County will minimize energy consumption and promote safe energy extraction, uses and systems to benefit local regional and global environmental goals.

Consistency: The Project is located on the site of an existing energy generation site. The Project will include a new PV solar facility and associated infrastructure necessary to generate up to a combined 150 megawatt alternating current of renewable electrical energy and/or energy storage capacity on 1,073 acres. The use of clean air technologies on the Project site will ensure good air quality for the County residents, businesses, and visitors by way of safe energy extraction, uses, and systems.

RE Goal 5: Renewable energy facilities will be located in areas that meet County standards, local values, community needs and environmental and cultural resource protection priorities.

Consistency: The Project is located on the site of an existing energy generation site. The proposal is to convert from Thermal Solar generation to PV Solar within the same footprint of the existing energy generation site. Considering features of the site design and the proximity to other solar generation facilities, the Project is appropriately sited and compatible with County standards, local values, community needs, and environmental and cultural resource protection priorities.

RE Objective 5.2: Utility-oriented Renewable Energy (RE) facilities will be subject to site selection criteria consistent with County priorities expressed in the RECE.

Consistency: The Project is located on the site of an existing energy generation site.

RE Policy 5.2(x): Utility-oriented RE generation projects on private land in the unincorporated County will be limited to the site-type below, in addition to meeting criteria established in the RECE and Development Code: … (x). Existing energy generation sites.

Consistency: The Project is located on the site of an existing energy generation site. The proposal is to convert from Thermal Solar generation to PV Solar within the same footprint of the existing energy generation site. Considering features of the site design, the RECE, the Development Code, and the proximity to other solar generation facilities, the Project is appropriately sited and compatible with the surrounding area.

Decommissioning activities will not result in any change to the land use associated with the Project site and are consistent with existing zoning and applicable land use plans, policies, and regulations and will not affect farmlands. Therefore, the decommissioning will not result in impacts to land use.

Table 4.6 lists the LORS applicable to land use.

Table 4.6: LORS Applicable to Land Use

LORS	Description	Comments
Local		
County of San Bernardino General Plan, Amended 2014	The General Plan consists of a statement of development policies and must include a diagram and text setting forth the objectives, principles, standards and proposals of the document. Per State of California Government Code Section 65300, a General Plan must include seven mandatory elements including Land Use, Circulation (Transportation), Housing, Conservation, Open Space, Noise, and Safety. The Land Use Element of the General Plan provides land use designations, goals, and policies for the development and conservation of land within San Bernardino County.	The goals and policies of the Land Use, Conservation, Circulation and Infrastructure, Noise, Safety, and Economic Development Elements are applicable to the proposed decommissioning activities. However, these activities will not conflict with these elements, with the exception of the Economic Development Element. The Economic Development Element goals and policies do specify encouraging industrial/commercial development that will produce jobs. (Goal ED 1). Reuse/replacement of the Project to photovoltaic solar is consistent with the plan's goal. Additionally, the future plan for the Project site to be redeveloped for solar PV is consistent with the RECE of the General Plan because the Project is an existing commercial solar thermal facility.

LORS = laws, ordinances, regulations, and standards
PV = photovoltaic
RECE = Renewable Energy and Conservation Element

4.6.1 Applicable Project Conditions of Certification

The CEC Decision did not include any Land Use COC Requirements.

4.6.2 Proposed Additional Decommissioning Design Measures

The following design measure is proposed in accordance with the County's anticipated requirement to obtain a demolition permit.

D-LU-1 The Project Owner will apply for a Demolition Permit from the County of San Bernardino prior to the start of demolition activities. The Project Owner shall submit a copy of the demolition permit application to the CEC CPM prior to the start of demolition activities.

4.7 NOISE

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to noise that may result from the decommissioning of the Project. There are no sensitive noise receptors within 1 mile of the Project area.

The following are the distances from the SEGS III-VII Project boundary to the nearest receptors:

- Distance to nearest residence is approximately 3.56 miles south of the Project site
- Distance to nearest business/off-site worksite is approximately 0.52 miles southeast of the Project site at Goodrich Silvertown's Auto Service
- Distance to nearest airport is 16.5 miles west of the Project site at Edward Air Force Base

Some temporary noise increases will occur with regard to decommissioning activities. Decommissioning activities will be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, in accordance with the County of San Bernardino Development Code standards. Additionally, construction equipment will be muffled in accordance with manufacturers' specifications. Given the temporary nature of decommissioning activities and the distance to the nearest sensitive receptor is approximately 0.88 miles from the Project site, decommissioning noise will not result in an increase above acceptable noise levels for residential areas. The Project will comply with occupational noise safety requirements and provide hearing protection to workers during decommissioning activities. The Project will comply with all applicable LORS for noise. Therefore, the proposed decommissioning activities will not cause a significant adverse noise impact and will be considered less than significant.

Table 4.7 lists the LORS applicable to noise.

Table 4.7: LORS Applicable to Noise

LORS	Description	Comments
Federal		
Occupational Safety and Health Act of 1970. 29 United States Code Section 651 et seq. Title 29 Code of Federal Regulations Section 1910.95	Regulates the worker noise exposure to 90 decibels over an 8-hour work shift. Areas above 85 dBA need to be posted as high noise level areas and hearing protection will be required.	Decommissioning activities will comply with these requirements.

State		
Title 8 California Code of Regulations Section 5095 et seq.	Establishes California Occupational Safety and Health Administration employee noise exposure limits. These standards are equivalent to the Federal Occupational Safety and Health Administration standards. Worker noise exposure is limited to 90 dBA over an 8-hour work shift. Areas where worker noise exposure exceeds 85 dBA must be posted as a noise hazard zone and a hearing conservation program is required.	Decommissioning activities will comply with these requirements.
Local		
San Bernardino County General Plan (2007) Noise Element; San Bernardino County Development Code (Amended 2019)	Defines the land noise levels that are normally acceptable in residential areas as between 45 and 55 dBA.	Decommissioning activities will comply with these requirements.

dBA = decibels

4.7.1 Applicable Project Conditions of Certification

The CEC Decision included Noise COC Requirements 1–4 to mitigate potential noise impacts. Requirements 1, 3, and 4 are not relevant to decommissioning. The proposed additional decommissioning design measures D-NOISE-1–D-NOISE-3 below are included to better address decommissioning activities.

4.7.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-NOISE-1 The Project shall comply with occupational noise safety requirements and provide hearing protection to workers during decommissioning activities.

D-NOISE-2 All construction equipment used for decommissioning shall be muffled in accordance with manufacturers' specifications.

D-NOISE-3 Decommissioning activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, in accordance with the County of San Bernardino Development Code standards.

4.8 PUBLIC HEALTH

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to public health that may result from the decommissioning of the Project.

Decommissioning activities will result in short-term and localized air quality impacts from fugitive dust and diesel emissions of trucks and other equipment used in the decommissioning activities. The Project will adhere to best management practices (BMPs) and mitigation measures to control fugitive dust emissions and maintain diesel equipment emissions as discussed in Section 4.1 to ensure that significant and adverse impacts do not occur to air quality due to SEGS III-VII decommissioning activities. Additionally, the Project Owner will ensure the safe handling and disposal of hazardous materials and adherence to worker safety and fire protection procedures and LORS during decommissioning, as described in Section 4.5 and Section 4.14. Therefore, the decommissioning will not result in impacts to public health.

Table 4.8 lists the LORS applicable to public health.

Table 4.8: LORS Applicable to Public Health

LORS	Description	Comments
LORS potentially applicable to public health during decommissioning are discussed in Section 4.1 Air Quality, Section 4.5 Hazardous Materials and 4.14 Worker Safety and Fire Protection. No other LORS related to public health are applicable or are anticipated.		

LORS = laws, ordinances, regulations, and standards

4.8.1 Applicable Project Conditions of Certification

The CEC Decision included Public Health COC Requirements 1–4 to mitigate potential impacts on public health. Requirements 1–3 are not relevant to decommissioning. The following Requirement from the existing Public Health COCs is relevant to decommissioning and will be addressed through updates to the Project Health and Safety Plan, SPCC, and Hazardous Materials Business Plan:

PH-4 [NEER] shall ensure that all hazardous materials on-site are handled as specified in [NEER]'s Safety Plan for all SEGS units with regard to:

- Worker protection
- Respiratory protection
- Disposal of HTF-contaminated materials
- Worker hazard training and communication
- Health status monitoring
- Accidental spill identification and reporting
- Hazardous waste management (for chemicals other than HTF)

4.8.2 Proposed Additional Decommissioning Design Measures

See Air Quality Section 4.1.1, Hazardous Materials Section 4.5.1, and Worker Safety and Fire Protection Section 4.14.1 for design measures that are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS related to public health. The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-PH-1: The Project Owner shall ensure all required asbestos related notification and removal testing is preformed prior to decommissioning. The Project Owner shall comply with all MDAQMD Rule 100 asbestos related activities in the monthly compliance report. The Project Owner shall submit the monthly compliance report to the CPM within 30 days of the end of each month.

D-PH-2: The Project Owner shall comply with County of San Bernardino Development Code control measures for diesel exhaust emissions. The Project Owner shall include a statement of compliance in the monthly compliance report. The Project Owner shall submit the monthly compliance report to the CPM within 30 days of the end of each month.

4.9 SOCIOECONOMICS

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to socioeconomics that may result from the decommissioning of the Project.

The proposed decommissioning will require construction contractors and labor for the decommissioning activities on the Project site. At its peak, the Project will require approximately 125 workers for a 7- to

8-month period. This short time period will not result in impacts to utilities and public services, schools, or housing needs. The Project area is near the unincorporated community of Lockhart in San Bernardino County and within commuting distance from the cities of Lancaster and Victorville. San Bernardino County has a population of 2,180,085 (U.S. Census 2020). Available skilled labor to support the decommissioning workforce positions should be available within the County.

Therefore, the Project will not place an undue burden on the local workforce and impacts to socioeconomics will be considered less than significant.

Table 4.9 lists the LORS applicable to socioeconomics:

Table 4.9: LORS Applicable to Socioeconomics

LORS	Description	Comments
There are no socioeconomic LORS directly applicable to decommissioning.		

LORS = laws, ordinances, regulations, and standards

4.9.1 Applicable Project Conditions of Certification

The CEC Decision included Socioeconomics COC Requirements 1 and 2 to mitigate potential socioeconomic impacts.

4.9.2 Proposed Additional Decommissioning Design Measures

No significant impacts to socioeconomics have been identified. Therefore, no additional design measures are warranted or proposed.

4.10 SOIL AND WATER RESOURCES

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to soil and water resources that may result from the decommissioning of the Project.

Decommissioning activities at the Project site will have a minimal effect on soil and water resources. Decommissioning will take place within the existing Project footprint, which is primarily graded or covered in gravel. No sensitive water or soil resources exist within the developed areas on site.

There will be less water usage and wastewater generated with the decommissioning of the SEGS III-VII Project as compared to when the Project was operational and prior to the steam turbine generators being shut down and removed. Existing water wells will continue to be utilized for non-potable water during decommissioning, while potable water will continue to be delivered via contract with Sparkletts or a similar provider.

The three evaporation ponds will be closed and decommissioned in accordance with Lahontan RWQCB WDRs (Lahontan RWQCB 1997). The bioremediation unit that received HTF-contaminated soil for storage and treatment and an associated land treatment unit will be closed in accordance with Lahontan RWQCB WDRs (Lahontan RWQCB 1995).

The Project Owner will implement the existing SPCC Plan and develop a SWPPP for decommissioning to mitigate potential water resource impacts during decommissioning activities. The SWPPP will also include BMPs to minimize soil impacts due to wind or water erosion. These BMPs include applying water to active excavations and disturbed soils, reducing vehicle speeds on site, and covering/treating soil piles. The implementation of the SWPPP will minimize soil and water resource impacts.

The decommissioning of the SEGS III-VII Project will comply with all applicable LORS for soil and water resources. Therefore, the proposed decommissioning activities will have a less than significant impact on soil and water resources.

Table 4.10 lists the LORS applicable to soil and water resources.

Table 4.10: LORS Applicable to Soil and Water Resources

LORS	Description	Comments
Federal		
None.	None.	None.
State		
Porter-Cologne Water Quality Control Act of 1967, California Water Code Section 13000 et seq.	Requires the State Water Resources Control Board and the nine Regional Water Quality Control Boards to adopt water quality criteria to protect state waters.	Compliance will be managed through use of Construction SWPPP and NPDES Permit.
California Water Code Section 13551	Prohibits the use of "…water from any source of quality suitable for potable domestic use for nonpotable uses, including…industrial… uses, if suitable recycled water is available…"	Recycled water is not available for use at the site.
The Safe Drinking Water and Toxic Enforcement Act of 1986, Health and Safety Code section 25249.5 et seq.	Prohibits the discharge or release of chemicals known to cause cancer or reproductive toxicity into drinking water sources.	Compliance will be managed through the use of a Construction SWPPP.
State Water Resources Control Board Resolution No. 68-16 (the "Anti-Degradation Policy")	Declares the State's policy that, among other things, the discharging of wastes will not pollute or result in a nuisance.	Compliance will be managed through the use of a Construction SWPPP.
Local		
County of San Bernardino, 2007 Development Code, 87.02.070	Specifies criteria for Grading and Erosion Control and for design of storm water facilities; assesses a Flood Mitigation Fee to assist in providing revenue for establishing adequate community drainage facilities.	Contractor to obtain a County of San Bernardino grading permit. Compliance will be managed through the grading permit and the use of Construction SWPPP and NPDES Permit.
Mojave Water Agency Regulations, §97-15	Requires a service agreement for providing a host of water and wastewater services to the Project.	Not applicable since public water and wastewater services are not available for the site.
Mojave Desert Air Quality Management District Rule 403	Specifies requirements for dust control.	Water for dust control will be obtained from the existing project water sources.

LORS = laws, ordinances, regulations, and standards
NPDES = National Pollutant Discharge Elimination System
SWPPP = Stormwater Pollution Prevention Plan

4.10.1 Applicable Project Conditions of Certification

The CEC Decision included Water Resources COC Requirements in two sections, Section 6 and Section 23.

The CEC Decision included Water Resources COC (Section 6) Requirements 1 through 5 to mitigate potential impacts to water resources. Requirements 1 through 5 are not relevant to decommissioning.

The Commission Decision included Water Resources COC (Section 23) Requirements 1 through 9 to mitigate potential impacts to water resources. Requirements 1 through 9 are not relevant to decommissioning.

The Commission Decision included Soil Conservation COC Requirements 1 and 2 to mitigate potential impacts to soil resources. Requirements 1 and 2 are not relevant to decommissioning.,

4.10.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-S&W-1 The Project Owner shall develop and implement a SWPPP for the decommissioning of the Project. The SWPPP shall identify erosion control measures to be implemented and maintained during decommissioning activities. The SWPPP shall be submitted to San Bernardino County for review prior to the start of decommissioning activities.

D-S&W-2 Any underground utility lines and piping that will be abandoned in place shall be cut, grouted, and capped at or below the surface. A map of all buried utility lines and piping that are proposed to be abandoned in place shall be prepared and submitted before decommissioning and closure are finalized. Before decommissioning and closure are finalized, the Project Owner shall prepare a map showing any and all buried utility lines and piping and submit it to the Compliance Project Manager for approval.

4.11 TRAFFIC AND TRANSPORTATION

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to traffic and transportation that may result from the decommissioning of the Project. The temporary nature and limited number of vehicles associated with decommissioning activities will have little impact on existing traffic and transportation within the Project area.

At its peak, the Project will require approximately 125 workers for a 7- to 8-month period. Truck traffic will consist of flatbed and lowboy delivery trucks (5-axel) for mobilization and demobilization, and heavy haul trucks (4-axel) during the decommissioning phase of the Project.

The following table provides the total number of truck hauls for materials that will be hauled off-site during decommissioning and the anticipated maximum number of hauls per day.

Materials to be Hauled Offsite During Decommissioning	Quantity of Material	Total Number of Truck Haul Trips During Decommissioning	Maximum Number of Haul Trips per day
Contaminated Concrete	54 tons	4	2
Glass	14,000 tons	700	12
Other non-recyclable waste	3,500 tons	250	5
Metal	12,500 tons	570	10
HTF Material	532,000 gallons	46	8
Maximum Number of Hauls per Day			**37**

Decommissioning-related vehicle ingress/egress will be scheduled to minimize traffic obstructions and not interfere with peak-hour traffic. Also, a flag person will be retained to maintain efficient traffic flow and safety adjacent to existing roadways.

The Project will continue to comply with applicable traffic and transportation COCs and all applicable LORS during decommissioning activities. A demolition permit will be secured from the County of San Bernardino and the contractor will be required to comply with all county demolition, disposal and recycling requirements and regulations. Further, the Project Owner will ensure that permits and/or licenses are secured from the California Highway Patrol and the California Department of Transportation 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.

Table 4.11 lists the LORS applicable to traffic and transportation.

Table 4.11: LORS Applicable to Traffic and Transportation

LORS	Description	Comments
Federal		
49 Code of Federal Regulations Chapter III, Subchapter B, Sections 350-399 on Motor Carrier Safety, Registration, and Transportation of Hazardous Materials	Establishes regulations affecting interstate motor carrier operations, routing registrations, insurance of vehicles and operational safety; describes transportation standards for radioactive and hazardous materials.	Decommissioning activities will comply with these requirements through implementation of proposed design measure D-TRAFFIC-2 during decommissioning.
State		
California Vehicle Code Division 15. Size, Weight, and Load Section 35000-35796	Provides requirements as to the size and licensing of vehicles on public highways.	Vehicles associated with the decommissioning activities will meet these requirements or obtain the required permits to exceed the requirements.
California Streets and Highway Code	Provides regulation pertaining to the modification of street infrastructure.	Because the decommissioning do not propose to remove, replace, or modify any facility within road rights-of-way, these requirements are not applicable.
Local		
San Bernardino County Congestion Management Plan	Industrial and warehouse truck uses must show the estimated number and distribution of truck trips (in Passenger Car Equivalents) for both peak hours and hours being studied.	A Traffic Impact Assessment is required if a project is forecasted to generate 250 two-way peak hour trips. Current traffic volume projections associated with decommissioning activities are not anticipated to require the preparation of a Traffic Impact Assessment. However, activities will maintain compliance with the Congestion Management Plan objectives and policies.
San Bernardino County General Plan, Threshold Standards Policy	The County's Threshold Standards Policy requires that LOS D or better be maintained on intersections under the County's jurisdiction.	A Construction Management Plan will be completed, and it is not anticipated that level of service at any intersections under the County's jurisdiction will fall below LOS D as a result of the decommissioning activity.
County Code, Title 5, Division 1, Highway Permit	Addresses permitting requirements for oversize/overweight vehicles.	All necessary permits for oversize/ overweight vehicles will be obtained.

COC = Condition of Certification
LORS = laws, ordinances, regulations, and standards
LOS = level of service

4.11.1 Applicable Project Conditions of Certification

The CEC Decision included Traffic and Transportation COC Requirements 1 through 3 to mitigate potential impacts to traffic and transportation. Requirements 1 through 3 are not relevant to decommissioning. ,.

4.11.2 Proposed Additional Decommissioning Design Measures

The following design measure is proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-TRAFFIC-1 The Project Owner shall utilize only licensed haulers, using approved vehicles marked in an appropriate manner, for the transportation of all hazardous, toxic, and flammable materials. All such materials shall be transported in compliance with all applicable requirements of the U.S. Department of Transportation, the California Highway Patrol, and the California Department of Transportation.

4.12 VISUAL RESOURCES

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to visual resources that may result from the decommissioning of the project.

The existing mirrors that occupy the majority of the site are approximately 22 feet high and the tallest existing structure in the boiler stacks at SEGS VI and VII which are 100 feet high. The proposed decommissioning activities will be temporary and will not create a new source of substantial light or glare that will adversely affect day or nighttime views in the area. Decommissioning activities will not take place during nighttime hours; however, some nighttime lighting with existing facility lights will be used for the purposes of maintaining site security. All lighting will be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties.

The proposed solar PV Project will have fewer visual impacts than the existing SEGS III-VII Project with lower profile panels, and the decommissioning of SEGS III-VII will remove the power blocks and cooling towers and associated plumes.

Further, the nearest residential parcel is more than 1 mile from the Project site, and the Project is not within a sensitive viewshed. Therefore, the proposed decommissioning activities will not have a significant impact to visual resources.

Table 4.12 lists the LORS applicable to visual resources.

Table 4.12: LORS Applicable to Visual Resources

LORS	Description	Comments
San Bernardino County Zoning Ordinance 83.07	Ordinance implements the light pollution policies of the San Bernardino County General Plan.	Decommissioning activities will not take place during nighttime hours. Some night-time lighting with existing facility lights will be used for the purposes of maintaining site security. Lighting shall be shielded in compliance with the ordinance in order to preclude light pollution or light trespass onto adjacent property and roadways.

LORS = laws, ordinances, regulations, and standards

4.12.1 Applicable Project Conditions of Certification

The CEC Decision included Visual Resources COC Requirements 1 and 2 to mitigate potential impacts to visual resources. Requirements 1 and 2 are not relevant to decommissioning.

4.12.2 Proposed Additional Decommissioning Design Measures

SEGS III-VII decommissioning will conform with all applicable LORS, and no additional design measures are necessary or proposed.

4.13 WASTE MANAGEMENT

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to waste management that may result from the decommissioning of the Project.

During decommissioning, all remaining nonhazardous wastes will be collected and disposed of in appropriate recycling centers, landfills or waste collection facilities according to all applicable LORS. Hazardous wastes will be disposed of according to all applicable LORS. The site will be secured 24 hours per day during the decommissioning activities.

Decommissioning will entail breakdown and removal of structures and facilities. Residual materials from these activities will be transported via heavy haul dump truck to the appropriate landfill identified. Debris will be placed in temporary on-site storage area(s) pending transportation to the recycling/disposal facilities. The debris and removed equipment will be cut or dismantled into pieces that could be safely lifted or carried with the on-site equipment being used. The vast majority of glass and steel will be processed for transportation and delivery to a scrap vendor or may be transported to the appropriate landfill and/or recycling center. Some specific equipment such as gas-fired heaters, cooling towers and power block equipment may be transported as intact components or reduced in size on site.

San Bernardino County owned and operated sanitary landfills, and transfer stations are not permitted to accept asbestos-contaminated wastes; therefore, any debris generated by the decommissioning of structures are subject to asbestos clearance prior to disposal at any San Bernardino County disposal sites. Applicants are required to have a Certified Asbestos Consultant perform testing of all materials to be disposed. The Project Owner will comply with the County requirement to perform asbestos testing of debris prior to disposal.

Hazardous materials containers will be rinsed clean when feasible and collected for off-site disposal. When possible, these materials will be placed directly into tanker trucks or other transport vessels and removed from the site at the point of generation to minimize the need for hazardous material and waste storage at the site.

Adherence to the applicable waste management COCs and decommissioning design measures for the Project through termination of CEC jurisdiction of the Project and compliance with the LORS applicable to waste management will ensure that impacts will be less than significant.

Table 4.13 lists the LORS applicable to waste management.

Table 4.13: LORS Applicable to Waste Management

LORS	Description	Comments
Federal		
Resource Conservation and Recovery Act (42 USC. Section 6922)	Establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal.	All hazardous wastes generated will be removed according to approved plans and appropriately documented. Hazardous wastes generated during decommissioning may potentially include waste fuel, lubricants, oil, and sorbent media.
Title 40, Code of Federal Regulations, Parts 239 through 282	These sections contain regulations promulgated by the United States Environmental Protection Agency to implement the requirements of the Resource Conservation and Recovery Act.	All hazardous wastes generated will be removed according to approved plans and appropriately documented. Hazardous wastes generated during decommissioning may potentially include waste fuel, lubricants, oil, and sorbent media.
Comprehensive Environmental Response, Compensation and Liability Act: (Superfund) Title 42, USC, §§ 9601, et seq.	Establishes mechanisms for the cleanup of accidental spills or releases of pollutants into the environment.	The facility Spill Prevention, Control and Countermeasures plan outlines spill response and reporting procedures to be followed during decommissioning.
State		
California Health and Safety Code, Section 25100 et seq. (Hazardous Waste Control Act of 1972, as amended)	Creates the framework under which hazardous wastes must be managed in California.	All hazardous wastes generated will be removed according to approved plans and appropriately documented. Hazardous wastes generated during decommissioning may potentially include waste fuel, lubricants, oil, and sorbent media.
Title 14, California Code of Regulations, Section 17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)	Establishes minimum standards for solid waste handling and disposal and guidelines to ensure conformance of solid waste facilities with county solid waste management plans as well as enforcement and administrative provisions.	All nonhazardous waste generated during facility decommissioning will be disposed of in manner that complies with these standards.
Title 22, California Code of Regulations, Section 66262.10 et seq. (Generator Standards)	Establishes requirements for generators of hazardous waste.	All hazardous wastes generated will be removed according to approved plans and appropriately documented. Hazardous wastes generated during decommissioning may potentially include waste fuel, lubricants, oil, and sorbent media.
Title 22, California Code of Regulations, Section 67100.1 et seq. (Hazardous Waste Source Reduction and Management Review)	Establishes reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits.	The requirements of this section apply to routinely generated wastes from ongoing processes or operations. If extremely hazardous waste is generated in excess of limits specified in this code section during decommissioning, this regulation will be applicable and all proper reporting will occur.
Title 24, California Code of Regulations, Part 11, Section 5.408 (California Green Building Standards Code)	Establishes standards for construction and waste management and recycling or salvage of a minimum of 65 percent of nonhazardous construction and waste.	NEER expects to sell or recycle much of the Project's equipment and waste, satisfying the 65 percent diversion requirements.

LORS	Description	Comments
Local		
San Bernardino County Fire Department, Hazardous Materials Division	Administers the California laws for hazardous wastes in the proposed Project area. This agency has been designated as the local hazardous waste Certified Unified Program Agency by the State of California.	All hazardous wastes generated will be removed according to approved plans and appropriately documented. Hazardous wastes generated during decommissioning may potentially include waste fuel, lubricants, oil, and sorbent media.

LORS = laws, ordinances, regulations, and standards
USC = United States Code

4.13.1 Applicable Project Conditions of Certification

The CEC Decision included Waste Management COC Requirements 1–14 to mitigate potential waste management impacts. Requirements 2, 4, 6 and 8 are related to hazardous materials, discussed above. Requirements 1, 3, 5, 7, 9, 10, 11, 12, 13, and 14 are not relevant to decommissioning.

4.13.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-WM-1 The Project Owner will comply with the County of San Bernardino's (County) requirement to perform asbestos testing of debris prior to disposal at a County owned and operated sanitary landfill and/or transfer station. Debris generated by decommissioning of SEGS III-VII structures is subject to asbestos clearance prior to disposal at any County disposal site. The Project Owner or its contractor shall obtain disposal authorization from the County Solid Waste Management Operations Section prior to disposal of debris at a County owned waste disposal facility.

D-WM-2 Hazardous decommissioning waste from SEGS III-VII shall be disposed of by the Project Owner or its contractors at a Class I or Class II disposal facility or to a permitted treatment, storage, and disposal facility authorized to treat specified waste streams.

D-WM-3 Non-hazardous decommissioning wastes from SEGS III-VII shall be disposed of by the Project Owner or its contractors at the Barstow Landfill or at facilities approved by the County of San Bernardino, or other appropriate agencies in counties where alternate disposal facilities may be located. The Project Owner shall obtain, or use contractors who have obtained, all applicable County permits for refuse collection and hauling.

D-WM-4 The Project Owner, or its contractor, shall update (if necessary) and utilize the solid waste management plan, which addresses the disposition of solid non-hazardous wastes from the SEGS III-VII facilities. The plan identifies all approved landfill sites in the region which the Project may use for solid waste disposal and describes the amount of waste to be sent to each facility. The plan also identifies non-hazardous waste materials to be diverted from disposal by salvage, sale, recycling, or other form of disposal diversion.

4.14 WORKER SAFETY AND FIRE PROTECTION

This section presents an analysis of LORS compliance and potential environmental impacts and benefits related to worker safety and fire protection that may result from the decommissioning of the Project.

The Project is under the jurisdiction of the San Bernardino County Fire Department. Prior to any decommissioning-related construction occurring on site, the Project Owner shall contact the Fire Department for verification of current fire protection requirements. Decommissioning activities shall comply with the current Uniform Fire Code requirements and all applicable statutes, codes, ordinances and standards of the Fire Department. Per applicable COCs, the Fire Protection Element of the Project Safety Plan will be followed during decommissioning. The plan will be updated, if necessary, to conform with current Uniform Fire Code requirements and submitted to the Fire Department for review and comment.

All workers will undergo proper worker safety training consistent with the CEC license requirements. The Project Owner will ensure that the decommissioning contractor shall comply with federal, state and local worker health and safety regulations.

Adherence to the applicable Safety COCs and decommissioning design measures for the Project through termination of CEC jurisdiction of the Project and compliance with the LORS applicable to worker safety and fire protection will ensure that impacts will be less than significant.

Table 4.14 lists the LORS applicable to worker safety and fire protection.

Table 4.14: LORS Applicable to Worker Safety and Fire Protection

LORS	Description	Comments
Federal		
Federal Occupational Safety and Health Act of 1970, Title 29 of the United States Code, section 651 (29 USC §§ 651 through 678) and implementing regulations, Title 29 of the CFR, General Industry Standards, Sections 1910.1 - 1910.1500	Mandates safety requirements in the workplace.	All applicable worker safety regulations will be followed during decommissioning.
Department of Labor, Safety and Health Regulations for Construction Promulgated Under Section 333 of the contract Work Hours and Safety Standards Act, 40 United States Code 327 et seq. and 29 CFR 1926	Requires meeting employee health and safety standards for construction activities.	All applicable worker health and safety regulations will be followed during decommissioning.
State and Local		
California Occupational Safety and Health Act, 1973	Establishes minimum safety and health standards for construction activities and industrial facilities in California.	These sections provide federal approval of California's plan for enforcement of its own safety and health requirements in lieu of most of the federal requirements found in 29 CFR §1910.1 to 1910.1500.

LORS	Description	Comments
California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.)	Consists of 11 parts containing the building design and construction requirements relating to fire and life safety and structural safety. The Building Standards Code includes the electrical, mechanical, energy, and fire codes applicable to the Project. Local planning/building and safety departments enforce the California Building Code.	All applicable regulations will be followed during decommissioning.
California Fire Code, Part 9 of Title 24 of the California Code of Regulations	The Fire Code contains general provisions for fire safety.	All applicable requirements will be followed during decommissioning.
Uniform Fire Code Standards, a companion publication to the California Fire Code	Contains standards of the ASTM and the National Fire Protection Act. The San Bernardino County Fire Department administers the Uniform Fire Code.	All applicable requirements will be followed during decommissioning.
Industry Codes and Standards		
San Bernardino County General Plan (2007) Safety Element	Goal S3 of the Safety Element of the San Bernardino County General Plan reads “The County will protect its residents and visitors from injury and loss of life and protect property from fires”. The Plan establishes policies and describes programs intended to accomplish this goal.	All applicable safety and fire requirements will be followed during decommissioning activities.
ANSI A10.6-1990	Safety requirements for decommissioning operations.	All applicable requirements will be followed during decommissioning activities.

CFR = Code of Federal Regulations
County = San Bernardino County
LORS = laws, ordinances, regulations, and standards

4.14.1 Applicable Project Conditions of Certification

The CEC Decision included Public/Worker Safety COC Requirements 1 through 22 to mitigate potential impacts to public and worker safety. Requirements 1, 7, 8, 9, 10, 11, 15, 16, 17, 20, 21 and 22 are not relevant for decommissioning. Requirements 2 through 6 are addressed in D-HAZ-1 above. Requirement 12 is addressed in D-TRAFFIC-1 above. Requirements 18 and 19 are supplemented by D-WS-1 and D-WS-2 below.

4.14.2 Proposed Additional Decommissioning Design Measures

The following design measures are proposed to be implemented during decommissioning to ensure that activities conform with applicable LORS.

D-WS-1 The Project Owner, or its demolition contractor, shall prepare or update the existing Health and Safety Plan elements (including the fire protection element) to reflect the activities expected during decommissioning. At least thirty (30) days prior to the start of decommissioning, the Project Owner shall submit to the CPM for review and approval a copy of the Project Demolition Health and Safety Program, the Demolition Emergency Action Plan, the Demolition Fire Prevention Plan to the San Bernardino County Fire Department for review and comment. The Project Owner shall provide a letter with the San Bernardino County Fire

Department's comments on the Demolition Health and Safety Program, Demolition Emergency Action Plan, and the Demolition Fire Prevention Plan to the CPM.

D-WS-2 The Project Owner shall ensure that all SEGS III-VII employees, contractors, and visitors that will be on-site during decommissioning receive safety training. In the monthly compliance report to the CPM, the Project Owner shall provide copies of the training class sign-in sheets indicating the employees who were provided safety training during the month.

4.15 ALTERNATIVES ANALYSIS

Under CEQA, an "Alternatives Analysis" is not required for demolition of facilities or decommissioning activities, except for the demolition of facilities of historical significance, which is not applicable here.[2] Decommissioning is ministerial, such that it is not a "project" as that CEQA term of art is defined. Additionally, the CEQA requirement to prepare an Environmental Impact Report, including the preparation of an alternatives analysis, is triggered when a proposed action requires a discretionary approval by a governmental agency and when there is substantial evidence that the action may result in a substantial adverse change in the environment.3[3] Because the CEC's Certified Regulatory Program is CEQA-equivalent, an alternatives analysis for decommissioning is not required. However, because the CEC has requested such an analysis in COC DECOMMISSIONING-1, this section provides a discussion of alternatives.

4.15.1 No Project: Discontinued Operation of the Existing Facility without Repowering with Photovoltaic Solar

The discontinued use of the existing project as a solar thermal facility will be equivalent to the "no project" alternative. The existing project has ceased operations and maintenance costs to maintain the project facilities in place will continue to grow. The no project alternative will not allow for the decommissioning and removal of certain project structures and equipment so that the project could convert from a concentrated solar thermal facility to a new PV solar facility. This alternative will not be the preferred alternative because the no project alternative will not allow for the beneficial use of site as a cleaner solar energy producing project.

4.15.2 Return Site to Pre-Project State

Returning the Project site to the pre-project state will involve the complete decommissioning of all Project structures and equipment. This alternative will not be the preferred alternative because it will remove a renewable energy source from the State of California. When operational, the SEGS III-VII project assisted the State in complying with the Renewables Portfolio Standard under Senate Bill 350, which requires that by December 31, 2030, 50 percent of all electricity sold in the State shall be generated from renewable energy sources, and the repowering of the site with solar PV will continue contributing to the State standard.

4.15.3 Decommissioning and Reuse of Existing Facility

Decommissioning of the existing concentrated solar thermal facility for reuse as a solar PV facility is the environmentally preferred alternative. Although decommissioning of the existing facility will result in some temporary impacts, its reuse as a solar PV facility will make beneficial use of existing developed land of low environmental and habitat quality. The reuse of the Project as a solar PV facility will continue to provide San Bernardino County and the State of California with a renewable energy source that is on

[2] See 20 California Code of Regulations 15064.5(b) and 20 California Code of Regulations 15126.4(b).

[3] See Public Resources Code § 21080 and 14 California Code of Regulations §§ 15002, 15382.

previously permitted and disturbed land. It will assist the state in complying with the Renewables Portfolio Standard under Senate Bill 350, which requires that by December 31, 2030, 50 percent of all electricity sold in the State shall be generated from renewable energy sources. The following are the benefits of the proposed reuse of the site as a PV solar facility:

- Develops a previously disturbed power-generating site that uses existing transmission infrastructure to minimize environmental impacts.
- Develops a solar PV facility that has the same or fewer environmental impacts than the facility currently in operation at the property.
  - Same development footprint
  - Fewer visual impacts with lower profile PV panels, no power block, and no cooling tower plume
  - Fewer air quality impacts with the shutdown of gas-fired heaters, exhaust towers and cooling towers, compared to its previous use as a solar thermal facility
  - Less water use and wastewater generated with shutdown of the steam turbine generator, compared to its previous use as a solar thermal facility
  - Less hazardous waste generated with no HTF needed for solar PV technology
  - Less potential of spills of hazardous materials due to the lack of heat transfer fluid
  - Less GHG generated with the shutdown of the existing gas-fired heaters, compared to its previous use as a solar thermal facility
- Establishes solar PV power-generating facilities and energy storage technology of sufficient size and configuration to produce reliable electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.
- Uses proven and established PV and energy storage technology that is efficient, requires low maintenance, and is recyclable.
- Assists California in meeting its GHG emissions reduction goals by 2030 as required by the California Global Warming Solutions Act (Assembly Bill 32), as amended by Senate Bill 32 in 2016.
- The redevelopment of the site as a solar PV facility is consistent with the County of San Bernardino General Plan. The RECE of the General Plan, with the adoption of Policy 4.10, a newly proposed utility-oriented RE Project is prohibited in RC and RL Land Use Districts. The future PV Project remains consistent with the RECE because the Project is an upgrade to an existing commercial solar energy facility. The Project includes the decommissioning of the existing thermal power facility and the redevelopment of the proposed PV solar facility entirely within the existing solar site, with no expansion of the existing footprint. The Project is consistent with RE Policy 5.2(x), adopted at the same time as Policy 4.10, which includes existing energy generation sites, like the Project site, as a suitable location for utility-oriented renewable energy generation projects.

5.0 REFERENCES

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APPENDIX A: CALIFORNIA ENERGY COMMISSION CONDITION OF CERTIFICATIONS FOR SEGS III-VII

COMPLIANCE PLAN

FOR

LUZ ENGINEERING CORPORATION'S

SOLAR ELECTRIC GENERATING SYSTEMS

UNITS III - VII

KRAMER JUNCTION

SAN BERNARDINO COUNTY

87-AFC-1C

Prepared by Staff of the
California Energy Commission's
Energy Facility Siting and
Environmental Protection Division
Compliance Unit
1516 9th Street, M.S. 2000
Sacramento, CA 95814

May 25, 1988

COMPLIANCE PLAN GENERAL PROVISIONS
Luz Solar Electric Generating Systems
Units III - VII

Section 25532 of the Public Resources Code provides that the California Energy Commission (CEC) shall establish a monitoring system to assure that a certified facility is constructed and operated in compliance with air and water quality, public health and safety, environmental and other applicable regulations, guidelines, and conditions adopted or established by the CEC and specified in the written Decision on the Application for Certification (AFC). The project compliance plan is formulated to satisfy that directive.

The CEC's jurisdiction extends only to the power plant and related facilities, the transmission tap line to the point of interconnection with the power grid and the fuel system from the major distribution system or existing storage facility.

Significant features of the plan include:

- Utilization of delegate agencies, where possible, to monitor specific elements of the compliance plan,
- A compilation of all compliance Conditions of Certification,
- Compliance verification of each Condition by a qualified professional,
- Periodic Compliance Reports filed by Luz, and
- An Annual Compliance Report filed by Luz.

Organization of the Plan

The compliance requirements are organized by technical discipline. Every requirement stated in the Commission Decision is included in the Compliance Plan. The sources of the requirements and implementing authority are listed for each requirement. Where requirements are applicable to more than one technical discipline or phase of the project, the requirement and corresponding verification procedure is listed in only one section and that section is referenced in the other sections having the same requirement.

Delegate Agencies

The Warren-Alquist Act provides the CEC with exclusive siting authority for thermal power plants and related facilities 50 mwe or greater. To the extent permitted by law, the CEC shall delegate authority for compliance verification to various state and local agencies who have expertise in subject areas where specific requirements have been established as a condition of certification. If a delegate agency is unwilling or unable to participate in this program, the CEC shall establish an alternative method of verification.

Substitute Agency

Whenever an agency's responsibility for a particular area is transferred by law to another entity, all references to the original agency shall be interpreted to apply to the successor entity.

Compliance Project Manager

A Compliance Project Manager (CPM) will be designated to oversee the implementation of the Compliance Plan. Specifically, the assigned CPM, after consultation with and the approval by the appropriate technical staff, Division, and Commission Management, shall be responsible for implementing the approved compliance plan after certification, for documenting and tracking compliance plan filings, for maintaining the compliance record files, and for initiating the dispute resolution procedure if required, and for processing any amendments for changes to the project or to the conditions of certification.

Verification of Compliance

All compliance submittals and correspondence pertaining to compliance matters shall include a cover letter with reference to the appropriate condition number, description of the submittal, and shall be addressed as follows:

Compliance Project Manager (87-AFC-1C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

Any need for CEC Staff action in a prescribed time, or by a preferred date, shall be specifically requested and shall include the response date and circumstances requiring a response by that date.

Each Condition of Certification described in the compliance section is followed by a means of verification. The verifications are not intended to be a part of the Conditions, but are the CEC Compliance Unit's procedures to ensure post-certification compliance with adopted Conditions. As such the verification procedures may be modified by Staff as necessary to carry out the compliance monitoring mandate without Commission approval. Verification of compliance with the Conditions of Certification will be accomplished by: Periodic Compliance Reports filed by Luz; appropriate letters from delegate agencies verifying compliance; auditing project records; or by inspecting the power plant site and related facilities.

All verification submittals shall be submitted by Luz, whether such verification was performed by Luz or another agent, and whether or not such verification was simultaneously submitted to the CPM.

The CEC CPM, or other designated CEC Staff and associates, shall be guaranteed and granted access to the power plant and related sites at times reasonable to conduct audits, surveys, or general site visits.

Periodic Compliance Reports

Periodic Compliance Reports as required by the compliance plan, are to be submitted by Luz to the CEC CPM and shall be filed at least once each quarter within 45 days after the end of the reporting quarter. These reports shall be numbered consecutively, and contain as a minimum:

- A summary of the current project construction or operating status;
- A listing, by compliance plan technical section, of compliance plan requirements scheduled during the reporting period, with a corresponding description of the status of the requirements, i.e., completed, not started, or in progress;
- For those compliance plan requirements which Luz had expected to satisfy during the reporting period but which were not satisfied, include a statement of how and when Luz intends to satisfy the requirements;
- A listing of any changes to compliance activities which have resulted from negotiations between Luz and the CEC or its delegate agencies (changes to conditions of certification or compliance requirements must be approved by the CEC prior to implementation);

- Notification of any filings made with other governmental agencies having permitting authority over any aspect of the project; and,

- A projection of project compliance activities scheduled during the next two reporting periods.

Noncompliance

Any person or agency may file a complaint alleging noncompliance with the Conditions of Certification. Such a complaint will be subject to review by the CEC and can result in proceedings pursuant to Title 20, California Code of Regulations, section 1230 et seq.

Enforcement

The CEC's legal authority to enforce its Compliance Plan is specified in the California Public Resources Code, sections 25532, 25534, and 25900. The Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Commission Decision.

Moreover, to ensure compliance with the terms and conditions of certification and applicable laws, ordinances, regulations, and standards, delegate agencies, as set forth in this document, are authorized to take any action allowed by law in accordance with their statutory authority, regulations, and administrative procedures.

Compliance Record

Luz shall maintain, for the life of the project, files of all "as-built" documents referenced in this report. Staff of the CEC and delegate agencies shall, upon reasonable notification, be given access to the files.

The CEC shall maintain as a public record:

- All attestments to the fulfillment of legal requirements;

- All periodic and annual compliance reports filed by Luz; and,

- All documents relative to complaints of noncompliance filed with the CEC.

Confidential Information

Any information which Luz deems proprietary shall be submitted to the Executive Director pursuant to Title 20, California Administrative Code, section 2505(a). Any information which is determined to be confidential shall be kept confidential as provided for in Title 20, California Administrative Code, section 2501 et seq.

Dispute Resolution Procedure

The following mediation procedure is designed to informally resolve, when possible, disputes concerning interpretation of compliance with the requirements of the Compliance Plan. Luz, the CEC, or any other party may initiate this procedure when time is critical in resolving a problem or when the alleged noncompliance does not appear significant enough to warrant a more formal investigation and proceeding.

The procedure is not intended to be a substitute for, or prerequisite to, the more formal complaint and investigation procedure specified in Title 20, California Administrative Code, section 1230 et seq. Nor may the procedure be used to change the terms and conditions of certification as approved by the CEC.

The procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be referred to the CEC for consideration.

- Request for Informal Investigation -- Any individual, group, or agency may request the CEC to conduct an informal investigation of an alleged noncompliance with the CEC's terms and conditions of certification. All requests for an informal investigation shall be made to the designated CEC CPM.

  Upon receipt of a request for investigation, the CPM shall promptly notify Luz, by telephone and subsequently by letter, of the allegation. All known and relevant information of the alleged noncompliance shall be provided to Luz and to the CEC Staff. Luz shall promptly investigate the matter and within seven working days provide a written report of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request Luz to provide an initial report, within 48 hours, followed by a written

report filed within 7 days.

- Request for Informal Meeting -- In the event that either the party requesting an investigation or the CEC staff is not satisfied with Luz's report, investigation of the event, or corrective measures undertaken, either party may request, by written request to the CPM, a meeting with Luz. Such request shall be made within 14 days of Luz's filing of its written report. Upon receipt of such a request, the CPM shall:

  * Immediately schedule a meeting with the requesting party and Luz, to be held at a mutually convenient time and place;

  * Secure the attendance of appropriate CEC Staff and staff of any other agency with general jurisdiction and expertise in the subject area of concern as necessary;

  * Conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and

  * Promptly after the conclusion of such a meeting, prepare a summary memorandum which fairly and accurately identifies the positions of all parties and any conclusions reached and distribute copies to all attendees.

- Request for Commission Hearing -- If either Luz, CEC Staff, or the party requesting an investigation is not satisfied with the results of said informal meeting, such party may, within 10 working days, request in writing, a hearing before the Commission's Siting and Regulatory Procedures Committee. The Committee shall, upon receipt of a written request stating the basis of the dispute and the attempt at informal resolution thereof, grant a hearing on the matter, consistent with the requirements of noticing provisions, and shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction.

Change in Ownership/Operator

Any change in ownership and/or operator of the CEC Certification licensed facility, or any portion of that facility, must be approved prior to the actual transfer of such ownership or the appointment of new operators. Such a change must be submitted through the CEC Compliance Unit, and must include:

- a statement describing the financial arrangements

between the present owner and/or operator and future owner and/or operator, as applicable, and a discussion of any significant changes in the operational relationship between the owner and the operator; and,

- a statement signed by a corporate officer of the new owner/operator that the Commission Decision and its Conditions of Certification have been explained to the new owner/operator, that new owner/operator understands the Conditions of the Commission Decision, and the new owner/operator agrees to abide by those duties and obligations as described and intended.

Amendment to Decision

Any proposed change to the Conditions of Certification, with the exception of the verifications, as contained in the Commission Decision will require an amendment to the Decision. Such changes shall be made according to the following procedure:

The CEC Staff, power plant developers or other parties shall be required to submit, in writing, to the CPM, any request for a post-certification change to Conditions of Certification. All requested changes shall require final analysis and approval by this Commission.

Upon receiving a request, the CPM shall notify interested parties to allow them the opportunity to comment on the proposed change.

Staff shall investigate the request and upon completion of its investigation submit its recommendation on the request to the Commission for consideration and Commission action. Any approval of changes to Conditions of Certification will come from this Commission.

SECTION 1

AIR QUALITY

APPLICABLE LAWS, STANDARDS, REGULATIONS, PLANS AND POLICIES

FEDERAL

EPA has determined, in a letter dated March 2, 1988, that the SEGS III through VII projects, as one facility are exempt from PSD review requirements as no pollutant exceeds the 100 ton per year trigger level for PSD review. However, the total NOx emissions from the five projects are very close to the 100 ton trigger, so any modifications to operations that increases emissions or hours of operation may trigger PSD requirements. Therefore, the PSD requirements are summarized in this testimony.

According to Title 40, Code of Federal Regulations (CFR) Part 52, Prevention of Significant Deterioration the PSD Program is designed to protect areas that have better air quality than that specified by the NAAQS, i.e., attainment areas. The requirements apply to new major stationary sources or major modifications to existing stationary sources located in these areas. A new source is considered major if emissions of any pollutant exceed either 100 tons/year for 28 listed source types or 250 tons/year for any other source type. PSD review is required of any modified major source that exceeds the pollutant significance levels specified in Air Quality: Table 17. EPA considers the SEGS III through VII units to be one new source and not modified sources, therefore the 100 ton trigger applies for PSD review.

Once a source is determined to be subject to PSD review, the following requirements may apply on a pollutant-by-pollutant basis:

The emissions must be controlled using Best Available Control Technology (BACT).

The air quality impacts in combination with other PSD

sources must not exceed maximum allowable incremental increases for SO_2 and PM.

The air quality impacts of all sources in the area plus ambient pollutant background levels cannot exceed the NAAQS.

Pre- and/or post-construction air quality monitoring may be required.

The air quality impacts on soils, vegetation, and nearby PSD Class I areas must also be addressed. National parks and wilderness areas are designated as Class I areas, where practically any deterioration in air quality is considered significant. Class II applies to areas where moderate, well controlled industrial growth could be permitted. Class III areas allow for greater industrial growth. No Class III areas exist at this time.

Title 40, CFR Part 60, includes various provisions such as monitoring and data reporting requirements. Briefly, these requirements are:

CFR Part 60.7 (a) (1) requires that an operator provide to the EPA written notification within 30 days after the construction of an affected facility (an electric utility steam gathering unit capable of combusting more than 250 MMBtu/hr and construction commenced after September 18, 1978) begins.

CFR Part 60.7 (a) (2) requires that an operator provide written notification of the anticipated date of initial start up of an affected facility to EPA postmarked no more than 60 days nor less than 30 days prior to such date.

CFR Part 60.7 (a) (3) requires that an operator provide to EPA written notification of the actual date of initial start up of the affected facility.

CFR Part 60.7 (c) requires that each operator required to install a continuous emissions monitoring system (CEMS) shall submit a written report of excess emissions to the EPA for every calendar quarter postmarked by the 30th day following the end of each quarter.

CFR Part 60.8 (a) requires that within 60 days after achieving initial start up of each affected facility, the operator of such facility shall conduct performance tests (source tests per the requirements of 40 CFR 60.48a) and furnish to the EPA a written report of the results of such performance tests.

CFR Part 60.47a (c) requires the operator of an affected facility to install, calibrate, maintain, and operate a CEMS and record nitrogen oxides emissions discharged into the atmosphere.

CFR Part 60.47a (d) requires the operator of an affected facility to install, calibrate, maintain, and operate a CEMS and record the oxygen (O_2) or carbon dioxide (CO_2) content of the flue gases at each location where NO_x emissions are monitored.

CFR Part 60.49a (a) requires an operator of an affected facility to submit to the EPA a NO_x performance test (as required by 40 CFR 60.8) and a performance evaluation of the CEMS (as required by 40 CFR 60.13).

CFR Part 60.49a (i) requires an operator of an affected facility to submit to the EPA written reports required by 40 CFR 60.49a and 60.7 (c) for each calendar quarter postmarked by the 30th day following the end of each quarter.

The EPA has identified a number of pollutants as potentially hazardous because of their adverse impacts on public health. These pollutants are being reviewed by the EPA under Section 112 of the Clean Air Act to establish National Emission Standards for Hazardous Air Pollutants (NESHAP). Among the pollutants being reviewed for NESHAP that are emitted by the Luz SEGS facilities are benzene and formaldehyde. A preliminary assessment of the impact of these pollutants is therefore included in this testimony.

STATE

State California Health and Safety Code, section 41700, requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property".

California Environmental Quality Act guidelines (Title 14, CAC Article 9, Section 15130) requires that the analysis for the Luz SEGS project include a cumulative assessment of impacts with those of any other reasonably foreseeable future projects in the project area.

LOCAL

San Bernardino County Air Pollution Control District (SBCAPCD) Rules and Regulations are applicable. A brief summary of the applicable rules are:

Rule 201 requires authorization from the SBCAPCD before constructing a new air pollution source.

Rule 203 requires authorization from the SBCAPCD before operating a new air pollution source.

Rule 204 allows the SBCAPCD to impose conditions on any permit to assure compliance with all applicable regulations.

Rule 212 states that a permit to construct or operate will be denied unless an applicant shows that the equipment will be operated without emitting air contaminants in violation of Sections 41700 and 41701 of the State Health and Safety Code or of the SBCAPCD Rules.

Rule 218 requires stack monitoring at the discretion of the Air Pollution Control Officer (APCO) for NO_x and CO_2 or O_2 for steam generators with a heat input greater than 256 million British Thermal Units (MMBTU).

Rule 401 prohibits a source from emitting effluent as dark or darker in shade than Number 1 on the Ringelman Chart for more than three minutes in any one hour.

Rule 402 prohibits a source from discharging effluent that could cause injury, detriment, nuisance, annoyance, or endanger the health or safety of the public.

Rule 403 prohibits emissions of fugitive dust from any transport, handling, construction, or storage activity so that the dust remains visible beyond the emission source property line. Particulate matter (PM) concentrations shall not exceed 100 micrograms per cubic meter when determined as the difference between upwind and downwind samples collected on high volume samplers at the property line for a minimum of 5 hours.

Rule 404 restricts the PM concentration emitted into the atmosphere based on the gas volume discharged.

Rule 405 restricts the PM emission rate of a source, based on a process weight/hour. The maximum allowable PM emission rate for any source is 30 lb/hr.

Rule 406 prohibits the emission of sulfur compounds greater than 500 ppm by volume.

Rule 407 prohibits the emission of CO greater that 2000 ppm measured on a dry basis.

Rule 409 prohibits the emission of combustion contaminants exceeding 0.23 gm/m^3 (0.1 grains per cubic foot) calculated to 12 percent of CO_2 at standard conditions averaged over a minimum of 15 consecutive minutes.

Rule 431 prohibits the burning of gaseous fuels containing sulfur compounds in excess of 800 ppm calculated as H_2S.

Rule 442 restricts the amount of volatile organic material that may be emitted into the atmosphere.

Rule 474 prohibits the emission of NO_x to exceed 125 ppm from any natural gas-fired steam generating equipment, calculated at 3 percent O_2 on a dry basis averaged over a minimum of 15 consecutive minutes.

Rule 475 prohibits the emission of NO_x to exceed 80 ppm from any natural gas-fired equipment having a maximum heat input rate of more than 50 MMBTU used to produce electric power. Combustion contaminant emissions must also be less than 11 lb/hr and 23 milligrams per cubic meter (0.01 gr/SCF), calculated at 3 percent O_2 on a dry basis averaged over a minimum of 15 consecutive minutes.

Rule 476 has the same emission limit requirements as Rule 475, but pertains to steam generating equipment.

Rule 902 includes reporting requirements of start-up dates and emission rate testing results of a new source.

Rule 903 prohibits emissions for new or modified fossil fuel-fired steam generating units of at least 250 MMBTU/hr heat input to exceed: 1) 0.1 lb PM/MMBTU heat input; 2) 20 percent opacity or greater except that a maximum of 40 percent opacity shall be permissible for not more than two minutes in any one hour; 3) 0.20 lb. of NO_x/MMBTU when gaseous fuels are burned. Rule 903 also contains stack emission monitoring requirements.

Rule 1303 defines what type of source is reviewed by Regulation 13: a new stationary source or a modification to an existing stationary source which emits more than 250 lb/day of any criteria air pollutant or organic gases, or 750 lb/day of CO. A permit to construct will be denied for sources subject to this regulation, unless: 1) The new source complies with all applicable rules and regulations of

the District; 2) All stationary sources owned or operated by the applicant in the state of California are in compliance with all applicable emission limitations and standards; 3) The new or modified source will be constructed using BACT for each pollutant subject to this rule; and 4) The net increase emissions for each affected contaminant has been offset pursuant to Rule 1307.

Rule 1305 requires that new permits be obtained for sources to be used for emission offsets, and for permits to be surrendered for units being taken out of service for emission offsets.

Rule 1306 sets guidelines for calculating emission increases or reductions to be used for emission offsets under Rule 1307 and for emission banking under Rule 1309. Emission reductions that require a source to comply with federal, state, or SBCAPCD laws, rules, or regulations shall be excluded from the accumulation of the total emission reduction credit for that source.

Rule 1307 specifies the type of source and pollutant that requires emission offsets, and the offsetting ratio required for a given emission increase. The minimum offset ratio is 1.2 to 1.0.

Rule 1308 identifies the eligibility of emission sources to be used as offsets for Rule 1307.

Rule 1309 quantifies the banking of emission sources for offsets.

Rule 1311 designates the SBCAPCD reviewing role for any power plant proposed to be constructed in the District for which an AFC has been accepted by the CEC.

Rule 1313 outlines conditions for providing a permit to operate, including that all offset conditions required in the permit be finalized prior to issuing a permit to operate.

Requirements:

NOTE:Requirements 1 and 2 are CEC Staff conditions while requirements 11 through 35 are SBCAPCD conditions included in the DOC.

1-1. In response to Soil Conservation Condition No. 1, Luz shall provide a discussion of the following control measures and justify any measures that Luz chooses not to implement.

a. Adequate dust suppression water applications (at least three times daily) to all actively disturbed construction areas. These areas include areas where grubbing, grading, or compacting activities occur.

b. The application of a non-toxic wetting or other agent that would be mixed with the water to increase dust control efficiency.

c. Stabilize, seal, or pave all dirt roads in the construction areas.

d. Any disturbed area not covered with a foundation or pavement within 14 days after completion of disturbing activities, would be stabilized with a soil crusting or coating agent. All completed cuts and berms would be treated with these soil stabilizing agents.

e. When wind speeds increase enough to transport fugitive dust across U.S. Highway 395 or State Highway 58, immediately increase water applications and/or curtail ground disturbing activities to the extent necessary to eliminate this impact.

f. If wind speeds exceed 25 miles/hour for a 15 minute averaging period at the Luz air quality monitoring station during construction hours, curtail all ground disturbing activities unless measures can be implemented that will prevent fugitive dust from being transported onto Highways 395 and 58.

Luz shall demonstrate compliance with Air Quality Condition 1-32.

Verification: Refer to Soil Conservation Verification 1 and Air Quality Verification 1-20.

1-2. Luz shall submit to the California Energy Commission (CEC) Compliance Project Manager (CPM) the Total Suspended Particulate (TSP) Air Monitoring Plan which shall include methods and schedules of monitoring TSP at the SEGS VII construction sites.

Verification: Luz shall submit to the CEC CPM the plan described above at least 30 days prior to the commencement of construction of SEGS VII. Luz shall not commence construction of SEGS VII until written approval by the CEC CPM of the plan described above is received by Luz.

1-11. Applicable District Rules. Luz is required to meet and comply with all applicable rules and regulations of the San Bernardino County Air Pollution Control District (SBCAPCD).

Verification: In the Annual Compliance Report, Luz shall provide the California Energy Commission (CEC), Compliance Project Manager (CPM) with a statement attested to by the responsible LUZ agent that the SEGS III through VII projects are in compliance with all air quality terms and conditions of certification and a summary of all LUZ-SBCAPCD correspondence relative to any non-compliance or potential non-compliance if not otherwise provided.

1-12. Other Applicable Regulations. The owner and operator of each of the proposed projects (SEGS III through VII) shall assure that the construction and operation of the proposed stationary source (SEGS III through VII) is in compliance with all applicable provisions of federal (including 40 CFR Section 60.7, 40 CFR Section 60.8, 40 CFR Section 60.13, 40 CFR Section 60.47a, 40 CFR Section 60.48a and 40 CFR Section 60.49a) and state air quality regulations, as well as those of the SBCAPCD.

Verification: In the Quarterly Compliance Report, Luz shall provide the CEC CPM status reports for the Code of Federal Regulation Requirements discussed above for each SEGS unit (SEGS III through VII).

1-13. Permit Conditions: The New Source Review and SBCAPCD permits are considered by the SBCAPCD to be specific limitations for this proposed project. Any changes to the operations which change emissions will be subject to a separate and independent SBCAPCD and CEC CPM review. Also, SBCAPCD required emission controls for each SEGS unit (SEGS III through VII) cannot be changed without the SBCAPCD's Executive Officer and CEC CPM approval.

Verification: Sixty (60) days before implementing any major change identified above, Luz shall submit to the SBCAPCD and the CEC CPM the design details of the proposed change and a discussion of the potential change in air emissions from the project. Luz shall receive written approval from the CEC CPM prior to instituting said change.

1-14. BACT Requirement. Luz will be required to use Best Available Control Technology (BACT) as specified herein (low NOx Burners, 80 ppm or less, dry at 3% O_2) and shall install 20 percent Flue Gas Recirculation to further reduce NOx emissions on SEGS VI and VII. BACT for CO for each SEGS unit is 100 ppm and shall be verified by annual test and maintained by good engineering practice and proper operating technique. Determination of NOx and/or CO concentrations in ppmv shall be over a 15 minute averaging period at 3 percent oxygen, dry. Compliance with emission limits (ppmv) shall be met when the load level is equal to or greater than 20 percent of design capacity.

Luz has submitted applications for each specific permit describing the equipment to be used as to controls and control efficiencies. Written approval from the SBCAPCD Executive Officer and the CEC CPM is necessary prior to making any change in previously approved BACT or more stringent controls specified herein. Such changes will, in general, be limited to revisions which reduce emissions and/or improve air quality beyond the levels presented in this review.

Verification: Sixty (60) days before implementing any change to the NOx emissions control equipment, use of the equipment, or control efficiencies, Luz shall submit to the SBCAPCD and the CEC CPM the design details (including "Approved for Construction" drawings), operation procedure changes, or control efficiency changes. Luz shall not precede with any changes described above until written approval is received from the CEC CPM.

1-15. Design Changes. Any substantial changes to the design, as permitted, must be submitted to the SBCAPCD and the CEC CPM for approval prior to incorporation into the facility design, construction and/or operation. A substantial change, as defined in this condition, includes any modifications to the design or operation of the air emissions control system (AECS), emissions monitoring system (EMS), or the air emissions computer control system (CCS).

Verification: Sixty (60) days before implementing any change to the auxiliary boiler/superheater steam generator, emergency oil heater, emergency generator, emergency fire pump or cooling tower, Luz shall submit to the SBCAPCD and the CEC CPM the design details of the proposed change (including "Approved for Construction" drawings), and a discussion of the potential change in air emissions. Luz shall not proceed with any changes described above until receiving written approval from the CEC CPM.

1-16. Permit Expiration. The Authorities to Construct for SEGS III through VI shall be superseded upon the issuance of the Commission Decision. These Authorities to Construct automatically expire in two years. A Permit to Operate (PTO) for SEGS III through VII must be obtained by complying with the provisions of the Commission Decision's Conditions of Certification and the provisions of the SBCAPCD's Determination of Compliance evaluation for SEGS III through VII. Permits must be renewed annually, in accordance with SBCAPCD regulations.

Verification: Luz shall submit copies to the CPM CEC of correspondence between Luz and the SBCAPCD concerning PTO renewals for SEGS III through VII.

1-17. Notification of Commencement of Construction and Startup. Luz must notify the SBCAPCD Executive Officer and the CEC CPM in writing of the anticipated date of initial start-up (as defined in 40 CFR 60.2[o]) of each functional subsystem or facility at each SEGS unit and the actual date of commencement of construction and start-up.

Verification: Luz shall notify the CEC CPM and the SBCAPCD Executive Officer in writing of the anticipated date of initial start-up not less than thirty (30) days prior to such date and the actual date of commencement of construction and start-up within fifteen (15) days

after such date.

1-18. Facilities Operation. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of the Commission Decision's Conditions of Certification shall, at all times, be maintained in good working order and operated as efficiently as possible consistent with minimum air pollutant emissions, and with the levels specified herein.

Verification: Luz shall make the SEGS III through VII sites available for inspection by the SBCAPCD, CARB, and CEC staff.

1-19. Malfunction/Breakdown Provisions. The SBCAPCD shall be notified of any process anomaly, malfunction of any air pollution control equipment, or malfunction of process equipment which results in a violation of applicable SBCAPCD rules, emission limits or conditions required herein. Notification shall be made promptly, and in accordance with SBCAPCD regulations (generally within one hour of the malfunction or within one hour of the time the malfunction reasonably should have been detected). The estimated time for repair or correction of the malfunction shall be reported as soon as possible thereafter. Typically, the SBCAPCD expects repairs to be completed within 24 hours or within a time determined to be reasonable by the SBCAPCD Executive Officer. In the event equipment repairs cannot be accomplished promptly, the SEGS III, IV, V, VI and VII owner/operator(s) must either shut down the equipment, or petition the CEC Compliance Committee with an amendment pending correction of the malfunction of the process or control equipment. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense for any violations of the Commission Decision or of any law or regulations which such malfunction may cause.

Verification: Luz shall notify the SBCAPCD, per the requirements of the SBCAPCD rules and regulations, of any malfunction described above. In the Quarterly Compliance Reports, Luz shall submit a summary of all malfunctions reported to the SBCAPCD and the appropriate actions taken. This information shall include, but not be limited to: a complete description of the malfunction including equipment failure(s) or procedural deviations, the time and day the malfunction

occurred, the duration of the malfunction, the pollutant(s) and quantity of emissions as a result of the malfunction, and the mitigation measures employed to correct the malfunction. In the event Luz petitions the CEC Compliance Committee for an amendment, Luz shall submit copies of the application for an amendment SBCAPCD.

1-20. Right to Entry. The Executive Officer of the SBCAPCD, the Executive Officer of the California Air Resources Board, the Administrator of the Environmental Protection Agency, and the Executive Officer of the California Energy Commission and/or their authorized representatives, upon the presentation of credentials, shall be permitted:

a. To enter upon the premises where the source is located or any location where records are required to be kept under the terms and conditions of the Commission Decision's Conditions of Certification or PTO; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of the Commission Decision's Conditions of Certification, or a PTO; and

c. To inspect any equipment, operation, or method required in the Commission Decision's Conditions of Certification, or a PTO; and

d. To test for or otherwise sample emissions from the source.

Verification: Luz shall make the SEGS III through VII sites and records available for inspection by the SBCAPCD, CARB, EPA and CEC during both construction and operation of the project.

1-21. Transfer of Ownership. In the event of any changes in control or ownership of facilities to be constructed or modified, the Commission Decision/Permit to Operate shall be binding on all subsequent owners and operators. Luz shall notify the succeeding owners and operators of the existence of the Commission Decision/Permit to Operate and its conditions by letter, with a copy forwarded to the SBCAPCD and the CEC CPM.

Verification: If control or ownership of SEGS

III, IV, V, VI or VII is transferred to new owners or operators, Luz shall notify the CEC CPM in writing within 10 days of that change of ownership or operation responsibility. Luz shall forward copies of the notification to succeeding owners and include the appropriate Commission Decision/Permit to Operate correspondence to the SBCAPCD and the CEC CPM.

1-22. Severability. The provisions of the Commission Decision are severable, and, if any provision of the Commission Decision is held invalid, the remainder of the Commission Decision shall not be affected thereby.

Verification: No Verification.

1-23. Emission Limits - Installation and Testing Phase. During the plant installation, start up and acceptance testing phase, which shall continue through the completion of the SBCAPCD's required compliance tests of SEGS III through VII, Luz shall be required to apply the best commonly accepted boiler operating procedures and techniques to comply with emission limits of Table I and II and statutory limits set forth in the SBCAPCD Rules and Regulations.

The emission estimates are based on an emission limit for NOx of 80 ppm for SEGS III through V and 40 ppm for SEGS VI and VII. Emission limits of 80 ppm for SEGS III, IV and V, and 40 ppm for SEGS VI and VII, are volumetric measures which are corrected to 3 percent oxygen on a dry basis. Final emission limits, as per these special conditions, for the SEGS VI and/or VII boiler/superheater NOx emissions will be determined by compliance tests. If the initial compliance test indicates that the SEGS VI and/or VII boiler/superheater emissions do not comply with the NOx emission limit of 40 ppm, dry at 3% O_2, Luz shall be required to submit a report describing the cause of the higher emissions concentration and a plan which identifies appropriate technical changes or measures that might be undertaken with the existing control technology (FGR and low NOx burners) to further reduce the emissions. Upon approval by the San Bernardino County Air Pollution District's Executive Officer and the CEC CPM, Luz shall implement the approved changes contained in this plan. After implementation of the plan and a good faith effort by Luz (as determined by the San Bernardino County Air Pollution Control

District's Executive Officer and the CEC CPM), should compliance testing still indicate that NOx emissions from the SEGS VI and/or VII boiler/superheater do not meet the 40 ppm, dry at 3% O_2 limit, the San Bernardino County Air Pollution Control District's Executive Officer and the CEC CPM may recommend to the Compliance Committee that the emissions limit be modified to reflect the level which is achievable with the existing control equipment.

Emissions during the installation, acceptance, and testing phase shall be minimized and all instances of known or suspected emissions in excess of the total for the aggregate project as shown in Table III which are a result of installation/maintenance shall be reported as a breakdown, Rule 430, and in writing to the SBCAPCD in a monthly summary letter report. Planned operations such as the steam generator acceptance test, demonstration of firm operation or any other procedure that will cause a known exceedence of Table III emissions as specified above shall be reported to the SBCAPCD in writing at least 48 hours prior to the scheduled start of the test or procedure. Fuel usage will be recorded and reported as required by Condition 1-29.

Verification: Refer to verification to Conditions 1-28, 1-29 and 1-30. Luz shall not exceed at any time during boiler/superheater operation 40 ppm NOx for SEGS VI and VII. If Luz cannot meet the 40 ppm for SEGS VI and/or VII, Luz must submit the report described above. Luz shall include in the Quarterly Compliance Reports copies of all notifications to the SBCAPCD of planned operations that exceed the Table III emission limits.

1-24. Operational Phase. Upon completion of Luz's installation, startup and acceptance testing phase, which includes the SBCAPCD's required performance tests to determine the boiler/superheater NOx limits, the aggregate of SEGS III through VII shall not discharge or cause the discharge into the atmosphere of pollutants in excess of those listed in Tables I and II and the following limits:

	EMISSION LIMITS (LBS/DAY)	
	SEGS III-V	SEGS III-VII
NOx (dry, at 3% O_2 as NO_2)	2100	2750
CO	1670	2540
PARTICULATE	100	161

In addition, the operation of emitting equipmrnt at each SEGS unit shall conform to the emission concentrations/factors and hourly emissions contained in Tables I and II and be limited to a maximum of 16 hours per day. If the emergency oil heater is operated when the associated SEGS unit boiler/superheater is operating, the maximum individual unit hourly emissions for the boiler/superheater shall be reduced to 40.3 lbs/hr for SEGS III, IV and V and 17.0 lbs/hr for SEGS VI and VII. Annual emissions of any regulated pollutant shall not exceed 95 tons for the aggregate of the five SEGS projects per year which is consistent with the FERC requirement on natural gas consumption which limits fossil-fuel use to twenty-five percent of the total energy input to the power block for each SEGS Unit (approximately 850 hours of operation per year of each boiler/superheater).

Luz shall perform compliance testing for SEGS III through VII annually (within 30 days of the anniversary date of the issuance of the PTO) utilizing a SBCAPCD and California Air Resources Board certified testing lab.

Verification: Refer to Verification to Condition 1-29. Luz shall submit annually to the CEC CPM the results of the annual compliance testing for SEGS III through VII and verification of certification of the testing lab by the SBCAPCD and the California Air Resources Board.

1-25. Although the boiler/superheater and emergency oil heater, are designed for both natural gas and fuel oil as a standby fuel, Luz may only use commercial grade (pipeline quality) natural gas as a fuel.

Verification: Refer to Verification to Condition 1-24.

1-26. Opacity Limit. Prior to the date of startup and thereafter, individual pieces of fuel burning equipment shall not discharge, or cause the discharge into the atmosphere of any emissions which exhibit an opacity of 10 percent or greater for any period or periods aggregating more than six minutes in any one hour, or exhibit an opacity of 20 percent or greater for any period or periods aggregating more than three minutes in any one hour.

Verification: Luz shall provide the SBCAPCD and the CEC staff access to the SEGS III through VII project sites to verify/monitor visible emissions.

1-27. Continuous Emission Monitoring (CEM). The owner/operator(s) of SEGS III, IV, V, VI and VII must install and operate in-stack CEM equipment for NOx and O_2 as required by 40 CFR Part 60, Subpart Da and Appendix B. Luz shall submit to the SBCAPCD and the CEC CPM an emissions monitoring system plan demonstrating compliance with Subpart Da and Appendix B. Written approval by the CEC CPM in consultation with the SBCAPCD is needed prior to installation of the CEM systems.

Verification: At least 90 days prior to installation of the Continuous Emission Monitoring system, Luz shall submit to the SBCAPCD and the CEC CPM an emissions monitoring system plan demonstrating compliance with CFR Part 60, Subpart Da and Appendix B. Luz shall notify the SBCAPCD and the CEC CPM at least 30 days prior to the date upon which demonstration of the CEM system commences.

1-28. Compliance Tests. For each SEGS unit (SEGS III, IV, V, VI and VII), within sixty (60) days after achieving maximum-rated electrical generation capability, but not more than 180 days after initial startup, the owner(s) or operator(s) of each SEGS unit shall conduct a compliance test on each installed unit to determine/verify the emissions with regard to compliance with Condition 1-24 and SBCAPCD rules and conditions. Standard EPA test methods or CARB Method 1-100 shall be used to conduct the compliance test for particulate (PM-10), NOx, CO, CO_2 and O_2; a test procedure plan must be submitted to the SBCAPCD and the CEC CPM for approval thirty (30) days prior to the

scheduled tests. Results shall be reported in concentration units (parts per million at standard conditions on dry basis corrected to 3 precent O2 specified in applicable rules), pounds per unit of fuel, and pounds per hour at the maximum hourly fuel rate. The maximum concentration of NOx, as determined in the compliance test for SEGS III through V, shall not exceed 80 ppmv at 3 precent O2 dry. The appropriate NOx emission limits for the SEGS VI and VII boiler/superheaters, using NOx burners and 20 percent FGR, is 40 ppmv at 3 precent O2 dry. However, the actual permit limit will be determined during the compliance tests and subsequent engineering analysis. The Permits to Operate for SEGS VI and VII will reflect the emission limit for SEGS VI and VII which are determined to be achievable by the SBCAPCD and the CEC CPM.

Verification: The owner(s) or operator(s) shall notify the SBCAPCD Executive Officer and the CEC CPM 30 days prior to the compliance test to afford the SBCAPCD Executive Officer the opportunity to have an observer present. The owner or operator shall make available to the SBCAPCD Executive Officer and the CEC CPM such records as may be necessary to determine the conditions of the compliance tests and shall furnish the SBCAPCD Executive Officer and the CEC CPM a written report of the results of such compliance test within 60 days of the test. If Luz submits a test plan for alternate test procedures, Luz shall not conduct such compliance tests until written approval is received from the SBCAPCD and the CEC CPM.

1-29. Monitoring Plan/Reporting Requirements. Luz is required to have a Monitoring Plan, approved by the SBCAPCD prior to startup, for the monitoring and recording of all natural gas consumed at the site, and the hours of operation for each individual unit. Also this plan shall include quarterly reporting procedures of emission data to verify compliance.

A section of the Monitoring Plan shall address the requirement that the heat input into the power block from the fossil fuel burned (in BTU's) in each unit (boiler/superheater and emergency oil heater) shall not exceed 25 percent of the energy supplied to each individual power block on an annual basis. This section shall, as a minimum, show a projection as to how this 75% solar/25% fossil fuel ratio will be

attained for the year on a month by month basis. In reporting fuel consumption the actual fuel use shall be compared with the projection and the projection shall be updated based on the actual data. The actual hours of operation and therms used per day for each emergency oil heater shall be presented and the equivalent hours of operation at maximum continuous rating shall be calculated and presented.

System specific natural gas flow or totaling meters shall be certified, and recertified, in accordance with the servicing utility company's schedules for the same or equivalent meters. The Monitoring Plan shall describe the daily operating parameters that will be recorded, the method of recording and sample calculations of the use of this data to verify compliance with SBCAPCD requirements.

The Monitoring Plan shall include a reporting format and a schedule for reporting and submitting quarterly reports of daily plant operations to the SBCAPCD. This plan shall include, in addition to the fuel use data indicated above, the following emissions data for each individual SEGS unit (III through VII): daily total pounds of emissions and the maximum emissions in both ppm, (at 3% O_2, dry) and pounds/hour for NOx; quarterly total tons emitted for NOx particulate; CO number of exceedances of the permit condition limits and, for each exceedance, the number of hours of exceedance and the maximum value associated with the exceedance.

The First Quarterly Report shall cover all operations from start-up to the end of the calendar quarter.

> Verification: 30 days prior to the startup of SEGS VI and VII, Luz shall submit a Monitoring Plan for approval by the SBCAPCD and the CEC CPM for the information required above. Luz shall submit quarterly reports, that include the data required above, to the SBCAPCD and the CEC CPM. Each quarterly report shall be delivered to the SBCAPCD no later than 30 days following the end of the reported quarter.

1-30. Operating Logs. Luz is required to maintain the appropriate daily operating logs and charts, at the site, for a period of not less than one year, and to make available such records for inspection by the SBCAPCD, CARB and CEC staff on request. Logs shall provide all information as required by the monitoring

plan of Condition 1-29.

Verification: Luz shall make the daily operating logs available at the site of each SEGS unit (SEGS III through VII) for inspection by the SBCAPCD, CARB, and CEC staff.

1-31. Luz shall continue to monitor ambient air quality at the site beyond the required minimum of one year, until sufficient data has been gathered to verify the modeling inputs to the satisfaction of the SBCAPCD's Executive Officer.

Verification: Luz shall submit in the quarterly compliance reports to the CEC CPM the ambient monitoring data summary reports. Luz may cease submitting the ambient monitoring data only after receiving written approval to do so by the SBCAPCD Executive Officer.

1-32. The control of fugitive dust during construction and operation shall be in compliance with the requirements of SBCAPCD rules 401, 402 and 403.

Verification: Refer to Condition 1-1.

1-33. The Diesel Generator Set and Diesel Fire Pump shall use only low sulfur diesel fuels which contain 0.5 percent or less sulfur by weight.

Verification: Luz shall include in the quarterly compliance reports submitted to the CEC CPM, records of fuel oil purchased that shall include sulfur content, quantity and Btu content of the fuel oil.

1-34. Control of Non-Criteria Pollutants. Hexavalent chromium compounds, used as corrosion inhibitors, shall not be used in the cooling tower water circulating system.

The heat transfer fluid (HTF) which is an eutectic mixture of biphenyl (26.5 percent) and diphenyl oxide (73.5 percent) may decompose to yield benzene, a listed Toxic Air Contaminant (TAC). Since leaks, spills and

venting of the ullage HTF tank can release the HTF into the atmosphere, appropriate precautionary measures and prompt response, as required in the containment plan developed by Luz and approved by the SBCAPCD and the CEC CPM, shall be strictly adhered to.

In addition, because the identification of toxic or hazardous substances is an ongoing process, new control strategies and regulations are being developed and implemented which may impact existing permitted facilities. Should such substances be identified as emissions from the SEGS III through VII facilities, the SBCAPCD may, and the CEC CPM will require additional analysis, data, remedial measures or demonstration of compliance with such applicable regulations.

Verification: For verification of cooling tower corrosion inhibitor compounds, refer to Public Health Condition 2. For HTF containment, refer to Public Health Condition 6. If current non-criteria substances become regulated as toxic or hazardous substances and are used or emitted by Luz, Luz shall submit to the CEC CPM a plan demonstrating how compliance will be achieved and maintained with such regulations. Luz shall submit this plan concurrent with the first required submission to any governmental agency and within the time specified in any new toxic substance control regulations. This plan is subject to SBCAPCD approval.

1-35. Permit to Operate. Approval, denial, or modification of Permits to Operate for the SEGS III, IV, V, VI and VII equipment will be made after inspection and appropriate tests to determine that equipment has been constructed in accordance with the Authorities to Construct for SEGS III through VI and the Commission Decision's Conditions of Certification and that the equipment can be operated in compliance with the Rules and Regulations of the San Bernardino County Air Pollution Control District.

Verification: Luz shall submit copies of the PTOs for SEGS III through VII to the CEC CPM within 15 days after receipt of the PTO from the SBCAPCD.

TABLE 1

EMISSION CONCENTRATIONS/FACTORS (VENDOR SUPPLIED)

ITEM	PARTICULATE	NOx	SOx	CO
Boiler/Superheater	1 mg/NM^3	80 ppm[a] 40 ppm[b]	Negligible	100 ppm
Emergency Oil Heater	Negligible	80 ppm	Negligible	100 ppm
Diesel Generator Set	.25 gm/hp-hr	8.0 gm/hp-hr	Negligible	1.4 gm/hp-hr
Diesel Fire Pump	.25 gm/hp-hr	8.0 gm/hp-hr	Negligible	1.4 gm/hp-hr
Cooling Tower	.005 % Drift Rate	0	0	0

[a] SEGS III, IV and V limits - low NOx burners
[b] SEGS VI and VII limits - low NOx burners and 20 percent flue gas recirculation

TABLE II

HOURLY EMISSIONS
POUNDS PER HOUR AT MAXIMUM CONTINUOUS RATING
SEGS III, IV, V, VI, VII

ITEM	PARTICULATE LBS/HR	NOx LBS/HR	SOX LBS/HR	CO LBS/HR
Boiler/Superheater	0.44[a] 0.25[b]	43.0[a] 19.4[b]	Negligible	33.9[a] 26.7[b]
Emergency Oil Heater	Negligible	2.7[a], 2.4[b]	Negligible	2.2[a], 1.8[b]
Diesel Generator Set	0.5	15.9	Negligible	2.8
Diesel Fire Pump	0.1	2.9	Negligible	0.5
Cooling Tower	1.1	0	0	0

[a] SEGS III, IV and V limits
[b] SEGS VI and VII limits

TABLE III

SEGS III, IV, V, VI & VII DAILY/ANNUAL EMISSIONS SUMMARY

	LBS/DAY (MAX)[a]						TONS/YEAR[b]					
SEGS	III	IV	V	VI	VII	TOTAL	III	IV	V	VI	VII	TOTAL
PARTICULATE	33.4	33.4	33.4	30.4	30.4	161.0	3.5	3.5	3.5	3.5	3.5	17.5
NOx (Reported as NO_2)	704.2	704.2	704.2	324.8	324.8	2762.2	24.7	24.7	24.7	9.9	9.9	93.9
CO	555.6	555.6	555.6	438.0	438.0	2542.8	19.6	19.6	19.6	12.9	12.9	84.6
SO_2	NEGLIGIBLE						NEGLIGIBLE					

a The combustion contaminant values are based on a maximum of 16 hour operation of the boiler/superheater for each SEGS project, 6 hours operation of the emergency oil heater and exclude running the diesel generator set and the diesel fire pump. The diesel generator and fire pump together produce no more than 18.8 pounds per hour NOx.

b Annual emissions are based on operations that will be approximately 850 hours per year for each boiler, but will also be restricted by fuel use that cannot exceed 25 percent of energy input to that SEGS unit power block.

SECTION 2

PUBLIC HEALTH

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The following federal, state and county laws, pertaining to the protection of public health have been identified as being applicable to the construction and operation of the proposed Luz SEGS project.

FEDERAL

- The 1977 Amendments to the Clean Air Act, 42 USC section 7412, 40 CFR part 61, National Emission Standards for Hazardous Air Pollutants (NESHAPS). Under the provisions of these amendments, the EPA is required to assess the potential risks to the public from exposure to non-criteria pollutants and establish acceptable exposure levels as well as regulations for their control.

- Code of Federal Regulations, Title 29, Labor. Part 1910 Occupational Safety and Health Standards. The purpose of this section is to ensure that the hazards associated with all chemicals produced or imported by chemical manufacturers or importers are evaluated, and that this information is transmitted to potentially affected employers and employees within the manufacturing sector. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, and employee training.

STATE

- The Warren-Alquist Act, Public Resources Code section 25523(a). This act requires the CEC to ensure, through its licensing process, that thermal power plants are constructed and operated in a manner that will protect environmental quality and assure public health and safety.

- California Health and Safety Code sections 25100 to 25245. These sections mandate the Department of Health Services to establish regulations necessary to ensure that the generators of hazardous wastes employ proper technology and waste management practices for the handling, treatment,

recycling or destruction of their hazardous wastes prior to disposal. These sections also establish the strict liability of the generator for injuries caused by exposure to any of the hazardous wastes that he may produce.

- California Health and Safety Code Sections 39650 through 39674. This law mandates the California Air Resources Board and the California Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies (BACT). It also requires that the new source review rule for each air pollution district include regulations that require new or modified procedures for controlling the emission of toxic air contaminants.

- California Health and Safety Code Section 41700. This law requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

- California Health and Safety Code Section 25531. Assembly Bill 3777, February 21, 1986. Acutely Hazardous Materials: Risk Management. Included in this section are provisions that would allow an administering agency to require a handler of hazardous materials to initiate a certified risk management and prevention program for handling such materials.

- California Administrative Code, Title 8, Section 5139-5155- Control of Hazardous Substances. These sections establish permissible exposure limits (PELs) for airborne concentrations of substances thereby serving to define the conditions and amounts of a substance to which most workers can be exposed daily for a lifetime without suffering ill effects. In some cases, a PEL is established to protect against illness or disease, and in others it is established to protect against irritation, narcosis, nuisance or other forms of stress. PELs apply only to occupational exposure in occupational settings. Employers are required by law to ensure that employees are not exposed to airborne concentrations of substances above the PELs. The best practice is to maintain the concentration of all airborne contaminants below the PEL to the extent possible.

- Title 22, California Administrative Code, section 66001 sets state minimum standards for the safe management of hazardous and extremely hazardous wastes.

- Title 23, California Administrative Code, section 640 et Seq. establishes criteria for the classification of wastes and waste disposal units and also establishes waste management requirements for waste treatment, storage, or disposal in landfills, surface impoundments (ponds), waste piles, and land treatment facilities.

- California Health and Safety Code section 25249.5 et Seq. Safe Drinking Water and Toxic Enforcement Act of 1986- Proposition 65. This Act prohibits any person in the course of doing business to knowingly discharge or release a chemical or chemicals known to the state to cause cancer or reproductive toxicity into water or onto or into land where such chemical passes or probably will pass into any source of drinking water. Furthermore the Act requires that if any person in the course of doing business knowingly and intentionally expose any individual to a chemical known to the state to cause cancer or reproductive toxicity, that person shall first give clear and reasonable warning to such individual.

LOCAL

San Bernardino County Air Pollution Control District Rule 212: Standards for Approving. This rule states that, in granting a permit for the construction and operation of a source of air pollutants, the district shall ensure that such a source shall not be in violation of section 41700 of the State Health and Safety Code.

CONDITIONS OF CERTIFICATION

Note: See Air Quality Compliance Section for additional conditions of certification.

1. Cooling towers and boiler water in each SEGS unit shall not be treated with hydrazine or chromate-based additives. Luz shall use only the following water additives in each unit:

   - o Orthophosphate (Powerline 3040)
   - o Dispersant (Powerline 3450)
   - o Sodium Nitrate/Sodium Hydroxide (BP 5252)
   - o Hydroquinone (Powerline 1200 P)
   - o Ammonia Substitute (Powerline 1405)

   Verification: 90 days after certification of SEGS III-V Luz shall submit to the CEC Compliance Project Manager (CPM) verification of Luz's intentions to use the above listed chemicals in circulating water treatment (for SEGS Unit VI and VII, 30 days before the start of operations). In the event that Luz intends to use alternative additives, Luz shall so inform the CEC CPM and provide an analysis verifying that the use of such additives would not pose a significant worker or public health hazard.

2. Luz shall use Therminol VP-1 as the HTF in all SEGS units.

   Verification: Luz shall submit to the CEC CPM, verification of Luz's intention to use Therminol VP-1 as the HTF in all SEGS units, at least 30 days before the start of operations , or within 30 days after certification, whichever is applicable.

   In the event that Luz intends to use an alternative HTF, Luz shall so inform the CEC CPM at least 90 days prior to the intended use of an alternative HTF, and provide an analysis to show that its toxic hazard would be such that no adverse worker and public health impacts would result from its use.

3. Luz will monitor quarterly for benzene, biphenyl and diphenol oxide for a period of two years. The monitoring will cease at the end of two years unless the CEC CPM determines that there is a need for additional monitoring.

Verification: Luz shall submit within 30 days after SEGS Units VI & VII begin commercial operation, a monitoring plan to the CEC CPM for approval. The results of the monitoring plan will be submitted in Luz's Annual Compliance Report.

4. Luz shall ensure that all hazardous materials on-site are handled as specified in Luz's Safety Plan for all SEGS units with regard to:

- o Worker protection
- o Respiratory protection
- o Disposal of Therminol-contaminated materials
- o Worker hazard training and communication
- o Accidental spill identification and reporting
- o Health status monitoring
- o Hazardous waste management (for chemicals other than Therminol)

Verification: 30 days before the start of commercial operation of each Unit SEGS VI and VII, Luz shall provide to the CEC CPM, verification that it intends to adhere to all the requirements detailed in Luz's Safety Plan with regard to the areas listed above.

SECTION 3

SOCIOECONOMICS

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

No laws, ordinances, regulations, or standards are applicable.

CONDITIONS OF CERTIFICATION

Requirement

1. Luz shall assist the school districts in the study area (including Boron, Mojave, Barstow, Victorville, and Lancaster) in conducting surveys of their students to determine which of them have immigrated as a result of the construction or operation of any of Units III through VII. Luz shall assist the districts by providing the names of contractors and subcontractors. Luz shall enter into negotiation with the districts if necessary to determine the appropriate mitigation.

   Verification: Within 60 days after certification, or at time that is agreeable to the school districts, Luz shall provide the names of the contractors and subcontractors to CEC Compliance Project Manager (CPM) and verification that arrangements have been concluded with the school districts in the study area to assit them for the student surveys. In its Annual Compliance Report, Luz shall inform the CEC CPM of the results of the student surveys and any compensation made to school districts in the study area for enrollment impacts.

2. Luz shall develop and implement a program for Units VI and VII to encourage construction employees and their families to reside in communities which can readily accommodate them and their families, so as not to cause a housing shortage, defined as causing the vacancy rate to fall below approximately 5 percent. Such a program will include providing real estate listings and car pooling information. Such a program will not include such things as providing on site housing or rent subsides.

Verification: Within 60 days of certification, Luz shall submit to the CEC CPM for approval and comment, a description of the proposed program to mitigate the potential housing impacts of the construction of SEGS Units VI and VII. SECTION 4

SECTION 4

PALEONTOLOGIC AND CULTURAL RESOURCES

APPLICABLE LAWS, ORDINANCES, REGULATIONS, STANDARDS, PLANS, POLICIES

The project must comply with the portion of Appendix K of Section 15126 of the California Environmental Quality Act (CEQA) Guidelines (Title 14 of the California Administrative Code) specifying procedures to be used when human remains are discovered.

CONDITIONS OF CERTIFICATION

Requirements

1. Luz will comply with the paleontologic resources mitigation requirements recommended by the staff of the San Bernardino County Museum during construction at the Luz SEGS Unit VI site, as stipulated during the CEC Pre-Hearing Conference Workshop on January 8, 1988.

   These mitigation measures include monitoring and resource recovery, analysis and curation. Luz will have a paleontologic specialist monitor excavation and construction activities on the SEGS Unit VI site, on an as-needed basis. Luz also will be responsible for the recovery, preparation for analysis, analysis, and curation of any paleontologic or cultural resource materials encountered during construction at the Luz SEGS Unit VI site.

   CEC staff requests that it receive information copies of communications related to any paleontologic or cultural resources monitoring and mitigation work being conducted at the Luz SEGS Unit VI site. Such communications may include contracts with San Bernardino County, staff of the San Bernardino County Museum, Luz contractors or sub-contractors, and/or other parties interested in the monitoring and mitigation work.

Verification: Luz shall submit to the CEC Compliance Project Manager (CPM), copies of communications related to any paleontologic or cultural resources monitoring and mitigation work being conducted at the Luz SEGS Unit VI site, within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to the start of any construction-related vegetation clearance or ground disturbance at Luz SEGS Unit VII, whichever is applicable.

2. Luz shall submit the name and qualifications of their designated paleontologic specialist (eg, someone with a graduate degree in geology or paleontology and field experience) to the CEC CPM for review and approval. The CEC CPM must review the qualifications of and approve in writing, Luz' designated paleontologic specialist prior to any ground clearance or disturbance at Luz SEGS Unit VII. After CEC approval, the paleontologic specialist shall be available to monitor, as needed, all site preparation and construction activities related to the Luz SEGS Unit VII site.

Verification: Luz shall provide to the CEC CPM for review and written approval, the name, resume, telephone number, and commitment to availability for its designated paleontologic specialist within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to the start of any construction-related vegetation clearance or ground disturbance at Luz SEGS Unit VII, whichever is applicable.

3. The designated paleontologic specialist shall prepare a monitoring and mitigation plan to minimize potential impacts to paleontologic resources. The plan shall be submitted to the CEC CPM for review and approval in writing. The plan shall include the following elements:

a. A provision that a records search be conducted at such places as the San Bernardino County Museum and the University of California Museum of Paleontology for identification of fossil resources which may be affected by construction and operation of Luz SEGS Unit VII.

b. A provision that a paleontologic resources survey be conducted for the Luz SEGS VII site. All vertebrate and invertebrate fossil remains encountered during the survey will be mapped and locality records filed with appropriate entities.

c. A provision that the mitigation and monitoring plan will apply to those areas where significant fossil resources were encountered during the field survey (b, above), or where the designated paleontologic specialist has determined there is a reasonable potential that fossil-bearing deposits would be encountered.

d. A provision that the designated paleontologic specialist be on site during ground clearance and excavation in areas of sensitivity identified in the monitoring and mitigation plan, and that the specialist be on call during earth moving activities in other project areas.

e. A provision that if, during monitoring of construction activities, the designated paleontologic specialist determines the likelihood of encountering fossil resources is slight, monitoring can be halted in that locality.

f. A provision that if fossil resources are encountered during construction activities, work in the immediate vicinity of the find shall be halted until the designated paleontologic specialist can determine the significance and sensitivity of the find. The designated paleontologic specialist shall act in accordance with the procedures set forth in the monitoring and mitigation plan which has been approved by CEC CPM prior to the start of construction.

Luz, or its designated representative, shall inform the CEC CPM within one working day of the discovery of any potentially significant resources and discuss the specific measure(s) proposed to mitigate potential impacts to the resources.

The designated paleontologic specialist, representatives of Luz, and the CEC CPM shall meet within seven working days of the notification of the CEC CPM, if necessary, to discuss the disposition of any finds and any mitigation measures already implemented or to be implemented.

g. A provision that all vertebrate fossil remains will be collected and any invertebrate fossil remains will be sampled. All fossil materials found shall be mapped, prepared, identified, and removed for analysis and curation in the retrievable storage collection at the San Bernardino County Museum in Redlands, California.

h. A provision that the CEC CPM shall have access to the Luz SEGS Unit VII site to observe paleontologic resources monitoring and data recovery activities.

Verification: Luz shall submit a monitoring and mitigation plan for paleontologic resources to the CEC CPM for review and written approval. The plan shall be submitted to the CEC within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to the start of any construction-related vegetation clearance or ground disturbance at the Luz SEGS Unit VII site, whichever is applicable.

4. Luz shall submit the name and qualifications of its designated cultural resources specialist (eg, someone with a graduate degree in anthropology, history, or cultural resource management and field experience) to the CEC CPM for review and approval. The CEC CPM must review the qualifications of and approve of in writing, Luz' designated cultural resources specialist before any ground disturbance may begin. After CEC approval, the designated cultural resources specialist shall be on call during site preparation and construction activities for the Luz SEGS Unit VII project.

Verification: Luz shall submit to the CEC CPM for review and written approval, the name, resume, telephone number, and commitment to availability for its designated cultural resources specialist within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to the start of any construction-related vegetation clearance or ground disturbance at Luz SEGS Unit VII, whichever is applicable.

5. The designated cultural resources specialist shall prepare and submit to the CEC CPM for review and approval, a monitoring and mitigation plan to minimize potential impacts to cultural resources. The plan shall include the following:

a. A provision that the designated cultural resources specialist conduct a records search at such places as the San Bernardino County Museum and the California Archaeological Inventory for identification of cultural resources which may be affected by construction and operation of Luz SEGS Unit VII.

b. A provision that the designated cultural resources specialist conduct a cultural resources survey of the Luz SEGS VII site. All cultural resource materials encountered during the survey will be mapped and site records filed with the San Bernardino County Museum, the California Archaeological Inventory, and the State Office of Historic Preservation.

c. A provision that the mitigation and monitoring plan will apply to those areas where significant resources were found during the survey (b, above) or to those areas where the designated cultural resources specialist has determined there is a reasonable potential that cultural resources would be encountered.

d. A provision that the designated cultural resources specialist be on call to inspect any potentially significant cultural resources found during ground clearance and excavation in areas of sensitivity identified in the monitoring and mitigation plan.

e. Specific measures proposed to mitigate impacts to particular types of cultural resources which may be discovered during earth moving activities.

f. A provision that if potentially significant cultural resources are encountered during construction activities, work in the immediate vicinity of the find shall be halted until the designated cultural resources specialist can determine the significance and sensitivity of the find. Luz' designated cultural resources specialist shall act in accordance with the procedures set forth in the monitoring and mitigation plan which has been approved by the CEC CPM prior to the start of construction.

Luz, or its designated representative, shall inform the CEC CPM within one working day of the discovery of any potentially significant resources and discuss the specific measure(s) proposed to mitigate potential impacts to the resources.

The designated cultural resources specialist, representatives of Luz, and the CEC CPM shall meet within seven working days of the notification of the CEC, if necessary, to discuss the disposition of any finds and any mitigation measures already implemented or to be implemented.

g. A provision that if human remains are encountered, work in the immediate vicinity shall stop and the county coroner and the CEC CPM shall be notified. Work in the vicinity of the find shall remain stopped until the coroner has determined if the remains are Native American in origin and any necessary mitigation measures have been implemented. If the remains are determined to be of Native American origin, the Native American Heritage Commission and appropriate Native American representatives shall be notified immediately. Any necessary mitigation measures shall be discussed and agreed upon by the interested parties and approved by the CEC CPM.

h. A provision that the CEC CPM shall have access to the Luz SEGS Unit VII site to observe cultural resources monitoring and data recovery activities.

Verification: Luz shall submit a monitoring and mitigation plan for cultural resources to the CEC CPM for review and written approval. The plan shall be submitted to the CEC within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to the start of construction-related vegetation clearance or ground disturbance at the Luz SEGS Unit VII site, whichever is applicable.

6. Luz shall prepare a plan for conducting a post-construction reconnaissance survey for paleontologic and cultural resources which may be present in the area disturbed by installation of the water supply pipeline. The survey plan shall be submitted to the CEC CPM for review and written approval.

The survey plan shall include a description of the proposed survey methodology and shall specifically identify the area to be included in the survey. The survey area shall include the six or more miles of the water supply pipeline route which is on privately-owned lands and the entire band of land which was disturbed by the installation of the water supply pipeline for the Luz SEGS III-VII project. The area of disturbance generally runs alongside the roadway in which the pipeline was installed.

The survey plan shall also contain a provision that the CEC CPM shall have access, for observation purposes, to those portions of the pipeline route where paleontologic and cultural resources surveys or data recovery activities are taking place.

Verification: Luz shall submit a paleontologic and cultural resources survey plan to the CEC CPM for review and written approval. The survey plan shall be submitted to the CEC within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to commencement of construction-related activities at the Luz SEGS Unit VII site, whichever is applicable.

7. Luz shall conduct post-construction reconnaissance surveys of the water supply pipeline in area delineated in the survey plan described in Requirement 5, to determine the presence of paleontologic or cultural resources. Survey methods shall be the same as those used for the survey of the two one-mile segments of the pipeline located on BLM-managed lands.

Verification: Luz shall submit reports on the status of the post-construction reconnaissance surveys, including the findings, methodology, and timing of the surveys to the CEC CPM. The surveys shall be completed and the final report on the surveys shall be filed with the CEC within 30 days after certification of the Luz SEGS III-VII project or 30 days prior to commencement of construction-related activities at the Luz SEGS VII site, whichever is applicable.

8. Luz or its designated paleontologic and cultural resources specialist(s) shall recover all paleontologic and cultural resource materials and data discovered during the post-construction surveys of the area disturbed by installation of the water supply pipeline for the Luz SEGS III-VII project. Recovered resource materials shall be mapped, collected, identified, prepared for analysis, analyzed by the Luz designated specialist(s) and curated at the San Bernardino County Museum in Redlands, California.

Methods of mapping, collection, identification, preparation for analysis, analysis, and curation of any paleontologic and cultural resource materials encountered during the surveys shall be comparable to those employed for resource materials found on the Luz SEGS Units III-V sites.

Verification: Luz shall submit a complete report on the results of the post-construction surveys, data recovery, mitigation, and analysis to the CEC CPM for review and approval, 120 days prior to the start of operation of the Luz SEGS Unit VII power plant.

SECTION 5

BIOLOGICAL RESOURCES

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

FEDERAL

Endangered Species Act of 1973, Title 16 (implementing regulations) of the United States Code (USC), section 1531 et seq., 50 Code of Federal Regulations (CFR) 17.1 et seq., designates and provides for protection of threatened and endangered plants and animals and their critical habitat.

STATE

California Endangered Species Act of 1984, Fish and Game Code, sections 2050 through 2098, protects California's endangered and threatened species.

California Administrative Code (CAC), Title 14, section 670.5, lists animals of California declared to be threatened or endangered.

California Fish and Game Code prohibits the taking of plants and animals listed as fully protected in California. Species fully protected by the code include certain birds (section 3511), mammals (section 4700), reptiles and amphibians (section 5050), and fishes (section 5515). The desert tortoise has specific protection. Sections 5001 through 5003 specifically prohibit the selling, purchasing, harming, taking, possessing, or transporting of any tortoise or parts thereof or shooting any projectile at a tortoise. Section 5000 provides for CDFG authorization of taking a tortoise, and sections 5001 and 5002 specify conditions under which tortoises can be legally possessed by individuals or institutions.

Native Plant Protection Act of 1977, Fish and Game Code, section 1900 et seq., gives CDFG authority to designate state endangered and rare plants and provides specific protection measures for identified populations.

California Environmental Quality Act (CEQA), Public Resources Code, section 21000et seq., requires all governmental agencies to develop standards and procedures necessary to protect environmental quality. It establishes public procedures for identification of significant adverse

environmental effects. CEQA exempts certified state regulatory programs, including the California Energy Commission (CEC) power plant site certification program, from specific procedural requirements; these programs remain subject to other provisions of CEQA, such as the policy of avoiding significant adverse effects on the environment where feasible.

Guidelines for Implementation of the California Environmental Quality Act of 1970 (CEQA Guidelines), CAC, Title 14, section 15065 ("Mandatory findings of significance") requires that a reduction in numbers of a rare or endangered species be considered a significant effect. Section 15380 ("Rare or endangered species") provides definitions and provides for protection of unlisted species as rare or endangered under the act if the species can be shown to meet the criteria for listing.

CDFG (Operations Manual, section 1100, June 1987) provides the following policy statement and definitions relevant to the subject of mitigation.

"State policy mandates the preservation, protection, restoration, and enhancement of fish and wildlife, and recreational use thereof, to be in the public interest (Section 1301 FCG; Section 11900 WC).

DFG goals in implementing this policy are to prevent further diminishment of fish and wildlife by land and water development projects, to restore fish and wildlife wherever possible, and to assure that necessary fish and wildlife preservation measures are carried out with other project features.

The following definitions apply:

Preservation - The maintenance and protection of fish and wildlife resources at levels that existed prior to the commencement of a project. Preservation is achieved through mitigation for unavoidable resource losses and/or compensation for unavoidable resource losses. The term "preservation" is synonymous with "conservation" as used in the U.S. Fish and Wildlife Coordination Act.

Conservation - Fish and wildlife resource loss prevention, mitigation, and compensation.

Compensation - Full replacement for unavoidable fish and wildlife resource losses in terms of habitat area and long-term

renewability of the quality and quantity of such resources. In the interest of clarification, compensation does not mean monetary payment as a substitute for replacement of resource losses.

Mitigation - Measures to lessen or reduce adverse effects on fish and wildlife resources through use of structural and non-structural loss prevention measures in project design and operations (see Section 15370 of CEQA Guidelines, 1986)."

Except where specifically indicated, mitigation in this chapter will refer to both mitigation and compensation as defined by CDFG.

CONDITIONS OF CERTIFICATION

Requirements

1. Luz shall comply with all terms of the attached Habitat Mitigation And Acquisition Agreement (Agreement) with the California Department of Fish and Game (CDFG), which the Energy Commission adopts in its entirety as a condition of certification. The Agreement is intended to supplement the December 15, 1987 Stipulation: RE: Biological Resources between Luz and the CEC Staff. The provisions of the Luz/CDFG Agreement shall supersede all inconsistent provisions of the earlier stipulation which are not reflected in the conditions of certification listed below.

   Verification: Luz will provide the CEC Compliance Project Manager (CPM) written confirmation that title of ownership of a suitable parcel or parcels has been transferred to CDFG or its agent in accordance with the terms of the Agreement. The confirmation notification for each acquired parcel will be submitted to the CEC within 30 days after transfer of title has taken place. In addition, within 60 days of certification Luz will provide documentation showing that the required security interest has been provided and the trust account or debt instrument established as specified in the Agreement.

2. Luz shall provide a plan and, upon review and approval by CEC Staff in consultation with staff of the CDFG, U.S. Fish and Wildlife Service (USFWS), and Bureau of Land Management (BLM), implement a study to determine the fate of all desert tortoises relocated from the SEGS VI-VII sites such that those tortoises held over winter in Pomona, California, and any tortoises subsequently collected from the sites shall be tracked utilizing radio telemetry and monitored for a minimum of two years. The purpose of the study is to determine the relative success of relocating desert tortoises to avoid direct mortality associated with constructing and operating the proposed project. The need for a third consecutive year of study shall be determined before February 28, 1989, by CEC Staff, in consultation with staff of the CDFG, USFWS and BLM.

   Verification: Prior to commencing site preparation activities at SEGS VII, Luz will submit the proposed

desert tortoise relocation study plan to the CEC CPM for CEC Staff review and approval, in consultation with the CDFG, USFWS, and/or BLM. Luz will submit annual progress reports describing preliminary study results and any proposed changes in the scope or methods of the study. The annual progress reports may be delayed with concurrence of the CEC CPM.

3. All documentation of activities recognized by CEC and CDFG as off-site mitigation, including land purchases or program funding, shall specifically acknowledge that funding for such purpose or activity was provided by Luz Engineering Corporation. Such acknowledgement shall be in the form of sign(s), letter(s), resolution(s) or other appropriate means to clearly communicate to the public that funding for the activity was provided by Luz.

   Verification: Luz will submit a sample of all distinctive signs and copies of all letters and resolutions to the CEC CPM within periodic compliance reports.

4. Luz shall designate a qualified biologist to advise on the implementation of these conditions of certification pertaining to on-site mitigation and to supervise or conduct mitigation, monitoring, and other compliance efforts.

   Minimum qualifications include (1) a bachelor's degree in biological science, zoology, botany, ecology, or a closely related field and (2) current certification of a nationally recognized biological society, such as the Ecological Society of America or Wildlife Society or a minimum of three years experience in field biology.

   Luz must demonstrate to the satisfaction of CEC Staff that the designated biologist has appropriate education and experience for the biological tasks described in the biological resources mitigation implementation plan (BRMIP) developed for this project. CEC CPM approval of the designated biologist shall not be unreasonably withheld. The supervising construction or operation engineer shall act on the advice of the biologist to ensure conformance with the BRMIP and the terms and conditions of the CEC certification.

Verification: Before starting site preparation of SEGS VII, Luz will provide to the CEC CPM for review and approval, the name, qualifications, address, and telephone number of the designated biologist. If there is a change in biologist, Luz will notify the CEC CPM and provide the name, qualifications, address, and telephone number of the proposed replacement in the next construction progress report.

5. Luz shall submit a detailed BRMIP to the CEC CPM before the initiation of any clearing, earth moving, or other construction activities on SEGS VII. The BRMIP shall include details for designing and implementing the following measures:

   a. For SEGS VII, if there is an indication of tortoises having been on the site, a final preconstruction site clearance shall be conducted, with emphasis on finding and relocating any desert tortoises that may have reinhabited the site;

   b. For SEGS VII, a final preconstruction walk-through to verify that no foxes are inhabiting a den system on site and to collapse any dens found in order to preclude the potential for direct impacts on foxes during site clearing;

   c. For temporarily disturbed areas, measures to clean up, restore to original topography and encourage reestablishment of native plants and animal species existing on site prior to disturbance. Such measures may include cultivation of the soil and reseeding with native or nonpersistent introduced species;

   d. An employee education program to provide construction and operation employees with information to help them avoid impacts on the key species and resources addressed in this document. The program shall be designed to inform personnel about these Mojave Desert animals and plants and to cover both potential direct, on-the-job impacts, as well as the potential indirect impacts associated with the dwelling places and leisure activities of employees and their families. The latter are to be included because of the in-migration

associated with the project and the possibility of significant impacts that may be inadvertently caused by the in-migrant employees, their families, or pets. The program should cover laws pertaining to desert wildlife and plants, the use of firearms, off-road recreational vehicle use, and other applicable regulations.

The program shall be administered to each new employee as part of his or her orientation and all staff members shall be required to review the information and be apprised of new information annually. Verification of the program's use can be accomplished by documenting its presentation date and content via statements signed by individual employees to whom the program has been presented; and,

e. A program designed to salvage seed, topsoil, and additional materials as necessary from SEGS VII shall be implemented by Luz in order to reestablish populations of the Barstow woolly sunflower and the Mojave spineflower in an appropriate off-site location. The program must provide a site-specific design for its implementation, including specifications of what material shall be collected and moved, how the material shall be handled, where the reestablishment site (a minimum of 5 acres in size) shall be located on Luz's adjacent undeveloped property and how the reestablished site shall be configured, managed, and preserved.

Verification: At least 45 days prior to commencing site preparation activities, Luz will submit the draft BRMIP to the CEC CPM for review and approval, and to the CDFG staff. The CEC Biological Resources Staff will review and comment on the draft BRMIP within 30 days of receipt. Site preparation will not begin until the final BRMIP is approved by the CEC CPM.

6. Luz shall allow access by CEC, or its designated representative, to inspect or monitor conditions of biological resources, impacts, mitigation measures, and study areas prior to and during preconstruction, construction and operation activities on the SEGS site and adjacent areas. The access shall be provided upon request and at all times necessary to conduct biological field observations.

Verification: Prior to commencing site preparation, Luz will provide a letter of authorization to conduct site visits as specified above.

7. Luz shall implement the monitoring and mitigation measures contained in the approved BRMIP and Commission Decision.

Verification: The approved BRMIP will be submitted to the CEC CPM prior to site preparation on SEGS VII. Luz will notify the CEC CPM, in writing, within 15 days of successfully satisfying each condition in the BRMIP. If any conditions of the plan are not successfully satisfied, Luz will submit proposed corrective actions within 30 days of the CEC CPM for comment and approval. The Luz qualified biologist will submit to the CEC CPM semiannual statements verifying activities conducted in compliance with the approved BRMIP permit conditions listed here, and any additional portions of the CEC decision pertinent to biological resources. These semiannual statements will be submitted beginning six months after the start of site preparation and will continue until all compliance activities have been completed.

Luz will report any adverse impacts on rare, threatened, or endangered species by telephone to the CEC CPM within two working days during the normal work week or by the end of the next working day following a weekend or holiday and will submit a follow-up written report within 10 days after contact with the CEC CPM.

SECTION 6

WATER RESOURCES

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

Federal, state, and local laws, ordinances, regulations, and standards (LORS) are designed to ensure that the project does not cause unacceptable impacts on water resources, including water supplies, water quality, and flood hazards. Project compliance with applicable LORS must consider the following:

FEDERAL

- The Clean Water Act, 33 USC section 1251 et seq., states that any point-source waste that discharges into U.S. waters requires a national pollution discharge elimination system (NPDES) permit. In California, the Regional Water Quality Control Boards (RWQCB) administer the federal NPDES program. The proposed project is under the jurisdiction of the Lahontan Regional Water Quality Board (LRWQCB).

- The Safe Drinking Water Act (SDWA) of 1974, as amended in 1986, requires the Environmental Protection Agency (EPA) to establish a program which provides for the safety of our nation's drinking water.

STATE

- California Water Code, section 461, articulates the Department of Water Resources' water use policy, namely, that "the primary interest of the people of the state in the conservation of all available water resources requires the maximum reuse of water in the satisfaction of the beneficial uses of water."

- California Water Code, section 100, prohibits the waste or unreasonable use or method of use or method of diversion of water.

- California Water Code, sections 4999 through 5008, requires filing for water extractions in excess of 25 acre-feet per year from groundwater basins in San Bernardino County.

- The Porter-Cologne Water Quality Control Act 1967, Water Code section 13260 et seq., requires the RWQCB to adopt

waste-discharge requirements in order to protect state waters for the use and enjoyment of the people of California.

- California Administrative Code (CAC), Title 22, section 64401 et seq., establishes standards for domestic water quality and monitoring.

- CAC, Title 23, section 2510 et seq., sets forth regulations pertaining to water quality aspects of waste discharge to land.

- The State Water Resources Control Board (SWRCB), Resolution 75-78 (on the water quality control policy for the use of and disposal of inland waters used for powerplant cooling), establishes a hierarchy for the use of available water sources in powerplant cooling applications.

- The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) which is added to the Health and Safety Code, sections 25249.5 et seq., prohibits the discharge or release of certain chemicals into drinking water sources.

- California Administrative Code, Water, Section 2532(c) Flooding:
  requires new and existing Class II waste management units (e.g., the SEGS III through V evaporation ponds) be designed, constructed, operated and maintained to prevent inundation or washout due to floods with a 1 in 100 chance recurrence interval.

- Street and Highways Code <u>Section 670:</u>
  authorizes CALTRANS and its various districts to issue written permits, which in the case of Luz would allow a road connection with U.S. Highway 395,

  <u>Section 725:</u>
  states that it is unlawful for any person to do any of the following:

  a. Drain water, or permit water to be drained from his lands onto any state highway by any means which results in damage to the highway.

  b. Obstruct any natural water course so as to:

     1. Prevent, impede or restrict the natural flow of waters from any state highway into and through such water course, unless other adequate and proper drainage is provided.

2. Cause waters to be impounded within any state highway, to the damage of the highway.

3. Cause interference with, or damage or hazard to public travel.

c. Store or distribute water for any purpose so as to permit it to overflow onto, to saturate by seepage, or to obstruct any state highway, to the damage of the highway.

Section 728:

states that any person proposing or desiring to excavate or construct ditches in, under or over any state highway, to carry water for any purpose, shall construct, without expense to the State, such bridges, culverts, pipes, siphons or crossings as are necessary adequately and properly to carry such water in, under or over such state highway.

Any such construction shall be done in accordance with the permit and pursuant to Section 671, and shall be subject to the approval of the department. The issuance of any such permit may be withheld until the department finds that proper and adequate provision is made for the protection of such state highway and for the safety of travel thereon.

LOCAL

- San Bernardino County Code, Chapter 5, specifies requirements for establishing and permitting septic systems within San Bernardino County.

- San Bernardino County, Board Order no. 6-86-108, requires that all facilities used in the collection, transport, treatment, or disposal of waste shall be adequately protected against overflow, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

- San Bernardino County, Board Order No. 6-86-108, requires that all facilities used in the collection, transport, treatment, or disposal of waste shall be adequately protected against overflow, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a 1 in 100 chance recurrence interval.

CONDITIONS OF CERTIFICATION

SEGS UNITS III THROUGH VII

Requirements

1. Luz shall apply for and obtain Waste Discharge Requirements for the boiler cleaning waste from the LRWQCB.

   Verification: Within 30 days of receiving a Waste Discharge Requirements for the LRWQCB, Luz shall provide a copy to the CEC CPM.

2. For liquid wastes discharged to the evaporation ponds, Luz shall notify the CEC CPM of any change in the waste discharge requirements issued by the LRWQCB.

   Verification: In its annual compliance report to the CEC CPM, Luz shall indicate the status of the current waste discharge requirements and attach the quarterly reports required by the LRWQCB for each SEGS Unit.

3. Luz shall file applications for and obtain waste discharge requirements for Units VI and VII before the start of their operation.

   Verification: Ninety (90) days prior to commercial operation of SEGS VI and VII, Luz shall submit to the CEC CPM a copy of waste discharge requirements issued by the LRWQCB.

4. Luz shall provide appropriate protective measures to eliminate potential channel scouring in flood-control channels and related structures.

   Verification: Thirty days prior to commencing site preparation, or 30 days after certification, whichever is applicable, Luz shall submit in its erosion control plan to the CEC CPM, detailed plans and drawings delineating protective measures for flood and drainage control channels and dikes for comment. The CEC CPM shall review and comment on the proposed measures.

5. To protect SEGS VII from flood flow along its east and west boundary and to prevent site development from resulting in increased erosion and off-site sediment transport and deposition Luz shall design, construct and maintain upstream, and downstream cross-channel silt trap weirs in both flood control channels and grade the intervening channel no steeper than one percent.

   Verification: 30-days prior to initiation of generation at SEGS VII, Luz shall submit to the California Energy Commission (CEC) Compliance Project Manager (CPM) plans and cross sectional as-built drawings of the cross-channel silt trap weirs which clearly depicts the intervening channel slope as being no grater than one percent.

SECTION 7

ENGINEERING GEOLOGY

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

State

- California Business and Professions Code, sections 7830 and 7835. Requires registration for geologists and specialty geologists (including engineering geologists) who practice for others, and that all geologic plans, specifications, reports or documents shall be prepared by a registered certified specialty geologist or by a subordinate employee under his or her direction. In addition, they shall be signed by the registered specialty geologist, indicating his or her responsibility for them.

- Title 24, California Administrative Code, sections 2-2901 et seq. and 2-7002 et seq., Uniform Building Code (UBC), 1985 edition, Chapters 29 (Foundations) and 70 (Excavation and Grading). Sets minimum technical and administrative requirements for foundations and for excavation and grading.

- California Public Resources Code, section 2621 et seq., Alquist-Priolo Special Studies Zones Act, states that cities and counties shall require, prior to approval of a project, a geologic report defining and delineating any hazard of surface fault rupture.

- Title 14, California Administrative Code, Policies and Criteria of the State Mining and Geology Board, with reference to the Alquist-Priolo Act, section 3802, (g), (2), defines a "structure for human occupancy" as a building which is expected to have a human occupancy rate of more than 2,000 man-hours per year.

County

- San Bernardino County Ordinance No. 2815: San Bernardino County Land Management Department requires a building permit for the construction of new structures or addition to existing structures and a grading permit for excavation and fill activities. This Ordinance adopts the 1982 Edition of the Uniform Building Code as the County's standard.

CONDITIONS OF CERTIFICATION

SEGS UNITS III - VII

Requirements

1. Luz shall assign to the project, to be present as needed, an engineering geologist, certified by the State of California, to monitor engineering geologic conditions as construction proceeds and to define engineering geologic conditions at units already constructed. This is to confirm that conditions encountered during excavation are similar to those described in the Application for Certification (AFC) and in any relevant data responses. The engineering geologist will also assure that any adverse conditions encountered are mitigated in a safe, environmentally sound manner. This shall include:

   - Monitoring compliance with design intent in engineering geologic matters
   - Providing consultation during the design and construction of the project
   - Evaluating geologic conditions and geologic safety
   - Recommending field changes to the responsible civil engineer

   Verification: For SEGS III-VI, Luz shall submit to the California Energy Commission (CEC) Compliance Project Manager (CPM) and designated Chief County Building Official (CBO), within 30 days after certification, the name(s) and license or registration number(s) of the assigned engineering geologist(s). Personnel changes shall be noted and pertinent data submitted in each subsequent monthly construction report.

   For SEGS VII, Luz shall submit the same information 30 days prior to the start of site preparation, or after certification, whichever is applicable.

2. To assure that the facilities have been constructed in accordance with pertinent laws, ordinances, regulations, standards, plans, and policies, the California-certified

engineering geologist shall review and sign all preconstruction, construction, and postconstruction reports pertaining to the engineering geologic suitability of the sites of all Units. This shall include reports pertaining to engineering geology for units that are planned, are already constructed, or that are in progress, as well as for the transmission line corridor.

Verification: For SEGS III-VI, Luz shall submit to the CEC CPM and designated CBO, 30 days after certification the name(s) and certification number(s) of the assigned engineering geologist(s). Personnel changes shall be noted and pertinent data submitted in each subsequent monthly construction report.

For SEGS VII, Luz shall submit the same information 30 days prior to site preparation, or after certification, whichever is applicable.

3. Luz shall incorporate all engineering geologic hazard mitigation measures in the design plans and specifications submitted to the CBO for his approval prior to issuance of construction permits.

Verification: Within 30 days after certification, Luz shall submit to the CEC CPM a notice of transmittal indicating that the design plans and specifications for SEGS VI have been sent to the CBO and that the engineering geologic hazard mitigation measures have been included in those plans and specifications.

For SEGS Unit VII, Luz shall submit a notice of transmittal at least 30 days prior to issuance of individual construction permits indicating that the design plans and specifications have been sent to the CBO and that the engineering geologic hazard mitigation measures have been included in those plans and specifications.

4. If geologic conditions do not differ much from those conditions described by Luz in their AFC, then Luz shall implement the AFC's recommended mitigation measures for adverse geologic conditions. If conditions differ significantly, then mitigation measures shall be revised and submitted to the CBO for approval.

Verification: The certified engineering geologist for Luz shall verify compliance with the AFC's recommended mitigation measures or any revised mitigation measures in the geologic grading report and "as-graded" grading

plan. If revised plans were submitted to the CBO for approval, Luz shall submit a copy of the statement of approval to the CEC in the next construction report.

5. Luz shall ensure that records of geologic site inspections, especially logs and descriptions of excavations including those for foundations and borings for piers, will be made during site preparation and submitted to the CEC CPM upon request.

Verification: Luz shall notify the CEC CPM of the availability of geologic records of site inspections 60 days after certification for SEGS III-V and after completion of foundations for SEGS VI and VII.

SECTION 8

SOIL CONSERVATION

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

FEDERAL

- Bureau of Land Management (BLM) Right-of-Way Permit, 43 United States Code (USC) 1737, et seq. Requires review and permitting for all development on lands administered by BLM.

STATE

- Lahontan Regional Water Quality Control Board, South Lahontan Basin Water Quality Control Plan, adopted 1975. Guidelines for Erosion Control, page I-5-104.

LOCAL

- San Bernardino County Ordinance No. 2815. Requires a Grading Permit for excavation and fill activities. This ordinance adopts the 1982 edition of the Uniform Building Code (UBC) as the county's standard. Chapter 70 of the UBC sets out the requirements for erosion and sedimentation control during grading.

CONDITIONS OF CERTIFICATION

LUZ SEGS UNIT III, IV, V, VI, VII

1. Luz shall submit an erosion and sedimentation control plan designed to minimize wind and water erosion at the existing and proposed SEGS units. This plan shall identify the following measures and the timing of their implementation:

   - o Construction work site shall be kept wet to minimize dust;
   - o During construction, primary roadways shall be treated to minimize dust;
   - o Once construction is completed, exposed surfaces of dikes and roadways shall be stabilized either through soil cementation, paving, soil sealants, or revegetation.

   Verification: Thirty days prior to commencing site preparation for SEGS Unit VII, or after certification, whicever is applicable, Luz shall file an erosion control plan with the California Energy Commission (CEC) Compliance Program Manager (CPM) for review and approval.

2. Luz shall minimize soil-related impacts by implementing the measures specified in the above mentioned erosion control plan.

   Verification: Within 180 days following the commencement of commercial operation for SEGS VII, Luz shall file an affidavit signed by Luz with the CEC CPM certifying that the mitigation measures in the CEC CPM approved erosion control plan have been implemented.

SECTION 9

CIVIL ENGINEERING

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The LORS referred to in the AFC, and as identified by Luz when asked to provide a summary of all LORS related to civil engineering, are provided in the following list (Luz 1987c, Data Response 79):

FEDERAL

(None provided by Luz)

STATE

- State of California, Department of Transportation; Highway Design Manual.
- State of California, Department of Transportation; Standard Specifications, July 1984.

LOCAL

- Williamson and Schmid; County of San Bernardino Hydrology Manual, August 1986.

GENERAL

- American Association of State Highway and Transportation Officials (AASHTO): Standard Specifications for Highway Bridges, Twelfth Edition, 1977.
- ASTM: "Standard Test Method for Density of Soil Aggregate in-place by Nuclear Density Methods (Shallow Depth)", D-2922-78.
- ASTM: "Standard Test Method for Density of Soil in-place by the Sand-Cone Method", D-1556-64.
- ASTM: "Standard Test Method for Moisture Density Relation of Soil and Soil Aggregate Mixtures Using 10 Pound Drop

Hammer and 18" Drop", D-1557-78.

- ASTM: "Standard Specification for Concrete Aggregates", C33-85.
- ASTM: "Standard Specification for Portland Cement", C150-85.
- Chow, Ven Te; Open Channel Hydraulics; 1959 (recognized professional text).
- International Conference of Building Officials; Uniform Building Code; 1985 edition.
- Los Angeles County Flood Control District; Design Manual, Hydraulic, March 1982.

The CEC Staff has determined that the following LORS, not identified by Luz, also apply to civil engineering and will be considered for determination of adequacy and for conditions of certification. In conflicts between listed LORS, the more stringent requirements shall govern and the latest adopted edition shall apply.

FEDERAL

- Title 29, Code of Federal Regulations (CFR) Chapter XVII. Occupational Safety and Health Administration (OSHA), Department of Labor, Part 1910, Occupational Safety and Health Standards.

STATE

- Business and Professions Code, Division 3, Chapter 7, section 6704. Requires state registration to practice as a civil engineer in California.
- Title 24, California Administrative Code (CAC), Parts 2-6. Adopts current edition of the Uniform Building Code (UBC) as minimum legal building standards.
- Title 8, CAC, Chapter 4, Division of Industrial Safety. Describes general construction safety orders, industrial safety orders, and work safety requirements and procedures.
- Title 8, CAC, sections 340 and 341, Labor Code section 6500. California State Department of Industrial Relations, Division of Industrial Safety. Requires a permit for construction of trenches or excavations five feet or deeper

where personnel have to descend.

- Warren-Alquist Act, Public Resources Code (PRC) section 25532. Requires that the CEC establish a monitoring program to ensure that construction and operation of the generating facilities are in compliance with all applicable regulations, guidelines, and conditions.

- Vehicle Code section 35780, Streets and Highway Code section 117. California Department of Transportation (CALTRANS), requires a permit to transport excessive loads over state highways.

- General Order No. 95 (GO 95), California Public Utilities Commission (CPUC). Contains rules for Overhead Electric Line Construction.

LOCAL

- San Bernardino County Ordinance No. 2815. San Bernardino County Land Management Department requires a Building Permit for the construction of new structures or addition to existing structures and a Grading Permit for excavation and fill activities. This Ordinance adopts the 1982 Edition of the Uniform Building Code as the County's standard.

GENERAL

- International Conference of Building Officials, International Association of Plumbing and Mechanical Officials, "Uniform Mechanical Code" (UMC), 1985 edition and Uniform Plumbing Code (UPC), 1985 edition.

- American Society for Testing and Materials (ASTM).

  - A120-84 - Specification for Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless, for Ordinary Uses.

  - A121-81 - Specification for Zinc-Coated (Galvanized) Steel Barbed Wire.

  - A123-84 - Specification for Zinc (Hot-Galvanized) Coatings on Iron and Steel Products.

  - A491-84 - Specification for Aluminum-Coated Steel Chain-Link Fence Fabric.

  - A153-82 - Specification for zinc Coating (Hot-Dip) on Iron and Steel Hardware.

Concrete and Reinforcing Steel

The following industry codes and standards are used for concrete design and construction of foundations, site access roads and secondary containment structures.

- o American Concrete Institute (ACI).
  - 211.1-81 - Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
  - 301-84 - Specifications for Structural Concrete for Buildings.
  - 304-79 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
  - 318-83 - Building Code Requirements for Reinforced Concrete.
  - 347-78 - Recommended Practice for Concrete Formwork.
- o American Society for Testing and Materials (ASTM).
  - A82-79 - Cold-Drawn Steel Wire Fabric for Concrete Reinforcement.
  - A184-79 - Fabricated deformed Steel Bar Mats for Concrete Reinforcement.
  - A185-85 - Specification for Steel Welded-Wire Fabric for Concrete Reinforcement.
  - A615-82 - Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.
  - C31-84 - Making and Curing Concrete Test Specimens in the Field.
  - C192-81 - Making and Curing Concrete Test Specimens in the Laboratory.
- o American Water Works Association (AWWA).
  - C301 - Standards for Prestressed Concrete Pressure Pipe, Steel Cylinder Type for Water and Other Liquids.
  - C302 - Standard for Reinforced Concrete Water Pipe-Non-Cylinder Type, Not Prestressed.

Excavation, Filling, Backfill and Embankments

- o American Society for Testing and Materials (ASTM)
  - D698-79 - Moisture Density Relations of Soils.
  - D422-63 - Particle Size Analysis of Soils.
  - D2937-79 - Density of Soil in Place by the Driven Cylinder Method.

Fences and Gates

- o American Society for Testing and Materials (ASTM).
  - A392 - Construction of Chain Link Fence.

PERFORMANCE OBJECTIVES/CRITERIA

Luz has not specifically listed performance objectives or criteria for civil engineering. Staff has inferred from the AFC and Luz data responses to Staff's data requests, and from review of plans and specifications for SEGS projects constructed or under construction, that the design and construction of civil site work is intended to protect the health, welfare and safety of site personnel, protect property from damage and to provide reliable and efficient operation of the facility. The following objectives and/or criteria were derived from the AFC and data responses:

- o Site grading and development work will comply with the applicable sections of the 1985 edition of the UBC;
- o Hydrology calculations will adhere to the criteria of the San Bernardino County Hydrology Manual. Hydraulic design will adhere to the Los Angeles County Flood Control District Hydraulic Design Manual and the CALTRANS Highway Design Manual. Runoff calculations are based on a 100-year, 24-hour point precipitation of 2.70 inches;
- o Soil compaction for fills and preparation of foundations will be based on ASTM D-1557-78. For the power block areas, up to 12 inches of subgrade and each layer of backfill is (to be) compacted to 95 percent relative compaction. The power block area was (is to be) mass excavated to a depth of 4 feet and recompacted to the degree specified. For the unpaved areas, the top 6 inches of subgrade and each layer of backfill or fill is (to be) compacted to 90 percent relative compaction. For paved roads, the top 6 inches of subgrade is to be compacted to 95 percent relative

compaction (Luz 1987c);

- Spill containment for heat transfer fluid (HTF), fuels and other hazardous materials will be installed and sized to contain in excess of 100 percent of the storage tank volume;

- Sanitary sewer facilities will be installed to meet the permit approval requirements of the San Bernardino County Environmental Services Department; and,

- Roadway facilities construction on U.S. Highway 395 and on site will conform to the standards of CALTRANS and the design requirements of the American Association of State Highway and Transportation Officials.

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV AND V

Requirements

1. Luz shall be responsible for assuring that the civil engineering facilities have been constructed in accordance with the applicable LORS listed in the section entitled Applicable Laws, Ordinances, Regulations and Standards and in Appendix A of the AFC. Luz shall provide all records requested for any audit by the CBO* to verify compliance with LORS. Luz shall correct any non-compliance resulting from the audit.

   Verification: Within 30 days after the Commission's Decision, Luz's project manager shall submit to the CBO and the CPM a signed statement certifying that the civil engineering facilities were constructed to conform to the applicable LORS. The CBO shall audit Luz to the extent necessary to verify compliance with the applicable LORS and report the audit findings to the CEC CPM.

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* CBO is the County Chief Building Official, other design CEC's duly authorized representative.

SEGS UNITS VI AND VII

1. Luz shall design, construct and inspect the Luz Solar Energy Generating Systems (SEGS) project in accordance with applicable LORS identified herein, under the sections entitled Applicable Laws, Ordinances, Regulations and Standards, the Proposed Modifications and pertinent portions of Luz's documents listed under Project Evaluation (Summary of Proposal).

   Verification: Fourteen (14) days prior to the start of commercial operation of each unit, Luz shall submit to the CPM a statement of verification that all design, construction and inspection requirements of the applicable LORS and the Commission's Decision have been met for the area of civil engineering.

2. Luz shall assign to the SEGS VI and VII projects a responsible, qualified civil engineer registered in California who shall:

   - be directly responsible for the design of secondary containment facilities, the proposed earthwork and related civil works facilities including, but not limited to, site preparation and grading, excavation, design and construction of drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems;
   - prepare (or directly supervise the preparation of) and sign plans, calculations and specifications for erosion and sediment control, structure foundations and related civil work facilities at the plant site, to comply with the AFC requirements and the Commission's Decision;
   - monitor construction progress to ensure compliance with the design intent;
   - evaluate and recommend necessary changes in the design of the civil works facilities and changes in the construction procedures; and
   - be responsible for all civil work construction conforming with approved plans and specifications - the UBC, Local Codes and Ordinances and applicable requirements (UBC 1985 edition; Business and Professions Code, Division 3, Chapter 7 and Section 6704).

Verification: At least 15 days prior to the submittal of the proposed plans, specifications and calculations for grading, erosion and sediment control and related civil works to the CBO, Luz shall submit to the CPM and the CBO the name, qualifications and registration number of the responsible civil engineer, assigned to the project to perform the duties set forth above. If the civil engineer is subsequently reassigned or replaced, Luz shall, submit the name, qualifications and registration number for the newly-assigned individual to the CEC CPM and the CBO in the following construction progress report.

3. Luz shall assign to the SEGS VI and VII projects a qualified civil engineer, registered in California and fully competent and proficient in soils mechanics, who shall:

- o prepare the soils engineering reports required by Chapter 70 of the UBC;
- o be present, as required, during site grading and earthwork to provide consultation and to monitor compliance with the requirements set forth in Appendix F.1.1 to the AFC and the 1985 edition of Chapter 70 of the UBC;
- o recommend field changes to the responsible civil and construction engineers; and
- o prepare a final soils grading report.

This civil engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basic for design of earthwork or foundations. (Business and Professions Code, Division 3, Chapter 7, and Section 6704; UBC 1985 Chapters 29 and 70; CAC, Title 8, Sections 340 and 341; and Rule 145, California Board of Professional Engineers).

Verification: At least 14 days prior to the start of site preparation of each unit - or 30 days after certification, whichever is applicable, Luz shall submit the name, qualifications and registration number of this civil engineer to the CBO and and to the CEC CPM for approval. If the civil engineer is subsequently reassigned or replaced, Luz shall submit, the name, qualifications and registration number for

CBO review of those documents, in the next monthly construction report.

7. For SEGS VII Luz shall make payments to the CBO equivalent to the fees listed in Chapter 70, Section 7007(a) and (b), Table No. 70-A and 70-B of the UBC for the plan review and permit. If San Bernardino County has adjusted the UBC fees by codes or ordinances, Luz shall pay the adjusted fees. (UBC 1985 Chapter 70, Sections 7007(a) and (b), Table No. 70-A and 70-B).

   Verification: Luz shall make payments to the CBO at the time of submittal of the plans, calculations and specifications and the soils report. Luz shall send a copy of the transmittal letter to the CEC CPM.

8. All plant site grading operations shall be subject to inspection by the CBO and the CEC CPM and Staff (CAC, Title 8, Chapter 4, Division of Industrial Safety; UBC 1985 edition, Chapters 29 and 70).

   Verification: If the inspector finds that the work is not being done in accordance with the approved plans, the discrepancies shall be reported immediately to the CBO, the CEC CPM, and the responsible Luz resident civil engineer. The inspector shall then prepare a written report, detailing the discrepancies and non-compliance items and send a copy to the CBO, the CEC CPM and the responsible Luz resident civil engineer. If the CBO delegates inspections to Luz, their inspectors shall file monthly progress reports with the CBO and the CEC CPM.

9. Luz's responsible civil engineer for plant site activities shall (when Luz's geologist identifies unforseen adverse geologic conditions) stop all earthwork and construction in the affected area (unless safety requires continuing work). Luz shall prepare and submit modified plans, specifications, and calculations to the CBO (CAC, Title 8, Chapter 4, Division of Industrial Safety; UBC 1985 edition, Chapters 29 and 70).

   Verification: Within 10 days after receipt of the design changes, the CBO, in consultation with the CEC CPM, shall approve or disapprove the changes. Upon approval of the revised design, the CBO shall authorize Luz to resume earthwork and construction in the

affected areas. Luz shall provide a copy of such approval to the CPM in the next construction progress report.

10. Luz shall keep the CBO and the CEC CPM informed of the plant site construction progress (Warren Alquist Act, Public Resource Code [PRC], 25532).

    Verification: Luz shall prepare and submit, on a monthly basis, the construction progress reports to the CEC CPM and the CBO.

11. After completion of finish grading and erosion and sedimentation control facilities, the Luz responsible civil engineer for plant site activities shall:

    - submit to the CBO a final as-graded plan, final erosion and sedimentation control plans, a signed statement that these documents conform with the final approved combined grading plan, and, if required by the CBO, supplementary soil grading and geologic reports;
    - the soils grading and geologic grading reports;
    - as-graded grading plan;
    - a summary of soil compaction tests; and
    - notify the CBO in writing that the work is ready for final inspection (1985-UBC).

    Verification: Within 14 days after completion of finish grading and erosion and sedimentation control facilities or 30 days after certification, whichever is applicable, the Luz responsible civil engineer for plant site activities shall submit the above documents to the CBO for review and approval and shall submit transmittal letters to the CEC CPM. Luz shall seek final approval from the CBO only after all required submittals are received and reviewed and after all work, including installation of all drainage facilities and their protective devices and all erosion control measures, have been completed in accordance with the final approved combined grading plan. Luz shall notify the CEC CPM of the CBO's final approval in the next monthly construction report.

12. Luz shall submit to the CBO for review five sets of plans and three sets each of calculations and specifications for

the newly assigned individual to the CPM and the CBO in the next construction progress report.

4. Prior to the start of site grading on SEGS VII Luz shall submit to the CBO for review and approval:

   - o five sets of the proposed Grading Plan, to conform to the requirements of San Bernardino Ordinance No. 2815, combined with the erosion and sediment control plans (combined grading plan), and three sets of the specifications and calculations signed by the responsible civil engineer;

   - o a statement signed by the responsible civil engineer that the proposed combined grading plan, drainage structures, calculations and specifications comply with the applicable LORS and with the criteria and requirements set forth in the Commission's Decision;

   - o A Soils Engineering report and Engineering Geology report; and

   - o Luz shall send a copy of the transmittal letter detailing compliance with the above requirements to the CEC CPM. (UBC 1985 edition, Chapter 70- Excavation and Grading; CAC Title 8, Chapter 340 and 341).

   Verification: At least 14 days prior to the start of site grading of each site, or within 30 days following certification, whichever is applicable, Luz shall submit to the CBO the above described documents. When the work described in the combined grading plan conforms with all applicable requirements, Luz shall obtain from the CBO one complete set of the submitted plans, stamped and signed with the CBO's approval. Luz shall submit a letter to the CEC CPM that the documents conform to said requirements and have been approved.

5. Prior to the start of construction of each major structure foundation or civil work at either facility or following certification, whichever is applicable, Luz shall submit 5 sets to the CBO and one set to the CEC CPM for each of the following:

- o geotechnical report, field exploration, laboratory tests and engineering analyses detailing the nature and extent of the site soil that may be susceptible to rapid settlement or collapse when the soil becomes saturated under load;

- o report on foundation investigation to comply with UBC, Chapter 29, Subchapter 2905 (b, c and d);

- o the proposed final design plans including soil classification and design bearing capacity (ASTM D698, D1556, D1557);

- o calculations, specifications, soil reports and quality control procedures, signed by the responsible civil engineer, to verify that the proposed bearing capacity and the foundation settlement values as presently proposed are still valid and applicable; and

- o a signed statement that the proposed plans comply with the criteria set forth in Appendix F.1.1 to the AFC and all the requirements set forth in the Commission's Decision.

If removed contaminated soil is to be replaced with uncontaminated soil, the soil shall be recompacted to the proper specifications (90% or 95% relative compaction as specified in the ASTM D1557-78). Foundations exposed during the soil removal shall be temporarily supported, if required, until compacted backfill can be properly replaced.

Verification: At least 30 days prior to the start of major structure foundations, Luz shall submit the above documents to the CBO and to the CEC CPM. Luz shall obtain one complete set of the original submittal stamped and signed with the CBO's approval. Luz shall submit a letter to the CEC CPM that the proposed foundation plans, specifications and calculations conform with the requirements of the Decision and that the CBO has approved them.

6. After completing foundation excavations, Luz's responsible civil engineer for plan site activities shall submit to the CBO for review and approval, supplementary soil grading and geologic grading reports, as-graded grading plans and a signed statement that any modifications in foundation design required by site geotechnical conditions were incorporated in the modified foundation plans approved by the CBO.

Verification: Luz shall provide the CEC CPM with such CBO review comments and approvals, or a status of the

the concrete or lined earth berm spill containment facilities for power block, chemical storage areas, the fuel oil storage tanks and acid and caustic storage tanks. The design, plans and calculations shall be signed and stamped by the responsible civil engineer. Luz shall send a copy of the transmittal letter to the CPM (ACI 318, 318.1; ASTM A185; A1915, UBC 1985, chapter 219; and CAC, Title 8, Chapter 4, Article 145).

Verification: At least 30 days prior to the start of construction of the spill containment facilities or 30 days after certification, whichever is applicable, Luz shall submit the above documents to the CBO for review and a copy of the transmittal letter to the CEC CPM. Luz shall submit written notice to the CEC CPM (prior to beginning work) that the spill containment facilities have been approved by the CBO and conform to the applicable requirements.

13. After construction of the spill containment facilities, Luz shall submit the as-built plans and a signed statement by the responsible civil engineer that the work was done in accordance with the final approved plans and that the spill facilities are adequate for their intended function (CAC, Title 8, Chapter 4, Article 145).

Verification: Within 30 days after completion of the spill containment facilities or certification, whichever is applicable, Luz shall submit said documents to the CBO for review. Luz shall file with the CEC CPM a copy of such review comments and approvals.

14. Luz shall submit to the CBO for review five sets of plans and three sets each of calculations and specifications for the transmission line pole foundations and guy anchors. The design plans and calculations shall be signed and stamped by the responsible civil engineer. Luz shall send a copy of the transmittal letter to the CEC CPM (CPUC General Order NO. 95; CAC, Title 8, Sections 340 and 341, Labor Code Section 6500; and CALTRANS Standard Specification, 1984 edition).

Verification: At least 30 days prior to the start of construction of the transmission line poles, guy anchors, access roads and crossings or 60 days after certification, whichever is applicable, Luz shall submit copies of the above documents to the CBO for review and a copy of the transmittal letter to the CEC CPM.

SECTION 10

STRUCTURAL ENGINEERING

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The following list of the LORS, as identified by Luz in the AFC (Luz 1987a), in the response to January 28 workshop requests (Luz 1987c), or in response to Staff data requests (Luz 1987c,d), apply to structural engineering. In cases where conflicts between cited codes (or standards) exist, the requirements of the more conservative code must be met.

FEDERAL

- MIL-C-16173GR1, Machine Surface Rust Preventative Type 1 & 2.

STATE

- Labor Code Section 6500, et Seq. Requires a permit for construction of trenches or excavations five feet or deeper where personnel have to descend. This also applies to construction or demolition of any building, structure, false work, or scaffolding which is more than three stories high or equivalent.

LOCAL

- No LORS have been identified that relate to structural work.

GENERAL

- International Conference of Building Officials, "Uniform Building Code (UBC), 1985 Edition with Supplement.
- American Institute of Steel Construction (AISC)
  - "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" - AISC, 1978
  - "Code of Standard Practice for Steel Buildings and

Bridges" - AISC, 1976

- "Specifications for Structural Joints Using ASTM A325 or A490 Bolts" - AISC, Approved April 26, 1978.

o Metal Building Manufacturers Association (MBMA), Low Rise Metal Building Systems Manual, 1986.

o American Society for Testing and Materials (ASTM). The following codes and standards shall be included as a minimum:

- ASTM A36-81A - Specification for Structural Steel
- ASTM A53-83 - Specification for Pipe, Steel, Black and Hot-dipped, Zinc Coated Welded and Seamless
- ASTM A307-83 - Specification for Carbon Steel Externally Threaded Standard Fasteners
- ASTM A325-84 - Specification for High-Strength Bolts for Structural Steel Joints.
- ASTM A615-82 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement with Supplement S1.
- ASTM C-33 - Specification for Concrete Aggregates
- ASTM C-150 - Specification for Portland Cement

o American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code:

- Section I - Power Boilers - July 1986
- Section VIII - Pressure Vessels - July 1986
- Section IX - Welding Qualifications - July 1986

o American Water Works Association (AWWA)

- "Standards for Welding Steel Tanks," (AWWA), D100, with Appendix D, 1979

o National Fire Protection Association Standards (NFPA), 1983

o Steel Structures Painting Council Standards (SSPC)

o National Electric Manufacturers Association (NEMA) Publication SG 6, Part 36.

- American National Standards Institute (ANSI)
  - ANSI B31.1, Power Piping, 1980 with 1985 Addenda
  - ANSI B16.25, Butt-Welding Ends, 1982
  - ANSI B16.5, Steel Pipe Flanges and Flanged Fittings
  - ANSI B16.21, Nonmetallic Baskets for Pipe Flanges
- Instrument Society of America (ISA).
- Asphalt Institute Handbook
- American Society of Nondestructive Testing (SNT-TC-1A).

In addition to the above listed LORS, Staff has identified the following required applicable LORS:

FEDERAL

- Title 29, Code of Federal Regulations, Part 1910, Occupational Safety and Health Standards.

STATE

- California Public Utilities Commission, General Order No. 95 applies to transmission line construction.
- Business and Professions Code, section 6704, Requires state registration to practice as a Civil Engineer, Structural Engineer or Soils Engineer in California.
- Vehicle Code, section 35780, Requires a permit from Caltrans to transport heavy loads on state roads.
- Title 24, California Administrative Code (CAC), Parts 2-6. Adopts current edition of Uniform Building Code (UBC) as minimum legal building standards.
- Title 8, CAC, Section 450 et Seq. (Chapter 4 Division of Industrial Safety). Describes general construction safety orders, industrial safety orders, and work safety requirements and procedures.

LOCAL

- San Bernardino County Ordinance No. 2815
- San Bernardino County Building Permit Fee Schedule

GENERAL

- Structural Engineers Association of California "Recommended Lateral Force Requirements," 1980 Recommendation and Commentary.
- Applied Technology Council, "Tentative Provision for the Development of Seismic Regulations for Buildings," (ATC-3-06), Amended December, 1982.
- American Concrete Institute (ACI). In addition to Luz's proposed codes and standards, the following industry standards used for the construction of concrete work should also be included as a minimum to obtain a satisfactory

concrete product. They supplement the Uniform Building Code and ACI 318.

- "Building Code Requirements for Reinforced Concrete" (ACI 318-83)
- "Building Code Requirements for Structural Plain Concrete" (ACI 318.1-83)
- ACI 212.2R - Guide for use of admixtures in concrete
- ACI 302.1R-80 - Guide for concrete floor and slab construction
- ACI 305R-77(82) - Guide to hot weather concreting
- ACI 306R-78(83) - Guide to cold weather concreting
- ACI 350R-77 - Concrete Sanitary Engineering Structures (Containments)
- ACI 531 - Concrete-Masonry Structures - Design and Construction"

o American Institute of Steel Construction (AISC), Manual of Steel Construction, 1980.

o American Iron and Steel Institute (AISI) "Specification for the Design of Cold Formed Steel Structural Members," Parts 1 and 2, 1968.

o American Welding Society (AWS) "Structural Welding Code" (AWS D1.1-80).

o International Conference of Building Officials, International Association of Plumbing and Mechanical Officials, Uniform Mechanical Code" (UMC).

o Masonry Institute of America, "Reinforced Masonry Engineering Handbook."

o Cooling Tower Institute - Standard 114.

o American Petroleum Institute (API) Standard 650, Welded Steel Tanks for Oil Storage, 1980.

o Hydraulic Institute Standards.

o Heating, Ventilating, and Air Conditioning Guide by American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE).

- Uniform Plumbing Code (UPC).

- American Institute of Timber Construction (AITC), "Timber Construction Manual," 2nd Edition.

- National Forest Products Association, "National Design Specification for Wood Construction."

- ANSI/Institute of Electrical and Electronic Engineers (IEEE) Standard 344-75 IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations.

- American Society for Testing and Materials.

  - ASTM A276-83 - Specification for Stainless and Heat Resisting Steel Bars and Shapes

  - ASTM A500-82 - Specification for Cold-formed Welded and Seamless Carbon Steel Structural Tubing

  - ASTM A695-82 - Specification for Coating of Zinc Mechanically Deposited on Iron and Steel

  - ASTM A123-78 - Specification for Zinc (Hot-Galvanized) Coatings on Products Fabricated for Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strip

  - ASTM A153-82 - Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

  - ASTM A82-79 - Cold-drawn Steel Wire for Concrete Reinforcement

  - ASTM A185-79 - Welded Steel Wire Fabric for Concrete Reinforcement

- IEEE Standard 693-84 IEEE Recommended Practices for Seismic Design of Substations.

PERFORMANCE OBJECTIVES/CRITERIA

The performance objective is to design and construct the facility to comply with the applicable LORS, to meet its intended operational function and to withstand all the imposed loads such as material self weight, moving load, equipment operating load, soil pressure, hydrostatic and hydrodynamic loads, thermal load, wind load and seismic load.

Seismic performance criteria for earthquake resistive structures are set forth in the Structural Engineers Association of California (SEAOC) "Recommended Lateral Force Requirements and Commentary" (1980) which are to protect against loss of life and limb. The SEAOC criteria is the basis for the seismic design criteria and analysis methods set forth in the UBC. The intent of the SEAOC "Blue Book" and the UBC is primarily to protect life and safety. This intent is consistent with the findings the CEC must make (i.e., protection of the environment and assurance of public health and safety.

According to the Blue Book, structures designed in accordance with the SEAOC recommendations should be able to:

- Resist minor earthquakes without damage;
- Resist moderate earthquakes without structural damage, but with some nonstructural damage; and
- Resist major earthquakes, of the intensity and severity of the strongest experienced in California, without collapse, but with some structural as well as nonstructural damage.

Note further that the "Blue Book" and UBC are oriented to ordinary building structures. Mechanical equipment such as the Steam Turbine Generator (STG), gas boilers, pump, switchyard equipment, etc. were considered in only an oblique manner during the development of the UBC and then primarily for anchorage.

The Commentary to the SEAOC Lateral Force Recommendations states: "The SEAOC Recommendations provide minimum design criteria in specific categories, but in broad general terms. Reliance must be placed on the experienced structural engineer to interpret and adapt the basic principles to each specific structure. Many types of structures require seismic design procedures which are beyond the scope of these Recommendations. Structures such as power plants, stacks, water towers, cooling towers, bridges, dams, retaining walls, docks, off-shore platforms, etc., require special design criteria. For some of these special structures, criteria have been developed by the technical association most directly concerned. Whenever this is not the case, the structural engineer must establish criteria to suit the special problem."

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV AND V

Requirements

1. Luz shall confirm that the design, construction, and inspection of the solar electric generation facility is in accordance with applicable LORS identified herein, under the section entitled "Applicable Laws, Ordinances, Regulations and Standards," and the pertinent portions of this testimony entitled "Summary of Proposal". Luz shall provide all records requested for any audit by the CBO to verify compliance. Luz shall correct any noncompliance resulting from the audit.

   Verification: Luz's project manager shall submit to the CEC Compliance Project Manager (CPM) a statement of verification that all design, construction, and inspection requirements of the applicable LORS and the Commission Decision have been met for the area of structural engineering. The statement shall be submitted thirty (30) days after the CBO's determination of compliance. The CBO shall audit Luz to the extent necessary to verify compliance with applicable LORS and report the audit findings to the CPM.

SEGS UNITS VI AND VII

Requirements

1. Luz shall design, construct, and inspect the solar energy generation facility in accordance with applicable LORS identified herein, under the section entitled "Applicable Laws, Ordinances, Regulation and Standards" of this testimony, the proposed modifications and the pertinent portions of the section of this testimony entitled "Summary of Proposal".

   Verification: Luz's project manager shall submit to the CEC CPM a statement of verification that all design, construction, and inspection requirements of the applicable LORS and the Commission Decision have been met for the area of structural engineering. The statement shall be submitted thirty (30) days prior to the date of commercial operation of both SEGS Units VI and VII.

2. Luz shall assign to the project a responsible design engineer(s) who is either a registered structural engineer with the authority to use the title "Structural Engineer" in California or a registered California Civil Engineer who is fully competent and proficient in the design of power plant structures and equipment supports. The design engineer(s) shall be:

   a. Directly responsible for design of proposed structures and equipment supports.

   b. Provide consultation to the responsible construction engineer during design and construction of the project.

   c. Monitor construction progress to ensure compliance with the design intent.

   d. Evaluate and recommend necessary changes in design.

   e. Prepare and sign all necessary building plans, specifications and calculations (Business and Professions Code; Chapter 7, Division 3).

   Verification: At least 30 days prior to submittal of building plans for each unit, Luz shall identify to the CBO and the CEC CPM the name and set forth the qualifications of the responsible design engineer who was assigned to the project and performed the duties set forth above.

3. For each project facility structure, equipment support, equipment anchorage, field fabricated tank, cooling tower, foundation, turbine/generator, boiler, ASME pressure vessels, switchyard equipment, and power piping Luz shall submit four sets each of proposed final design plans and three sets each of the specifications, calculations, soils report, and quality control procedures for each structure, equipment support, equipment anchorage, field fabricated tank, cooling tower, foundation, turbine/generator, boiler, ASME pressure vessels, switchyard equipment, and power piping to the CBO with one copy of a complete transmittal package (plans, calculations, specifications, soils report, and quality control procedures) to the CEC CPM.

Luz shall ensure that all field fabricated tanks shall be designed, fabricated, and installed in accordance with API 650 or AWWA D-100 and CAC, Title 8, Chapter 4. If there are conflicting requirements, the most conservative shall govern (i.e., highest loads, lowest allowable stresses.

Plans, calculations, and specifications for foundations that support structures should be filed concurrently with the foundations plans, calculations, and specifications. The final plans, calculations, and specifications shall clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design and be signed and stamped by the responsible design engineer. In addition, the responsible design engineer shall submit a signed statement to the CBO and to the CEC CPM that the proposed final design plans, specifications and calculations conform with all of the requirements set forth in the Commission's Decision.

Verification: Luz shall submit the plans, calculations, and other required documents to the CBO and the CEC CPM at least 30 days, upon agreement of the CBO, prior to the intended start of fabrication or installation of each structure, equipment support, or foundation for each SEGS Unit. If the CBO discovers nonconformance with the stated requirements, he shall notify Luz's responsible design engineer within 30 days of the submittal date and shall return the nonconforming portion of the plans to Luz for correction. Luz shall resubmit the corrected plans within 30 days of the return to Luz of the nonconforming submittal.

Luz shall submit written notice to the CEC CPM that the proposed building plans, specifications, and calculations for each SEGS Unit have been determined by

the CBO to be in conformance with the requirements set forth in the applicable laws, ordinances, regulations and standards and that he has approved them.

4. Luz shall make payments to the CBO equivalent to the fees listed in the Uniform Building Code (UBC) Chapter 3, Section 304 and Table No. 3-A, for the plan review and permit. If the city or county in which the plant is to be built has adjusted the UBC fees by county ordinance or code, Luz shall pay the adjusted fee.

   Verification: Luz shall make payment to the CBO at the time of submittal of the plans, specifications, calculations and soils report, and notify the CEC that the payment has been made.

5. Luz shall apply for and obtain an "in-lieu" building permit and upon receipt of payment and approval of the proposed building plans, the CBO shall issue the permit to Luz.

   Verification: Within the next construction progress report after issuance, Luz shall notify the CEC CPM that an "in lieu" building permit has been issued to Luz.

6. Luz shall keep the CBO informed regarding the status of construction.

   Verification: Luz shall submit a monthly construction progress report to the CBO and the CEC CPM. All material testing reports and all inspection reports shall be submitted to the CEC CPM on a routine submittal schedule.

7. Inspections shall be performed in accordance with Chapters 3 and 70 of the UBC (1985 edition). Luz shall assign a qualified special inspector, approved by the CBO, who shall be present on site as required to monitor construction activities, who shall have authority to halt construction and to require changes or remedial work if the work does not

conform to the applicable requirements and who shall be responsible for the special and continuous inspections required by UBC Section 306. All welding, such as structural piping, tanks, and pressure vessels, shall be inspected by a certified weld inspector (AWS and/or ASME as applicable). Names and qualifications of the qualified special inspector, the certified weld inspector, and the other special inspectors shall be submitted to the CBO and to the CEC CPM at least 60 days (or a lesser number of days mutually agreeable to the CEC and CBO) prior to start of any activity requiring special inspection in accordance with UBC Section 306 (UBC, Chapters 3 and 70).

Verification: Prior to issuance of the "in lieu" building permit for each SEGS Unit, Luz shall identify the qualified special inspector, the certified weld inspectors, and the certified special inspectors to the CBO and to the CEC CPM. Luz shall notify the CEC CPM of all CBO approvals or disapprovals of the resident registered civil engineer, weld inspectors, or special inspectors in the next construction progress report.

8. All structural work shall be subject to inspection by the CBO and CEC CPM.

Verification: Luz shall notify the CBO and CEC CPM by telephone at least 15 days prior to when the work is ready for inspection.

9. If any changes to the approved final plans are deemed necessary, Luz shall file with the CBO and CEC CPM design changes to the final plans as required by UBC, Section 303, submitting three sets of the revised drawings, and two sets of the specifications and calculations to the CBO with one copy of the complete transmittal package to the CEC CPM and shall notify the CBO of the intended filing (UBC, Chapter 3).

Verification: Luz shall notify the CBO at least 15 days prior to the intended filing of design changes. The CBO shall return two sets of submittals stamped and signed with his/her approval to Luz within 30 days (or a lesser number of days mutually agree able to the CBO and CEC CPM), provided the plans comply with the stated requirements and Luz shall notify the CEC CPM that the CBO has approved the revised plans.

10. Upon completion of any structure, Luz's responsible resident engineer shall submit to the CBO and to the CEC: (a) a written notice that the structure is ready for final inspection, and (b) a signed statement that the structure conforms to the final approved building plans. The marked up "as-built" drawing for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings.

    Verification: The CBO shall inspect the completed structure and review the submitted documents. When the work and the "as-built" plans conform with the approved final building plans, the CBO shall give them final approval and Luz shall notify the CEC CPM of such approval. If the San Bernardino County Chief Building Official is used as the CBO, he/she shall also issue a Certificate of Occupancy after final approval.

11. Luz shall submit weekly to the CBO two sets each of the following data:

    - Concrete cylinder strength test reports, (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, mix design designation and parameters).
    - Concrete pour sign-off sheets.
    - Bolt torque inspection reports (including location of test, date, bolt size, recorded torques).
    - Field weld inspection reports, (including type of weld, location of weld, inspection of NDT procedure and results, welder qualifications, certifications, qualified procedure description or number [ref: AWS and ASME]).
    - Reports covering other structure activities requiring special inspections in accordance with UBC, Section 306.

Verification: The CBO shall review the above reports and shall indicate his/her approval/disapproval to Luz within 30 days after receipt. Luz shall submit copies to the CEC CPM, provided specific test results comply with identified requirements. If disapproved, the CBO shall immediately advise Luz and the CEC CPM of the reason for disapproval.

12. Prior to the intended start date of the first increment of construction (the first increment of construction is excavation for foundations), Luz shall furnish to the CBO and the CEC a schedule of structural plan submittals, a Master Drawing List, and a Master Specifications List. The schedules shall contain a description and list of proposed submittal packages of structural plans, calculations, and specifications for critical electrical and mechanical equipment and the estimated date of submittal.

Verification: At least 30 days, if agreeable to the CBO, prior to the intended start date of the first increment of construction (the first increment of construction is excavation for foundations), Luz shall submit the schedule, Master Drawing List, and Master Specifications List to the CBO and to the CEC CPM, and provide updates at least monthly.

SECTION 11

WASTE MANAGEMENT

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

FEDERAL

- Clean Water Act, 33 USC section 1251. Under this act, any point-source waste discharges into waters of the United States require a National Pollution Discharge Elimination System (NPDES) Permit. In California, the Regional Water Quality Control Boards (RWQCB) administer the federal NPDES program. The proposed project will be under the jurisdiction of the Lahontan Regional Water Quality Control Board (LRWQCB).

- Resource Conservation and Recovery Act (RCRA) of 1976, 40 CFR section 260. This federal legislation was reauthorized and strengthened by the Hazardous and Solid Waste Amendments of November 1984. The law defines the types of solid and liquid wastes that are considered hazardous and establishes specific criteria for handling, storing, transporting, treating, and disposing of those wastes. RCRA also specifies the minimum reporting and monitoring requirements for hazardous waste generators.

  The U.S. Environmental Protection Agency (EPA) has the authority to enforce the provisions of RCRA nationally. This authority to administer a RCRA program can be delegated to a state (40 CFR section 271). The California Department of Health Services (DHS) was the lead agency and had interim authority to administer the program until January 31, 1986. Administering RCRA in California is currently the joint responsibility of the EPA and DHS.

- Safe Drinking Water Act (SDWA) 1974, amended 1986. This act requires the EPA to establish a program that provides for the safety of the country's drinking water.

STATE

- The Porter-Cologne Water Quality Control Act 1967, Water Code, section 13260 et seq. Under this Act, the RWQCB are required to adopt waste discharge requirements to protect the waters of the state for the use and enjoyment of the people of California.

  The owner or operator of any facility which discharges waste that may affect the quality of water of the state (including groundwater) must obtain waste discharge requirements from the RWQCB. If the facility discharges wastes to navigable surface waters of the United States, the owner or operator must obtain a NPDES Permit rather than obtain waste discharge requirements from the RWQCB. The NPDES program is administered by the appropriate RWQCB.

  The proposed Luz SEGS project will require waste discharge requirements from the LRWQCB. Since Luz has not proposed to discharge any wastewater directly to a navigable surface water body, a NPDES Permit will not be required.

- Title 22, California Administrative Code (CAC), section 66001 sets state minimum standards for the management of hazardous and extremely hazardous wastes. Because this project will use a variety of chemicals during operations, there exists a potential to generate waste products which could be classified as hazardous wastes according to the provisions of the CAC, Title 22. If Luz generates hazardous waste they must apply for a Hazardous Waste Generator Permit from the DHS. If Luz intends to store those hazardous wastes on site for more than (90) days, they must obtain a Hazardous Waste Facility Permit from the DHS. Without this permit, hazardous wastes shall be removed from the site within 90 days.

- Title 23, CAC, section 640 establishes criteria for the classification of wastes and waste disposal units and also establishes waste management requirements for waste treatment, storage, or disposal in landfills, surface impoundments (ponds), waste piles, and land treatment facilities.

LOCAL

- The San Bernardino County Department of Environmental Health Services (DEHS) serves as the local enforcement agency for the operation of solid waste disposal facilities under Title

14 of CAC, section 18051. The County's DEHS has responsibility for permitting, inspecting and enforcing regulations related to solid waste disposal facilities. Permitting of these disposal facilities must be done with concurrence from the California Waste Management Board.

- San Bernardino County Code, Chapter 5. This code specifies requirements for establishing and permitting septic systems within San Bernardino County.

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV, V, VI, AND VII

Requirements

1. Non-hazardous construction wastes from Units III, IV, V, VI and VII shall be disposed of by Luz or its contractors at the Barstow Landfill or at facilities approved by the LRWQCB and the San Bernardino County DEHS. Hazardous wastes generated during construction and operation shall be disposed of at the Kettleman Hills facility or a CEC CPM and CDHS approved facility.

   Verification: At least 30 days following the Commission decision, Luz shall submit a letter to the California Energy Commission (CEC) Compliance Project Manager (CPM) verifying that Luz intends to (1) dispose of all construction and operation non-hazardous wastes at the Barstow Landfill or at facilities approved by the LRWQCB and San Bernardino County DEHS and (2) dispose of construction and operation-related hazardous wastes at the Kettleman Hills facility or a CEC CPM and CDHS approved facility. In the Annual Compliance Reports Luz shall provide the CEC CPM verification that all wastes have been disposed of in the appropriate landfills.

2. Luz shall obtain a Hazardous Waste Generator Permit from the DHS for the management of hazardous wastes from the proposed Units III, IV, V, VI, and VII.

   Verification: Within 30 days after commencing commercial operations, of each SEGS Unit, Luz shall submit to the CEC CPM a copy of the Hazardous Waste Generator Permit for Units III, IV, V, VI and VII (as appropriate) or a letter from the DHS stipulating a waiver for this permit.

3. If Luz uses an anticorrosive agent other than Powerline 1200 and Powerline 3040 in the boiler and the cooling tower as proposed, Luz shall analyze the boiler cleaning waste and cooling tower blowdown to determine if they are hazardous under Title 22 of the California Code of Regulations (CCR)

and verify that their use would present no health hazard to humans or the environment. Luz shall notify DHS, CEC CPM and LRWQCB of the results of this analysis. Luz shall then obtain a waste discharge permit from the LRWQCB if required, and dispose of these wastes in a manner permitted by the LRWQCB.

Verification: Luz shall provide a copy of the permit to the CEC CPM at least 30 days before discharge. In addition, Luz shall verify that the use of the new anticorrosive agent would not present a health hazard to humans or the environment.

4. If Luz stores hazardous wastes on site for more than 90 days, Luz shall obtain a determination from the DHS that the requirements of a hazardous waste storage or disposal facility permit have been satisfied. Storage and disposal of such wastes shall be in accordance with the DHS regulations.

Verification: Luz shall notify the CEC CPM within 7 days if Luz applies for and/or obtained a Hazardous Waste Facility Permit from the DHS.

5. Luz shall dispose of sanitary wastes in a manner approved by the LRWQCB and the San Bernardino County DEHS.

Verification: Thirty (30) days prior to commercial operation of Units VI and VII, Luz shall submit to the CEC CPM, verification that the sanitary wastes will be disposed of in a manner approved by the LRWQCB and the San Bernardino County DEHS.

Ninety (90) days before commercial operations of SEGS VI or VII, Luz shall submit to the CEC CPM verification that its as-built septic tank/leach field systems, at SEGS III-VII, plans and specifications have been approved by the LRWQCB and the San Bernardino County DEHS.

6. Luz shall annually prepare a report summarizing the nature of all project-related hazardous wastes along with all waste disposal methods and the facilities used. The report shall also include the quantities of each type of waste generated and disposed of.

Verification: Luz shall submit a hazardous waste summary report to the CEC CPM in the Annual Compliance Report.

7. Luz shall notify the CEC of any waste management-related enforcement action or proposed action taken against Luz, and any action against the waste hauler or disposal facility operator (that Luz has knowledge of) during the construction and operation of the proposed project.

Verification: Luz shall notify the CEC CPM within 10 days of learning of any such impending enforcement action.

8. Luz shall ensure that hazardous wastes generated during construction and operation are handled and disposed of at the Kettleman Hills facility or a CEC CPM and CDHS approved facility in a manner specified by DHS and the LRWQCB.

Verification: In its Annual Compliance Report, Luz shall submit to the CEC CPM, verification that hazardous wastes were transported by a DHS-permitted hazardous waste hauler, and disposed of at the Kettleman Hills facility or to a CEC CPM and CDHS approved facility, by a CDHS permitted hazardous waste hauler, and disposed of in accordance with applicable LORS.

9. Luz shall remove, as described in its Safety Plan (and modifications thereto), to Kettleman Hills disposal facility, all HTF-contaminated soil and materials that were generated at Units III, IV, and V, and that have been stored on site for 90 days or more, at least 30 days before the start of operations in Units VI or VII. Luz shall notify the CEC CPM prior to the utilization of a waste disposal site other than Kettleman Hills.

Verification: At least 30 days before the beginning of operations at Units VI or VII, Luz shall submit verification to the CEC CPM that no HTF-contaminated soil and materials at Units III, IV, and V have been stored on site for more than 90 days, without CDHS and/or LRWQCB permission. This verification shall also show that these contaminated wastes were hauled by a licensed hazardous waste hauler to the Kettleman Hills facility or to a CEC CPM and CDHS approved facility.

10. Because of the hazardous nature of the HTF, Luz shall maintain records of all shipments of HTF to SEGS Units III-VII. All HTF must be accounted for in the Annual Compliance Report.

Verification: Within 90 days of certification, Luz shall submit an HTF accounting plan to the CEC CPM for comment and subsequent approval.

11. Luz shall immediately notify the CEC CPM of any HTF spill of 20 gallons or more.

Verification: Within 48 hours of a spill, Luz shall notify the CEC CPM of the spill, and immediately therafter shall submit verification to the CEC CPM of the spill and cleanup measures initiated.

12. Luz shall undertake additional soil sampling testing at previous reportable HTF spill locations at SEGS Unit III, IV, and V to determine the levels of HTF still present in the soil. If the levels of HTF are found to be 3000 mg/kg of HTF in the soil or greater Luz shall undertake additional measures to cleanup the HTF to a level which is below the 3000 mg/kg level as verified by a DHS certified laboratory and dispose of the hazardous waste at Kettleman Hills or a CEC CPM and DHS approved facility. If DHS determines, at a later date, that the HTF hazardous waste level is less than 3000 mg/kg, Luz shall undertake additional cleanup measures as prescribed by DHS. If DHS determines that the HTF hazardous waste level is greater than 3000 mg/kg, Luz shall modify its cleanup procedures as prescribed by DHS.

Verification: Within 30 days after certification, Luz shall submit to the CEC CPM the results of the soil sampling testing including a map depicting the past reportable spill locations and the levels of HTF present. Within 90 days after certification, Luz shall submit a report on each additional cleanup including the methodology, volume of material removed and manifest of the disposed HTF. The need for additional monitoring and cleanup will be determined by the CEC CPM in consultation with DHS and San Bernardino DEHS staff.

13. Luz shall undertake an investigation of HTF hazardous waste treatment technologies which could provide an alternative to disposal of such hazardous waste at Kettleman Hills. If the alternative treatment technology proves environmentally and economically feasible, Luz may implement such a procedure as an alternative to disposal at Kettleman Hills or a CEC CPM and DHS approved facility.

Verification: Within 30 days of initiating the investigation, Luz shall submit an investigation protocol to the CEC CPM, LRWQCB, DHS, and San Bernardino DEHS for review. 90 days prior to implementing an alternative disposal treatment technology, Luz shall submit its proposal for alternative treatment for review and approval to the CEC CPM and DHS.

14. If there are future HTF spills at SEGS Units III-VII, Luz will cleanup the hazardous waste to a level that is less than the 3000 mg/kg of HTF in the soil as verified by a DHS certified laboratory or a CEC CPM and DHS approved methodology. If DHS determines, at a later date, that the HTF in the soil is hazardous at a level less than 3000 mg/kg, Luz shall undertake additional cleanup measures as prescribed by DHS. If DHS determines that the cleanup level is greater than 3000 mg/kg of HTF in the soil, Luz shall modify its cleanup procedures as prescribed by DHS.

Verification: Within 30 days of a HTF spill, Luz shall submit to the CEC CPM a map depicting the HTF spill location and a report on the volume of HTF spilled, the volume of hazardous material removed, the level of cleanup achieved. Within 90 days of a HTF spill Luz shall submit to the CEC CPM a manifest of the disposed HTF.

SECTION 12

PUBLIC/WORKER SAFETY

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The following codes, regulations and standards were listed by Luz in the AFC Vol. 4, Sections 3.2.6, 4.2.6, 5.2.6, 6.2.6, 7.2.6 and 12.0 and portions of each relate to safety (Luz 1987a). The common list for each SEGS Unit III through VII with a list of applicable regulations from Section 12.0 of the AFC Vol. 4 follow:

Luz has stated in the AFC, Volume 4 Sections 3.2.6, 4.2.6, 5.2.6, 6.2.6, 7.2.6 (Luz 1987a) "The applicable edition of codes, standards, ordinances and regulations is that in effect on July 1, 1984, including any later updates. Codes relevant to each SEGS unit include, but are not limited to, the following:"

ABMA:	American Boiler Manufacturers Association
AFBMA:	AntiFriction Bearing Manufacturers Association
AIEE:	American Institute of Electrical Engineers
AISC:	American Institute of Steel Constructors
ANSI:	American National Standards Institute
ASME:	American Society of Mechanical Engineers
ASTM:	American Society for Testing and Materials
Cal-OSHA:	California Occupation Safety and Health Administration
CSEC:	California State Electrical Code
HEI:	Heat Exchange Institute
IEC:	International Electrotechnical Commission
ICEA:	Insulated Cable Engineers Association
IEEE:	Institute of Electrical and Electronic Engineers
ISA:	Instrument Society of America
MS:	Manufacturers Standards
NEC:	National Electric Code
NEMA:	National Electrical Manufacturers Association
NFPA:	National Fire Protection Association

NFC:	National Fire Code
TEMA:	Tubular Exchanger Manufacturers Association, Inc.
UBC:	Uniform Building Code
UL:	Underwriters Laboratories

Extracted list of LORS from Luz AFC Vol. 4, Section 12.0:

- Equipment operating permits for boilers, etc., California Labor Codes Sections 7621, 7680, 7683, 7300, et. seq.
- California-Occupational Safety and Health Act (Cal-OSHA) Permit, California Labor Code Section 6500
- Hazardous Waste Generator Permit, California Administrative Code (CAC), Title 22, Section 66016, et seq.

The following additional list of the latest editions of published codes, regulations and standards, determined by Staff also should be applicable:

FEDERAL

- OSHA Regulations - The provisions of OSHA, as stipulated and identified in Title 29, Part 1910, "Occupational Safety and Health Standards".
- Environmental Protection Agency Spill Prevention Control and Countermeasure Regulation, 40 Code of Federal Regulations (CFR), Parts 112, 300 and 302.
- Department of Transportation, 49 CFR, Parts 171, 172, 173, 177 and 178.
- 49 CFR, Sections 173.245, 173.302, 178.36, 178.37, 178.118a

STATE

- Title 8, CAC, Section 450 et seq. [Chapter 4, Division of Industrial Safety (Industrial Safety Orders) and applicable subsections.]
- Title 22, CAC, Division 4 Chapter 30 - Minimum Standards for the Management of Hazardous and Extremely Hazardous Wastes.
- Title 8, CAC, Part 1, Chapter 4, Subchapter 7 - General

Safety Orders for Protection of Workers From Hazardous Substances.

- Title 24, CAC, Parts 2 through 6 (State Building Code, Electrical Code, Mechanical Code, Plumbing Code and Special Building Regulations).
- Business and Professional Code, Section 6700 et seq.
- Regulations of the following State agencies:
  - Department of Transportation
  - Department of Labor and Industry Regulations
  - Bureau of Fire Protection
  - Department of Public Health
  - Water and Power Resources
- California Occupational Safety and Health Act 1973 (California OSHA), Labor Code Section 6300 et seq.
- California Administrative Code, Title 13, Sections 1160 et seq., 1161 et seq., 1201.1
- California Health & Safety Code Sections 25160, 25161, 25163, 25168
- California Vehicle Code Sections 2530, 2531, 34500 et seq.

LOCAL (SAN BERNARDINO COUNTY)

- National Fire Safety Codes
- National Electric Code
- Uniform Building Code
- Uniform Plumbing Code
- Uniform Mechanical Code
- San Bernardino Uniform Fire Code Ordinance Nos. 3054 and 3055
- San Bernardino County Ordinance No. 2816
- San Bernardino County Ordinance No. 2815
- San Bernardino County Ordinance No. 3130

INDUSTRY CODES AND STANDARDS

- American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code
  - Section I, Boiler Codes
  - Section II, Material Specifications
  - Section VIII, Pressure Vessels
  - Section IX, Welding and Brazing Qualifications
- ASME TDP-1 - 1980 Recommended Practices for the Prevention of Water Drainage to Steam Turbines Used for Electrical Power Generation
- American National Standards Institute (ANSI), per latest catalog of publication listings
  - ANSI B31.1, Power Piping Code
  - ANSI B31.2, Fuel Gas Piping
  - ANSI B31.3, Chemical Plant and Petroleum Refinery Piping
  - ANSI B31.4, Liquid Petroleum Transportation Piping Systems
  - ANSI Standards for Materials
  - ANSI-UL 193-1980, Safety Standards for Alarm Valves for Fire-Protection Service
  - ANSI-NFPA 72E-1984, Automatic Fire Detectors
  - ANSI-UL 1481-1979, Power Supplies for Fire Protection Signaling Systems American Petroleum Institute (API) Standards
  - API 650, Welded Steel Tanks for Oil Storage
  - API 614, Lubrication of Shaft Sealing and Control Oil Systems for Special Purpose Applications
  - API 615, Sound Control of Mechanical Equipment for Refinery Services
  - API RP-520, Design and Installation of Pressure Relieving Systems in Refineries (in 2 parts)
  - API RP-521, Guide for Pressure Relieving and Depressurizing Systems
  - API Standard 660 Shell-and-Tube Heat Exchangers for General Refinery Services, 4th Edition, 1982
  - API RP-550 Manual on Installation of

Refinery Instruments and Control Systems (Parts I, II, III and IV)

- Mechanical Equipment Standards for Refinery Service, API Standards 610-619
- Piping Component Standards for Refinery Service, API Standards 590, 593-595, 597-607 and 609
- Recommended Practices for Electrical Installations and Equipment Binder, API 500 A, 500 B, 500 C and 540-544
- Welded Steel Storage Tanks for Refinery Services Binder, API 510, Standard 620, 650, RP-941, RP-942, STD 2000, RP-2001, RP-2003, PUBL 2009, PUBL 2015, 2015A and 2015B, PUBL 2021, PUBL 2023, STD 2508, STD 2510, STD 2555 and IRE Chapter XIII Atmospheric and Low-Pressure Storage Tanks
- Structural Engineers Association of California "Recommended Lateral Force Requirements", 1980 Recommendation and Commentary
- Applied Technology Council, "Tentative Provision for the Development of Seismic Regulations for Buildings" (ATC-3-06), Amended December, 1982
- Standards of Tubular Exchanger Manufacturers Association (TEMA)
- Standards of the Heat Exchanger Institute
- Standards of the Hydraulic Institute
- "Heating, Ventilating and Air Conditioning Guide" by American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
- "Industrial Ventilation" by American Conference of Governmental Industrial Hygienists
- American Institute of Steel Construction (AISC) Specifications
- Standards of the American Society for Testing Materials (ASTM)

- National Fire Protection Association Standards (NFPA)
  - NFPA 10-1984, Portable Fire Extinguisher
  - NFPA 11, Low Expansion Foam and Combined Agent Systems
  - NFPA 12, Carbon Dioxide Extinguishing Systems
  - NFPA 12A-1980, Halon Fire Extinguishing Systems
  - NFPA 13, Sprinkler Systems
  - NFPA 14-1983, Standpipe and Hose Systems
  - NFPA 15, Water Spray Fixed
  - NFPA 17, Dry Chemical Extinguishing Systems
  - NFPA 20-1983, Centrifugal Fire Pumps
  - NFPA 22, Water Tanks for Private Fire Protection
  - NFPA 24-1984, Private Fire Service Mains and Their Appurtenances
  - NFPA 26, Supervision of Valves
  - NFPA 30-1984, Flammable and Combustion Liquids Code
  - NFPA 37-1984, Stationary Combustion Engines and Gas Turbines
  - NFPA 54-1984, National Fuel Gas Code
  - NFPA 70-1984, National Electrical Code
  - NFPA 72E-1984, Automatic Fire Detector
  - NFPA 214-1983, Water Cooling Towers
  - NFPA 496-1982, Purged and Pressurized Enclosures for Electrical Equipment in Hazardous (Classified) Locations
  - NFPA 21, Fire Flow Testing and Marking of Hydrants
  - NFPA 1961, Standards for Fire Hoses
  - NFPA 1962, Standards for Fire Hose Case Use
  - NFPA 1963, Standards for Fire Hose Connections
  - NFPA/NEC Class I, Division II, Group D, Hazardous Area Designation
  - NFPA 850-1, Recommended Practice for Fire Protection for Fossil Fueled Steam Electric Generating Plants, dated December 30, 1985 and issued in 1986

- Standards of the Institute of Electrical and Electronic Engineers (IEEE)
- Standards of the National Electrical Manufacturers Association (NEMA)
- Standards of the Insulated Power Cable Engineer Association (IPCEA)
- Standards of the American Society of Nondestructive Testing (SNT-TC-1A)
- Standards of the Underwriters Laboratories (UL)
- International Conference of Building Officials, International Association of Plumbing and Mechanical Officials, "Uniform Mechanical Code" (UMC)
- American Institute of Steel Construction (AISC)
  - "Specifications for Structural Joints Using ASTM A325 or A490 Bolts"
- American Welding Society (AWS) "Structural Welding Code" (AWS D1.1)
- American Concrete Institute (ACI)
  - "Code Requirements for Nuclear-Safety-Related Structures", Appendix B, (Steel Embedments only) (ACI 349)
- American Water Works Association (AWWA)
  - "Standards for Welding Steel Tanks" (AWWA D100, with Appendix D)
- National Electrical Code (NEC)

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV AND V

Requirements

1. Luz shall comply with transportation, storage, handling and disposal procedures for HTF as specified in Title 22, CAC, Sections 66570, 66595, 67142, 66620, 66645, 67120, 66328, 67120, 67144, 67126, 66508, 67243; Title 8, CAC, Part 1, Chapter 4, Subchapter 7, "General Safety Orders for Protection of Workers from Hazardous Substances"; and the HTF material safety data sheets provided by "Monsanto" and "Dow" Chemical Companies, the HTF manufacturers.

   Verification: Within 90 days following the Commission Decision, Luz shall submit a letter to the County Building Official CBO (as applicable), stamped and signed by the mechanical engineer/safety engineer, who is registered in the State of California, under whose responsible charge it was prepared, stating that the HTF transportation, storage and handling procedures are in conformance with the above laws, ordinances, regulations and standards (LORS). A copy of the transmittal letter accompanying the letter shall be delivered to the California Energy Commission (CEC) Compliance Project Manager (CPM).

2. Luz shall comply with hazardous substance communication procedures according to Title 8, CAC, Section 5194.

   Verification: Within 90 days following the Commission Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer safety engineer under whose responsible charge it was prepared, stating that the hazardous substance communication procedures are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

3. Luz shall comply with storage and handling procedures for flammable liquids as specified in NFPA 30 and Title 8, CAC, section 5415-5420, 5426-5439, 5465-5498, and Title 13, CAC, section 1160 et. seq.; 1161 et seq., 1202.1 et

seq.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling procedures for flammable liquids are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

4. Luz shall comply with the handling and storage requirements for sulfuric acid as specified in Title 8, CAC, sections 5415-5420, 5426-5439; Title 13, CAC, section 1160 et seq.; 1151 et seq., 1202.1 et seq.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling requirements for sulfuric acid are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

5. Luz shall comply with the handling and storage requirements for sodium hydroxide as specified in Title 8, CAC, sections 460, 5155, 5162 and 5165.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling requirements for sodium hydroxide are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

6. Luz shall comply with the handling and storage procedures for lube oil as specified in Title 8, CAC, sections 5417 and 5420.

Verification: Within 90 days following the Commision

Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling procedures for lube oil are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

7. Luz shall submit its fire protection program specifications and drawings for the construction of each SEGS facility to the CBO (as applicable) for approval, which must be in compliance with the Uniform Fire Code, Uniform Building Code and the American Petroleum Institute guidelines for fire protection in plants having large quantities of hydrocarbons.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the fire protection program specifications and drawings are in conformance with required LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

8. Luz shall submit its fire protection program for the operation of the facility to the CBO (as applicable) for approval.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter and plans to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge they were prepared, stating that the fire protection program for plant operation is in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

9. Luz shall request the CBO (as applicable) to annually reexamine the fire protection program.

Verification: Luz shall summarize the reexamination of the fire protection program in its annual compliance report to the CEC CPM.

10. Luz shall prepare and implement an accident prevention program for both the operation and the construction of the SEGS projects and shall submit the program to the Cal-DOSH Consultation Service within 30 days following the Commission Decision for review of their program.

Verification: Luz shall request a letter from the Cal-DOSH Consultation Service certifying compliance with the requirements of Title 8, CAC, sections 1509 and 3203. A copy of the letter (or a statement of the actions taken by Luz to procure such a letter without positive results) shall be filed by Luz with the CEC CPM in the Annual Compliance Report.

11. Luz shall comply with the design requirements for building construction, via the UBC, UMC, NEC, NFPA and UPC in accordance with Title 24, CAC, sections 2-101 to 2-522; 2-2701 to 2-2910; 2-3201 to 2-3330; 3-280-5 to 3-427-22; 4-403 to 4-2212; 5-102 to 5-1704; and Chapters 5, 19, 32 and 33 of the Uniform Building Code (UBC); San Bernardino County Uniform Fire Code Ordinance 3054, 3055.

Verification: Luz shall request the CBO[3] to verify compliance with these LORS. The letter requesting the CBO's verification and the CBO's response shall be submitted to the CEC CPM in the construction progress report following of said request and response.

12. Luz shall only contract with California licensed haulers for the transport of hazardous materials.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CEC CPM signed by the plant manager, verifying that Luz is contracting with California licensed haulers for the transport of hazardous materials indicating business operating license number and name.

13. For all hazardous materials, Luz shall comply with the following sections of Title 8, CAC:

- sections 5139-5155; Dust, Fumes, Mists, Vapors and Gases
- sections 5160-5185; Hot, Flammable, Poisonous, Corrosive and Irritant Substances
- sections 5503-5624; Design, Construction and Installation of Venting, Diking, Valving and Supports
- section 3203; Operation; Accident Prevention Program
- section 5415-5420, 5465-5498, 5621, 6000, 6003; Flammable Liquids, Gases and Vapors
- sections 6150-6184; Fire Protection
- Title 22 sections 66693-66723 Management of Hazardous and Extremely Hazardous Waste

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the procedures for handling hazardous materials are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

14. Luz shall comply with the requirements of 49 CFR 172, 173, 178 for Containers of Hazardous Chemicals.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the containers for hazardous chemicals are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

15. Luz shall submit applicable documents to the CBO[1,2] requesting their review of the fire protection systems for conformance with applicable sections of the following (NFPA) standards:

- NFPA 10; Portable Fire Extinguisher
- NFPA 12; Carbon Dioxide Extinguishing Systems
- NFPA 12A; Halon Fire Extinguishing Systems
- NFPA 13; Standard for the Installation of Sprinkler Systems
- NFPA 14; Standpipe and Hose Systems
- NFPA 15; Water Spray Fixed System

- NFPA 17; Dry Chemical Extinguishing Systems
- NFPA 20; Centrifugal Fire Pumps
- NFPA 26; Standard for Supervision of Valves
- NFPA 30; Flammable and Combustible Liquids Code
- NFPA 70; National Electric Code
- NFPA 72E; Automatic Fire Detectors
- NFPA 1961; Standards for Fire Hoses
- NFPA 1962; Standards for Fire Hose Connections
- NFPA-NEC; Class I, Division II, Group D Hazardoes Area Designation
- Uniform Building Code
- Uniform Fire Code San Bernardino County

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, requesting that the fire protection systems be reviewed in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

16. Luz shall install fire dampers in the HVAC duct work penetrating walls into any automatically controlled area.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the fire dampers are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

17. Luz shall install insulation on equipment which exceeds 130°F for protecting personnel from burns and to minimize fire hazards from the HTF contacting these surfaces in accordance with section 3308,8 CAC.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the required insulation is in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

18. Luz shall complete the arrangements and agreements portion of the Safety Plan (i.e., Business Plan) for medical services for its personnel with ambulance and hospital service.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the safety engineer under whose responsible charge it was prepared, stating that the arrangements and agreements of the Safety Plan are in conformance with the above. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

19. Luz shall establish a First Aid/CPR Program for its personnel to deal with personal accident emergencies prior to the arrival of an ambulance.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the safety engineer under whose responsible charge it was prepared, stating that personnel have been trained in first aid/CPR procedures in conformance with the cited LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

20. Luz shall establish a fire fighting plan for its own personnel and receive training by the CBO County Fire Planning Officer.

Verification: Within 90 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the safety engineer under whose responsible charge it was prepared, stating that the fire fighting plan and training are in conformance with the above. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

21. Luz shall verify that the turbine pressure relief valve vent lines have been extended outside the turbine enclosure to a location where steam discharge will not present a hazard to personnel and are in compliance with

section 3310, Title 8 CAC.

Verification: Within 90 days following the Commission Decision, Luz shall submit a letter to the CBO signed by the responsible mechanical engineer that the vent lines have been relocated and that they are in compliance with Title 8 CAC. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

22. Luz shall provide ready and safe access at turbine/generator to components which have to be operated and maintained by plant operators.

Verification: Within 90 days following the Commission Decision, Luz shall submit to the CPM documentation, signed by the CBO, showing ready and safe access at turbine/generator to components which have to be operated and maintained by plant operators. Luz shall submit a copy of the data to the CBO. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

SEGS UNITS VI AND VII

Requirements

1. Luz shall comply with transportation, storage, handling and disposal procedures of HTF as specified in Title 22, CAC, Sections 66570, 66595, 67142, 66620, 66645, 67120, 66328, 67120, 67144, 67126, 66508, 67243; Title 8, CAC, Part 1, Chapter 4, Subchapter 7, "General Safety Orders for Protection of Workers from Hazardous Substances"; and the HTF material safety data sheets provided by "Monsanto" and "Dow" Chemical Companies, the HTF manufacturers.

   Verification: Within 30 days prior to filling the ullage vessel of each SEGS Unit, Luz shall submit a letter to the County Building Official (CBO) (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the HTF transportation, storage and handling procedures are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC Compliance Project Manager (CPM).

2. Luz shall comply with hazardous substance communication procedures according to Title 8, CAC, Section 5194.

   Verification: Within 30 days prior to filling the ullage vessel of each SEGS Unit, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the hazardous substance communication procedures are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

3. Luz shall comply with storage and handling procedures for flammable liquids as specified in NFPA 30 and Title 8, CAC, section 5415-5420, 5426-5439, 5465-5498. Title; Title 13, CAC, section 1160 et. seq.; 1161 et seq., 1202.1 et seq.

   Verification: Within 60 days following the Commision Decision, Luz shall submit a letter to the CBO (as

applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling procedures of each SEGS Unit VI & VII, for flammable liquids are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

4. Luz shall comply with the handling and storage requirements for sulfuric acid as specified in Title 8, CAC, sections 5415-5420, 5426-5439; Title 13, CAC, section 1160 et seq.; 1151 et seq., 1202.1 et seq.

Verification: Within 30 days prior to filling the sulfuric acid vessel, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling requirements of each SEGS Unit, for sulfuric acid are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

5. Luz shall comply with the handling and storage requirements for sodium hydroxide as specified in Title 8, CAC, sections 460, 5155, 5162 and 5165.

Verification: Within 30 days prior to filling the sodium hydroxide vessel, of each SEGS Unit, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling requirements for sodium hydroxide are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

6. Luz shall comply with the handling and storage procedures for lube oil as specified in Title 8, CAC, sections 5417 and 5420.

Verification: Within 30 days prior to filling the lube oil vessel, of each SEGS Unit, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the storage and handling procedures for lube oil in

conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

7. Luz shall submit its fire protection program specifications and drawings for the construction of each SEGS facility to the CBO (as applicable) for approval.

   Verification: Within 30 days prior to commercial operation, of each SEGS Unit, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the fire protection program specifications and drawings are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

8. Luz shall submit its fire protection program for the operation of the facility to the CBO (as applicable) for approval.

   Verification: Within 30 days prior to commercial operation, of each SEGS Unit, Luz shall submit a letter and plans to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge they were prepared, stating that the fire protection program for plant operation is in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

9. Luz shall request the CBO (as applicable) to annually reexamine the fire protection program.

   Verification: Luz shall summarize the joint reexamination of the fire protection program of each SEGS Unit, in its annual compliance report to the CEC CPM.

10. Luz shall prepare and implement an accident prevention program for both the operation and the construction of the SEGS projects and shall submit the program to the Cal-DOSH Consultation Service within 30 days following the Commission Decision for review of their program.

Verification: Luz shall request a letter from the Cal-DOSH Consultation Service certifying compliance with the requirements of Title 8, CAC, sections 1509 and 3203 of each SEGS Unit. A copy of the letter shall be filed by Luz with the CEC CPM.

11. Luz shall comply with the design requirements for building construction, via the UBC, UMC, NEC, NFPA and UPC in accordance with Title 24, CAC, sections 2-101 to 2-522; 2-2701 to 2-2910; 2-3201 to 2-3330; 3-280-5 to 3-427-22; 4-403 to 4-2212; 5-102 to 5-1704; and Chapters 5, 19, 32 and 33 of the Uniform Building Code (UBC); San Bernardino County Uniform Fire Code Ordinance 3054, 3055.

Verification: Luz shall submit a letter to the CEC CPM signed by the CBO verifying compliance with these LORS of each SEGS Unit.

12. Luz shall only contract with California licensed haulers for the transport of hazardous materials.

Verification: Within 60 days following the Commision Decision, Luz shall submit a letter to the CEC CPM signed by the plant manager, verifying that Luz is contracting with California licensed haulers for the transport of hazardous materials of each SEGS Unit, indicating business operating license number and name.

13. For all hazardous materials, Luz shall comply with the following Title 8, CAC:

- sections 5139-5155; Dust, Fumes, Mists, Vapors and Gases
- sections 5160-5185; Hot, Flammable, Poisonous, Corrosive and Irritant Substances
- sections 5503-5624; Design, Construction and Installation of Venting, Diking, Valving and Supports
- section 3203; Operation; Accident Prevention Program
- section 5415-5420, 5465-5498, 5621, 6000, 6003; Flammable Liquids, Gases and Vapors
- sections 6150-6184; Fire Protection
- Title 22 sections 66693-66723 Management of Hazardous and Extremely Hazardous Waste

Verification: Within 60 days following the Commision

Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the hazardous materials of each SEGS Units VI & VII, are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

14. Luz shall comply with the requirements of 49 CFR 172, 173, 178 for Containers of Hazardous Chemicals.

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the containers for hazardous chemicals of each SEGS Unit, are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

15. Luz shall submit applicable documents to the CBO requesting their review of the fire protection systems for conformance with applicable sections of the following (NFPA) standards:

- NFPA 10; Portable Fire Extinguisher
- NFPA 12; Carbon Dioxide Extinguishing Systems
- NFPA 12A; Halon Fire Extinguishing Systems
- NFPA 13; Standard for the Installation of Sprinkler Systems
- NFPA 14; Standpipe and Hose Systems
- NFPA 15; Water Spray Fixed System
- NFPA 17; Dry Chemical Extinguishing Systems
- NFPA 20; Centrifugal Fire Pumps
- NFPA 26; Standard for Supervision of Valves
- NFPA 30; Flammable and Combustible Liquids Code
- NFPA 70; National Electric Code
- NFPA 72E; Automatic Fire Detectors
- NFPA 1961; Standards for Fire Hoses
- NFPA 1962; Standards for Fire Hose Connections
- NFPA-NEC; Class I, Division II, Group D Hazardous Area Designation
- Uniform Building Code
- Uniform Fire Code San Bernardino County

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was

prepared, requesting that the fire protection systems of each SEGS Unit, be reviewed in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

16. Luz shall install fire dampers in the HVAC duct work penetrating walls into any automatically protected areas.

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the fire dampers of each SEGS Unit, are in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

17. Luz shall install insulation on equipment which exceeds 130°F for protecting personnel from burns and to minimize fire hazards from the HTF contacting these surfaces in accordance with section 3308,8 CAC.

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the mechanical engineer/safety engineer under whose responsible charge it was prepared, stating that the required insulation of each SEGS Unit, is in conformance with the above LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

18. Luz shall complete the arrangements and agreements portion of the Safety Plan (i.e., Business Plan) for medical services for its personnel with ambulance and hospital service.

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the safety engineer under whose responsible charge it was prepared, stating that the arrangements and agreements of the Safety Plan of each SEGS Unit, are in conformance with the above. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

19. Luz shall establish a First Aid/CPR Program for its personnel to deal with personal accident emergencies prior to the arrival of an ambulance.

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the safety engineer under whose responsible charge it was prepared, stating that personnel of each SEGS Unit, have been trained in first aid/CPR procedures in conformance with the cited LORS. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

20. Luz shall establish a fire fighting plan for its own personnel and receive training by the CBO, County Fire Planning Officer.

Verification: Within 30 days following the Commision Decision, Luz shall submit a letter to the CBO (as applicable), signed by the safety engineer under whose responsible charge it was prepared, stating that the fire fighting plan and training of each SEGS Unit, are in conformance with the above. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

21. Luz shall verify that the turbine pressure relief valve vent lines have been extended outside the turbine enclosure to a location where steam discharge will not present a hazard to personnel and are in compliance with section 3310, Title 8 CAC.

Verification: Within 60 days following the Commission Decision, Luz shall submit a letter to the CBO signed by the responsible mechanical engineer that the vent lines of each SEGS Unit, have been relocated and that they are in compliance with Title 8 CAC. A copy of the transmittal letter accompanying the letter shall be delivered to the CEC CPM.

22. Luz shall provide ready and safe access at turbine/generator to components which have to be operated and maintained by plant operators.

Verification: No less than 30 days prior to date of

commercial operation, of each SEGS Unit, Luz shall submit to the CEC CPM documentation, signed by the CBO, showing ready and safe access at turbine/generator to components which have to be operated and maintained by plant operators. Luz shall submit a copy of the data to the CBO.

SECTION 13

TRANSMISSION LINE ENGINEERING

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

STATE

California Public Utilities Commission (CPUC) General Order No. 95 is the applicable transmission line engineering standard for the construction and operation of overhead transmission lines.

The California Environmental Quality Act (CEQA), and Appendices F and G, therein requires a discussion of energy impacts and efficiency. Staff's performance objective/criterion 3 provides the context for such analysis.

CONDITIONS OF CERTIFICATION

SUNGEN 115 KV TRANSMISSION LINE

Requirements

1. Luz shall ensure that the design, construction, and operation of the existing and proposed transmission outlet facilities will conform to the following requirements:

   a. The existing 2.4 mile 115 kV transmission line shall be operated and maintained as shown in Transmission Line Engineering: Figure #3.

   b. The proposed 653.9 kCM ACSR wood pole transmission line to SEGS VI and VII shall be constructed along the route as shown in Transmission Line Engineering: Figure #3.

   c. The transmission facilities shall meet or exceed the requirements of California Public Utilities Commission (CPUC) General Order 95.

   d. No other generating unit, transmission or distribution circuit or load other than as described in the AFC and amendments thereto may be connected to the outlet facilities.

   e. Luz shall report any change in ownership of the outlet circuit to the California Energy Commission (CEC) Compliance Project Manager (CPM) thirty days prior to legal transfer. All requirements and verifications shall apply to the future owner(s).

   Verification: No later than 60 days prior to construction of SEGS Units VI & VII the transmission outlet facilities, Luz shall submit verification documents to the CEC Compliance Project Manager. These documents shall include all pertinent drawings, such as one-line diagrams and descriptions of electrical equipment, signed and sealed by a California registered electrical engineer and a signed statement by the registered electrical engineer that the facilities have been designed consistent with requirements 1a - 1d above.

2. Luz shall submit to the CEC CPM any request for a variance from Requirement 1 above and items a through i below. Approval must be obtained from the CEC CPM before any change (variance) is implemented.

   a. Route Specified: as shown in Transmission Line Engineering: Figure #3.

   b. Conductor size: 653.9 kCM ACSR or larger.

   c. Number of conductors: one per phase.

   d. Number of circuits: one 115 kV circuit.

   e. Voltage level: nominal 115 kV phase to phase.

   f. Conductor loading: 150 MW (167 MVA at 90% power factor) when SEGS III, IV, V, VI, and VII are all generating at normal full output.

   g. Structure types: steel towers, steel poles, and wood poles.

   h. Capacity: one 115 kV circuit rated at 169 MVA (normal) and 179 MVA (emergency) based on present Southern California Edison rating conditions.

   i. Any other change that may significantly affect the capacity, reliability or economics of the SCE transmission system.

   Verification: Luz shall inform the CEC CPM of any proposed changes which may not conform to requirements 1 and 2 and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic justification for the change shall accompany the request. No changes may be made without written approval of the CEC CPM.

3. Luz shall be responsible for the inspection of the proposed transmission facilities during construction, for compliance with requirement Nos. 1 and 2 above, and any subsequent CEC-approved changes, and for conformance with CPUC General Order 95. In case of nonconformance, Luz shall inform the CEC in writing of such nonconformance, and identify immediately the corrective actions proposed by Luz to be taken.

Verification: Within 60 days following the first successful synchronization of SEGS VI, and VII generator with the SCE system, Luz shall transmit verification documents to the CEC CPM. These shall include engineering description(s) and one-line drawings signed by the California registered Electrical Engineer in responsible charge for the facilities covered by requirements Nos. 1, 2 and 3 above. A statement attesting to conformance with General Order 95 shall be concurrently provided.

SEGS UNITS III, IV AND V SWITCHYARD

Requirements

4. Luz shall ensure operation of the existing switchyard facilities and tap line will conform to the following requirements:

   a. The tap line, generator step-up transformer, power circuit breaker, disconnect switches, lightning arresters and associated equipment shall not be changed from that described in the AFC and shown in Transmission Line Engineering: Figure #4.

   b. No other generating unit other than as described in the AFC and amendments thereto may be connected to the switchyard facilities or tap line.

   c. Luz shall report any changes in ownership of the switchyard or tap line to the CEC thirty days prior to legal transfer. All requirements and verifications shall apply to the future owner(s).

   Verification: No later than 60 days after CEC certification, Luz shall submit verification documents to the CEC CPM. These documents shall include all pertinent drawings, such as one-line diagrams and descriptions of electrical equipment, signed and sealed by a California registered electrical engineer and a signed statement by the registered electrical engineer that the facilities have been designed consistent with requirements 1a and 1b above.

5. Luz shall submit to the CEC any request for a variance from Requirement 1 above and items a through f below. Approval must be obtained from the CEC Staff before any change (variance) is implemented.

   a. Switchyard layout: per figures 3-18, 3-19, and 3-20 in the AFC.

   b. Step-up transformer: 3-phase, 13.8 kV/115 kV, 25/32.5/37.33 MVA.

   c. Power circuit breakers: 1200 amp, 550 kV BIL with a

5,000 MVA short circuit duty rating.

d. Disconnect switches: 115 kV, 1200 amp, 550 kV BIL, group operated center breaker.

e. Lightning Arresters: station class metal oxide, pedestal, 96 kV, grounded, with a minimum creepage of 135 inches.

f. Tap line: SCTL, 115 kV, 653.9 kCM ACSR, wood poles.

Verification: Luz shall inform the CEC CPM of any proposed changes which may not conform to requirements 1 and 2 and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental and economic justification for the change shall accompany the request. No changes may be made without written approval of the CEC CPM.

6. Luz shall be responsible for compliance with requirements Nos. 1 and 2 above, and any subsequent CEC-approved changes, and for conformance with CPUC General Order 95. In case of nonconformance, Luz shall inform the CEC in writing, within 10 calendar days of such nonconformance, and identify the corrective actions proposed by Luz to be taken.

Verification: Within 60 days after CEC certification of each SEGS III, IV and V generation, switchyard and tap line, Luz shall transmit verification documents to the CEC CPM. These shall include engineering description(s) and one-line drawings signed by the California registered Electrical Engineer in responsible charge for the facilities covered by requirements Nos. 1, 2 and 3 above. A statement attesting to conformance with General Order 95 shall be concurrently provided.

CONDITIONS OF CERTIFICATION

SEGS UNITS VI AND VII SWITCHYARD

Requirements

7. Luz shall ensure that the design, construction and operation of the proposed switchyard facilities and tap line will conform to the following requirements:

   a. The tap line, generator step-up transformer, power circuit breaker, disconnect switches, lightning arresters and associated equipment shall be installed as described in the AFC and shown in Transmission Line Engineering: Figure #4.

   b. No other generating unit other than as described in the AFC and amendments thereto may be connected to the switchyard facilities or tap line.

   c. Luz shall report any changes in ownership of the switchyard or tap line to the CEC thirty (30) days prior to legal transfer. All requirements and verifications shall apply to the future owner(s).

   Verification: No later than 60 days prior to construction of the switchyard facilities, Luz shall submit verification documents to the CEC Compliance Project Manager. These documents shall include all pertinent drawings, such as one-line diagrams and descriptions of electrical equipment, signed and sealed by a California registered electrical engineer and a signed statement by the registered electrical engineer that the facilities have been designed consistent with requirements 1a and 1b above.

8. Luz shall submit to the CEC any request for variance from Requirement 1 above and items a through f below. Approval must be obtained from the CEC Staff before any change (variance) is implemented.

   a. Switchyard layout: per figures 3-18, 3-19, and 3-20 in the AFC.

   b. Step-up transformer: 3-phase, 13.8 kV/ 115 kV, 25/32.5/37.33 MVA.

c. Power circuit breakers: 1200 amp, 550 kV BIL with a 5,000 MVA short circuit duty rating.

d. Disconnect switches: 115 kV, 1200 amp, 550 kV BIL, group operated center breaker.

e. Lightning Arresters: station class metal oxide, pedestal, 96 kV, grounded, with a minimum creepage of 135 inches.

f. Any other change that may significantly affect the capacity, reliability or economics of the SCE transmission system.

Verification: Luz shall inform the CEC CPM of any proposed changes which may not conform to requirements 1 and 2 and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental and economic justification for the change shall accompany the request. No changes may be made without written approval of the CEC CPM.

9. Luz shall be responsible for the inspection of the proposed transmission facilities during construction, for compliance with requirements Nos. 1 and 2 above, and any subsequent CEC-approved changes, and for conformance with CPUC General Order 95. In case of nonconformance, Luz shall inform the CEC in writing, within 10 calendar days of such nonconformance, and identify the corrective actions proposed by Luz to be taken.

Verification: Within 60 days following first successful synchronization of each SEGS VI and VII generation with the SCE system, Luz shall transmit verification documents to the CEC CPM. These shall include engineering description(s) and one-line drawings signed by the California registered Electrical Engineer in responsible charge for the facilities covered by requirements Nos. 1, 2 and 3 above. A statement attesting to conformance with General Order 95 shall be concurrently provided.

SECTION 14

TRANSMISSION LINE SAFETY AND NUISANCE

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Laws, Ordinances, Regulations and Standards (LORS) applicable to transmission line safety and nuisance were not listed by Luz in the AFC. Staff has determined that the following LORS are applicable:

FEDERAL

o Aviation Safety

- Advisory Circular (AC) No. 70/7460-1G. "Obstruction Marking and Lighting." Describes the Federal Aviation Administration's (FAA) standards for marking and lighting of obstructions as identified by Federal Aviation Regulations (FAR) Part 77.

- AC No. 70/7460-2H. "Proposed Construction or Alteration of Objects That May Affect the Navigable Airspace." Informs individuals proposing to erect or alter an object which may affect the navigable airspace regarding the need to notify the FAA prior to such construction.

- Title 14 Code of Federal Regulations (CFR) Part 77. "Objects Affecting Navigable Airspace." Establishes standards for determining obstructions in navigable airspace, sets forth the requirements for notice to the administrator of certain proposed construction or alteration and provides for aeronautical studies of obstructions to air navigation, to determine their effect on the safe and efficient use of airspace.

- Title 14 CFR, Part 91. "Air Traffic and General Operating and Flight Rules." Prescribes aircraft speed restrictions, minimum safe altitudes, and basic visual flight rules (VFR) governing the operation of aircraft, including helicopters, with the United States.

o Communications Interference

- Title 47 CFR, section 15.25. "Operating Requirements: Incidental Radiation Device." Requires that a device emitting incidental radiation be operated in a way which does not cause harmful interference with communications. The regulation also requires mitigation for any device which causes interference.

STATE

o Aviation Safety

- California Public Utilities Code (CPUC), sections 21656-21660. Discusses the permit requirement for construction of possible obstructions in the vicinity of aircraft landing areas, to navigable airspace, and near the boundary of airports.

o Communications Interference

- CPUC GO(General Order)-52 governs the "Construction and Operation of Power and Communications Lines." Applies to the prevention or mitigation of inductive interference.

o Design and Construction

- CPUC GO-95. "Rules for Overhead Electric Line Construction." Covers clearances, grounding, maintenance and inspection.

- Title 8 California Administrative Code (CAC) section 2700 et seq. "High Voltage Electrical Safety Orders." Establishes essential requirements and minimum standards for installation, operation and maintenance of electrical installation and equipment to provide practical safety and freedom from danger.

o Fire Hazard

- Title 14 CAC sections 1250-1258. "Fire Prevention Standards for Electric Utilities." Provides specific exemptions from electric pole and tower firebreak and electric conductor clearance standards and specifies when and where standards apply.

- Public Resources Code (PRC) sections 4292-4296. "Mountainous, Forest-, Brush-, and Grass-Covered Lands." Provides fire prevention measures for buildings

or structures in, upon or adjoining any mountainous area or forest-, brush-, or grass-covered lands or any land covered with flammable material.

- o Hazardous Shock
  - Title 8 CAC section 2940. Covers construction, safety, operation and maintenance of electrical installations and equipment.

LOCAL

- o Noise
  - San Bernardino County Development Code Section 87.1305, Noise Standards.

GENERAL

- o Fire Hazard
  - Division 11, Uniform Fire Code (UFC), section 11-201. Defines measures to prevent the accumulation of waste materials.

- o Nuisance Shock
  - National Electric Safety Code (NESC), ANSI C2, section 9, Article 92, Paragraph E; Article 93, Paragraph C, No. 6. Covers basic provisions for safeguarding of persons from hazards arising from the installation, operation and maintenance of (1) conductors and equipment in electric supply stations, and (2) overhead and underground, electric supply and communication lines.

CONDITIONS OF CERTIFICATION

Requirements

1. Luz shall obtain a statement from the responsible electrical engineer, registered in the State of California, indicating that the existing Sungen line has been constructed in accordance with CPUC GO-95 and with Title 8 CAC. As each SEGS Unit is connected to the Sungen line, Luz shall also provide an additional statement from the responsible, California-registered electrical engineer indicating that the new segment of the Sungen line connecting the units was constructed in accordance with these LORS.

   Verification: Luz shall submit the required statement covering the existing Sungen line (and Units III and IV) to the CBO and to the California Energy Commission (CEC) Compliance Project Manager (CPM) within 60 days after the Commission Decision. Luz shall submit the required statement for each unit added to the Sungen line 14 days prior to commercial operation of that unit.

   Luz shall also submit to the CEC CPM the Southern California Edison (SCE) annual inspection report for the transmission line in the Periodic Compliance Report after completion of the inspection.

2. Luz shall notify all property owners, within or adjacent to the Sungen right-of-way of the nature and operation of the Sungen line. This notification shall inform the property owner of Luz's responsibility for, and intent to, ground all ungrounded metallic fences, gates, roofs, building sidings or other large permanent metallic objects within the right-of-way, regardless of ownership or location.

   Luz shall also include a statement to the property owners informing them of their responsibility to notify Luz in the event that the property owner adds or installs a metallic object which requires grounding as described above. Further, this notification shall include a statement that the refueling of vehicles or equipment under the transmission line is not recommended.

Verification: Luz shall file a list of property owners, including proof of notification, by SEGS Unit with the CBO and the CPM within 30 days after certification.

3. Luz shall ensure that all ungrounded metallic fences, gates, roofs or building sidings or other large permanent metallic objects within the right-of-way, regardless of ownership or location, are grounded in conformance to procedures defined in the NESC.

In the event that an owner will not permit the grounding of a metallic object, Luz shall so notify the CPM. Notification shall include, when possible, the owner's written objection. Upon receipt of such notice of objection, the CPM will waive the requirement for grounding of that object. As a condition of certification, Luz shall, for the part of the transmission line already energized, file a statement with the CPM verifying compliance with the grounding procedures defined in Section 9 of the NESC.

Verification: Within 30 days prior to scheduled energization of each part of the transmission line associated with SEGS, V, VI and VII, or 30 days after certification, whichever is applicable, Luz shall file an additional statement with the CPM verifying compliance with these grounding procedures. The above filings shall include, where applicable, owner's objection to required grounding.

4. Luz shall investigate all complaints from owners or the public regarding problems due to induced voltages on vehicles, portable objects, metallic roofs, metallic building siding, gutters, fences, irrigation equipment or other objects within the right-of-way. Luz shall, at its own expense, take all measures to correct these problems.

Luz shall also respond, within 10 days, to an owner's notice of additional objects placed within the right-of-way and requiring grounding. The response shall include completion of the required grounding or establishment of a date within 30 days for such completion.

Verification: Luz shall maintain a record of activities (grounding, notifications and correspondence) related to this requirement. Such records shall be summarized in the Annual Compliance Reports. Upon request, these records shall be made available to the CPM or his authorized representative.

5. Luz shall make every reasonable effort to locate and correct, on a case-by-case basis, all causes of radio and television interference attributed to the transmission line facilities. In addition to any necessary transmission line repairs; corrective action shall include, but shall not be limited to, adjusting or modifying receivers, adjusting, repairing, replacing or adding antennas, antenna signal amplifiers, filters or lead-in cables (47 CFR 15.25).

   Verification: Luz shall maintain records of complaints and corrective actions and shall, upon request, make these records available to the CPM or his authorized representative. All complaints shall be recorded including explicit notations of the corrective actions performed. Complaints which did not result in corrective action or resolution shall be defined and justified. The record shall be signed by the owner's authorized representative and also by the complainant to indicate concurrence with the corrective action or with the justification of no corrective action. All such records shall be summarized in the Annual Compliance Reports.

6. Luz shall keep each transmission line pole site free of waste material and rubbish as required by regulations (14 CAC 1250-1258; UFC 11.201).

   Verification: Luz annually shall submit a report to the CPM concerning the inspection, cleanup and fire protection activity around the transmission line poles.

7. Luz shall obtain an endorsement of their FAA Form 7460-1 to the effect that the coordinates of latitude and longitude given by them adequately describe the location of all proposed and existing power transmission facilities located within the project limits (FAA AC No: 70/7460-2H). This endorsement shall be made by the Hawthorne, California FAA office.

Verification: Luz shall file the endorsement with the CEC CPM within 60 days after certification.

8. If there are complaints of noise or interference from the Sungen line, Luz shall request that SCE conduct noise measurements, both with the Sungen line in an energized and in a de-energized state, on the AT&SF Railroad's railway signal circuits.

If such measurements show that objectionable noise or interference is present due to Luz' transmission, Luz and AT&SF will enter into negotiations to determine the sum necessary to correct the interference to AT&SF's communications and signal system.

Verification: Upon completion of the interference measurements, Luz shall provide the CPM with the results of the measurements. If mitigation is required because of interference, Luz shall send to the CPM a proof of payment or funding to AT&SF.

SECTION 15

POWER PLANT RELIABILITY

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Presently there are no LORS which establish either power plant reliability criteria or procedures for attaining reliable operation. Sections 25511 and 25520 of the Warren Alquist Act merely require that the Commission review the factors related to safety and reliability. Consequently, Staff is assessing the likelihood that the project will realize Luz' own performance objectives, enumerated in the following section.

PERFORMANCE OBJECTIVES/CRITERIA

Luz states various performance objectives of the project in the AFC and in responses to data requests. One of these objectives is explicitly stated:

- to reach a target "overall plant availability" of 95% (Luz 1987a, "Reliability and Availability", page 8-10).

The remainder are implicit objectives resulting from conditions imposed by the federal government, by contractual obligations to the utility, and by Luz' forecasted performance. Some of these overlap into other disciplines such as Power Plant Efficiency and Demand Conformance. These objectives are

- to use no more than 25% of the total energy input to the plant in the form of natural gas--a requirement imposed by the Federal Energy Regulatory Commission (FERC) (18 CFR, section 292.204),
- to produce at least 80% of the contracted summer on-peak electric generation capacity as required by the terms and conditions of the power purchase agreement with the utility, Southern California Edison (SCE) (Luz 1987a, "Need for Facilities", p. 2-16),
- to generate approximately 40% of the total electrical output during "on-peak" periods (Luz 1987a, p. 1-11), and
- to operate with an overall capacity factor of 34% (Luz 1987b, Attachment 1-5; Luz 1987h) representing 95% on-peak, 54% mid-peak, and 11% off-peak.

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV, V, VI, AND VII:

1. Luz shall have in place at each SEGS Unit a comprehensive preventative- and restorative-maintenance program having the following features:

   - o an inventory management plan for assurance that adequate spare parts are on hand
   - o maintenance tools, factory repair manuals, and repair facilities adequate to perform on-site repair and maintenance of equipment
   - o a training program for mechanics and maintenance personnel in the operation and maintenance of plant systems and major equipment
   - o optimized scheduling of preventive maintenance
   - o QA/QC control over purchase specification and acceptance of spare parts and equipment

   Verification: Within 90 days of commercial operation of SEGS Units VI and VII, Luz shall provide a statement signed by the project manager for each Luz SEGS Unit, attesting to compliance with the condition. The statements shall be submitted to the CEC Compliance Project Manager (CPM).

SYSTEM EFFICIENCY

Requirements

2. The facility shall be operated in accordance with the requirements of Title 18 CFR, Section 292.204(b)(2). Total energy input into each of the SEGS projects shall be monitored continuously by Luz. Monitored data shall include solar energy input, natural gas energy input, total energy input, monthly and annual plant availability, monthly and annual plant equivalent availability, and monthly and annual capacity factor for each utility period (peak, mid-peak and off-peak).

Verification: Luz shall file an annual report with the California Energy Commission (CEC) Compliance Project Manager (CPM) and signed by the project operations supervisor under whose supervision the data were obtained and the report prepared, attesting to the veracity of the data and showing each of the above parameters, by month, for each SEGS unit.

3. Luz shall maintain logs at each SEGS unit of the electrical energy deliveries to the utility, Southern California Edison:

Verification: Luz shall submit the above monthly totals of electrical energy deliveries in each Annual Compliance Report. The reports shall be accompanied by a letter signed by the project engineer or registered engineer, under whose supervision the logs were maintained, attesting to the veracity of the data upon which the reports were based.

4. Luz shall submit to the CEC CPM FERC Qualifying Facility (QF) Orders for SEGS Units VI and VII.

Verification: Within 30 days after receipt of FERC Qualifying Facility Orders for SEGS Facilities VI and VII, Luz shall submit to the CEC CPM copies of said FERC Qualifying Facility Orders.

SECTION 16

NOISE

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

FEDERAL

- Occupational Safety and Health Act (OSHA) of 1970, Title 29, Code of Federal Regulations, Part 1910. These regulations establish worker noise exposure standards which are basically the same as the Cal/OSHA regulations (Noise: Table 3).

STATE

- California Occupational Safety and Health Administration (Cal/OSHA) Occupational Noise Exposure Regulations; Title 8, California Administrative Code (CAC), sections 5095-5100, (Article 105), General Industrial Safety Orders. These regulations apply to workers on site. They established an enforceable limit of 90
dB for an 8-hour period and reduced the allowable exposure time in half for each 5 dB increase in the A-weighted noise level above 90 dB (Noise: Table 3).

PROPOSED CONDITIONS OF CERTIFICATION

SEGS UNITS III THROUGH VII

1. Luz Engineering Corporation (Luz) shall develop a noise complaint resolution program for handling public complaints during both the construction and operational phases of the proposed project. The program shall include, at a minimum, procedures for logging complaints, identifying contact personnel, scheduling responses to complaints, and investigating the magnitude of the complaint. The intent of this procedure shall be for Luz to promptly conduct an investigation to determine the nature and cause of the complaint and take reasonable measures to eliminate its cause.

   Verification: Not later than 60 days after certification, Luz shall submit for review and approval to the California Energy Commission (CEC) Compliance Project Manager (CPM) and the San Bernardino County Department of Environmental Health Services, a procedure for handling public complaints. The County Department of Environmental Health Services shall, within 15 days of receipt of the procedure, notify Luz and the CEC CPM regarding the acceptability of the procedure.

2. Luz shall maintain all internal combustion engine driven equipment used for the project in good working order and shall equip such equipment with appropriate mufflers so as to control noise emissions. Construction activity utilizing such equipment shall be limited to daytime hours to the extent practicable.

   Verification: Not later than 60 days after certification, Luz shall submit to the CEC-CPM a letter which certifies that all internal combustion engine driven equipment has been inspected and that all such equipment has been fitted with appropriate mufflers.

3. Luz shall conduct a noise survey at SEGS III and IV. The survey will cover operating conditions with and without the forced draft boilers. The noise levels will be monitored at locations acceptable to CEC and San Bernardino County Department of Health Services on the

east, south, and west property lines at the nearest points to the operating units. Noise levels shall additionally be monitored at a distance of 50 feet from each forced draft boiler fan inlet, five feet above the ground, with the unit operating. The noise levels shall be measured for a period of at least one hour at each of the locations under each of the above operating conditions. The hourly Leq and the statistical descriptors, L_{10}, L_{50}, and L_{90} shall be reported. Additional noise surveys, as described above, shall be conducted within 60 days after SEGS V-VII each reach full operation.

Luz shall prepare reports on the surveys which will be used for comparison with pre-project background noise levels and projected plant noise levels. In the event that the measured levels substantially exceed the projected levels, the report shall contain details of a mitigation plan, if appropriate, and a schedule for instituting corrective measures. Luz shall conduct an additional noise survey within five working days of completion of the mitigation measures and report the results to the CEC and the San Bernardino County Department of Environmental Health Services within 30 days of completing the survey. The results of the survey would be used to evaluate the effectiveness of such corrective measures. No additional off-site noise survey shall be required unless the public registers complaints about operational noise.

Verification: Within 60 days after certification, Luz shall conduct the above described noise study. Within 30 days of completing the initial and each additional noise survey, Luz shall submit the noise survey report to the CEC CPM and the San Bernardino County Department of Environmental Health Services. The County shall notify Luz and the CEC-CPM, in writing, within 30 days of receipt of the report about the acceptability of the survey. If the report indicates that further mitigation is required, the CEC CPM shall so inform Luz.

4. Luz shall conduct occupational noise surveys to identify the noise hazardous areas in the facility. The surveys shall be conducted immmediately after certification and again after SEGS VI and VII each reach full operation. The surveys shall be conducted by a qualified person in accordance with the provisions of Title 8 of the California Administrative Code, sections 5095-50100 (Article 105) and Title 29, Code of Federal Regulations, Part 1910. The survey's results shall be used to determine the magnitude of employee noise exposure, and Luz shall prepare a report on the survey's results and proposed mitigation measures, if necessary, that will be implemented to comply with the California and Federal regulations.

Verification: The above noise surveys shall be conducted at least 90 days after certification and again 90 days after each unit reaches full operation. Within 60 days of the occupational noise surveys, Luz will submit the above report on the surveys to the CEC-CPM. Luz shall make this report available to Cal/OSHA upon request.

SECTION 17

MECHANICAL ENGINEERING

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

The LORS cited herein are applicable to all units.

The following LORS applicable to mechanical design are listed by Luz in the Application for Certification (AFC) dated January 6, 1987 (Luz 1987a), in the Information in Response to January 28, 1987 Workshop Requests dated March 4, 1987 (Luz 1987b) and in the responses to Staff's Data Requests, Volumes I and II dated June 5, 1987 (Luz 1987c).

FEDERAL

- Occupational Safety and Health Administration (OSHA).

STATE

- CAL-OSHA - California Occupational Safety and Health Administration, Title 8 - Industrial Relations, chapter 4 - Division of Industrial Safety.
- State Labor Code 6500 - Cal-OSHA permit governing construction of plant and related facilities.
- Title 22 California Administrative Code (CAC) section 66016 et seq. - Hazardous Waste Generator Permit governing handling, storage, and disposal of hazardous wastes.
- CAC Title 24 - Energy Code.
- California State Electrical Code (CSEC).

LOCAL

- San Bernardino County Development Code 84.02505(i) by County Fire Warden - conditions governing site approval including fire protection approval.

GENERAL

- Uniform Building Code (UBC).

- Uniform Mechanical Code (UMC).
- Uniform Plumbing Code (UPC).
- American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Guides and Standards.
- Underwriters Laboratories (UL).
- American Society for Testing and Materials (ASTM).
- International Electrotechnical Commission (IEC).
- Insulated Cable Engineers Association (ICEA).
- Institute of Electrical and Electronic Engineers (IEEE).
- Instrument Society of America (ISA).
- Manufacturers Standards (MS).
- National Electrical Manufacturers Association (NEMA).
- National Fire Code (NFC).
- Tubular Exchanger Manufacturers Association, Inc. (TEMA).
- American Boiler Manufacturers Association (ABMA).
- Anti-Friction Bearing Manufacturers Association (AFBMA).
- American Institute of Electrical Engineers (AIEE).
- American Institute of Steel Construction (AISC).
- National Fire Protection Association (NFPA).
  - NFPA 10-1984 - Standard for Portable Fire Extinguishers.
  - NFPA 11-1983 - Standard for Low Expansion Foam and Combined Agent Systems.
  - NFPA 12A-1980 - Standard for Halon 1301 Fire Extinguishing Systems.
  - NFPA 13-1985 - Standard for the Installation of Sprinkler Systems.
  - NFPA 15-1985 - Standard for Water Spray Fixed Systems for Fire Protection.

- NFPA 20-1983 - Standard for the Installation of Centrifugal Fire Pumps.

- NFPA 22-1984 - Standard for Water Tanks for Private Fire Protection.

- NFPA 24-1984 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

- NFPA 214-1983 - Standard on Water Cooling Towers.

o American Society of Mechanical Engineers (ASME).

o American National Standards Institute (ANSI).

- ANSI/ASME Boiler and Pressure Vessel Code - Section I.

- ANSI/ASME Section VIII - Pressure Vessels, Division 1.

- ANSI/ASME Welding and Brazing Qualifications - Section IX.

- ANSI/ASME B31.1 - Code for Pressure Piping.

- ANSI/ASME 249.1 - Safety in Welding and Cutting.

- ANSI/NFPA 70 - NEC - National Electrical Code - 1984 (SEGS III, IV and V) (NEC 1987, SEGS VI, VII).

- ANSI/NFPA 78-1983 - Lightning Protection Code.

- ANSI C2-1987 - American National Standard Electrical Code.

- ANSI/UL 508-1983 - Safety Standard for Industrial Control Equipment.

- ANSI B16.5 - Steel Pipe Flanges and Flanged Fittings.

- ANSI 16.25 - Butt Welding Ends.

o American Water Works Association (AWWA).

- AWWA D100-79 - AWWA standard for welded steel tanks for water storage.

o American Petroleum Institute (API).

- API RP-520 - Recommended Practice for the Design and Installation of Pressure-Relieving Systems in Refineries.

- API RP-521 - Guide for Pressure-Relieving and Depressuring Systems.

- API RP-526 - Flanged Steel Safety Relief Valves.

- API 65 - Large Diameter Carbon Steel Flanges.

o Military Specifications:

- MIL-C-1617GR1 - Machined Surface Rust Preventative Types 1 and 2.

Staff has reviewed submitted drawings and specifications and, in addition to the above listed LORS, Staff considers the following LORS to be applicable:

STATE

o California Labor Code Sections 7300, 7621, 7680 and 7683.

o Title 24, CAC, Parts 2, 3, 4 and 5.

LOCAL

o San Bernardino County Air Pollution Control District, New Source Review Rule XIII.

o San Bernardino County Ordinance No. 2815.

GENERAL

o American National Standards Institute (ANSI).

- ANSI A13.1 - Scheme for the Identification of Piping Systems.

- ANSI B31.2 - Fuel Gas Piping.

- ANSI B31.3 - Chemical Plant and Petroleum Refinery Piping.

- ANSI B31.8 - Gas Transmission and Distribution Piping Systems.

o Standards of The American Gear Manufacturers Association

(AGMA).

- Standards of The Sheet Metal and Air Conditioning Contractors National Association (SMACNA).

- Standards of The American Petroleum Institute (API).

  - Standard 610 - Centrifugal Pumps for General Refinery Services.

  - Standard 612 - Special - Purpose Steam Turbines For Refinery Services.

  - Standard 613 - Special - Purpose Gear Units For Refinery Services.

  - Standard 614 - Lubrication, Shaft-Sealing, and Control Oil Systems for Special Purpose Applications

  - Standard 671 - Special Purpose Couplings For Refinery Services.

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV AND V

Requirements

1. Luz shall perform hose repairs listed under recommendations for Units III and IV.

   Verification: Within 60 days following certification and in the Annual Compliance Report, Luz shall submit to the California Energy Commission (CEC) Compliance Project Manager (CPM) a report of the number of hoses that were replaced and the reason for their replacement.

2. Luz shall identify the piping systems per ANSI A13.1.

   Verification: Within 60 days following certification, Luz shall submit to the CEC CPM written documentation stating that identification of piping systems per ANSI 13.1 has been completed. Luz shall submit a copy of the data to the CBO*** and request the CBO to perform a field check of the completed piping identification.

3. Luz shall assign a special inspector to review the existing inspection reports and to perform additional inspections as required of the piping and mechanical systems within the powerblock for compliance with LORS.

   Verification: Within 30 days following certification, Luz shall submit to the CEC CPM, for comment and subsequent approval by CEC Staff, the name and qualifications of the proposed special inspector. Within 60 days of receipt of approval of the inspector, Luz shall submit to the CEC CPM a written report, signed by the special inspector, of the inspector's findings along with the proposed corrective action required to bring the project into compliance with LORS. Luz shall submit a copy of the data to the CBO.

***CBO is the County Chief Building Official, other designated authority or CEC duly authorized representative.

4. Luz shall perform any necessary corrective action required to bring the project into compliance with LORS.

Verification: Within 60 days, or at a time mutually agreeable to Staff and Luz, Luz shall perform the necessary corrective actions. Luz shall submit a statement of compliance to the CEC CPM with a copy to the CBO.

SEGS UNIT VI

Requirements

1. Prior to the boiler or solar field start up, Luz shall provide temporary pipe and flow identification. Luz shall provide permanent pipe identification prior to the completion of construction per ANSI A13.1.

   Verification: No less than 30 days after to date of completion of construction, Luz shall submit to the CEC CPM written documentation stating that identification of piping systems has been completed in conformance with ANSI A13.1. Luz shall submit a copy of the data to the CBO and request the CBO to perform a field check of the completed piping identification. Prior to boiler or solar field start up, Luz shall provide temporary pipe identification per ANSI A13.1.

2. Luz shall assign a special inspector to perform inspections as required of the piping and mechanical systems within the powerblock for compliance with LORS.

   Verification: No more than 30 days prior to date of construction, Luz shall submit to the CEC CPM the name and qualifications of the proposed special inspector. Within 30 days of receipt of approval of the inspector, Luz shall submit to the CEC CPM, in the construction progress reports, the inspector's findings.

3. Luz shall perform the necessary corrective action that may be required to bring the project into compliance with LORS. The necessary corrective action will be as determined by CEC CPM upon review of the submitted proposed corrective action by Luz.

   Verification: Within 60 days of receipt of the CEC Staff's determination of the necessary corrective action, Luz shall complete the necessary corrective action to bring the project into compliance with LORS. Luz shall submit a statement of compliance to the CEC CPM with a copy to the CBO.

4. Luz shall design and install all piping, other than domestic and refrigeration, to ANSI B31.1 (Power Piping Code), ANSI B31.2 (Fuel Gas Piping Code), and ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code), and ANSI B31.8 (Gas Transmission and Distribution Piping Code) and NFPA, as applicable. Prior to the start of any increment of construction, Luz shall submit 3 copies each of the proposed final design drawings, specifications, calculations, and applicable quality control procedures for each plant piping system to the CBO with a copy of the transmittal letter to CEC. The final plans, specifications, and calculations shall reflect clearly the inclusion of approved criteria, assumptions, and methods used in the design.

The responsible engineer(s), registered to practice mechanical engineering in the State of California, shall submit a signed and stamped statement to the CBO and to the CEC that the proposed final design plans, specifications, and calculations conform with all of the requirements set forth in the Commission Decision. The responsible engineer(s) also shall submit a signed and stamped statement to the CBO and to the CEC that all of the other piping systems, except domestic and refrigeration, have been designed, fabricated, and installed in accordance with all applicable ordinances, laws, and industry standards.

The principal piping systems for which design plans, specifications, calculations, and quality control procedures shall be submitted are:

a. Condensate system

b. Boiler feedwater systems

c. Main steam system

d. NO_x control system (if applicable)

e. Process steam system

f. Natural gas supply system

g. Heat Transfer Fluid System

h. Fire water system

i. Acid and caustic system

Verification: Luz shall submit the required documents,

including a copy of the signed and stamped engineer's certification, to the CBO at least 30 days (or a lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of any increment of construction or fabrication or 30 days after certification, whichever is applicable. Luz shall submit a letter to the CEC CPM with copies of the CBO comments and approvals to certify completion of both the plan-check and installation. The CBO may require, as necessary, Luz to employ special inspectors to report directly to the CBO to monitor shop fabrication or equipment installation.

5. Luz shall ensure that all pressure vessels are designed, fabricated and installed in accordance with ASME Code VIII, and CAC, Title 8, Chapter 4, including those prefabricated vessels furnished by vendors. Prior to the intended start of fabrication or construction, Luz shall submit six (6) sets each of the proposed final design plans, and three (3) sets each of the specifications, calculations, and quality control procedures for each pressure vessel to the CBO with a copy of the transmittal package to the CEC CPM. The responsible design engineer registered to practice in California or a Cal/OSHA certified inspector shall submit a statement to the CBO and the CEC CPM that the proposed final design plans, specifications, and calculations conform with all of the requirements set forth in the CAC, Title 8 and ASME Boiler Pressure Vessel Code Section VIII. For all pressure vessels installed in the plant, Luz shall submit to the CBO and Cal/OSHA, prior to installation, certified code papers and other documents required by standards, ordinances, and laws.

Verification: Luz shall submit the plans, calculations, and specifications (including a copy of the signed and stamped engineer's certification) to the CBO and the CEC CPM at least 120 days (or a lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of fabrication, construction, or 30 days after certification or installation, whichever is applicable. Luz shall request written notification from the CBO that the plan check and installation are in accordance with the Code requirements. In addition, Luz shall request Cal/OSHA or a Cal/OSHA certified inspector to verify the proper implementation of the above codes through on-site inspection. Luz shall send copies of CBO and Cal/OSHA or Cal/OSHA certified inspector comments and approvals to the CEC CPM in the next Construction Progress

Report. Luz shall furnish the CBO and CEC CPM with the code certification papers and any other documents required by the code certification papers and any other documents required by the code at least 30 days prior to the initial operation of each pressure vessel.

6. Luz shall ensure that the boiler, including superheater, steam drums, and all duct work, are designed, fabricated, and constructed in accordance with ASME Section I, and ANSI B31.1.

Verification: At least 30 days (or lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of construction, or 30 days after certification, whichever is applicable Luz shall submit to the CBO the documents pertaining to the above and a certification by the vendor certifying compliance with the applicable standards, ordinances, and laws. Luz shall request written notification from the CBO as to whether the plan check and the installations are in accordance with the code requirements. Luz shall send copies of CBO and Cal/OSHA comments and approvals and Cal/OSHA inspections results, as appropriate, to the CEC CPM in the next Construction Progress Report.

7. Luz shall design and install all heating, ventilating, air conditioning, and refrigeration systems within buildings and related structures in accordance with the Uniform Mechanical Code and other applicable standards, ordinances and laws. Prior to the intended start of construction, Luz shall submit three sets each of the proposed final design plans, specifications, calculations, and quality control procedures for the HVAC system to the CBO, with a copy of the transmittal letter to the CEC CPM. The final plans, specifications, and calculations shall clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical design engineer, registered to practice mechanical engineering in the State of California, shall sign all plans, drawings, and calculations and submit a signed statement to the CBO and to the CEC CPM that the proposed final design plans, specifications, and calculations conform with all applicable standards, ordinances, and laws.

Verification: At least 30 days (or lesser number of days mutually agreeable by the CBO and CEC CPM) prior to the intended start of construction, or 30 days after certification, whichever is applicable Luz shall submit

the three (3) copies of the required calculations, plans, and specifications (including a copy of the signed and stamped statement from the design engineer certifying compliance to the applicable standards, ordinances, and laws) to the CBO. Luz shall request the CBO perform the plan check and inspection required to ascertain that the above HVAC and refrigeration systems have been fabricated and installed in accordance with the Uniform Mechanical Code and other applicable standards, ordinances, and laws. Luz shall request written notification from the CBO as to when the HVAC system is ready for operation. Luz shall send copies of CBO comments and approvals to CEC CPM in the next Construction Progress Report.

8. Luz shall design, fabricate, and install:

a. Plumbing in accordance with Title 24, CAC, Division 5, Part 5, and Uniform Plumbing Code.

b. Potable water system in accordance with Title 24, CAC, Division 5, Part 5, Article P10, and Uniform Plumbing Code.

c. Drainage system including sanitary drain and waste system in accordance with Title 24, CAC, Division 5, Part 5, Articles P4, P5, P6, and P7, and Uniform Plumbing Code.

d. Toilet rooms and number of toilet rooms in accordance with the Uniform Plumbing Code, Appendix C, and Title 24, CAC, Part 2.

e. Energy conservation in the control and maintenance building in accordance with Title 24, CAC, Division 5, Chapter 2-53, Part 2.

f. Temperature and ventilation requirements in accordance with Title 24, CAC, Division 5, Chapter 2-53, Part 2.

Prior to the intended start of construction, Luz shall submit three sets each of the proposed final design plans, and three sets each of the specifications, calculations, and quality control procedures for each mechanical system to the CBO including water and sewer connection permits issued by the city, with a copy of the transmittal package to the CEC CPM. The final plans, specifications, and calculations shall clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. In addition, the responsible

mechanical design engineer, registered to practice mechanical engineering in the State of California, shall stamp and sign all plans, drawings, and calculations and submit a signed statement to the CBO and to the CEC CPM that the proposed final design plans, specifications, and calculations conform with all of the requirements set forth in the Commission Decision.

Verification: At least 30 days (or lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of construction, or 30 days after certification, whichever is applicable Luz shall submit the documents (including a copy of the signed and stamped statement from the design engineer certifying the compliance to the applicable standards, ordinances, and laws. Luz shall request approval from the CBO confirming that the cited sanitary facilities have been designed, fabricated, and installed in accordance with the cited applicable standards, ordinances, and laws. Luz shall request the CBO return two complete sets of the approved submittal. Luz shall request written notification from the CBO as to when the sanitary facilities are ready for operation. Luz shall send copies of CBO comments and approvals to CEC CPM in the next Construction Progress Report.

SEGS UNIT VII

Requirements

1. Prior to start of each increment of construction Luz shall submit four sets each of the proposed final design plans, specifications, calculations and quality control procedures for the Unit VII installation to the CBO with a copy of the transmittal letter to the CEC CPM. The responsible engineer in charge, registered to practice mechanical engineering in the state of California, shall sign the documents and submit a signed statement to the CBO and to the CEC CPM certifying that the calculations, plans, specifications and documents conform to all applicable LORS.

   Verification: No less than 30 days (or a lesser number of days acceptable to the CBO) prior to the intended start of each increment of construction, Luz shall submit four sets of the above data to the CBO with a copy of the transmittal letter to the CEC CPM.

2. Luz shall identify the piping systems per ANSI A13.1.

   Verification: No less than 30 days prior to date of completion of construction, Luz shall submit to the CEC CPM written documentation stating that identification of piping systems has been completed in conformance with ANSI A13.1. Luz shall submit a copy of the data to the CBO and request the CBO to perform a field check of the completed piping identification.

3. Luz shall assign a special inspector to review the existing inspection reports and to perform additional inspections as required of the piping and mechanical systems within the powerblock for compliance with LORS.

   Verification: No less than 30 days prior to date of commercial operation, Luz shall submit to the CEC CPM the name and qualifications of the proposed special inspector. Within 30 days of receipt of approval of the inspector, Luz shall submit to the CEC CPM in its construction report the special inspectors findings.

4. Luz shall design and install all piping, other than domestic and refrigeration, to ANSI B31.1 (Chemical Piping Code), ANSI B31.2 (Fuel Gas Piping Code), ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code), and ANSI B31.8 (Gas Transmission and Distribution Piping Code) and NFPA. Prior to the start of any increment of construction, Luz shall submit 3 copies each of the proposed final design drawings, specifications, calculations, and applicable quality control procedures for each plant piping system to the CBO with a copy of the transmittal letter to CEC CPM. The final plans, specifications, and calculations shall reflect clearly the inclusion of approved criteria, assumptions, and methods used in the design.

The responsible engineer(s), registered to practice mechanical engineering in the State of California, shall submit a signed and stamped statement to the CBO and to the CEC CPM that the proposed final design plans, specifications, and calculations conform with all of the requirements sets forth in the Commission Decision. The responsible engineer also shall submit a signed and stamped statement to the CBO and to the CEC CPM that all of the other piping systems, except domestic and refrigeration, have been designed, fabricated, and installed in accordance with all applicable ordinances, regulations, laws, and industry standards.

The principal piping systems for which design plans, specifications, calculations, and quality control procedures shall be submitted are:

a. Condensate system

b. Boiler feedwater systems

c. Main steam system

d. NO_x control system (if applicable)

e. Process steam system

f. Natural gas supply system

g. Heat Transfer Fluid System

h. Fire water system

i. Acid and caustic system

Verification: Luz shall submit the required documents,

including a copy of the signed and stamped engineer's certification, to the CBO at least 30 days (or a lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of any increment of construction or fabrication. Luz shall submit a letter to the CEC CPM with copies of the CBO comments and approvals to certify completion of both the plan-check and installation. The CBO may require, as necessary, Luz to employ special inspectors to report directly to the CBO to monitor shop fabrication or equipment installation.

5. Luz shall ensure that all pressure vessels are designed, fabricated and installed in accordance with ASME Code VIII, and CAC, Title 8, Chapter 4, including those prefabricated vessels furnished by vendors. Prior to the intended start of fabrication or construction, Luz shall submit six (6) sets each of the proposed final design plans, and three (3) sets each of the specifications, calculations, and quality control procedures for each pressure vessel to the CBO with a copy of the transmittal package to the CEC CPM. In addition the responsible design engineer, registered to practice mechanical engineering in the State of California, shall stamp and sign all drawings, specifications, and calculations. The responsible design engineer shall submit a statement to the CBO and the CEC CPM that the proposed final design plans, specifications, and calculations conform with all of the requirements set forth in the CAC, Title 8 and ASME Boiler Pressure Vessel Code Section VIII. For all pressure vessels installed in the plant, Luz shall submit to the CBO and Cal/OSHA, prior to installation, certified code papers and other documents required by standards, ordinances, and laws.

Verification: Luz shall submit the plans, calculations, and specifications (including a copy of the signed and stamped engineer's certification) to the CBO and the CEC CPM at least 30 days (or a lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of fabrication, construction, or installation. Luz shall request written notification from the CBO that the plan check and installation are in accordance with the Code requirements. In addition, Luz shall request Cal/OSHA to verify the proper implementation of the above codes through on-site inspection. Luz shall send copies of CBO and Cal/OSHA comments and approvals to the CEC CPM in the next Construction Progress Report. Luz shall furnish the CBO and CEC CPM with the code certification papers and any other documents required by the code at

least 30 days prior to the initial operation of each pressure vessel.

6. Luz shall ensure that the boiler, including superheater, steam drums, and all duct work, are designed, fabricated, and constructed in accordance with ASME Section I, and ANSI B31.1.

Verification: At least 30 days (or lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of construction, Luz shall submit to the CBO the documents pertaining to the above and a certification by the vendor certifying compliance with the applicable standards, ordinances, and laws. Luz shall request written notification from the CBO as to whether the plan check and the installations are in accordance with the code requirements. Luz shall send copies of CBO and Cal/OSHA comments and approvals and Cal/OSHA inspections results, as appropriate, to the CEC CPM in the next Construction Progress Report.

7. Luz shall design and install all heating, ventilating, air conditioning, and refrigeration systems within buildings and related structures in accordance with the Uniform Mechanical Code and other applicable standards, ordinances and laws. Prior to the intended start of construction, Luz shall submit three sets each of the proposed final design plans, specifications, calculations, and quality control procedures for the HVAC system to the CBO, with a copy of the transmittal letter to the CEC CPM. The final plans, specifications, and calculations shall clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical design engineer, registered to practice mechanical engineering in the State of California, shall sign all plans, drawings, and calculations and submit a signed statement to the CBO and to the CEC CPM that the proposed final design plans, specifications, and calculations conform with all applicable standards, ordinances, and laws.

Verification: At least 30 days (or lesser number of days mutually agreeable by the CBO and CEC CPM) prior to the intended start of construction, Luz shall submit the three (3) copies of the required calculations, plans, and specifications (including a copy of the signed and stamped statement from the design engineer

certifying compliance to the applicable standards, ordinances, and laws) to the CBO. Luz shall request the CBO perform the plan check and inspection required to ascertain that the above HVAC and refrigeration systems have been fabricated and installed in accordance with the Uniform Mechanical Code and other applicable standards, ordinances, and laws. Luz shall request written notification from the CBO as to when the HVAC system is ready for operation. Luz shall send copies of CBO comments and approvals to CEC CPM in the next Construction Progress Report.

8. Luz shall design, fabricate, and install:

a. Plumbing in accordance with Title 24, CAC, Division 5, Part 5, and Uniform Plumbing Code.

b. Potable water system in accordance with Title 24, CAC, Division 5, Part 5, Article P10, and Uniform Plumbing Code.

c. Drainage system including sanitary drain and waste system in accordance with Title 24, CAC, Division 5, Part 5, Articles P4, P5, P6, and P7, and Uniform Plumbing Code.

d. Toilet rooms and number of toilet rooms in accordance with the Uniform Plumbing Code, Appendix C, and Title 24, CAC, Part 2.

e. Energy conservation in the control and maintenance building in accordance with Title 24, CAC, Division 5, Chapter 2-53, Part 2.

f. Temperature and ventilation requirements in accordance with Title 24, CAC, Division 5, Chapter 2-53, Part 2.

Prior to the intended start of construction, Luz shall submit three sets each of the proposed final design plans, and three sets each of the specifications, calculations, and quality control procedures for each mechanical system to the CBO including water and sewer connection permits issued by the city, with a copy of the transmittal package to the CEC CPM. The final plans, specifications, and calculations shall clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical design engineer, registered to practice mechanical engineering in the State of California, shall stamp and sign all plans, drawings, and calculations and submit a signed statement to the CBO and to the CEC CPM

that the proposed final design plans, specifications, and calculations conform with all of the requirements set forth in the Commission Decision.

Verification: At least 30 days (or lesser number of days mutually agreeable to the CBO and CEC CPM) prior to the intended start of construction, Luz shall submit the documents (including a copy of the signed and stamped statement from the design engineer certifying the compliance to the applicable standards, ordinances, and laws. Luz shall request approval from the CBO confirming that the cited sanitary facilities have been designed, fabricated, and installed in accordance with the cited applicable standards, ordinances, and laws. Luz shall request the CBO return two complete sets of the approved submittal. Luz shall request written notification from the CBO as to when the sanitary facilities are ready for operation. Luz shall send copies of CBO comments and approvals to CEC CPM in the next Construction Progress Report.

SECTION 18

ELECTRICAL ENGINEERING

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

The following LORS are listed by Luz in the AFC, Section 3 (relating to SEGS III), Section 4 (relating to SEGS IV), etc. through Section 7 (relating to SEGS VII), entitled "Codes and Standards"; and in Information in Response to First Data Request, Section 5, dated March 4, 1987.

FEDERAL

- o None

STATE

- o State of California Administrative Code (CAL-AC).
- o State of California Occupational Safety and Health Administration (CAL-OSHA).
- o State of California Public Utilities Commission (CAL-PUC).
- o California State Electrical Code (CSEC).

LOCAL

- o None

GENERAL

- o Association of Edison Illuminating Companies (AEIC):
- - AEIC Pub. No. 5-74 4th Edition 1974 - Polyethylene and Cross-Linked Polyethylene Insulated Shielded Power Cables Rated 5 kV to 69 kV.
- o Anti-Friction Bearing Manufacturers Association (AFBMA).

- American Institute of Electrical Engineers (AIEE).
- American National Standards Institute (ANSI).
- American Society of [sic] Testing and Materials.
- Insulated Cable Engineers Association (ICEA):
  - ICEA S-68-516 - Ozone Resistant Ethylene - Propylene - Direct Burial Cable.
  - ICEA S-19-81 6th Edition - Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy - Sections 4 and 7.
  - ICEA S-61-402 - PVC Jacket Tray Cable.
  - ICEA S-19-81 - Hypalono [sic] Jacket Tray Cable.
  - ICEA S-66-524 - Ozone Resistant Cross-Linked Polyethylene (XLP) - Direct Burial Cable.
- International Electrotechnical Commission (IEC).
- Institute of Electrical and Electronic Engineers (IEEE):
  - IEEE C57-13-1973 Requirements for Instrument Transformers 1978.
  - IEEE Std 80-1986 IEEE Guide for Safety in Substation Grounding.
  - IEEE Std 81-1983 IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials for a Ground System.
  - IEEE Std 91-1984 IEEE Standard Graphic Symbols for Logic Diagrams.
  - IEEE Std 100-1984 IEEE Standard Dictionary of Electrical and Electronic Terms.
  - IEEE Std 141-1986 IEEE Recommended Practice for Electrical Power Distribution for Industrial Plant Chapters 2, 3, 4, 5, 6, 7, 8, 9 and 10.
  - IEEE Std 142-1982 IEEE Recommended Practice for Grounding of Industrial and Commercial Power

Systems.

- IEEE Std 260-1978 IEEE Standard Letter Symbols for Units of Measurements.

- IEEE Std 280-1985 IEEE Standard Letter Symbols for Quantities used in Electrical Science and Electrical Engineering.

- IEEE Std 315-1975 Graphic Symbols for Electrical and Electronic Diagrams.

- IEEE-22 Air Switches, Insulator Units and Bus Supports.

- IEEE-74 Standard Test for Industrial Controls.

- IEEE-85 Cable Test Voltage - Table 85, ICEA Specified, Direct Current.

- IEEE-141 General Requirements Distribution, Power and Regulating Transformers.

- IEEE-400 Guide for Making High Direct Voltage Tests on Power Cable Systems in the Field.

- IEEE-422 Cable Guide for the Design and Installation of Cable Systems in Power Generating Stations.

- IEEE-815 Cable Terminators.

o Instrument Society of America (ISA):

- ISA-520 [sic] - Specification Forms for Process Measurement and Control Instruments, Primary Elements, and Valves.

o National Electric Code (NEC).

o National Electrical Manufacturers Association (NEMA):

- NEMA - AB-1 Molded Case Circuit Breakers.

- NEMA - E-1 Instrument Transformers.

- NEMA ICS-1-73 General Standards for Industrial Control Systems-1983.

- NEMA KS1 - Enclosed Switches.

- NEMA MG-1-1973 (R1981) Standard Publication for Motors and Generators - Parts 1, 2, 3, 4, 10, 11,

12, 14, 20.

- NEMA SG5 - Power Switchgear Assemblies-1981.

- NEMA WC3-1980 Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy Sections 4 and 7.

- NEMA WC5-1984 Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

- NEMA WC7-1984 Standard for Cross-Linked Polyethylene Insulation.

- NEMA WCB-1984 [sic] Ethylene Propylene Rubber Insulated Wire and Cable for Transmission and Distribution of Electrical Energy.

- NEMA - Z10 Secondary Unit Substations.

o National Fire Code (NFC).

o National Fire Protection Association (NFPA).

o Southern California Edison Company (SCE):

- Engineering Standards (ES):

  o Section 31 - Switchboard Wiring.

  o Section 30 - Power Cable Installation.

  o Section 33 - Station Grounding Criteria.

  o Section 34 - Conduits, Roadways [sic], Cable Structures and Supports.

  o Section 51 - Power Cable Installation.

- SCE E-4801 - Standard Construction Specification Technical Requirements.

- SCE Material Standards (MS):

  o MS-11-1978 Aluminum clad Overhead Ground Wire.

  o MS-14-1978 Suspension Insulators.

  o MS-19-1981 Bolts and Nuts for Steel Towers and

Racks.

- o MS-215 Rigid PVC Conduit and Fittings.
- o MS-226-1981 Steel for Towers, Racks and Miscellaneous Items.
- o MS-452-1981 Wood Poles, Approved Species, Preservatives and Treatment.
- o MS-467 Electrical Bus, Connectors, Terminals and Fittings for Bus, Cable and Wire.
- o MS-471-1981 Post Type and Cap and Pin Type Insulators.
- o MS-474 Plastic Utility Duct and Fittings for Underground Insulation.
- o MS-475-1978 600 Volt Control Cables.
- o MS-481 Steel Cable Trays.
- o MS-484-1978 Power Fuses and Accessories.
- o MS-491-1981 Pin Type Insulators.
- o MS-492-1984 Control, Instruments and Test Switches, Test Jacks and Wiring Devices.
- o MS-499-1975 Signs and Markers.
- o A3 115 kV Circuit Breakers.
- o A6-1980 Fine [sic] Traps 69 kV Through 500 KV.
- o A13-1981 Intermediate and Station Class Surge Arrestors 2.4 kV Through 50.0 kV Systems.
- o A27-1984 34.5, 69 and 115 kV Group Operated Disconnect Switches.
- o A40-1984 34.5, 69 and 115 kV Outdoor Metering Units.
- o A84-1983 115 and 230 kV Voltage Transformers.
- o A180-1983 115 kV and 230 kV Outdoor Current Transformers.

- SCE Guidelines for Operating Metering Protective Relaying for Co-Generators and Small Power

Procedures [sic].

- SCE Specifications and Technical Requirements (STR).

o National Electrical Manufacturers Association (NEMA). Contains requirements for electrical equipment.

o Underwriters Laboratories (UL). Establishes safety standards for electrical equipment and components.

o In addition, Staff has identified a San Bernardino County Ordinance and additional industrial standards and codes which are applicable to the SEGS facilities. The list of these is included in Appendix B.

PERFORMANCE OBJECTIVES/CRITERIA

Staff has analyzed the electrical engineering portion of the solar electric generation plant designs based on the following performance objectives and criteria:

o The specifications for major electrical equipment should be in accordance with the applicable LORS.

o The ratings of major electrical equipment should be adequate for system operational requirements.

o The existing and proposed electrical equipment should operate safely during electrical fault conditions.

o The existing and proposed electrical systems should have sufficient capability to achieve an acceptable level of reliability.

o Complete and specific requirements should be established which define the post-certification reviews and appraisals which are necessary to verify that the project has been designed and constructed in compliance with the applicable LORS specified in the AFC and promulgated by the Commission Decision.

CONDITIONS OF CERTIFICATION

SEGS UNITS III AND IV

Requirements

1. Luz shall be responsible for ensuring that the electrical facilities have been built in accordance with the applicable LORS listed in the section entitled Applicable Laws, Ordinances, Regulations, and Standards and in Appendix B. Luz shall make available all records requested in any audit undertaken by either the CBO or the Compliance Project Manager (CPM) to verify compliance. Luz shall take all necessary measures to correct any instance of noncompliance disclosed by the audit.

   Verification: Within 60 days after the Commission Decision, the responsible electrical design engineer shall submit to the CBO and the CPM a signed statement certifying that the electrical facilities and equipment conform to the applicable LORS. The CBO may audit Luz to the extent necessary to verify compliance with the applicable LORS. Luz may report the audit findings to the CPM in the monthly construction report.

Requirements

2. Luz shall be responsible for ensuring that the electrical facilities have been built in accordance with the applicable LORS listed in the section entitled Applicable Laws, Ordinances, Regulations, and Standards and in Appendix B. Luz shall provide all records requested in any audit undertaken by the CBO and the CPM to verify compliance. Luz shall take all necessary measures to correct any instances of noncompliance disclosed by the audit.

Verification: Within 60 days after the Commission Decision, the responsible electrical design engineer shall submit to the CBO and the CPM a signed statement certifying that the electrical facilities and equipment conform to the applicable LORS. The CBO shall audit Luz to the extent necessary to verify compliance with the applicable LORS and report the audit findings to the CPM. Luz may report the audit findings to the CPM in the monthly construction report.

3. Luz shall submit to the CBO and the CPM the following final electrical system calculations to assist the CBO and the CPM in their determination that the electrical installation conforms to the requirements of the applicable building regulations (Electrical Engineering: Table B-4):

- o short-circuit ratings of equipment
- o voltage drops in feeder cables
- o coordination study calculations for fuses, circuit breakers and for protective relay settings
- o other calculations as required by the CBO

Verification: No later than 30 days after the Commission Decision, Luz shall transmit the required calculations and data to the CBO and the CPM.

Requirements

4. Luz shall design, construct and inspect the facility in accordance with the applicable LORS identified in Appendix B and those submitted by Luz which are listed in the section entitled Applicable Laws, Ordinances, Regulations, and Standards.

   Verification: Fourteen days (14) prior to the start of commercial operation, Luz shall submit to the CPM a statement that all design, construction and inspection requirements of all applicable LORS have been met for electrical engineering.

5. The electrical engineer, responsible for the electrical design of SEGS VI, shall sign and stamp all final design drawings, plans, specifications, calculations and applicable quality control procedures. This electrical engineer shall be registered to practice in the State of California. The engineer's name, signature, registration number and registration expiration date shall appear on all the above documents. A statement containing the engineer's name, registration number and registration expiration date shall be sent to the CBO and the CPM.

   Verification: Luz shall submit the statement to the CBO and the CPM no later than 30 days after certification.

6. Luz shall submit to the CBO and the CPM one-line diagrams, or a statement confirming that the one-line diagrams already submitted (Luz 1987g) remain valid, for the 115 kV, 13.8 kV, 4.16 kV and 480 V electrical system. This one-line diagram shall be accompanied by complete equipment data to enable the CBO to determine that the electrical design is adequate and was completed and documented in sufficient detail to address all the following:

   - Was the electrical equipment specified in accordance with all the applicable building regulations (Electrical Engineering: Table B-4)?
   - Are the ratings of the electrical equipment adequate for system operational requirements?

- o Will the electrical equipment operate safely during electrical fault conditions?

- o Does the electrical system have adequate protection devices to insure reliable operation?

  Verification: Luz shall submit the required electrical system data to the CBO and the CPM within 30 days after adoption of the Commission Decision.

7. Luz shall construct the SEGS Unit VI from plans which have been reviewed and approved by the CBO. These plans, design changes and design change notices shall remain on the site at all times. Luz shall request the CBO to inspect the installation to ensure compliance with the requirements of applicable LORS including the NEC and Title 24, CAC.

   Verification: Luz shall submit electrical inspection reports to the CPM in the construction progress reports. At least 30 days after the completion of construction, Luz shall submit to the CPM a statement signed by the CBO that the electrical equipment has been installed in accordance with applicable LORS and with applicable portions of the NEC and Title 24, CAC.

8. Luz shall ensure that all electrical equipment including, but not limited to that listed in the following groups, is designed and fabricated to the applicable industrial standards listed in Appendix B.

   Luz shall submit a list of equipment standards accompanied by:

   - o For Group I, each equipment vendor's certification.

   - o For Group II, a signed statement from the engineer that the equipment has been designed and fabricated in accordance with the listed standards.

   The submittal shall be verified by the Luz quality assurance representative.

GROUP I
Battery and Battery Chargers
Cable, Medium Voltage
Generator Units and Accessories
Grounding Resistors
High Voltage Circuit Breakers
Medium-Voltage Switchgear and Controllers

Metering and Protective Relay Panels
Motor Control Centers, Medium Voltage
Motors, Larger than NEMA frame size 445
Segregated Phase Bus
Surge Arresters, 1000 V and greater
Switchgear
Transformers: Main and Auxiliary
Uninterruptible Power Supplies

GROUP II
Cable, Low Voltage
Cable Trays
Cathodic Protection Equipment
Conduit
Disconnect Switches
Distribution Panels
Grounding Materials
Heat-Tracing Equipment
Load Centers
Motor Control Centers
Motors, NEMA frame size 445 and smaller
Metal-Enclosed Bus, Low Voltage
Transformers: Dry Type

Verification: Luz shall include the information required above in a report which shall be submitted to the CPM with the first periodic construction report after operation.

Requirements

9. Luz shall design, construct and inspect the facility in accordance with the applicable LORS identified in Appendix B and those submitted by Luz which are listed in the section entitled Applicable Laws, Ordinances, Regulations, and Standards.

   Verification: Fourteen days prior to the start of commercial operation, Luz shall submit to the CPM a statement that all design, construction and inspection requirements of all applicable LORS have been met for electrical engineering.

10. The electrical engineer, responsible for the electrical design of SEGS VII, shall sign and stamp all final design drawings, plans, specifications, calculations and applicable quality control procedures. This electrical engineer shall be registered to practice in the State of California. The engineer's name, signature, registration number and registration expiration date shall appear on all the above documents. A statement containing the engineer's name, registration number and registration expiration date shall be sent to the CBO and the CPM.

    Verification: Luz shall submit the statement to the CBO and the CPM no later than 30 days after certification.

11. Luz shall submit to the CBO five sets each of the following items:

    a. Final design plans to include:

    -one-line diagrams for the 115 kV, 13.8 kV, 4.16 kV and 480 V systems
    -system grounding drawings
    -lighting drawings
    -general arrangement or conduit drawings
    -other plans as required by the CBO

b.Final calculations to establish:

-short-circuit ratings of equipment
-ampacity of feeder cables
-coordination study calculations for fuse, circuit breaker and protective relay settings
-lighting energy calculations
-other calculations as required by the CBO

c. A signed statement certifying that the proposed final design plans and specifications conform to all requirements set forth in the Commission Decision.

Verification: Thirty days before start of electrical equipment installation, Luz shall submit to the CPM a copy of the transmittal letter to the CBO, verifying that the items listed above were transmitted to the CBO.

12. Luz shall construct from plans which have been reviewed and approved by the CBO. These plans, design changes and design change notices shall remain on the site at all times. Luz shall request the CBO to inspect the installation to ensure compliance with the requirements of applicable LORS including the NEC and Title 24, CAC.

Verification: Luz shall submit electrical inspection reports to the CPM in the monthly construction report. At least 30 days Prior to initial turbine roll, Luz shall submit to the CPM a statement signed by the CBO that the electrical equipment has been installed in accordance with applicable LORS and with applicable portions of the NEC and Title 24, CAC.

13. Luz shall ensure that all electrical equipment including, but not limited to that included in the following groups, are designed and fabricated to the applicable industrial standards listed in Appendix B.

Luz shall submit a list of equipment standards accompanied by: for GROUP I each equipment vendor's certification and for GROUP II, a signed statement from the engineer that the equipment has been designed and fabricated in accordance with the listed standards.

GROUP I
Battery and Battery Chargers
Cable, Medium Voltage
Generator Units and Accessories
Grounding Resistors
High Voltage Circuit Breakers
Medium-Voltage Switchgear and Controllers
Metering and Protective Relay Panels
Motor Control Centers, Medium Voltage
Motors, Larger than NEMA frame size 445
Segregated Phase Bus
Surge Arresters, 1000 V and greater
Switchgear
Transformers: Main and Auxiliary
Uninterruptible Power Supplies

GROUP II
Cable, Low Voltage
Cable Trays
Cathodic Protection Equipment
Conduit
Disconnect Switches
Distribution Panels
Grounding Materials
Heat-Tracing Equipment
Load Centers
Motor Control Centers
Motors, NEMA frame size 445 and smaller
Metal-Enclosed Bus, Low Voltage
Transformers: Dry Type

Verification: Luz shall include the information required above in a report which shall be submitted to the CPM with the first periodic construction report after operation.

SECTION 19

SYSTEM EFFICIENCY

Requirements

1. The facility shall be operated in accordance with the requirements of Title 18 CFR, Section 292.204(b)(2). Total energy input into each of the SEGS projects shall be monitored continuously by Luz. Monitored data shall include solar energy input, natural gas energy input, total energy input, monthly and annual plant availability, monthly and annual plant equivalent availability, and monthly and annual capacity factor for each utility period (peak, mid-peak and off-peak).

   Verification: Luz shall file an annual report with the California Energy Commission (CEC) Compliance Project Manager (CPM) and signed by the project operations supervisor under whose supervision the data were obtained and the report prepared, attesting to the veracity of the data and showing each of the above parameters, by month, for each SEGS unit.

2. Luz shall maintain logs at each SEGS unit of the electrical energy deliveries to the utility, Southern California Edison:

   Verification: Luz shall submit the above monthly totals of electrical energy deliveries in each Annual Compliance Report. The reports shall be accompanied by a letter signed by the project engineer or registered engineer, under whose supervision the logs were maintained, attesting to the veracity of the data upon which the reports were based.

3. Luz shall submit to the CEC CPM FERC Qualifying Facility (QF) Orders for SEGS Units VI and VII.

   Verification: Within 30 days after receipt of FERC Qualifying Facility Orders for SEGS Facilities VI and VII, Luz shall submit to the CEC CPM copies of said FERC Qualifying Facility Orders.

SECTION 20

DECOMMISSIONING

REQUIREMENT

1. Prior to commencing decommissioning activities for the Luz-SEGS Units III, IV, V, VI, or VII, Luz Engineering shall file a decommissioning plan with the California Energy Commission (CEC) Compliance Project Manager. The decommissioning plan shall:

   A. Identify and discuss the proposed decommissioning activities and schedule for the power plant sites, transmission line corridor, and all appurtenant facilities constructed as a part of/or because of the project;

   B. Identify all applicable laws, ordinances, regulations, standards, (LORS) and local/regional plans applicable at that time;

   C. Discuss how the specific proposed decommissioning activities will comply with those identified LORS and plans;

   D. Contain an analysis of all decommissioning alternatives considered, including restoration of the site to its preconstruction, natural state;

   E. Discuss the reasons for selecting the preferred proposal.

Prior to submittal of the decommissioning plan, a prefiling workshop shall be held with Luz Engineering and CEC staff, and other interested parties, for the purpose of determining the specific contents of the plan. Luz Engineering shall be responsible for requesting the CEC staff to schedule the prefiling workshop.

In the event that significant issues are associated with the plan's approval, or the desires of local officials or interested parties are inconsisitent with the plan, the CEC may hold workshops and/or public hearings as part of its approval procedure.

Luz Engineering shall not commence decommissioning

activities of the Luz-SEGS Units III, IV, V, VI, or VII until approval of the decommissioning plan is obtained from the CEC. Luz Engineering shall comply with any requirements incorporated by the CEC as a condition of the decommissioning plan.

Verification: At least twelve (12) months prior to commencing decommissioning activities at the Luz-SEGS Units III, IV, V, VI, or VII facilities, Luz Engineering shall file the above described decommissioning plan with the CEC Compliance Project Manager.

At least six (6) months prior to filing the decommissioning plan with the CEC Compliance Project Manager, Luz Engineering shall request, in writing, that the CEC staff schedule a prefiling workshop to determine specific contents and scope of the decommissioning plan.

SECTION 22

TRANSMISSION SYSTEM EVALUATION

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

There are no federal, state or local laws, ordinances, regulations or standards (LORS) that directly address the planning, design and operation of individual electric utility power systems and qualifying facilities. In order to maintain reliable operation, minimize costs and customer complaints, each utility has developed its own guidelines/standards to which it generally adheres. These guidelines/standards evolved over many years and their use has been accepted by the utility industry. Since the Luz SEGS plants are located within the SCE service area, the SCE guidelines/standards were used in the analysis of the electric transmission system proposed by Luz. SCE's transmission and subtransmission reliability criteria are presented in Appendix E and Appendix F, respectively.

CONDITIONS OF CERTIFICATION

SEGS UNITS III, IV AND V

Requirements

1. Luz shall verify that the following has been accomplished:

   a. Installed and/or modified its transmission system protection, metering, communication systems, and administrative procedures needed to incorporate the Luz SEGS project into the SCE system.

   b. Established procedures with Luz regarding dispatch and control of the electrical energy of the Luz SEGS project.

   c. Guaranteed that the Luz SEGS project is under the exclusive control of the appropriate SCE dispatcher.

   d. Implemented a curtailment scheme such that SCE system overloads will be avoided in the event that area generation curtailment is required.

   Verification: No later than 60 days after certification, Luz shall furnish the CEC CPM with a statement signed by the SCE project manager describing how these requirements will be implemented.

2. Luz shall submit to the CEC CPM a request for any variance from Requirements 1a, 1b, 1c, and 1d or for any other changes in the SCE system that may affect the performance of the transmission system related to the Luz SEGS project. The request shall contain information appropriate to justify any proposed changes. Approval must be obtained from the CEC Staff before the change (variance) is implemented.

   Verification: Luz shall file its request with the CEC CPM. Staff shall review the submittal and make recommendations to the Regulatory Procedures Committee within 45 days after receipt of Luz's complete submittal. The 45 day period shall not start until Staff has determined that adequate information to review the change has been provided.

Requirements

3. Luz shall verify that the following has been accomplished:

   a. Installed and/or modified its transmission system protection, metering, communication systems, and administrative procedures needed to incorporate the Luz SEGS project into the SCE system.

   b. Established procedures with Luz regarding dispatch and control of the electrical energy of the Luz SEGS project.

   c. Guaranteed that the Luz SEGS project is under the exclusive control of the appropriate SCE dispatcher.

   d. Implemented a curtailment scheme such that SCE system overloads will be avoided in the event that area generation curtailment is required.

   Verification: No later than 60 days after the first successful synchronization of the SEGS Unit VII Generator, Luz shall furnish the CEC CPM with a statement signed by the SCE project manager describing how these requirements will be implemented.

4. Luz shall submit to the CEC CPM a request for any variance from Requirements 1a, 1b, 1c and 1d or for any other changes in the SCE system that may affect the performance of the transmission system related to the Luz SEGS project. The request shall contain information appropriate to justify any proposed changes. Approval must be obtained from the CEC Staff before the change (variance) is implemented.

   Verification: Luz shall file its request with the CEC CPM. Staff shall review the submittal and make recommendations to the Regulatory Procedures Committee within 45 days after receipt of Luz's complete submittal. The 45 day period shall not start until Staff has determined that adequate information to review the change has been provided.

SECTION 23

WATER RESOURCES

APPLICABLE LAWS, ORDINANCES, REGULATIONS AND STANDARDS

Federal, state, and local laws, ordinances, regulations, and standards (LORS) are designed to ensure that the project does not cause unacceptable impacts on water resources, including water supplies, water quality, and flood hazards. Project compliance with applicable LORS must consider the following:

FEDERAL

- The Clean Water Act, 33 USC section 1251 et seq., states that any point-source waste that discharges into U.S. waters requires a national pollution discharge elimination system (NPDES) permit. In California, the Regional Water Quality Control Boards (RWQCB) administer the federal NPDES program. The proposed project is under the jurisdiction of the Lahontan Regional Water Quality Board (LRWQCB).

- The Safe Drinking Water Act (SDWA) of 1974, as amended in 1986, requires the Environmental Protection Agency (EPA) to establish a program which provides for the safety of our nation's drinking water.

STATE

- California Water Code, section 461, articulates the Department of Water Resources' water use policy, namely, that "the primary interest of the people of the state in the conservation of all available water resources requires the maximum reuse of water in the satisfaction of the beneficial uses of water."

- California Water Code, section 100, prohibits the waste or unreasonable use or method of use or method of diversion of water.

- California Water Code, sections 4999 through 5008, requires filing for water extractions in excess of 25 acre-feet per year from groundwater basins in San Bernardino County.

- The Porter-Cologne Water Quality Control Act 1967, Water

Code section 13260 et seq., requires the RWQCB to adopt waste-discharge requirements in order to protect state waters for the use and enjoyment of the people of California.

- California Administrative Code (CAC), Title 22, section 64401 et seq., establishes standards for domestic water quality and monitoring.

- CAC, Title 23, section 2510 et seq., sets forth regulations pertaining to water quality aspects of waste discharge to land.

- The State Water Resources Control Board (SWRCB), Resolution 75-78 (on the water quality control policy for the use of and disposal of inland waters used for powerplant cooling), establishes a hierarchy for the use of available water sources in powerplant cooling applications.

- The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) which is added to the Health and Safety Code, sections 25249.5 et seq., prohibits the discharge or release of certain chemicals into drinking water sources.

LOCAL

- San Bernardino County Code, Chapter 5, specifies requirements for establishing and permitting septic systems within San Bernardino County.

- San Bernardino County, Board Order no. 6-86-108, requires that all facilities used in the collection, transport, treatment, or disposal of waste shall be adequately protected against overflow, inundation, structural damage, or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

CONDITIONS OF CERTIFICATION

SEGS UNITS III THROUGH VII

Requirements

1. Reliance on local groundwater and use of on-site wells shall be limited to emergency situations when the AVEK water supply is temporarily interrupted but shall not be relied upon to meet routine project demands.

   Verification: Luz shall notify the California Energy Commission (CEC) Compliance Project Manager (CPM) by telephone not later than 24 hours after the commencement of pumping of water from any Luz well.

2. For any well developed by Luz for extracting water from the Kramer Basin, Luz shall provide the following:

   - o driller well log(s)
   - o drawdown and recovery test(s)
   - o a 1:24,000 map depicting the location of all wells developed by Luz

   Verification: The information specified in this condition shall be provided to the CEC CPM within 30 days after completion of the well and at least 30 days before water is extracted to supply any SEGS unit.

3. Luz shall install in-line flow meters on all emergency supply wells.

   Verification: Thirty days after completion of each well Luz shall submit to the CEC CPM as-built drawings which depict the installation of in-line meters on each and every emergency supply well.

4. Luz shall collect and maintain the following for each and every period during which water is extracted from the Kramer Basin by Luz wells:

- o pre and post pumping standing water levels
- o pumping rates in gallons per minute
- o total extraction in acre-feet

Verification: Within 30 days after cessation of pumping Luz shall forward a copy of the drawdown and recovery records specified above to the CEC CPM.

5. Luz shall maintain records of water deliveries from the AVEK Water Agency.

Verification: Luz shall include in the annual compliance report submitted to the CEC CPM a tabulation of monthly and annual water deliveries from AVEK for each and all SEGS Units located at Kramer Junction.

6. Prior to certification Luz shall enter into an agreement with Intervenor Caillier to supply water to their businesses at Kramer Junction if and when groundwater pumping by Luz interferes with the wells belonging to the Cailliers and the Caillier's ability to pump said groundwater.

Verification: Within 30 days after certification Luz shall provide the CEC CPM a copy of an agreement entered into by Luz and the Cailliers describing terms acceptable to both.

7. Luz shall provide a water supply connection to its on-site storage system from which to supply local (domestic and commercial; but not industrial or agricultural) groundwater users in the Kramer Basin in the event that pumping of groundwater from Luz wells interferes with the pumping of groundwater by local users.

Verification: Within 30 days after development of the first on-site well Luz shall supply as-built drawings to CEC CPM depicting an on-site water supply connection and storage system adequate to supply local water users with AVEK water in the event that pumping by Luz interferes with the use of groundwater by local pumpers.

8. Luz shall perform a feasibility investigation of potential alternative sources of non-fresh water, including the use of reclaimed wastewater to satisfy part of all of the SEGS water demand at the conclusion of each five-year interval following the commencement of commercial operations. The CEC CPM shall review the feasibility studies provided by Luz and make recommendations to the CEC regarding the feasibility of an alternative water supply consistent with SWRCB policy stated in resolution 75-58. If the Commission finds that it is both economically and technically feasible to construct and operate with an alternative source of water supply, Luz shall construct and operate such a system in a reasonable amount of time.

Verification: Five years after certification and every five years thereafter, Luz shall submit the feasibility study to the CEC CPM.

9. Luz shall prepare a feasibility study considering the technical, economic, and environmental aspects of implementing water-conservation measures described in the AFC Section 4.D of Appendix F.2.6 and other available water-conservation measures. Water conservation methods which appear feasible shall be implemented by Luz to reduce their dependence on fresh inland water for power plant cooling.

Verification: Luz shall submit to the CEC CPM, a water conservation feasibility study within 120 days of site certification. Measures determined to be economically and technically feasible by CEC CPM shall be implemented by Luz. As built drawings shall be provided to the CEC CPM in the next periodic compliance report.

SECTION 24

TRAFFIC AND TRANSPORTATION

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

STATE

Streets and Highways Code sections 117, 660-711 require an encroachment permit from the State Department of Transportation for facilities that require construction, maintenance, or repairs on or across state highways.

California Vehicle Code section 35780; Streets and Highways Code, 660-711; Title 21 CAC sections 1411.1-1411.6 state that overload approvals from the State Department of Transportation are required for transportation of excessive loads over state highways.

LOCAL

San Bernardino County

California Vehicle Code, section 35000 et seq. states that a Moving Permit from the San Bernardino County Department of Transportation is required if vehicles exceed legal limits of length, width, height, or weight.

San Bernardino County Code section 51.016 states that an Excavation Permit from the San Bernardino County Department of Transportation is required for any excavation within the county road right-ow-way limits, including power poles or water lines.

Kern County

California Vehicle Code section 35780; Streets and Highways Code, 660-711, require that a Transportation Permit from Kern County Public Works and Road Department be acquired for transportation of vehicles that exceed legal limits of length, width, height, or weight.

CONDITIONS OF CERTIFICATION

Requirement

1. Luz shall comply with the Kern County, San Bernardino County, and Caltrans restrictions on oversize or over weight limit vehicles. Luz shall obtain necessary transportation permits from the counties and Caltrans.

   Verification: In its annual compliance report, Luz shall notify the California Energy Commission (CEC) Compliance Project Manager (CPM) of any transportation permits obtained during the reporting period.

2. Luz shall monitor traffic on US 395 and SR 58 to determine peak traffic times. Luz shall schedule shift changes if the monitoring results show a significant impact for its operations employees at SEGS Units III-V so as not to coincide with shift changes for construction employees at Units VI and VII, and shall, if practicable, schedule both types of shift change so as not to coincide with morning and evening peak traffic hours on US 395 and SR 58, based on the results of the monitoring.

   Verification: 60 days after certification, Luz shall submit to CEC CPM, documentation of monitoring for peak traffic on US 395 and SR 58 in the project vicinity, and a schedule for shift changes for operations employees at SEGS Units III-V and for construction employees at SEGS Units VI and VII.

3. Based upon the traffic monitoring and if necessary, Luz shall develop and implement a program to minimize the number of vehicles used by its workers for commuting, employing techniques such as ride sharing and van pooling. Incentives which Luz may provide include (1) granting preferential (shaded) parking for vehicles with three or more occupants, (2) recognizing car poolers as exemplary employees, and (3) making vans or buses available. The program shall include a schedule of when workers will be briefed and a questionnaire to be administered quarterly to determine the effectiveness of the program.

Verification: Within 60 days of determining that a traffic mitigation is necessary, Luz shall submit to the CEC CPM a description of the program to be used to reduce the number of vehicles used by its workers for commuting. In the periodic compliance report Luz shall indicate how many workers have been briefed and how many remain to be briefed, as well as the results of the worker questionnaires concerning the effectiveness of the program.

SECTION 25

LAND USE

APPLICABLE LAWS, ORDINANCES, REGULATIONS, STANDARDS, POLICIES AND PLANS

FEDERAL

- BLM - 43 USC 1737, et seq.

  This section of the federal code addresses approval of operations and rights-of-way on federal land. (Water supply pipeline - right-of-way grant executed 6/86)

- BLM - California Desert Conservation Area Plan, 1980

  The Desert Plan provides development policies, standards, and requirements associated with BLM administered lands in the project area as required by 43 USC 1781.

LOCAL

- San Bernardino County, San Bernardino County General Plan and Implementation System, 1979

  The San Bernardino County General Plan designates generalized uses for land areas of the County and specific policies for development.

- San Bernardino County Zoning Ordinance, 1985

  The zoning code implements the General Plan by designating zoning for land areas in the County and identifying what uses are permitted within various zoning classifications.

- San Bernardino County, Joint Utility Management Plan (JUMP), 1973

  The JUMP provides standards for regulating the location and development of utilities in the County.

- Kern County, Kern County General Plan and Zoning Ordinance, 1986 (Water Supply Pipeline)

  Kern County's Zoning Ordinance which implements Kern County's General Plan, exempts underground water supply

pipelines for public utilities from land use zoning ordinances (Elliott 1987).

CONDITIONS OF CERTIFICATION

None.

SECTION 26

VISUAL RESOURCES

APPLICABLE LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

FEDERAL

- Bureau of Land Management, California Desert Conservation Area Plan, 1980.

  The Desert Plan provides development policies, standards, and requirements associated with BLM administered lands in the project area.

LOCAL

- San Bernardino County Joint Utility Management Plan (JUMP), 1976.

  The JUMP defines San Bernardino County's policy on the future location of all major energy facilities. The Aesthetics and Design section of the Siting Criteria Checklist states that

  > Where possible, facilities must be located where they may be naturally or artificially screened and/or designed so as to be congruous with the natural features of its site. Modification of the various structural components and equipment, forms, and the application of appropriate textural and color treatments may be required.
  >
  > The site shall comply with all the requirements and guidelines of the Scenic Routes Element.

CONDITIONS OF CERTIFICATION

Requirement

1. Luz will evaluate painting the stacks, upper cooling towers, makeup water storage tanks, and control rooms of SEGS VI and VII to blend with the surrounding landscape. (Staff recognizes that certain areas of the facility cannot be painted due to safety and efficiency reasons.) Additionally, when repainting is required for the same portions of SEGS Units III-V, a similar evaluation will be undertaken.

   Verification: Sixty days prior to the completion of construction on SEGS Unit VII Luz shall submit to CEC staff a proposed plan to paint Units VI-VII, including samples of all paint colors to be used and color simulations of the project after it has been painted, as viewed from the nearest points on SR 58 and US 395. CEC staff shall evaluate the appropriateness of the plan and notify Luz as to the results of that evaluation within 14 days. For the repainting of SEGS III-V, Luz shall submit a painting plan 120 days prior to beginning any painting for CEC staff approval.

   If the plan is deemed inappropriate, CEC staff and Luz representatives shall meet to attempt to agree as to an appropriate plan. Luz shall not begin painting until CEC Staff has approved a painting plan.

2. To partially screen foreground views of the solar fields, Luz will install windscreening, similar to that installed at SEGS III & IV, on the existing security fence on the north and east sides of SEGS V.

   Verification: 90 days prior to the completion of construction on SEGS unit VI or VII, whichever begins first, Luz shall submit to the CEC CPM a statement that the appropriate windscreening has been installed.

APPENDIX B: COLD LAYUP PLAN

Cold Layup Plan

SEGS III - VII Kramer Junction Facilities

Boron, California

October 2019

Table of Contents

Acronyms/Abbreviations

AFC	Application for Certification
CEC	California Energy Commission
DCS	Distributed Control System
ESD	Emergency Shutdown
GSU	Generator Step-up Transformer
HP	High Pressure
HTF	Heat Transfer Fluid (Therminol VP-1)
kV	kilovolt
LORS	Laws, Ordinances, Regulations, and Standards
LP	Low Pressure
MCC	Motor Control Center
NGB	Natural Gas-Fired Boiler
SCE	Southern California Edison
SGT	Steam Generator Train
SEGS	Solar Electric Generating System
ST	Steam Turbine
USEPA	United States Environmental Protection Agency
III-V	SEGS III – V Facilities
III-VII	SEGS III – VII Facilities

1. Introduction

Since 2005 NextEra Energy Resources (NEER) has owned and operated five solar thermal facilities located at Kramer Junction off Highway 395 in Boron, California. The Solar Electric Generating Systems (SEGS) III through VII facilities are located at 41100 US Highway 395, Boron, California as shown in Figure 1. In total SEGS can generate 150 megawatts (MW) of thermal solar energy. All five sites cover more than 1,400 acres in the Mojave Desert. Commercial operation began for the SEGS units in 1987. The project is jointly owned by NEER and Fortress.

NEER previously suspended operation of the SEGS VI and VII facilities pursuant to a Cold Layup Plan for VI & VII that was submitted to the California Energy Commission in September 2018.

NEER has now decided to suspend operation of the SEGS III, IV, and V (III-V) facilities. This new Cold Layup Plan is intended to cover all five units (III – VII) so that going forward, all units are being managed under a single plan.

The cold layup process includes the de-energization of certain control systems and the partial de-energization of others. This mitigates hazards and conditions that could lead to equipment starting and/or valves opening or closing unintentionally. Accordingly, the SEGS III - V will have a specific Lockout Plan in place for applicable equipment. The site will take measures to protect worker and public health, safety and the environment during the period of cold layup. This Cold Layup Plan details the measures that NEER will take to place III-V in cold layup status and to continue to manage all five units (III – VII) in cold layup status.. These measures will be conducted in compliance with all applicable California Energy Commission (CEC) Conditions of Certification and all applicable laws, ordinances, regulations, and standards (LORS).

1.1. Solar Electric Generating System

The subject site is located in a sparsely populated area of the Western Mojave Desert near the boundary between San Bernardino and Kern Counties, just northwest of Kramer Junction (intersection of California Highways 58 and 395) and east of the Community of Boron.

The site has a fenced area of approximately 1,019 acres and consists of five 30-megawatt solar electric generating systems named SEGS III through SEGS VII as shown on Figure 2. For the purposes of regulatory permits and other legal matters, Luz Solar Partners Ltd. III, IV, V, VI and VII are the landowners and NextEra Energy Operating Services, LLC is the operator. Each of the SEGS plants consists of a solar field and a power block. Each of the five power blocks includes power generation equipment, a control room, a condenser and cooling tower for circulating process water, a process water system including a small wet chemistry laboratory for testing water quality, a circulating heat transfer fluid (HTF) system including expansion vessels and related piping, and electrical switching and distribution equipment plus an emergency back-up generator.

All SEGS plants share three 10-acre Class II surface water impoundments (evaporation ponds), located on the east side of the property near US Highway 395 and other administrative and support facilities. Solar fields for each of the SEGS plants are divided into four quadrants. The solar

fields are constructed as line-focus parabolic trough collectors that focus sunlight onto vacuum-insulated steel pipes. HTF, which is manufactured by Solutia and marketed under the name Therminol VP-1, is circulated through the steel pipes at temperatures up to 735°F and pumped through a series of heat exchangers in the power block to produce superheated steam for use in a conventional Rankine power cycle. Each solar collector assembly (SCA) in the solar field consists of a row of individual trough collectors moved by a single drive train. Each solar field includes approximately 100,000 mirrored panels. SEGS III and IV were placed on line in December 1986, SEGS V in September 1987, and SEGS VI and VII in December 1988.

Electrical power generated by the SEGS is supplied under a long-term contract to the Southern California Edison (SCE) grid through SCE-owned switchyard equipment located onsite. Electrical equipment located within SCE-owned switchyards is not discussed in this plan.

Fire protection and emergency response is provided by local hydrants and water monitor cannons equipped with foaming agents, water deluge systems, and small handheld fire extinguishers.

1.2. California Energy Commission

The CEC granted a license to operate SEGS III-VII in 1988 in response to Application for Certification 97-AFC-02C and under the CEC's authority from the Warren Alquist State Energy Resources and Conservation Act (California Public Resources Code §25000 et seq.) to license electrical generation of more than 50 MW using a thermal process in California. Energy Commission Decision 97-AFC-02C includes Conditions of Certification regarding the ultimate decommissioning of the SEGS. At this time, NEER has not made a decision to permanently close SEGS III, IV, V, VI, or VII. However, NEER has notified the CEC of its intention to suspend generation at the SEGS III, IV, and V facilities to evaluate the future of these facilities and is providing a copy of this Plan to the CEC Compliance Project Manager.

1.3. Mojave Desert Air Quality Management District

SEGS is currently subject to a Title V Federal Air Operating Permit (Title V Permit) issued and administered by MDAQMD. The Title V Permit requires compliance with applicable MDAQMD, California, and federal air quality rules and regulations and other permit-specific obligations.

SEGS III - VII will remain in compliance with the Title V Permit while in cold layup status as may be required by MDAQMD and/or the USEPA until such time as the Title V permit is no longer required. SEGS will remain in compliance with all Air District issued permits while in cold layup status. As systems and equipment are de-energized and removed from service, associated Air District permits will be cancelled or modified as required.

Figure 1-1

SEGS Site Location

SEGS Site Location

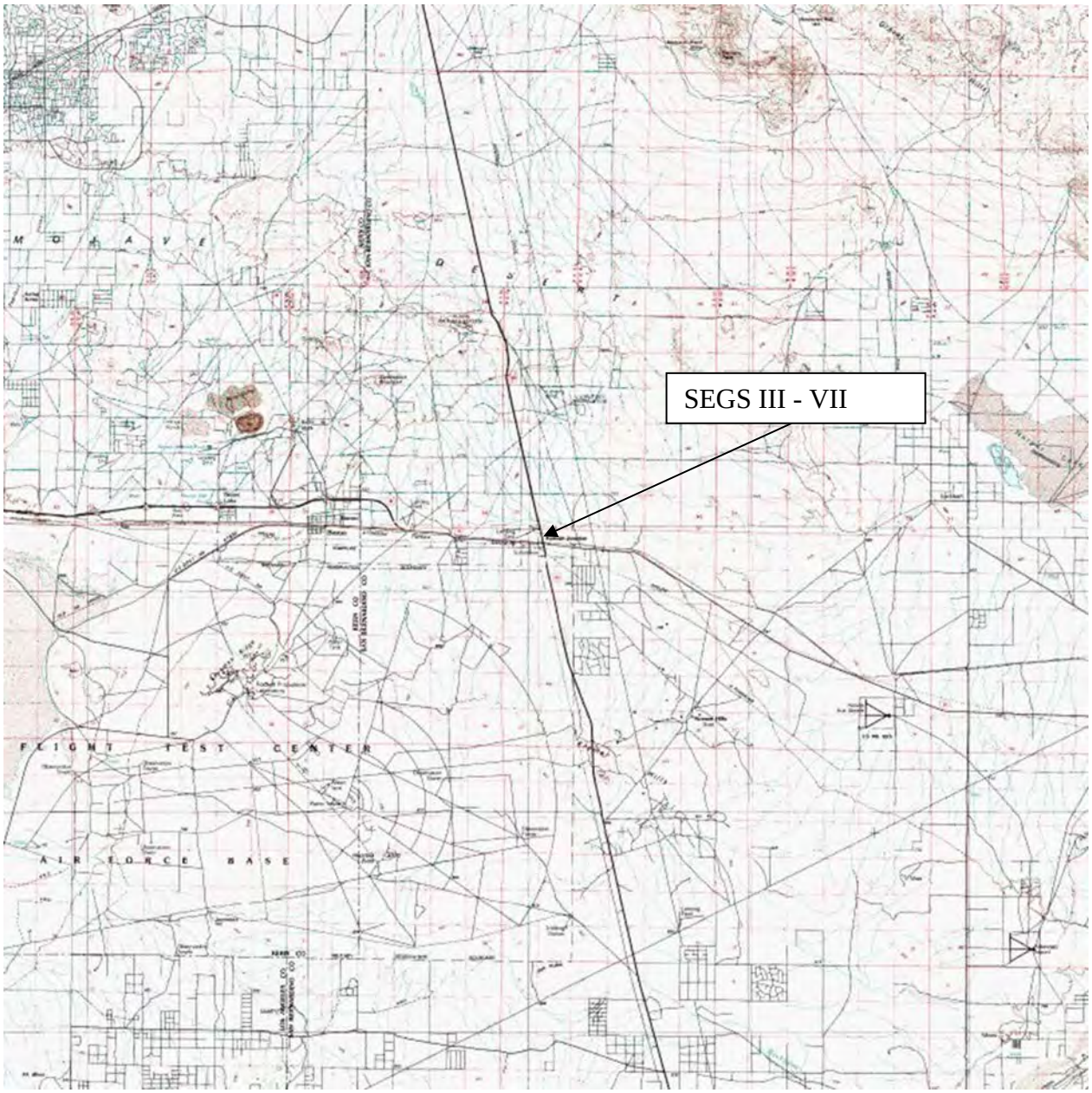
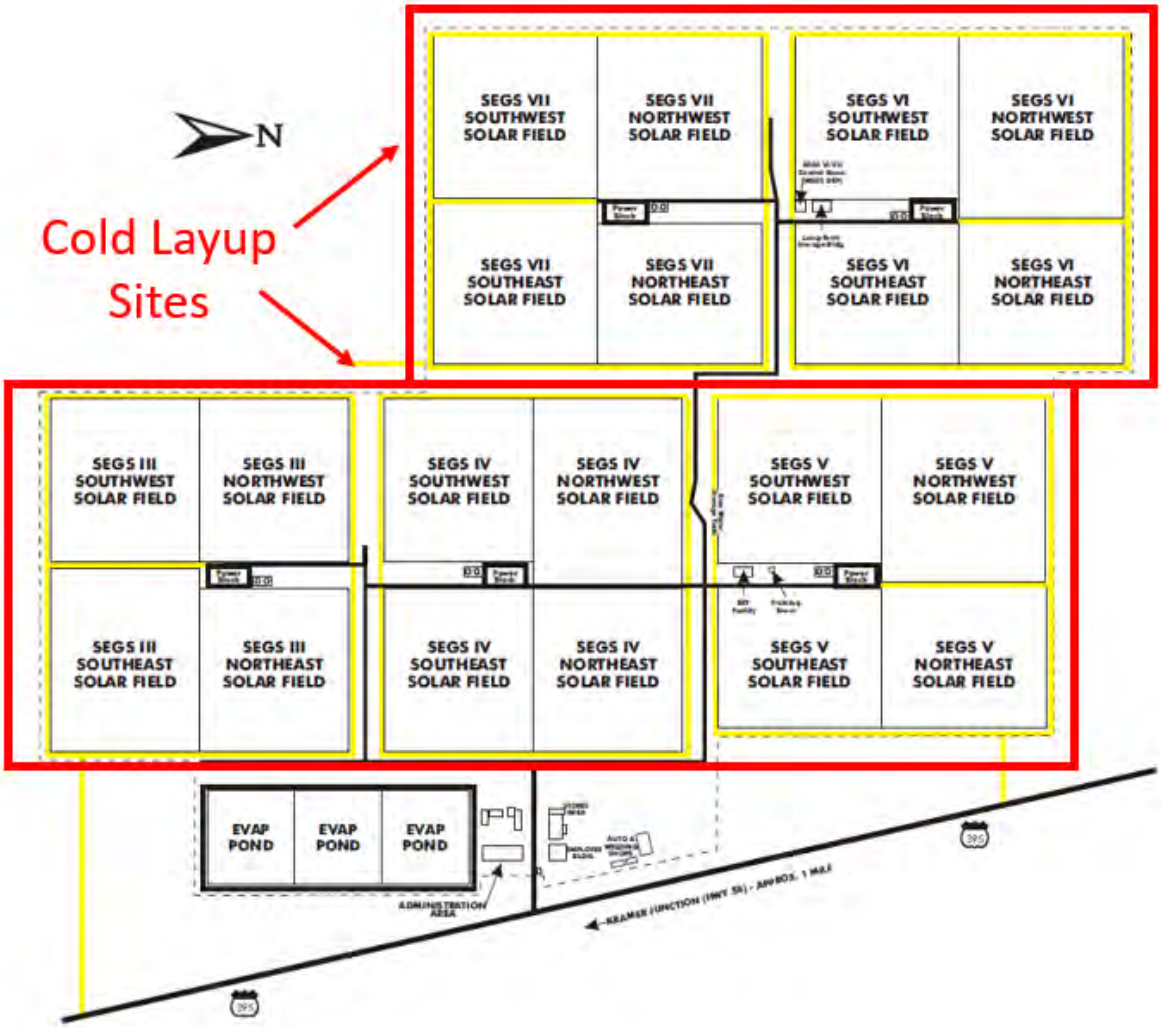


Figure 1-2

SEGS Site Layout

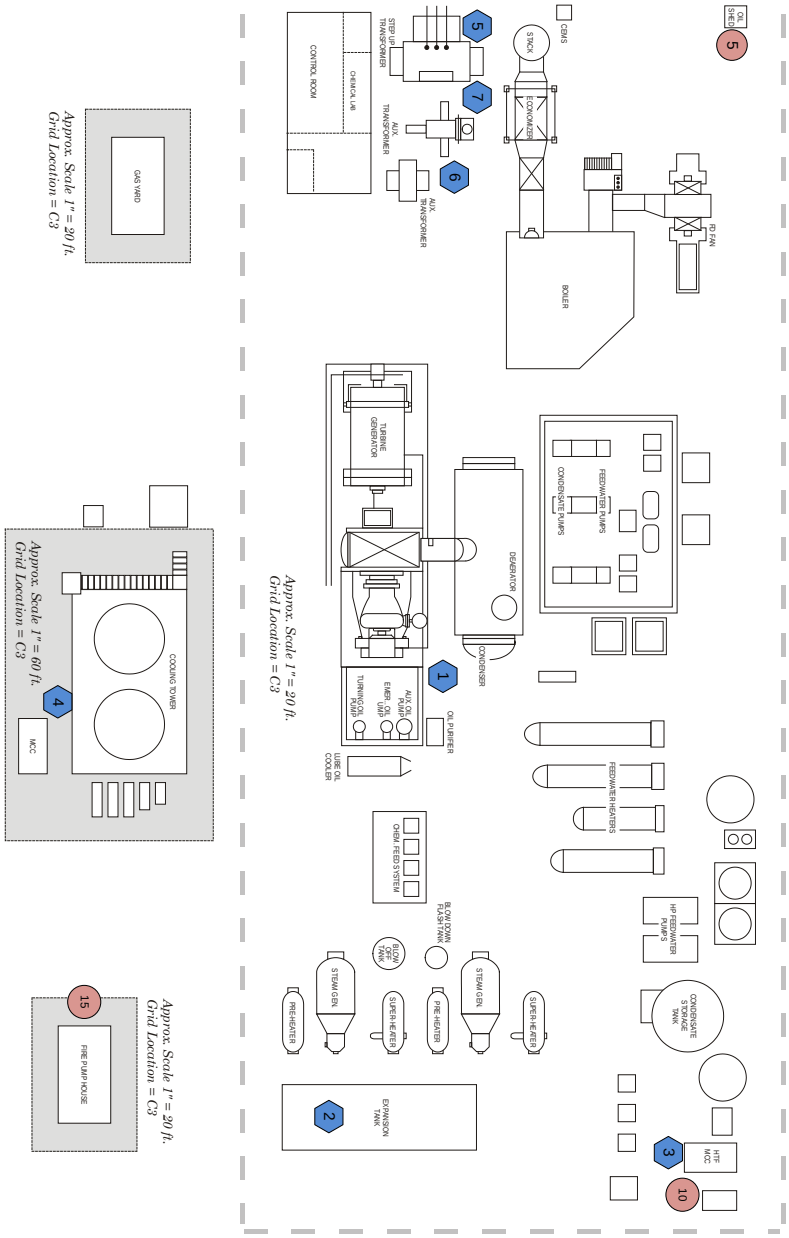


2. Equipment to Remain in Operation

The listed systems in Table 2-1 below will remain in service to allow the HTF to be stored and heated until the HTF has been completely removed from the facility for recycling. After HTF removal has been completed, several of these systems (denoted with *) will be removed from service or have operation modified. These changes are explained in Section 4.2.

Table 2-1. System Codes and Designators, Systems that will remain in operation during Cold Layup

Code	System Name
JA*	Nitrogen Vessel
EC*	Ullage Vessel and System
ED*	Expansion vessel, small heat transfer fluid pump, HTF heater and associated piping
EE*	Panels 125v DC
EF	Security System
EG*	Emergency Generator
EH	Telephone and Communication System
EK*	Heat Tracing
EN*	480V Essential Services MCC
EQ*	Switchgear to include GSU, 13.8KV to 4160 V and 4160 to 480 V transformers
ES*	120V AC Uninterruptible Power Supply
EU*	Distributed Control System
FL*	Instrument and Plant Air
JD*	Fire Protection
PAI/PAS	Potable Water
PF	Buildings and Warehouse
PW*	Demineralized Water
VS	Raw Water
XN	Sanitary Waste
XW*	Waste Water
ZL*	Switchyard Lighting

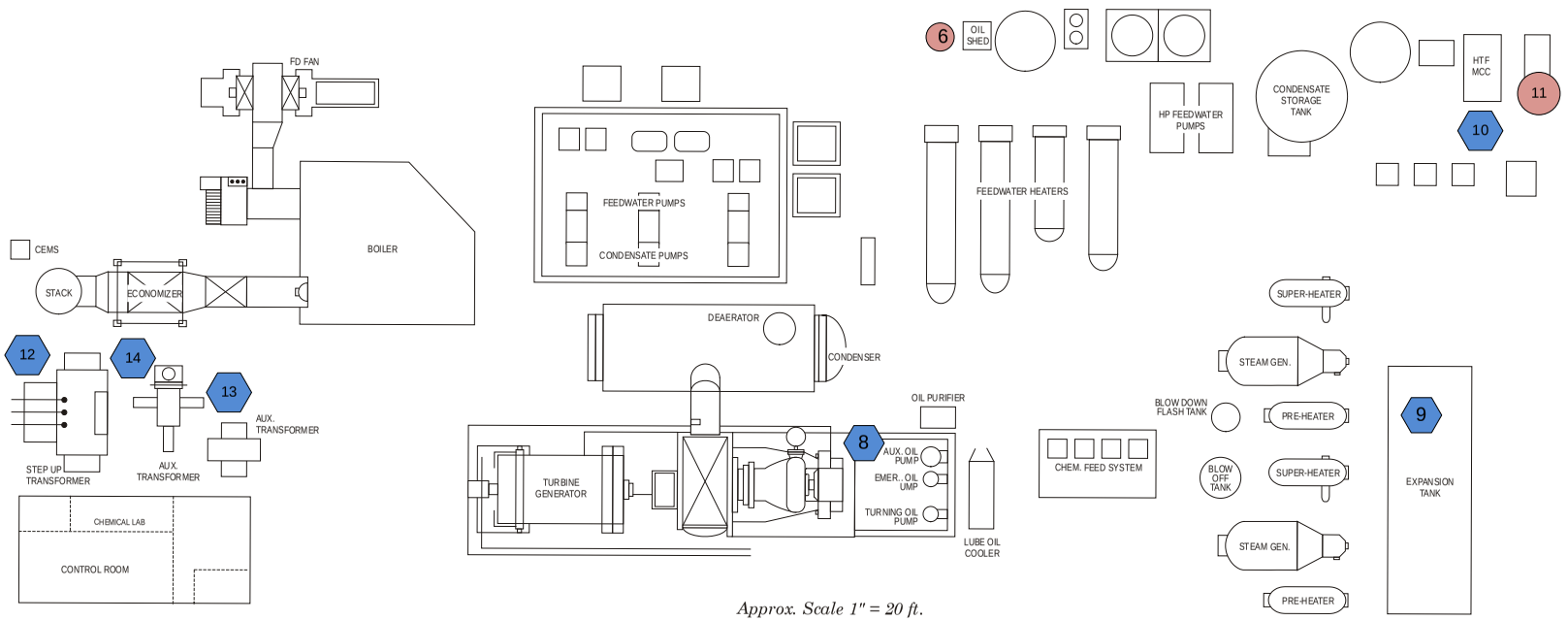


SPCC Oil Storage/Use Areas Legend	
4	Oil Tanks (Table 1)
2	Operational Equipment (Table 2)

TITLE		REVISIONS	
SEGS III Power Block Layout and Oil Storage Areas		DATE	DESCRIPTION
		2/15/15	UPDATE TO NEW FORMAT
DATE ORIGINAL 1/7/08	DIAGRAM TYPE		
LATEST REVISION 2/15/15	LOCATION SEGS III - VII	APPROVED GTK	FIGURE: 4

SEGS IV
POWER BLOCK

NORTH

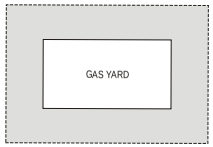


Approx. Scale 1" = 20 ft.
Grid Location = D3

SPCC Oil Storage/Use Areas Legend

4 Oil Tanks (Table 1)

2 Operational Equipment (Table 2)



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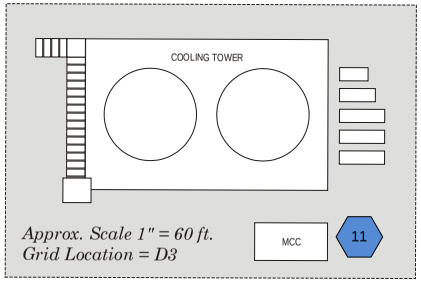
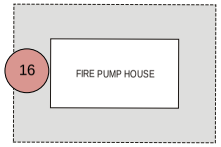


Approx. Scale 1" = 60 ft.
Grid Location = D3

Approx. Scale 1" = 20 ft.
Grid Location = D3

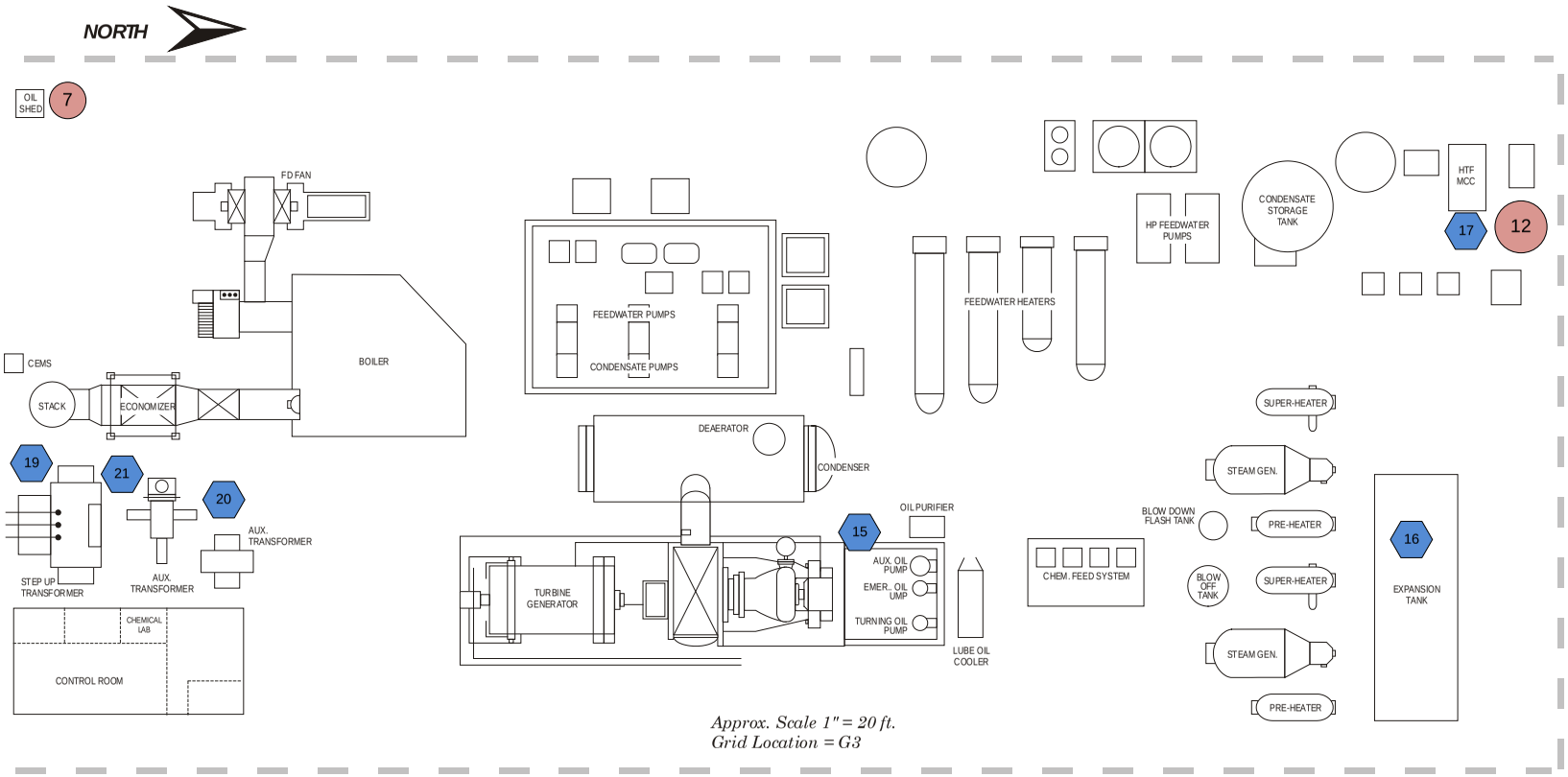


TITLE	SEGS IV Power Block Layout and Oil Storage Areas
DATE ORIGINAL	1/7/08
DIAGRAM TYPE	
LATEST REVISION	2/15/15
LOCATION	SEGS III - VII
APPROVED	GTK
FIGURE:	5

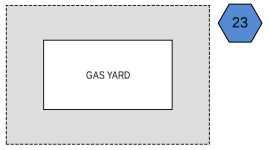
REVISIONS

DATE	DESCRIPTION
2/15/15	UPDATE TO NEW FORMAT

SEGS V
POWER BLOCK

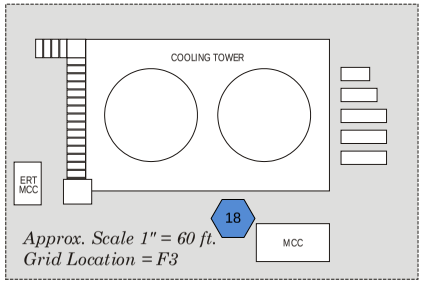


Approx. Scale 1" = 20 ft.
Grid Location = G3



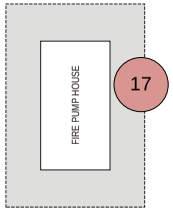
Approx. Scale 1" = 20 ft.
Grid Location = F3

22



Approx. Scale 1" = 60 ft.
Grid Location = F3

Approx. Scale 1" = 20 ft.
Grid Location = F3



SPCC Oil Storage/Use Areas Legend

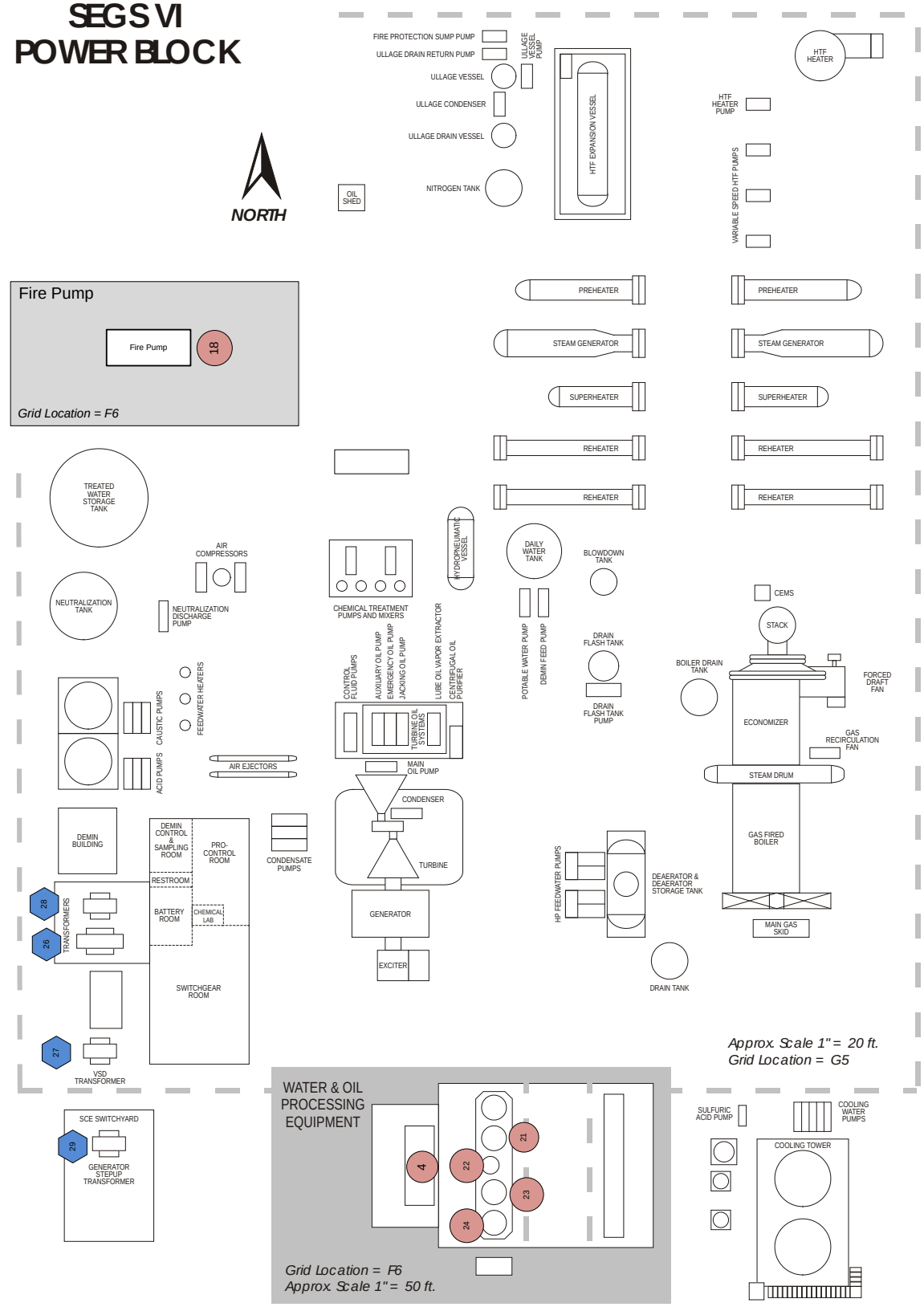
2 Operational Equipment (Table 2)

4 Oil Tanks (Table 1)

TITLE	SEGS V Power Block Layout and Oil Storage Areas
DATE ORIGINAL	1/7/08
DIAGRAM TYPE	
LOCATION	SEGS III - VII
LATEST REVISION	2/15/15
APPROVED	GTK
FIGURE:	6

REVISIONS		
DATE	DESCRIPTION	
2/15/15	UPDATE TO NEW FORMAT	

SEGS VI POWER BLOCK

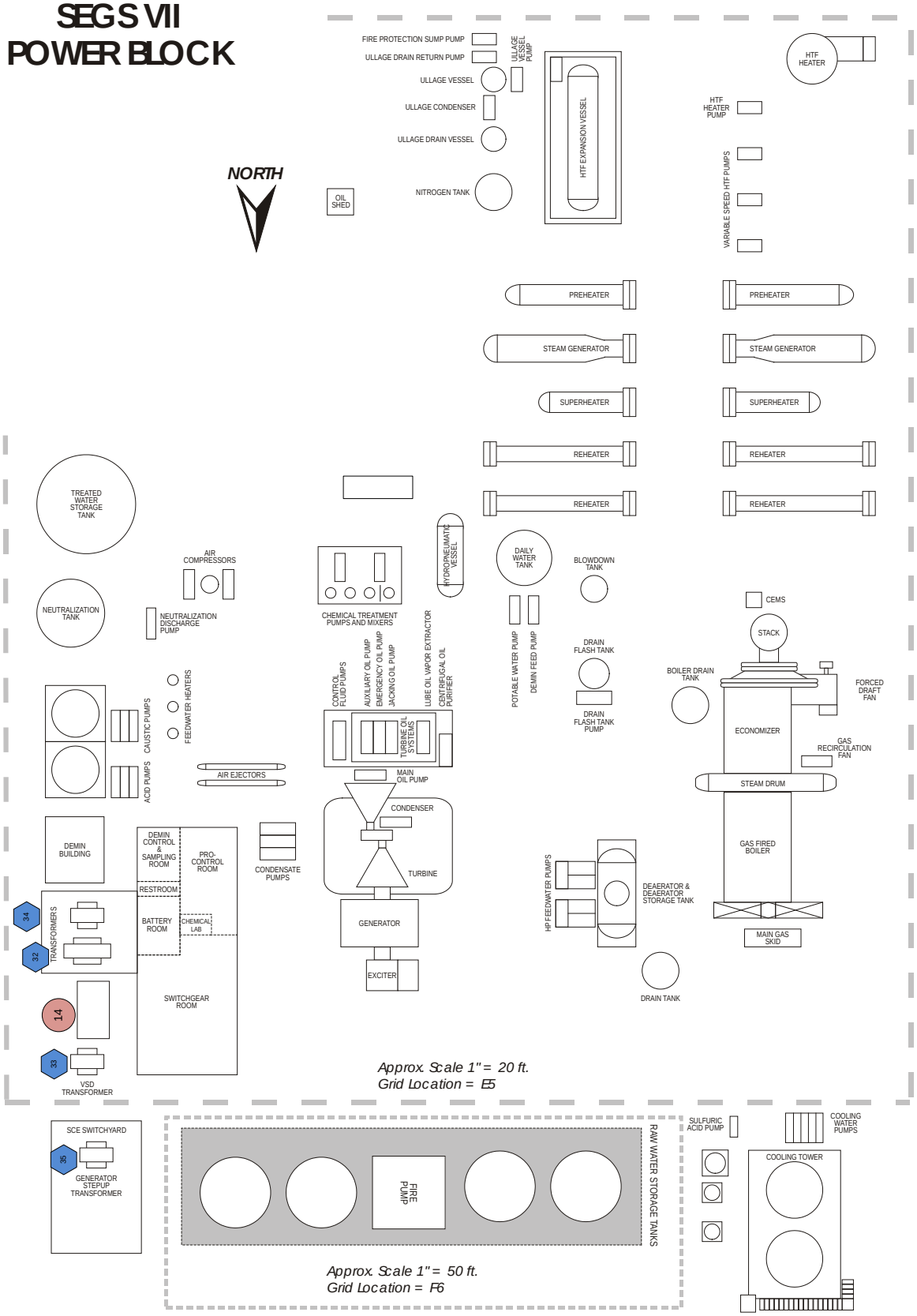


SPCC Oil Storage/Use Areas Legend

- 4 — Oil Tanks (Table 1)
- 2 — Operational Equipment (Table 2)

TITLE	REVISIONS	
SEGS VI Power Block Layout and Oil Storage Areas	DATE	DESCRIPTION
	2/15/15	UPDATE TO NEW FORMAT
	7/8/19	REMOVE HTF, OILS, GENERATOR
DATE ORIGINAL: 1/7/08	DIAGRAM TYPE:	
LATEST REVISION: 7/8/19	LOCATION: SEGS III - VII	APPROVED: GTK
		FIGURE: 7

SEGS VII POWER BLOCK



SPCC Oil Storage/Use Areas Legend	
4	Oil Tanks (Table 1)
2	Operational Equipment (Table 2)

TITLE		REVISIONS	
SEGS VII Power Block Layout and Oil Storage Areas		DATE	DESCRIPTION
		2/15/15	UPDATE TO NEW FORMAT
		7/8/19	REMOVE HTF & OILS
DATE ORIGINAL 1/7/08	DIAGRAM TYPE		
LATEST REVISION 7/8/19	LOCATION SEGS III - VII	APPROVED GTK	FIGURE: 8

3. Site Security and Lockout Plan

3.1. Site Security

The facility will be staffed 24 hours per day and 7 days per week during layup activities by site personnel, as necessary. Once site safety and environmental risks have been mitigated, post layup staffing will consist of site personnel Monday – Friday 06:00 – 16:00. Site will have controlled access at all times through locked gates and monitoring cameras.

In the event an after-hours emergency occurs, contact information will be posted on the main gate and personnel can respond within one hour.

3.2. Lockout Plan

The cold layup process includes the de-energization of certain control systems and the partial de-energization of others. Accordingly, all SEGS III – VII will have a specific Lockout Plan in place for applicable equipment.

Some of the major equipment to be included in this plan is listed below to illustrate the area of focus of the Lockout Plan:

- Generators
- Natural Gas Fired Boilers
- Boiler feed water pump motors
- Condensate pump motors
- Cooling Tower Fan motors
- Large Circulating water pumps
- Heat transfer fluid pumps
- Solar field
- Steam Trains

A Cold Layup Lockout Plan will be developed to mitigate the hazards associated with inadvertent energization during the layup reconfiguration process, and to place certain equipment into a de-energized and inactive state during the period of the layup. All work activities, during the layup will be conducted in accordance with NEER's existing procedures, including SMS 226 In-Plant Clearance (LOTO).

4. System Specific Procedures

4.1. System-Specific Layup Procedures

The following layup procedures outline a step-by-step process for each applicable system. NEER has developed these plans based on prudent utility practices, industry best practices, original equipment manufacturer recommendations, laws, ordinances and regulations, and NEER's extensive, fleet-wide operational expertise.

Table 4-1 contains a list of the facility systems (according to the SEGS owner's engineer during system design and construction) that will be subject to cold layup as well as the procedures that will be used for layup. The following sections contain descriptive information about each system and are indexed to layup procedures. Appendix A contains a table of system status under cold layup.

Table 4-1. System Codes and Designators, Systems Subject to Cold Layup

AA	Steam Train (water side)
AB	HTF
AC	Steam Turbine
AD-1	Condensate
AD-2	Condenser
AE	Feed Water
AG	Cooling tower
AJ	Chemical Feed
AR	Condenser Air Removal
BA	Natural gas fired boiler
BM	Blowdown
BS	Bleach & acid
FA	Fuel Gas
FG	Chemical Injection Skid
JD	Fire Protection
JS	Solar field

For each system, the sections below outline or reference procedures for layup.

All cold layup procedures listed here will also be implemented at SEGS VI and VII to allow all plants to be maintained in a consistent manner.

4.1.1. AA– Steam Trains

The solar steam generation unit consists of two 50% heat exchanger trains (A and B) which generate 190,000 Ibs./hr. each at 620°F/630 psia superheated main steam. The steam is generated using heat gathered in the solar field by the HTF. When the plant is in solar mode, the solar steam system is the sole supplier of steam to the turbine. Feed water flows to the two preheaters than to the two solar steam generators. The level in the solar steam generators is maintained by FCV-6001 and FCV-6002. Check valves and motorized stop valves are installed in the feed lines before the preheater inlets. Saturated steam generated in the solar steam generators is superheated in

the solar super heaters. The two super heater outlets join and the steam is fed to the Low pressure steam header. The steam lines have motorized valves to isolate each one of the steam generator trains from the low pressure steam header. A blow off valve on the joint super heater steam outlet is used during solar field start-up. After steam passes through the steam turbine it is than routed to the main condenser where the steam is condensed. The solar steam generator generates steam according to the heat energy transferred from the HTF. The HTF flow changes according to the solar insolation, but the HTF temperature at the solar steam generator inlet is controlled at a constant temperature.

When the plant is in hybrid mode, the solar main steam generators and the gas-fired boiler operate in parallel to provide steam to the turbine. The steam from the steam trains enters the steam turbine at the 4th stage, while the gas fired boiler steam enters the 1 stage.

A dry layup method will be implemented during the layup period. The water side of the steam train will be isolated from the preheater inlet to the super heater outlet. All water will be drained and the heat exchangers will be placed into a dry layup.

The main pieces of equipment associated with the steam train and the basic techniques used to lay up these pieces of equipment are listed below

Equipment	Procedure
Two Preheater	Isolated, drain water and lock out.
Two Steam Generators	Isolated, drain water and lock out
Two Solar Super Heaters	Isolated, drain water and lock out

4.1.2. HTF

The HTF system is a closed loop system, consisting of approximately 110,000 gallons of Therminol VP-1. The system utilizes two large pumps to circulate the HTF through the solar field and back to the power block. The heat absorbed in the solar field is used at the power block in the solar superheaters, steam generators, and preheaters to generate and superheat steam. The flow of HTF is controlled by the distributed control system (DCS).

The biggest part of the HTF system is the solar field, each loop in the solar field will be isolated and evacuated. The evacuated HTF will be placed into the HTF expansion vessels and associated piping located in the power block in secondary containment.

As part of the layup review of the SEGS III through V facilities, the method of storing the heat transfer fluid (HTF) was evaluated to determine if there were better methods of storage. The condition of the HTF was analyzed and evaluated in consultation with fluid manufacturers and re-processors. Based on the analysis, it was determined that to restore the fluid to near new specifications would cost approximately 80% of the cost of new fluid.

Since the fluid restoration costs are high and considering that during cold layup the facility

must circulate the fluid and burn natural gas to provide freeze protection, removal of the HTF from the facilities was viewed as a way to minimize safety and environmental risks at the facility.

Several companies were approached regarding recycling of the HTF from the facilities. World Oil Corporation in Compton, California replied to us with the best proposal from a logistics and environmental standpoint. They have all of the necessary permits and facilities to handle the HTF in the most efficient manner and with the lowest safety and environmental risk of all companies evaluated. They will be able to recycle the HTF into marine diesel fuel and asphalt flux materials.

This method will be employed to recycle the HTF at the SEGS III, IV, and V facilities in order to further minimize safety and environmental risks at the facility.

The facility has developed a procedure and plan to allow for the complete removal of the HTF from the SEGS III, IV, and V Power Blocks.

The procedure is included as Appendix B. Additionally, the site procedure for Bulk Chemical Transfer that will be used in conjunction with the evacuation procedure is included as Appendix C.

Working in conjunction with World Oil, the facility has developed a schedule that will utilize one or two trucks per day on a Monday through Friday schedule, depending on truck availability.

Equipment	Procedure
Piping	Isolate, drain and lock out
Large valves	Closed valves and lock out

4.1.3. AC – Steam Turbine

The turbine is a Rankine cycle horizontal mixed pressure condensing steam unit. It consists of two separate steam inlets one from high pressure coming from the gas fired boiler which operates at 1450 psia at 950°F and one from low pressure coming from the solar steam trains which operates at 630 psia at 620°F. Inlet steam can be admitted from either of these sources independently. It can also be admitted from both in the "hybrid" mode of operation, in which case the two sources of steam combine at the 4th stage of the turbine. Steam exhausted after exiting the last stage of the turbine and is condensed in the main condenser, which operates at 2.4 inches of mercury absolute pressure, and below 150°F. four extraction chambers provide steam to four feed water heaters. Extractions #4 is off the high pressure side of the turbine. Extractions #1 through #3 are off the low pressure side of the turbine suppling LP feed water heaters.

The steam turbine will be taken off gear and the lube oil will be secured. The vapor extractor auxiliary lube oil pump, turning gear oil pump, DC oil pump and reservoir emersion heater will be removed from service. The lube oil reservoir will be drained.

Equipment	Procedure
Auxiliary Lube oil Pump	De-energize and lock out
Turning gear pump	De-energize and lock out
DC oil pump	De-energize and lock out
Lube oil vapor extractor	De-energize and lock out
Lube oil emersion heater	De-energize and lock out
Steam turbine lube oil	Isolate, drain and lock out
Steam turbine valves	De-energize and lock out control oil pumps
Steam turbine generator	Isolate and lock out
Exciter	Disable/Secure and lock out
AVR cabinets	Disable/Secure and lock out
Gen Protection panels	Disable/Secure and lock out

4.1.4. AD-1 – Condensate

The condensate system supplies boiler quality water to the feedwater system. It receives and condenses turbine exhaust steam and the shell side water of the LP and HP feedwater heaters. It also provides transfer, storage, preheating and deaeration of the condensate. The feedwater system supplies deaerated, preheated feedwater to the steam generators in the low pressure steam (solar) system and to the gas fired boiler in the high pressure steam (boiler) system.

The cold lay-up process will include de-energizing all rotating equipment which will include three Condensate pumps and the gland steam Condenser. All three feed water heaters, gland steam condenser and both vacuum pumps will be isolated and drained.

Equipment	Procedure
Condensate/LP feed water pumps	Disable, isolate, drain and lock out
Gland steam condenser	Isolate, drain (tube and shell) and lock out
Vacuum Pumps	Isolate, drain (tube and shell) and lock out
Feed water heaters	Isolate, drain (tube and shell) and lock out
HP feed water pumps	Disable, isolate, drain and lock out

4.1.5. AD-2 – Condenser

The main condenser is a two pass, horizontal, surface type, shell and tube heat exchanger. Turbine exhaust steam and, when applicable, turbine bypass steam, is directed to the shell side of the condenser where it is cooled and condensed. Cooling is provided by water circulating through the tubes. The condenser is located at grade, beside the turbine/generator.

For cold layup, this system will be isolated and drained on both the water box side and hotwell side. Measures will take place to control moisture during the lay-up process.

Equipment	Procedure
Condenser water boxes	Isolate, drain and lock out
Hotwell	Isolate, drain and lock out

4.1.6. AE – Feed Water

The feed water system begins at the discharge of the LP feed water pumps. The feed water pumps take direct suction from the discharge of the condensate pumps. Water is pumped through three LP feedwater heaters than to the steam generators and/or the HP feedwater pump suction which pump water to the HP feed water heater to the gas fired boilers.

For cold layup, this system will be isolated, drained and measures will take place to control moisture during the layup process to control corrosion.

Equipment	Procedure
Boiler feed water pumps	Disable, drain, uncouple and lock out
Boiler feed water pump motors	Disable, Maintain space heaters, and lock out
HP feed water heaters	Isolate and drain (shell and tube side) and lock out

4.1.7. AG – Cooling Tower

The site utilizes an induced draft (crossflow) cooling tower. The towers are used to flow water through the main condenser. The steam that exits the turbine makes contact with the cool tubes in the main condenser and allows the water to be condensed into the hotwell. Each cooling tower has two fans that are capable of running in low or high speed depending on the unit load. The cooling towers also have four circulating water pumps that are started and stopped as needed to control temperature in the condenser.

The lay-up will involve isolating the cooling tower make up, securing all chemical injection and blowing down the basin.

Equipment/Equipment Group	Procedure
Circulating water pumps (4)	Disable, Isolate, drain and lock out

Cooling tower fans (2)	Disable, Isolate and lock out.
Cooling tower basin	Isolate, drain and lock out

4.1.8. AR – Condenser Air Removal

The evacuation of the turbine exhaust trunk and main condenser is accomplished by two 100% capacity motor driven vacuum pumps. The air and non-condensable gasses are suctioned off of the main condenser and exhausted to the atmosphere. Each Vacuum pump is provided with cooling water. Each vacuum pump has one drain pump to recover condensation and return it to the condensate train tank.

Each vacuum pump will be isolated, which will include de-energizing the breakers to the motors, isolating the cooling water and air isolation valves from the main condenser.

Equipment	Procedure
Vacuum pump 600 A & B	Isolate, drain and lock out
Vacuum pump drain pump 601 A & B	Isolate, drain and lock out

4.1.9. BA – Natural gas fired boiler

The gas-fired boiler, rated at 30 net MW's, generates superheated main steam using natural gas as the fuel source. The full load operating heat rate is approximately 12.5 MMBtu /MW. The system delivers main steam to the inlet of the high pressure turbine. After leaving the turbine the exhaust steam is condensed in the main condenser. The plant can operate in boiler mode using exclusively boiler steam; in hybrid mode using solar and boiler steam; and in solar mode using solar steam.

A dry layup method will be implemented during the layup period. The forced draft fan motors will be de-energized. The main gas supply to the boiler will be isolated. The water will be isolated and drained. Desiccant will be installed to control corrosion.

Equipment	Procedure
Forced Draft fan	Disable, uncouple and lock out
Gas header	Isolate, depressurize, install blind and lock out
Economizer, Steam drum, mud drum and associated piping	Isolate, drain and lock out

4.1.10. BM – Blowdown

The blowdown systems provide continuous removal of dissolved and suspended impurities from the solar and boiler steam generating components, and from the cooling water. The blowdown from the solar steam generators and boiler goes to the cooling tower, and the cooling tower blowdown flows to the neutralization tank.

All blowdown sources from the natural gas fired boiler, Steam generator and cooling towers will be drained and isolated to the site evaporation ponds.

Equipment	Procedure
Blowdown tanks	Isolate, drain and lock out
Blowdown tank pump	Disable, isolate, drain and lock out

4.1.11. BS – Bleach & Acid

Sulfuric acid (93%) is injected at an inline injection nozzle in the main cooling water basin to maintain cooling water pH between 6.8 and 7.2. The acid is provided from the sulfuric acid tank.

Bleach (12.5%) is used for microbiological control.

All contents of the bleach and acid tanks will be evacuated and sold to other facilities or disposed of in accordance with LORS.

Equipment	Procedure
Acid tank	Isolate, drain and lock out
Bleach	Isolate, drain and lock out

4.1.12. EC – Ullage Vessel and System

The Ullage System is designed to remove the accumulated degradation gases which are measured in the form of high and low boilers from the expansion vessel. Vapors discharge to a vessel which is vented to atmosphere and any vapors that are condensed in the ullage vessel are pumped back into the expansions vessel. The Ullage system also captures vents from the HTF pumps and steam trains. A quench tank is also used to capture oil from an over pressurization of the expansion vessel through a pressure safety valve.

After the HTF has been removed from each plant, this system is no longer needed and will be isolated, drained, and removed from service.

4.1.13. ED – Expansion Vessel, etc.

The HTF expansion vessel provides the NPSH for the main HTF pumps, it is also used to control the thermal expansion of the HTF during temperature changes and is also used as a gas separator. The gaseous products from HTF degradation dissolve in the HTF are separated from the hot fluid in the vessel then discharged to the ullage vessel as needed.

After the HTF has been removed from each plant, the expansion vessel, small heat transfer fluid pump, HTF heater and associated piping are no longer needed and will be isolated, drained, and removed from service.

4.1.14. EE – Panels 125VDC

The 125 DC panel supplies power to all essential components such as generator protective relays, 13.8 KV bus, aux transformers, DC oil pump and fire control panels that ensure the safe operation of the power plant.

After the SEGS III main transformer and switchyard have been de-energized, this system will be turned off and all station batteries disconnected. Station batteries will be removed from site and recycled per LORS.

4.1.15. EG – Emergency Generator

The Emergency Diesel Generator will automatically start when it senses a low voltage condition on the essential service MCC. The auto transfer switch will switch to emergency power and the generator will supply power to the essential service MCC. This will ensure essential equipment runs until the main power is restored.

After the HTF has been removed from each plant, this system is no longer needed and will be de-energized and removed from service.

4.1.16. EK – Heat Tracing

Heat trace is used throughout the plant on smaller HTF and water piping so they do not freeze during the colder months. The heat trace circuits are switched on and off with thermostats at various locations.

After the HTF has been removed from each plant, this system is no longer needed and will be de-energized and removed from service.

4.1.17. EN – 480V Essential Services MCC

The essential service MCC is 480 Volts that supplies power to all essential equipment such as turning gear oil pump, Solar field, plant air compressors, small HTF pump, one small circulating water pump. The essential service MCC allows essential equipment to run in the event of a power outage via the diesel generator.

After the HTF has been removed from each plant, this system is no longer needed and will be de-energized and removed from service.

4.1.18. EQ – Switchgear

The switch gear includes a 115KV circuit breaker, protective relays, surge arrestors, and station disconnects. This equipment is the property of Southern California Edison and is operated and maintained by them.

After plant electrical, computer, and fire protection systems have been de-energized and removed from service, SCE will be contacted to have personnel open the 115kV circuit breaker and the station disconnects for each plant.

4.1.19. ES – 120VAC Uninterruptible

The 125 AC panel supplies power to all essential components such as DCS systems and computer system that require clean stable power to insure the safe operation of the power plant.

After plant electrical, computer, and fire protection systems have been de-energized and

removed from service, this system is no longer needed and will be de-energized and removed from service.

4.1.20. EU – Distributed Control System

The Distributed control system is an Emerson Ovation computer system that controls and monitors all the components of the power plant.

After the HTF has been removed from each plant, this system is no longer needed and will be shut down and removed from service.

4.1.21. FG – Chemical Injection Skid

The site utilizes chemical injection skids to maintain water chemistry parameters in the natural gas fired boiler, solar steam generators, and condensate and feed water steams. The skids consist of a small day tanks and small positive displacement pumps. These pumps feed neutralizing amine to the condensate and phosphate to the natural gas fired boiler and steam generators to help maintain the water chemistry parameters.

Equipment	Procedure
Phosphate injection skid to the natural gas fire boiler	Disable, isolate, drain and lock out
Phosphate injection skid to the solar steam generators	Disable, isolate, drain and lock out
Neutralizing Amine injection into the condensate system	Disable, isolate, drain and lock out

4.1.22. FL – Instrument and Plant Air

There are two rotary screw type air compressors that provide 110 psig to an air receiver tank. Plant air is taken directly from this tank and distributed to plant service stations located throughout the power block and HTF areas. Instrument air is taken from the tank and passed through a desiccant air dryer and distributed as instrument air to components throughout the facility.

After the HTF has been removed from each plant, this system is no longer needed and will be isolated, drained, and removed from service.

4.1.23. JA – Nitrogen Vessel

Nitrogen is stored in a 525-gallon cryogenic container, comprised of a stainless steel inner tank in an outer carbon steel vacuum shell. Nitrogen required for blanketing is provided by the ambient air vaporizer.

The nitrogen system provides a nitrogen blanket for the expansion vessel to keep an inert atmosphere present in the vapor space, it also provides the required NSPH for the HTF pumps. When the ullage system is placed into service it removes pressure from the vapor space of the expansion vessel which in turn requires more nitrogen.

After the HTF has been removed from each plant, this system is no longer needed and will be removed from service.

4.1.24. JD – Fire Protection

The Fire Protection System includes a skid mounted diesel driven fire pumps at each SEGS and one electrical fire pump mounted at SEGS V. The fire system pressure is maintained with a jockey pump that cycles on and off to maintain pressure. The site also has deluge systems that operate automatically in the event of a fire. Each local control room has halon that will discharge automatically if sensors detect a fire.

The fire protection systems will remain in service at the SEGS III – V plants until all HTF has been removed from the facilities, natural gas disconnected, electrical systems powered down, chemicals removed, and no personnel at the facilities. San Bernardino County Fire Department will then be contacted to approve of removing the fire systems at SEGS III – V from service.

Equipment necessary to maintain the fire protection systems at the Administration and warehouse buildings will remain in service until such time as the Administration building is unoccupied.

4.1.25. JS – Solar Field

The function of the Solar Field is to collect heat from the sun, using Solar Collector Assemblies (SCAs) which use reflective panel to focus and concentrate the sun's heat energy on the Heat Collection Element (HCE). The HCE consist of 2" stainless steel tube surrounded by an evacuated glass annulus. The stainless steel tube contains a heat transfer fluid (HTF) called Therminol VP-1, which is circulated throughout the Solar Field collecting heat. The heat-laden HTF is then passed through the power block heat exchanger equipment where it gives up the heat to make steam and, in turn, generates electricity.

All solar field collectors (SCA's) will be placed in a stow position to prevent movement. As indicated in the HTF section each solar field loop will be isolated and evacuated.

Equipment	Procedure
Solar Collection Arrays	Isolate, drain and lock out

4.1.26. PAI/PAS – Potable Water

Each power block has a potable water tank that stores water for the use of sanitary facilities, safety shower and plant utility stations. This water is pumped from the raw water tank to the potable water tank. Plant air is used to provide pressure required in the tank to push the water to all the location where potable is used.

After the HTF has been removed from each plant, this system is no longer needed and will be isolated, drained, and removed from service.

Equipment necessary to maintain the potable water systems at the Administration and warehouse buildings will remain in service until such time as the Administration building is unoccupied.

4.1.27. PW – Demineralized Water

The Demineralized water system consists of a reverse osmosis/polisher system located at

SEGS V as well as transfer pumps, piping and storage tanks at all three plants. Water from this system is used for steam generation and solar field mirror wash.

After all process water has been drained from the plants, this system is no longer needed and will be removed from service.

4.1.28. XW – Waste Water

The waste water system consists of a series drains, sumps, and piping as well as a neutralization tank and three ten-acre evaporation ponds. The waste water to the evaporation ponds mainly comes from the plant cooling towers during blowdowns. Blow downs are required to maintain plant water chemistry and total dissolved solids. Process and storm water run-off enter the drains and sumps, which are pumped to the neutralization tank and from there to the evaporation ponds.

The site evaporation ponds will be maintained in a fully operational state until all of the process waters from the Power Block areas have been drained. At that time the ponds would be placed in a standby mode.

While in standby, the ponds will be allowed to evaporate until all water has been removed. While in this state, one pond will be available at all times to receive water from the Power Block areas in the event a large storm event results in water accumulation in the blocks.

After the majority of water has evaporated from the ponds, a crust naturally forms, serving as a seal.

At all times while in standby, all Water Board required monitoring and sampling will be performed and reported per the site's WDR permit.

4.1.29. ZA – Transformers

The site interconnects to Southern California Edison through an 115KV Substation. Each site utilizes one 115KV to 13.8 KV GSU, one 13.8KV to 4160V, and one 4160KV to 480V transformer.

During the layup process all power all sources will remain energized in order to provide 480V power for HTF recirculation pump and the natural gas fired oil heaters until the HTF has been removed from the facilities.

Once the HTF has been removed from the plant, all electrical equipment de-energized, and plant assessment determines that there will be no further need for electrical power, these transformers will be de-energized. SCE will be contacted and arranged to open the 115kV circuit breaker and line disconnects to the plant. Once this is complete, the low side wiring on the GSU will be disconnected and grounded.

4.1.30. ZL – Switchyard Lighting

The switchyard lighting is provided for night time monitoring of electrical equipment. This system lighting turns on and off by photocells.

After plant electrical, computer, and fire protection systems have been de-energized and removed from service, SCE will be contacted to have personnel open the 115kV circuit breaker and the station disconnects for each plant. Opening the circuit breaker will remove this lighting from service.

5. Hazardous Materials Management

Plant Operations will coordinate removal from the facility of chemicals and hazardous wastes, except those that are required for routine activities associated with the layup process and disposal of wastewater from the Power Blocks. This will include the following items:

- Hazardous wastes will be removed from all satellite accumulation areas and moved to the SEGS 90-day accumulation area for proper disposal.

- Water treatment chemicals not needed to support the cold layup processes and stored in bulk totes and storage tanks will be isolated by closing the discharge valve on each vessel. These materials will be returned to the vendor where possible or disposed of in accordance with LORS. This will include the following items:
  - Boiler Chemical Phosphate
  - Boiler Chemical Amine
  - Cooling Tower Acid
  - Cooling Tower Bleach
  - Cooling Tower Phosphate

- Equipment containing chemicals will be drained and shut down to ensure public health and safety and to protect the environment. Drained chemicals will be sent for recycling where feasible or disposed of in accordance with LORS.

- All unused chemicals and hazardous materials that can neither be used at other NEER facilities nor be returned to the vendor will be sent offsite for recycling where feasible or disposed of in accordance with LORS.

Ongoing hazardous waste generation during the cold layup period will be limited to waste generated as a result of housekeeping and layup activities (e.g., oily rags and miscellaneous spent fluids/materials).

6. Environmental Considerations

SEGS will maintain the facility's existing environmental plans and permits and will update plans as needed to address applicable changes resulting from the cold layup. Changes to the Hazardous Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasures Plan, are anticipated to be made, as applicable, in consultation with the appropriate regulatory agencies as needed.

7. Site Safety and Fire Protection

The existing site safety procedures, programs and standards, as listed below, will remain in full effect.

7.1. Safety Management System.

The safety management system (SMS) is a comprehensive management system designed to manage safety elements in the workplace. It includes policy, objectives, plans, procedures, organization, responsibilities and other safety measures. The SMS is used to manage significant safety risks in our facilities. The SMS includes the following elements:

a. SMS 201 Job Safety Analysis
b. SMS 202 Risk Assessment and Mitigation
c. SMS 203 Industrial Hygiene Program
d. SMS 204 Hazard Communication
e. SMS 205 Hearing Conservation
f. SMS 206 Respiratory Protection
g. SMS 209 Health and Safety Inspections
h. SMS 210 Hazard Reporting
i. SMS 211 Safety Bulletins
j. SMS 212 Injury and Illness Reporting
k. SMS 213 Behavior Based Safety Observations
l. SMS 214 Personal Protective Equipment
m. SMS 215 Fall Protection
n. SMS 216 Chemical Spill Response
o. SMS 217 Chemical Storage and Handling
p. SMS 218 Compressed Gas
q. SMS 219 Confined Space
r. SMS 220 Mobile Cranes
s. SMS 221 Electrical Safety
t. SMS 222 Fire Protection Plan
u. SMS 223 Ladders and Stairs
v. SMS 224 First Aid Services
w. SMS 225 Bloodborne Pathogens
x. SMS 226 In-Plant Clearance

y. SMS 228 Machine Guarding
z. SMS 229 Powered Industrial Trucks
aa. SMS 231 Welding and Cutting
bb. SMS 232 Hot Work
cc. SMS 234 Asbestos Control
dd. SMS 235 Lead Control
ee. SMS 236 Hexavalent Chromium
ff. SMS 237 Emergency Action Plan
gg. SMS 239 Hand and Portable Power Tools
hh. SMS 240 Scaffolds
ii. SMS 241 Contractor Management
jj. SMS 242 Safety Meetings and Communications
kk. SMS 247 Severe Weather Guidelines
ll. SMS 248 Electrical Arc Flash Protection
mm. SMS 249 Electrical Ground Testing
nn. SMS 252 Excavation
oo. SMS 253 Electrical Switching
pp. SMS 254 Safety Mentorship Program
qq. SMS 255 Legionella
rr. SMS 257 Grounding Main Transformers and Generators
ss. SMS 258 Testing Main Power Generators
tt. SMS 259 Grounding Equipment Using a Ground and Test Device
uu. SMS 260 Grounding Equipment without Using a Ground and Test Device
vv. SMS 261 Gas Purging
ww. SMS 262 Ergonomics
xx. SMS 264 Pest Control and Bite Prevention
yy. SMS 270 Use of Barrier Tape
zz. SMS 271 Care of Ice Machines and Portable Water Containers
aaa. SMS 272 Working at Heights
bbb. SMS 281 Safety Action Tracking
ccc. SMS 282 Office Safety
ddd. SMS 283 Utility Vehicles
eee. SMS 285 Fleet Work Vehicle Safety and Driving
fff. SMS 286 Aerial Lifts
ggg. SMS 287 Contractor Safety and Health Review

Appendix A

SEGS III – VII System Status during Cold Layup

Table A-1 below lists the SEGS component systems, and an indicator as to whether the system is planned for continued use, temporary use, or cold layup.

Table A-1

System	SEGS Component System	Cold Layup or
a. HTF System	AB-HTF	Cold Layup
	JS- Solar field	Cold Layup
	EC- Ullage System	Cold Layup
	JA – Nitrogen vessel	Cold Layup
	ED- Expansion vessel, heat transfer pumps &	Cold Layup
	HTF heater	
b. Turbine	AC-Steam turbine & Generator	Cold Layup
d. Cooling system	AG- Cooling Tower	Cold Layup
	BS-Bleach & Acid	Cold Layup
e. Condensate and Feed Water System	AD-1 Condensate	Cold Layup
	AD-2 Condenser	Cold Layup
	AE- Feed Water	Cold Layup
	AR- Condenser Air Removal	Cold Layup
	FG-Chemical injection	Cold Lay up
f. Steam Generation	BA-Natural Gas Fired boiler	Cold Layup
	AA-Steam Trains (water side)	Cold Layup
	AM- Blowdown	Cold Layup
	FA-Fuel Gas	Cold Layup
g. Electrical Equipment	EE- 125 V DC panel	Temporary Use
	EG –Emergency Generator	Temporary Use
	ES- 120V UPS	Temporary Use
	ZL- Switch yard lighting	Temporary Use
	EU-Distributed Control System	Temporary Use
	EK Heat tracing	Temporary Use

h. Transformers	ZA-Transformers GSU transformer (115KV to 13.8KV) 13.8KV to 4160 V transformer 4160 to 480V transformer	 Temporary use Temporary use Temporary use
i. Service water supplies	Demineralized water Raw Water Waste water	Temporary Use Continued use Temporary Use
j. Buildings and warehouse		Continued use
K. Sanitary Waste		Continued use
l. Security System		Continued use
m. Telephone and Communication System		Continued use
p. Fire Protection	JD – Fire Protection	Continued use
q. Staffing	Cold Layup Plan Section 3.0	Continued Staffing

Appendix B

SEGS III, IV, and V HTF Evacuation Procedure

DESCRIPTION:

Following this procedure will provide the maximum safety for the operators and protection of the environment. The evacuation of the Power Block expansion vessel and associated piping will be accomplished by offloading HTF into trucks to be transported off site. The HTF in the system will be moved into the expansion vessel using compressed air in a phased approach in order to completely evacuate the system while minimizing the safety and environmental exposures. The steps below shall be followed in order to accomplish this work safely for the operators and contractors working in the area.

SAFETY CONSIDERATIONS:

1. The tasks listed on this operating instruction require operating critical pieces of plant equipment that are powered by high pressure steam, high pressure hydraulic fluids, compressed air and high voltage electricity. It is imperative that the operators performing these checks fully understand the system operating parameters, the task objectives, the associated procedures and all hazardous conditions that exist and could occur during the performance of these tasks.
2. **Tailboard Meeting:** A detailed tailboard must be held prior to performing these tasks to ensure that all personnel are aware of the tasks being executed.
3. **Communication:** Contact with the Production Leader, Operations Specialist and other affected personnel must be established and maintained during these tasks.
4. **Equipment:** All equipment used needs to have passed a functional test and inspection. Take corrective action immediately when a piece of equipment is observed not performing properly.
5. Always use caution when performing these tasks. Piping and conduit throughout the plant is often at knee level or at eye level in the areas where these checks must be performed. Always wear appropriate Personal Protective Equipment.
6. Focused attention with your eyes on the path of travel is imperative. The best safety practice is to approach an inspection area with your eyes on path of travel, stop to look around, observe, and then return your eyes on path of travel for the next inspection area.

ENVIRONMENTAL CONSIDERATIONS:

Any waste generated shall be managed according to federal, state and local regulations as well as company policy. All waste management activities shall be coordinated through the Plant Environmental Specialist.

The use of all Toxic Release Inventory (TRI) associated with chemicals must be tracked, documented and submitted to the appropriate plant environmental contact.

Note that there will be no increase in fugitive VOC emissions during the evacuation process since, compared to normal operating conditions, the fluid will be at a much lower temperature (100°F vs 500°F) and pressure (60-70 psia vs 140 psia).

One diesel-fueled air compressor will be used during the evacuation process. The facility has two diesel-fueled air compressors that are permitted with the Air District (Permit #s B009352, B009447) It is estimated that one air compressor will be used for no more than 2 hours per plant for a total of 6 hours. Both site air compressors are the same model and year with the same emissions factors. Based on this information, the estimated criteria pollutant emissions would be:

Pollutant	Pounds
PM	1.26
CO	7.23
SOx	1.49
NOx	19.61
TOG	1.23
PM10	1.44

REFERENCES:

ENV-SEGS-CHEM-0003 Bulk Chemical Transfer Procedure

1435-J15	Steam Generating Systems P&ID
85-108-F-101	Oil Heater System P&ID
85-108-F-106	Heat Transfer Fluid Circulation System P&ID
85-108-F-109	SCA Field III WA & WB P&ID
85-108-F-110	SCA Field III EA & EB P&ID
85-109-F4-101	Oil Heater System P&ID
85-109-F4-106	Heat Transfer Fluid Circulation System P&ID
85-109-F4-109	SCA Field IV WA & WB P&ID
85-109-F4-110	SCA Field IV EA & EB P&ID
I-85-300-F5-101	Oil Heater System P&ID
I-85-300-F5-106	Heat Transfer Fluid Circulation System P&ID
I-85-300-F5-109	SCA Field V WA & WB P&ID
I-85-300-F5-110	SCA Field V EA & EB P&ID
OI-09	Operating Instruction - Evacuation Unit Operation
OI-10	Operating Instruction - HTF System
JSA-039	Job Safety Analysis - Evacuation Unit Operation
JSA-086	Job Safety Analysis - HTF Evacuation

STARTUP REQUIREMENTS – INITIAL EVACUATION:

1. Check the condition of the Portable Air Compressor. Ensure that the air compressor has the proper fittings, good hoses and is in sound condition
   - **Note: Refer to OI-122 for Air Compressor operation**
2. Any time air is introduced into the HTF system a double check valve shall be set up to prevent fluid from escaping in the event of a failed air hose.
3. Call the Control Room Operator to check that the system pressure is less than 30 psi.

EVACUATION ORDER:

The Power Block HTF system shall be evacuated in an orderly phased manner to ensure complete HTF removal.

Phase 1– HTF Steam Train "A"

Phase 2 – HTF Steam Train "B"

Phase 3 – HTF Steam Train Bypass, HTF Pump Piping

Phase 4 – HTF Heater

Phase 5 – Solar Field Cold HTF Header

Phase 6 – Solar Field Hot HTF Header

Phase 7 – Expansion Vessel (Truck Loading)

PHASE 1 & 2 STEAM TRAIN EVACUATION:

1. Stage the portable air compressor in position near the Steam Train "A" inlet isolation valve. Install the double check valve. Air compressor should be started and brought up to pressure before introducing air into system.
2. Check the condition of the double check valve to ensure correct operation.
3. Ensure expansion vessel pressure is below 30 psi.
4. Secure P-100C HTF pump.
5. Isolate Steam Train "A" inlet HTF valve V-182.
6. Install double check valve on drain line immediately downstream of V-182

7. Attach air hose from air compressor to double check valve.
8. Verify compressor has reached a pressure greater than 100 psi.
9. Line up air into piping to begin pushing HTF.
10. Monitor expansion vessel pressure and level. If pressure reaches 50 psi, vent vessel through ullage system. If level reaches 80 inches, secure airline to stop pushing HTF.
11. Continue to push with air until all HTF has been removed from Steam Train as indicated by no increase in expansion vessel level.
12. Isolate HTF outlet isolation valve V-181.
13. Attach Evacuation Truck to each HTF low point drain on Preheater, Steam Generator, and Super

Heater and pull a vacuum on the truck to ensure all residual HTF is removed from each vessel.

14. Repeat above steps on “B” Steam Train utilizing V-180 in place of V-182 and V-179 in place of V-181.

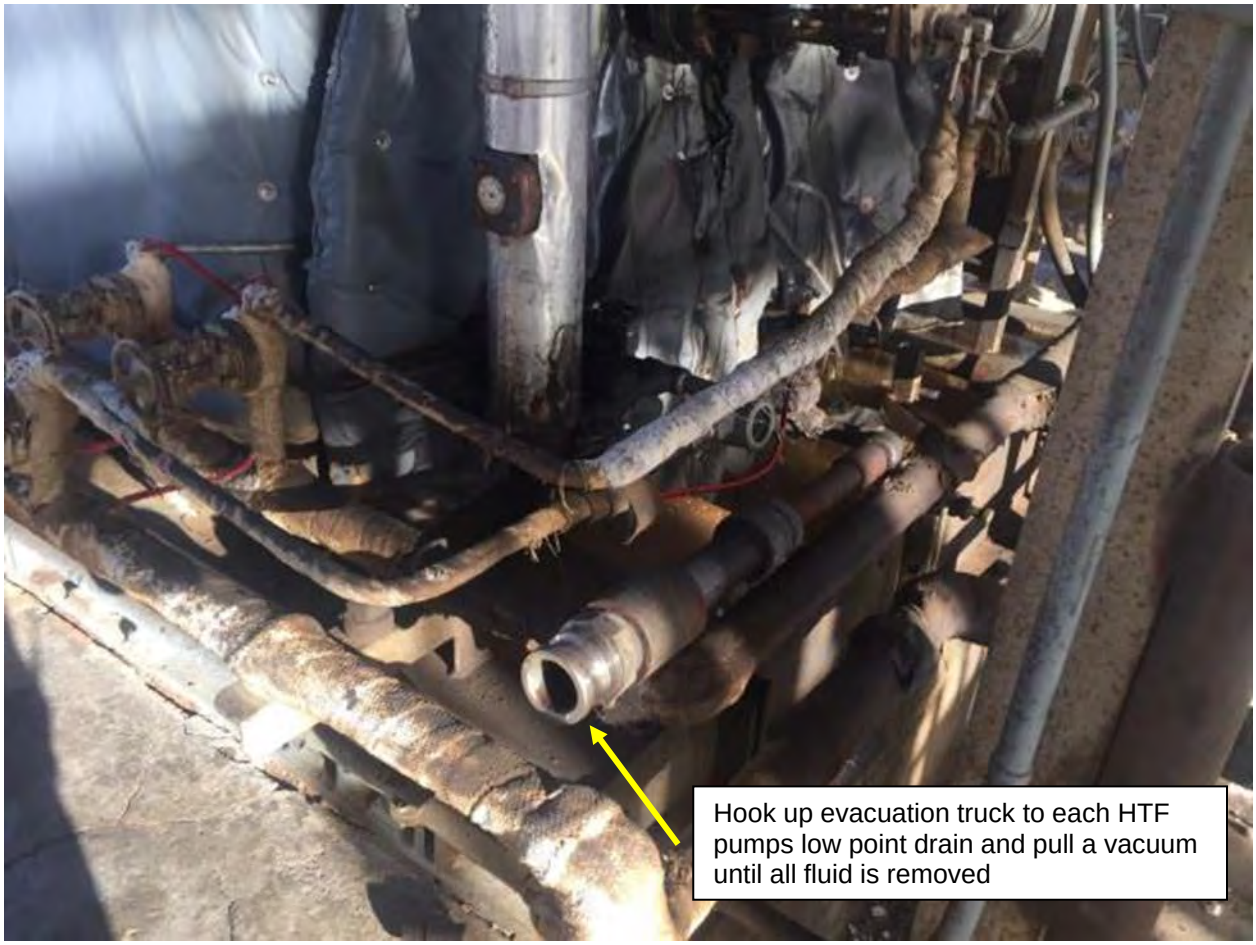
PHASE 3 STEAM TRAIN BYPASS & HTF PUMP PIPING:

1. Ensure expansion vessel is below 30 psi.
2. Secure P-100C HTF pump.
3. Isolate expansion vessel main outlet.

4. Hook up double check valve at low point drain on HTF steam train bypass.
5. Attach air hose from air compressor to double check valve.
6. Verify compressor has reached a pressure greater than 100 psi.
7. Line up air into piping to begin pushing HTF.
8. Monitor expansion vessel pressure and level. If pressure reaches 50 psi, vent vessel through ullage system. If level reaches 80 inches, secure airline to stop pushing HTF.
9. Continue to push with air until all HTF has been removed from the piping as indicated by no increase in expansion vessel level.
10. Hook up evacuation truck to low point drain on HTF steam train bypass line and continue to pull

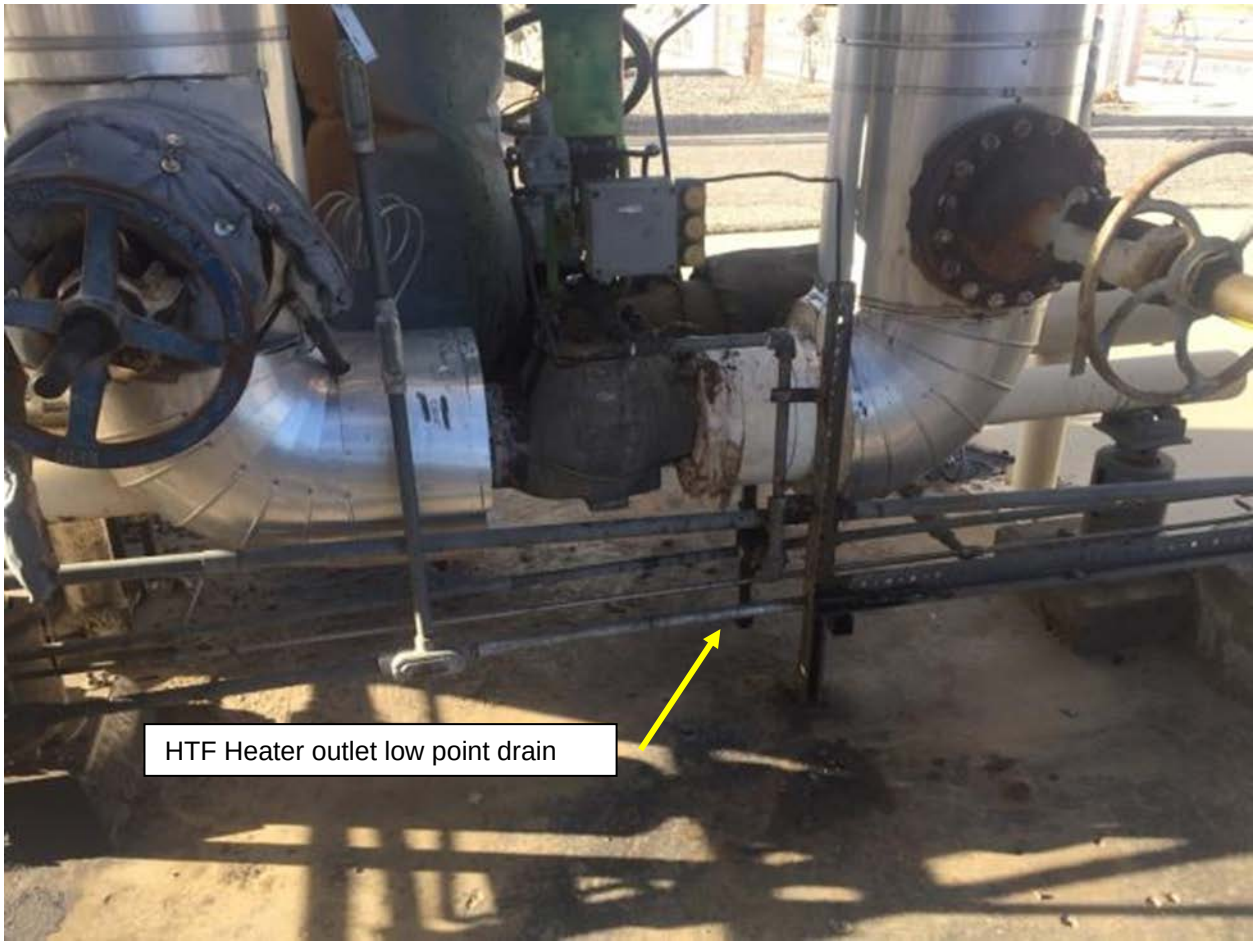
vacuum on header until no level increase on truck.

11. Hook up evacuation truck to low point drain on each HTF pump (P-100A, P100B, and P-100C) pull vacuum until no more fluid is present.



PHASE 4 HTF HEATER:

1. Isolate inlet and outlet block valves to the HTF heater.
2. Hook up evacuation truck at low point on heater outlet and pull vacuum until all HTF is removed.



3. Hook up evacuation truck at low point on heater inlet and pull vacuum until all HTF is removed.

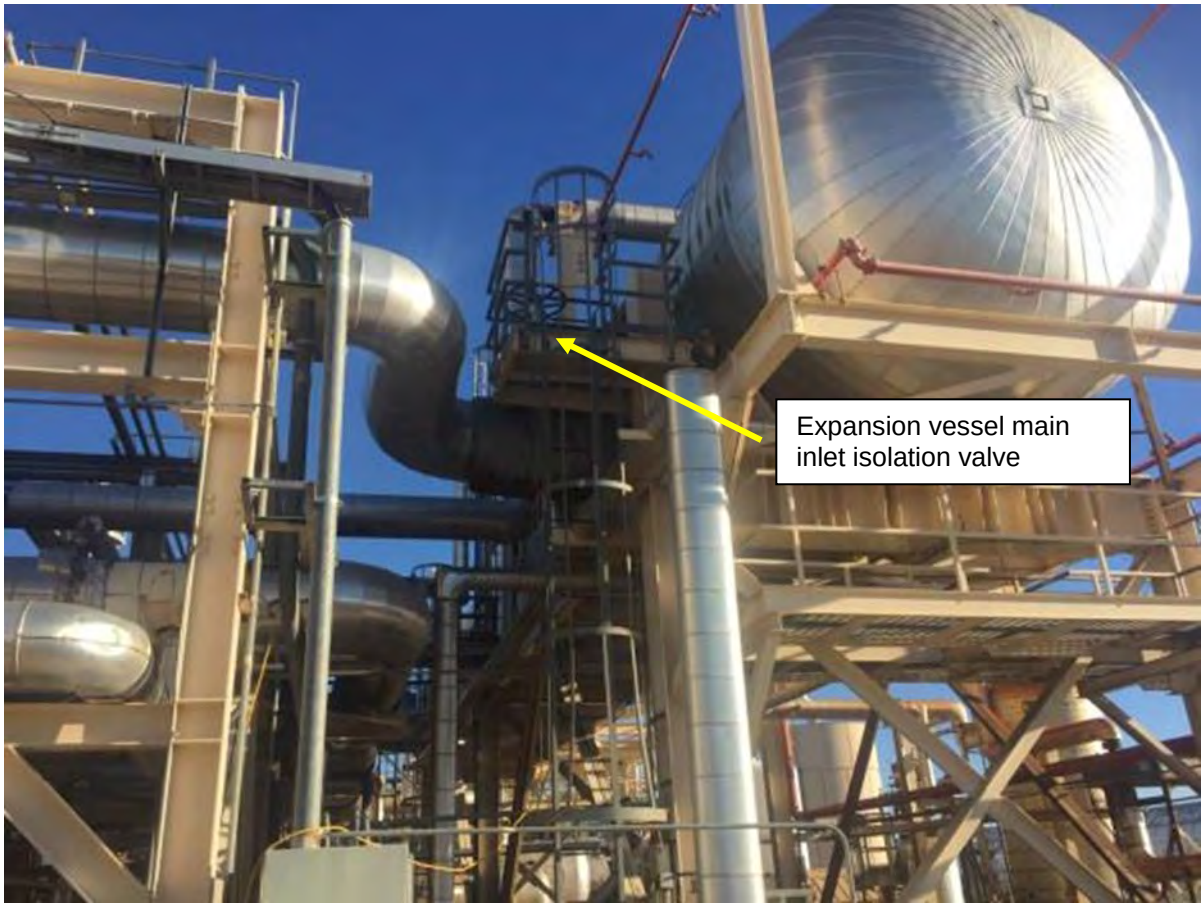
PHASE 5 SOLAR FIELD COLD HTF HEADERS:

1. Hook up at low point with evacuation truck at cold header inlet to the east solar field.

2. Pull vacuum until no more HTF is present.
3. Hook up at low point with evacuation truck at cold header inlet to the west solar field.
4. Pull vacuum until no more HTF is present.

PHASE 6 SOLAR FIELD HOT HTF HEADER:

1. Isolate main inlet valve to expansion vessel from the solar field.



2. Hook up evacuation truck at low point on hot HTF return header from the solar field. Pull vacuum until no more HTF is present.

PHASE 7 EXPANSION VESSEL (TRUCK LOADING):

1. Filling of trucks can be accomplished using the drain located at the bottom of the expansion vessel.

2. HTF will be transfer using a vacuum generated on the trailer.
3. The ullage vent will need to open to allow the expansion vessel not to pull a vacuum during the truck fill operation.
4. If necessary, nitrogen is available to add additional pressure in the expansion vessel.
5. Utilize ENV-SEGS-CHEM-0003 Bulk Chemical Transfer Procedure for all connection, monitoring, and spill prevention requirements.
6. Trucks shall be located within the Power Block concrete HTF containment area whenever HTF transfers are in progress.
7. Additional spill containments materials are available and will be used as needed during the truck loading operation.

REFERENCES:

OI-09	Evacuation Unit Operation
OI-10	HTF System
JSA-039	Evacuation Unit Operation
JSA-086	HTF Evacuation

Appendix C

SEGS III – VII Bulk Chemical Transfer Procedure

DESCRIPTION

This procedure is to provide guidance for the bulk transfer of chemicals between tanks and/or trucks. This procedure shall apply to all products and waste materials and shall be used for all bulk transfers.

TYPE

This procedure is a continuous use procedure. This procedure is to be used at all times when a transfer of bulk chemicals occurs between tanks and/or trucks.

OBJECTIVE

To ensure that bulk transfers of chemicals are accomplished in a safe and environmentally friendly manner in compliance with all regulations.

SAFETY CONSIDERATIONS:

1. The tasks listed on this procedure may require operating critical pieces of plant equipment that are powered by high pressure, high pressure HTF fluids and high voltage electricity. It is imperative that the operators performing these tasks fully understand the system operating parameters, the task objectives, the associated procedures and all hazardous conditions that exist and could occur during the performance of these tasks.
2. Tailboard Meeting. A detailed tailboard must be held prior to performing these tasks to ensure that all personnel are aware of the task being executed.
3. Communication: Contact with the Production Leader, Production Specialist and other effected persons must be established and maintained during these tasks.
4. Results: Take corrective action immediately upon failure of a piece of equipment that is not performing its function of protecting people and equipment.
5. Use caution when performing assigned tasks. Piping and conduit is at various heights and distributed through out the plant in the areas where these tasks will be performed. Always wear the appropriate Personal Protective Equipment.

GENERAL PROCEDURE

1. Hazards
    a. Possibility of chemical reaction if chemical is transferred into the wrong tank.
    b. Eye contact with chemical.
    c. Skin contact with chemical.
    d. Inhalation of chemical fumes.
    e. Pressurized lines.
    f. Possibility of chemical spill.

2. PPE requirements
    a. Plant required PPE.
    b. PPE recommended by SDS.
3. Receiving material
    a. Perform Risk Assessment.
    b. Verify chemical identity via Bill of Lading.
    c. Verify correct plant and correct tank for delivery.
    d. Verify that the receiving tank has sufficient room to accept the delivery amount.
    e. Never fill a tank more than 90% of the tank capacity.
    f. Review appropriate SDS to familiarize yourself with the product hazards.
    g. Verify that the truck operator has all of the required PPE and that it is in good working condition.
    h. Inspect and don all of the required PPE if you are going to be involved in the actual off-loading process. Additional PPE is not required if you are only monitoring the operation from a safe distance and will only perform an emergency shutdown operation, if needed.
    i. Locate the nearest safety shower and verify operation of shower and eye wash. Show the location to the truck's operator.
    j. Wherever possible locate truck and transfer hose or piping on concrete or in containment areas to minimize environmental impact should a spill occur.
    k. Whenever possible place appropriate absorbent mats or drip pans under all connections.
    l. Direct truck operator to proper tank and fill connection.
    m. Inspect all hoses, pipes, gaskets, and connection fittings for integrity. Do not use any questionable items.
    n. Ensure all female cam-lock fittings have gaskets in place and the gaskets are in good condition. Do not use any questionable items.
    o. Ensure that all cam-lock fitting locking levers are fully engaged and restrained to prevent accidental opening of the fitting.
    p. After all connections have been completed, inspect all connections for proper alignment, tightness, etc.
    q. Prior to starting transfer have the truck operator show you how to secure the product flow in the event of an emergency.
    r. Ensure the truck operator has donned all of the required PPE.
    s. Communicate with the truck operator to ensure everything and everyone is in readiness prior to opening any valves.
    t. Notify Control Room that the transfer is beginning.
    u. Open appropriate valves and begin the transfer operation.
    v. Continuously monitor the transfer operation, checking for leaks at any connections and monitoring tank level.
    w. If a leak occurs, discontinue the transfer operation immediately and notify the Control Room of the issue.

x. If the leak can be safely repaired and cleaned up, perform the necessary repairs and clean up spilled material. Ensure all required PPE is being used during the repair and clean-up.
y. If leak cannot be safely repaired, set up barrier tape around area and notify Control Room of the need for the Emergency Response Team or outside contractor to secure the situation and perform clean-up.
z. Once product transfer is complete, secure tank fill valve and have truck operator evacuate fill line using vacuum equipment on the truck.
aa. Notify Control Room the transfer is completed.
bb. Re-install any pipe caps or blind flanges that were removed for the transfer operation.
cc. Pick up all materials used during the transfer operation and ensure area housekeeping is in order.

4. Shipping materials.
   a. Perform Risk Assessment.
   b. Verify correct plant and correct tank for waste removal.
   c. Review appropriate SDS to familiarize yourself with the waste hazards.
   d. Verify that the truck operator has all of the required PPE and that it is in good working condition.
   e. Locate the nearest safety shower and verify operation of shower and eye wash. Show the location to the truck's operator.
   f. Wherever possible locate truck and transfer hose or piping on concrete or in containment areas to minimize environmental impact should a spill occur.
   g. Whenever possible place appropriate absorbent mats or drip pans under all connections.
   h. Direct truck operator to proper tank and drain connection.
   i. Inspect all hoses, pipes, gaskets, and connection fittings for integrity. Do not use any questionable items.
   j. Ensure all female cam-lock fittings have gaskets in place and the gaskets are in good condition. Do not use any questionable items.
   k. Ensure that all cam-lock fitting locking levers are fully engaged and restrained to prevent accidental opening of the fitting.
   l. After all connections have been completed, inspect all connections for proper alignment, tightness, etc.
   m. Prior to starting transfer have the truck operator show you how to secure the product flow in the event of an emergency.
   n. Ensure the truck operator has donned all of the required PPE.
   o. Inspect and don all of the required PPE if you are going to be involved in the actual off-loading process. Additional PPE is not required if you are only monitoring the operation from a safe distance and will only perform an emergency shutdown operation, if needed.

p. Communicate with the truck operator to ensure everything and everyone is in readiness prior to opening any valves.
q. Notify Control Room that the transfer is beginning.
r. Open appropriate valves and begin the transfer operation.
s. Monitor the transfer operation, checking for leaks at any connections and monitoring tank level.
t. If a leak occurs, discontinue the transfer operation immediately and notify the Control Room of the issue.
u. If the leak can be safely repaired and cleaned up, perform the necessary repairs and clean up spilled material. Ensure all required PPE is being used during the repair and clean-up.
v. If leak cannot be safely repaired, set up barrier tape around area and notify Control Room of the need for the Emergency Response Team or outside contractor to secure the situation and perform clean-up.
w. Once waste transfer is complete, secure tank drain valve and have truck operator evacuate fill line using vacuum equipment on the truck.
x. Notify Control Room the transfer is completed.
y. Re-install any pipe caps or blind flanges that were removed for the transfer operation.
z. Pick up all materials used during the transfer operation and ensure area housekeeping is in order.

5. On-site Material Transfer
   a) When transferring materials between tanks on site follow all steps listed above for shipping and receiving material.
   b) When material transfer is complete and the material transferred is determined by the site Environmental Specialist as appropriate for on-site rinse-out, the tank truck rinse-out will be conducted at the evaporation ponds. Under no circumstances will rinse-out occur at any other location. Consult Site Environmental Specialist if there are any questions.

INTERNAL SITE CONTACT

Glen King, Environmental Specialist – Office: 760-762-5562 x440 cell: 661-202-5837

FLEET TEAM CONTACT

NOTE: Please refer to the PGD ENVIRONMENTAL WEB SITE for the most-current information on Contacts.

REVISION HISTORY

Rev #	Revision Description	Approved By Position/Title	Effective Date
2	Changed MSDS to SDS. Added plant personnel PPE requirements to Receiving and Shipping sections	Sr. Environmental Specialist	6/2/2015
3	Updated contact information	Sr. Environmental Specialist	10/10/19

APPENDIX C: AIR QUALITY REPORT

AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

SOLAR ENERGY GENERATING SYSTEM (SEGS) III-VII Decommissioning (87-AFC-01C)

SAN BERNARDINO COUNTY, CALIFORNIA

January 29, 2021

NextEra Energy Resources

TABLE OF CONTENTS

TABLES

FIGURES

ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CH_4	methane
CO	Carbon Monoxide
CO_2	carbon dioxide
$CO2_e$	CO_2 equivalent
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse Gas
GWP	global warming potential
HAP	hazardous air pollutants
HFC	hydrofluorocarbon
lbs/day	pounds per day
LORS	laws, ordinances, regulations, and standards
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
NAAQS	National Ambient Air Quality Standards
MT	metric tons
N_2O	nitrous oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
O_3	Ozone
PFC	perfluorocarbons
PM	Particulate Matter
Project	SEGS III-VII Thermal Solar Project
ROG	Reactive organic gases

SB	Senate Bill
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminants

OVERVIEW

NextEra Energy Operating Services as Agent for Luz Solar Partners III -VII (hereinafter Project Owner; NEER), is submitting a Facility Decommissioning Plan for the Solar Energy Generating System (SEGS) III-VII (87-AFC-01C) to the California Energy Commission (CEC). The air quality analysis presented in this report evaluates the potential air quality impacts associated with decommissioning the SEGS III-VII facilities. Decommissioning is scheduled to begin as early as May 2021, pending the approval of the Decommissioning Plan. The duration of decommissioning is approximately 7-8 months, completing in 2022. Because the Project is located within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD), the air quality analysis follows MDAQMD's guidelines. This report also provides estimates of greenhouse gas (GHG) emissions from the combustion of fossil fuels, primarily from the operation of construction equipment and mobile sources used to decommission and remove equipment.

In summary, the air quality and GHG analysis concludes that emissions during short-term decommissioning of the SEGS III-VII project will not exceed the significant emissions thresholds established by the MDAQMD. Therefore, the project does not pose significant adverse impacts on local air quality or global climate change.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

Air quality impacts from decommissioning, and on- and off-site transportation sources were analyzed based on the equipment used, length of time for a specific construction task, equipment power type (gasoline or diesel engine), equipment emission factors established by the U.S. Environmental Protection Agency (EPA; AP-42 handbooks), horsepower, load factor, and percentage of time in use. Exhaust and dust emissions from worker commutes and on- and off-site travel were calculated based on available information regarding these activities. Fugitive dust (fine particulate matter equal to or less than 10 microns [PM_{10}] and fine particulate matter equal to or less than 2.5 microns [$PM_{2.5}$]) emissions would result from wind erosion of exposed soil and soil storage piles, grading operations, and vehicles traveling on paved and unpaved roads. These emissions were calculated based on decommissioning information available and provided to Tetra Tech. Motor vehicle pollutant emissions associated with the project were estimated utilizing information on decommissioning operations. The California Emissions Estimator Model (CalEEMod 2016.3.2; CAPCOA 2017) was used to calculate the emissions associated with decommissioning activities, including vehicle trips to and from the project site. Emissions associated with stationary sources (i.e., portable generators) were also quantified using CalEEMod. The total project decommissioning emissions were compared to the MDAQMD threshold criteria, and a determination of significance was made. CalEEMod also identifies mitigation measures and calculates the benefits of using such mitigation measures.

A discussion of GHGs and their potential effects on global climate change is included. Emissions of carbon dioxide (CO_2), a key GHG identified in Assembly Bill (AB) 32, and other major GHGs such as methane (CH_4) and nitrous oxide (N_2O) from direct and indirect project-related sources were calculated. Tetra Tech calculated the construction-related GHG emissions commensurate with available project specific information. Standard measures for construction activities recommended by the MDAQMD were identified and incorporated as part of the project's standard conditions. Potential GHG impacts associated with the proposed decommissioning project were calculated.

1.2 PROJECT DESCRIPTION

This plan describes the decommissioning activities and equipment, and provides an analysis of potential environmental impacts associated with the decommissioning of SEGS III-VII

Each SEGS unit consists of a solar field and a power block. Each of the five power blocks includes power generation equipment, a control room, a condenser and cooling tower for circulating process water, a process water system including a small wet chemistry laboratory for testing water quality, a circulating heat transfer fluid (HTF) system including expansion vessels and related piping, and electrical switching and distribution equipment plus an emergency back-up generator. All SEGS units share three 10-acre Class II surface water impoundments (evaporation ponds), located on the east side of the property near US Highway 395 and other administrative and support facilities. Electrical power generated by the SEGS is supplied to the grid through the Southern California Edison (SCE) owned switchyard equipment located onsite. Electrical equipment located within SCE owned switchyards is not discussed in this plan.

1.3 SCHEDULE

Decommissioning is scheduled to begin as early as May 2021, pending the approval of this Decommissioning Plan and market-driven business decisions, and would occur over approximately a 7- to 8-month duration. Decommissioning will be completed using traditional heavy construction equipment including but not limited to front-end loaders, track mounted and rubber-tired excavators, bull dozers, concrete crushers, dump trucks and heavy haul trucks. Although various types of

decommissioning equipment will be utilized to dismantle each type of structure or equipment, dismantling will consist of dismantling of mirror panels to be removed, power generation facility equipment removal, and concrete removal and crushing as needed to ensure that no concrete structure remains within 3 feet of final grade (i.e., floor slabs, below-ground walls, and footings) in areas that need to be cleared for the proposed solar PV Project facilities. The Project Owner intends to limit the needs for underground utility removal to the maximum extent practical.

1.4 REGIONAL AND LOCAL SETTING

The SEGS III-VII units are located on a site located in a sparsely populated area of the Western Mojave Desert near the boundary between San Bernardino and Kern Counties, approximately one mile northwest of Kramer Junction (intersection of California Highways 58 and 395) and east of the community of Boron. The site is located at 41100 US Highway 395, Boron, California as shown in Figure 1. The site has a fenced area of approximately 1,019 acres and consists of five 30 MW solar electric generating systems named SEGS III through SEGS VII as shown in Figure 2.

The site is developed on generally level desert terrain within Kramer Basin at an elevation of 2,450 feet. The site is surrounded by discontinuous low-relief uplands including the Saddleback Mountains to the north and the Kramer Hills to the south.

1.5 SENSITIVE LAND USES AND RECEPTORS

Decommissioning activities occurring near sensitive receptors receive a higher level of preventive planning for controlling emissions and fugitive dust. Sensitive receptors may include residences, school-aged children (schools, daycares, playgrounds), and the infirm (medical facilities/hospitals), near planned construction areas such as work sites. The Project right-of-way (ROW) traverses mostly unpopulated areas.

MDAQMD guidance (MDAQMD, 2020) requires certain project types that are proposed for sites within the specified distance to an existing or planned (zoned) sensitive receptor land use require a risk assessment. The project type and distance criteria are as follows:

- Any industrial project within 1,000 feet;
- A distribution center (40 or more trucks per day) within 1,000 feet;
- A major transportation project (50,000 or more vehicles per day) within 1000 feet;
- A dry cleaner using perchloroethylene within 500 feet;
- A gasoline dispensing facility within 300 feet.

The nearest populated areas near the site include the small communities of Kramer Junction and Boron. There were no sensitive receptors identified within 1,000 feet of the planned decommissioning areas. The distance to the closest receptor in Kramer Junction (a gas station) is 2,736 feet. The distance to the closest receptor in Boron (a residence) is 18,794 feet.

NextEra Energy Operating Services as Agent for Luz Solar Partners III -VII

Figure 1
Project Location

San Bernardino County
California

California Energy Commission Site Boundary

Project Features

Decommissioning Boundary

Transportation

U.S. Highway

State Highway

TETRA TECH

Reference Map

OR | ID
NV
UT
CA
AZ
Pacific Ocean

U S 395
CALIFORNIA 58
Kramer Junction

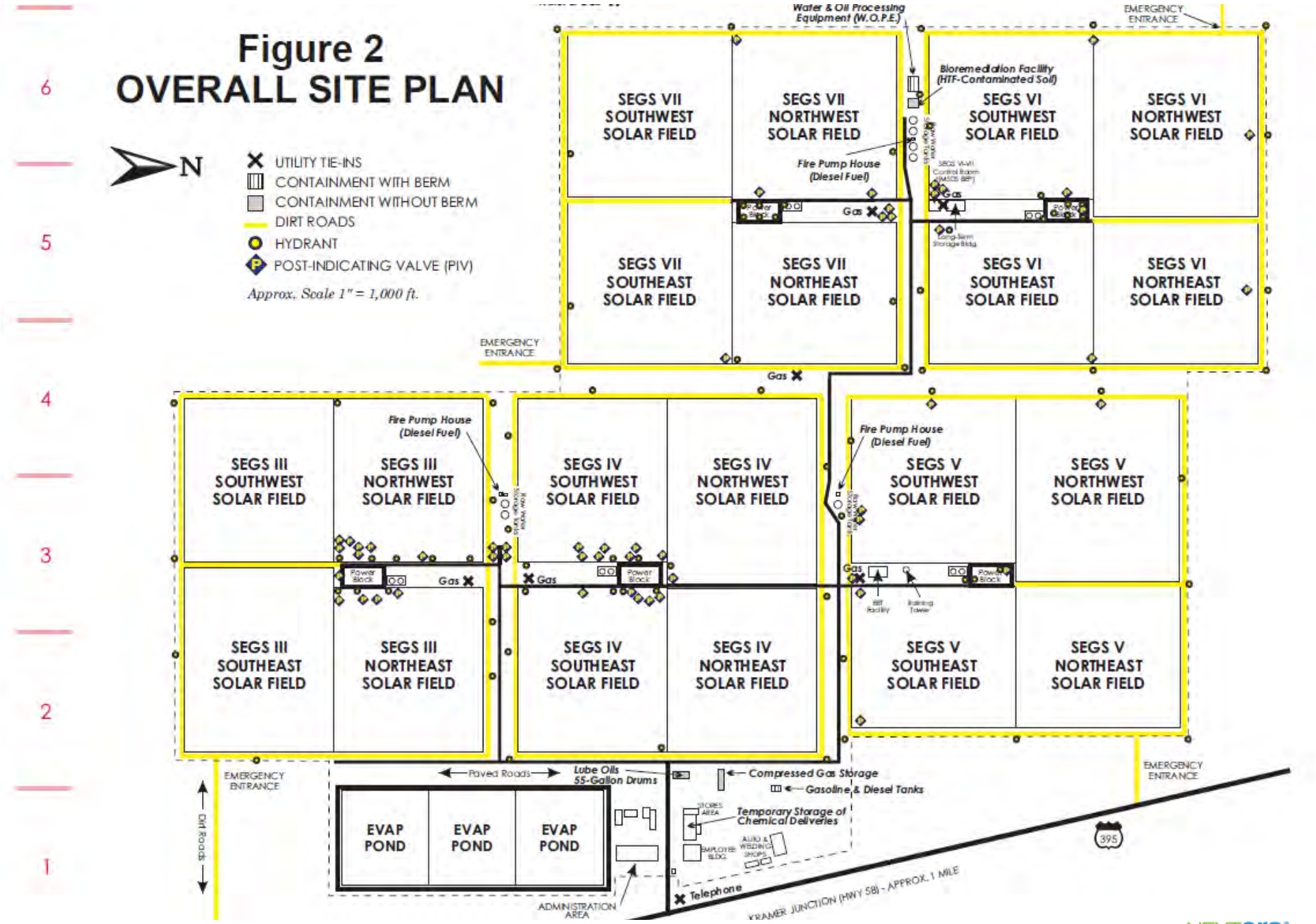
P:\1106_0027_SEGS_III_VII_SOLAR_REPOWER\GIS\Layouts\Project_Location.mxd

1:18,000 NAD 1983 StatePlane California V FIPS 0405 Feet

0 0.5 1 Miles

Source: ESRI, USDA NAIP

Figure 2
OVERALL SITE PLAN



2.0 AIR QUALITY

2.1 ENVIRONMENTAL SETTING

2.1.1 Climate

The SEGS III-VII Site is located in San Bernardino County's high desert. The site is classified as having a high desert climate. Hot and dry summers with occasional intense desert thunderstorms are followed by cool and dry winters. High winds and blowing sand and dust are frequent in the area. The adjacent land is vacant except for desert plant and animal life indigenous to the western Mojave Desert (CEC, 1988). The two closest National Weather Service (NWS) meteorological sites are located in Victorville and Barstow California. Climatological data for both the Barstow and Victorville NWS sites show normal high temperatures around 60ºF during the winter months and average high temperatures around 100ºF during the summer months. Annual precipitation ranges from approximately five inches per year at Barstow and seven inches in Victorville. The annual average number of days with rain is 27 in Barstow and 29 in Victorville.

Prevailing winds in the Mojave Desert Air Basin (MDAB) are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB (MDAQMD, 2020).

During the summer the MDAB is generally influenced by Pacific Subtropical high pressure that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB is classified as a dry-hot desert climate (MDAQMD, 2020).

2.1.2 Pollutants and Effects

2.1.2.1 Criteria Air Pollutants

The Clean Air Act (CAA) requires EPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. EPA calls these "criteria" air pollutants because it regulates them by developing health-based (primary) or environmentally-based (secondary) standards. These pollutants are summarized below. The California Air Resources Board (CARB) has also developed California Ambient Air Quality Standards for criteria pollutants.

Ozone (O_3) is a secondary pollutant that is formed from the reaction of nitrogen oxides and volatile organic compounds in the presence of sunlight. Ozone exists naturally in the stratosphere, shielding Earth from harmful ultraviolet radiation. However, at ground-level, ozone causes adverse health effects and is a major component of smog. High concentrations have been tied to respiratory ailments and cardiovascular disease, as well as damage to natural ecosystems, agricultural crops, and materials such as rubber, paint, and plastics. Ozone is regulated under the NAAQS and CAAQS.

Reactive organic gases (ROG) are composed of hydrocarbon compounds that contribute to the formation of smog through atmospheric chemical reactions. ROG are emitted from fuel combustion and industrial and agricultural processes. Compounds that make up ROG are often evaluated as part of a toxic risk assessment under AB 2588 provisions. ROGS are regulated as precursors to ozone under the NAAQS and CAAQS.

Nitrogen Oxides (NOx) are a family of gaseous nitrogen compounds that result primarily from the combustion of fossil fuels. It is a precursor to the formation of ozone and particulate matter, and Nitrogen Dioxide (NO_2) is assigned with NAAQS and CAAQS.

Particulate Matter (PM) is comprised of solid particles and liquid droplets, made up of acids, organic chemicals, metals, and soil or dust particles. Particles that are 10 micrometers in diameter or smaller are a potential human health concern because they can enter the lungs, which can affect the heart and cause adverse health effects. They can be emitted directly to the atmosphere as well as formed in the atmosphere by chemical reactions among precursors. Particulate matter can be categorized based on their size:

Inhalable coarse particles ($PM_{2.5}$-PM_{10}) are between 2.5 and 10 micrometers in diameter. Sources include roads, farming activities, windblown dust as well as combustion sources.

Fine particles ($PM_{2.5}$) are 2.5 micrometers in diameter or smaller, and are generally emitted by combustion sources like vehicles, power generation, industrial processes and wood burning.

Both PM_{10} and $PM_{2.5}$ are regulated under the NAAQS and CAAQS.

Carbon Monoxide (CO) is an odorless, colorless gas formed by the incomplete combustion of fuels emitted directly into the air. The main source of CO in the air basin is on-road motor vehicles. Therefore, CO problems tend to be localized with nonattainment areas designated in urban areas rather than the entire basin. With the introduction of new automotive emission controls and fleet turnover, emissions from motor vehicles have been declining. CO is regulated under the NAAQS and CAAQS.

Sulfur Dioxide (SO_2) is a colorless gas formed by the combustion of fossil fuels that contain sulfur. The Valley is in attainment of both the Federal and California standards for SO_2. The use of low-sulfur fuel has minimized problems with this pollutant. SO_2 is regulated under the NAAQS and CAAQS.

2.1.2.2 Greenhouse Gases

GHGs are emitted by natural processes and human activities. Natural GHG sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Human activities known to emit GHGs include industrial manufacturing, utilities, transportation, residential, and agricultural activities. The GHGs that enter the atmosphere because of human activities are CO_2, CH_4, N_2O, fluorinated carbons (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

CO_2 is an odorless, colorless gas with both natural and anthropogenic sources. Examples of natural sources are respiration of bacteria, plants, and animals, evaporation from oceans, and decomposition of organic matter. Human activities that emit CO_2 include burning coal, oil, natural gas, and wood.

CH_4 is a flammable gas that is the main component of natural gas. When burned in the presence of oxygen, CO_2 and water are released. There are no direct health effects from exposure to CH_4. Sources of CH_4 include decay or organic material, natural gas fields, cattle, and landfills.

N_2O is a colorless gas that can cause euphoria, dizziness, and slight hallucinations when exposed to higher concentrations. Sources include agricultural sources (e.g. microbial processes in soil and water, fertilizer) and industrial processes (e.g. fossil fuel-fired power plants, vehicle emissions, nylon production).

Fluorinated Gases are synthetic and emitted from a variety of industrial processes.

> **HFCs** are man-made chemicals used as a substitute for CFCs (chlorofluorocarbons) for automobile air conditioners and refrigerants.
>
> **PFCs** are very stable and do not break down through the chemical processes in the lower atmosphere and they have long lifetimes (between 10,000 and 50,000 years). The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

SF_6 is an inorganic, colorless, odorless, nontoxic, nonflammable gas used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

2.2 REGULATORY SETTING

Ambient air quality standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and safety. They are designed to protect those people most susceptible to respiratory distress (i.e., sensitive receptors), such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research suggests however, that long-term exposure to air pollution at levels that meet air quality standards may nevertheless have adverse health effects. For example, ozone exposure even at levels close to the ambient air quality standard may lead to adverse respiratory health.

SEGS III-VII is subject to a Title V Federal Air Operating Permit (Title V Permit) issued and administered by MDAQMD. The Title V Permit requires compliance with applicable MDAQMD, California, and federal air quality rules and regulations and other permit-specific obligations. SEGS III-VII will remain in compliance with the Title V Permit during decommissioning as may be required by MDAQMD and/or the USEPA. SEGS will ensure that the Title V Permit is current and that applicable monitoring, reporting, recordkeeping, and other obligations continue to be met, to the extent they continue to apply or are not otherwise waived during the pendency of the decommissioning.

The following discussion describes the regulatory authority of the federal, state and local jurisdictions. The federal CAA, the California Clean Air Act (CCAA), and the Air Quality Management Plan (AQMP) prepared and adopted by the MDAQMD, regulate air quality in the air basin. Federal and state standards are shown in Table 1, State and Federal Air Quality Standards.

2.2.1 Federal Regulations

2.2.1.1 Criteria Air Pollutants

The federal CAA (42 United States Code Section 7401-7671q) is a comprehensive Federal law that regulates air emissions from area, stationary, and mobile sources and requires the adoption of the NAAQS to protect public health and welfare from the effects of air pollution. The Federal CAA Amendments of 1990 required that the EPA review all National Ambient Air Quality Standards with respect to health impacts and propose modifications or new rules as appropriate. In addition, the amendments of the 1990 federal CAA are associated with the attainment and maintenance of air quality standards, permits and enforcement, toxic air pollutants, acid deposition, stratospheric ozone protection and motor vehicles and fuels.

Current NAAQS are assigned to SO_2, CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Lead. These pollutants are designated criteria pollutants.

2.2.1.2 Hazardous Air Pollutants

The 1977 federal CAA amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants (NESHAPs) to protect public health and welfare. Hazardous air pollutants (HAPs) include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. The 1990 federal CAA Amendments, which expanded the control program for HAPs, identified 189 substances and chemical families as HAPs.

2.2.2 State Regulations

2.2.2.1 Criteria Air Pollutants

The CCAA, passed by the California Legislature and signed into law by the Governor in 1988, assigns state-specific ambient air quality standards. The California standards are, in most cases, more stringent than federal standards. The goal of the CCAA is to attain state air quality standards by the earliest practical date. Because California established CAAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology in much of California, there can be a considerable difference between state and national clean air standards. Those standards currently in effect in California are shown on Table 1, State and Federal Ambient Air Quality Standards.

The CCAA requires each air pollution control district of an air basin designated as nonattainment of state ambient air quality standards to prepare and submit a plan for attaining and maintaining state standards.

2.2.2.2 Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California Toxic Air Contaminants (TAC) list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, facilities are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2016). The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, On-Road Heavy Duty (New) Vehicle Program, In-Use Off-Road Diesel Vehicle Regulation, and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel powered equipment. Several Airborne Toxic Control Measures reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 California Code of Regulations [CCR] 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Table 1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemilumine-scence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (365 µg/m³)[9]	—	
	Annual Arithmetic Mean	—		0.30 ppm (for certain areas)[9]	—	
Lead (Pb)[10, 11]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[9]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates (SO_4)	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	24 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Source: California Air Resources Board (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, updated 06/07/12), and U.S. Environmental Protection Agency (http://www.epa.gov/air/criteria.html, accessed January 2013]

- *California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter (PM_{10}, and $PM_{2.5}$) and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*
- *National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.*
- *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. The torr (symbol: Torr) is a non-SI unit of pressure with the ratio of 760 to 1 standard atmosphere, chosen to be roughly equal to the fluid pressure exerted by a millimeter of mercury, i.e., a pressure of 1 Torr is approximately equal to one millimeter of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*
- *Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.*
- *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect public health.*
- *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*
- *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*
- *To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.*
- *On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.*
- *CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects that are determined. These actions allow implementing control measures at levels below the ambient concentrations specified for these pollutants.*
- *The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.*

2.3 STATE AND LOCAL AGENCY REVIEW REQUIREMENTS

The CEC will review the project-related emissions to determine whether decommissioning will comply with all applicable LORS. The County of San Bernardino (County) may take over jurisdiction of the decommissioning of the existing SEGS III-VII solar thermal facilities upon agreement with the CEC, for which the County would oversee the necessary condition of certification and/or conditions of approval to ensure that decommissioning activities will not result in a significant impact to the environment or public health and safety. The MDAQMD may also review the project-related emissions to determine whether construction of the proposed project will comply with all applicable MDAQMD rules and regulations.

The MDAQMD is a commenting agency on air quality and related matters within its jurisdiction or affecting its jurisdiction. The MDAQMD reviews projects to ensure that they will not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan. A number of air quality modeling tools are available to assess the air quality impacts of projects. In addition, certain air districts, such as the MDAQMD, have created guidelines and requirements to conduct air quality analyses. The MDAQMD's current guidelines, included in its California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (2020) were followed in the assessment of air quality impacts for the proposed project.

2.3.1 Project Site Attainment Status

In an effort to protect human health and welfare, the CARB and EPA have established Ambient Air Quality Standards. Areas are considered in "attainment" if standards are met and "nonattainment" if they are not met. For ozone, nonattainment status is further classified as marginal, moderate, serious, severe or extreme. Table 2 provides the attainment status for the portion of San Bernardino County that covers the project area.

Table 2. Western San Bernardino County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone (1-Hour)	No federal standard	Nonattainment/Severe
Ozone (8-Hour)	Nonattainment/Severe	Nonattainment/Moderate
NO_2	Attainment/Unclassified	Attainment
CO	Attainment/Unclassified	Attainment/Unclassified
PM_{10}	Nonattainment/Moderate	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
SO_2	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Sources: MDAQMD 2020

The poor air quality in the air basin is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emissions sources. Projects that emit these pollutants or their precursors (i.e., volatile organic compounds [VOCs] and oxides of nitrogen [NO_X] for ozone) potentially contribute to poor air quality. The MDAQMD significance thresholds take into account the cumulative impact of a project that adds emissions to the entire air basin, in this case a basin already in nonattainment for O_3, PM_{10}, and $PM_{2.5}$.

For most construction projects, motor vehicles and construction equipment make up the bulk of GHG) emissions. The primary GHGs emitted by motor vehicles and construction include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O).

2.4 MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT

2.4.1 Thresholds of Significance

In February 2020, the MDAQMD revised its California Environmental Quality Act (CEQA) and Federal Conformity Guidelines (MDAQMD, 2020), which provide significance thresholds for criteria pollutants and GHGs. The MDAQMD significance thresholds are based on either daily or total annual air pollutant emissions (i.e., the amount of air pollutants generated from decommissioning during the anticipated 7- to 8-month period). For multi-phased projects, such as projects with separate construction phases, phases shorter than one year can be compared to the daily value. MDAQMD thresholds are the same for construction and operation. If emissions exceed the thresholds, then a project is considered to have a significant impact on air quality and must incorporate all feasible mitigation measures.

The MDAQMD emissions thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. The ambient air quality concentration standards in Table 1 were set at a level that protects public health with an adequate margin of safety (USEPA, 2016). The County and air district both utilize the MDAQMD CEQA and Federal Conformity Guidelines (MDAQMD, 2020) to identify potentially significant impacts on air quality. For the purposes of this analysis, an impact is considered significant if a project:

- Generates total emissions (direct and indirect) in excess of the thresholds given in Table 3;
- Generates a violation of any ambient air quality standard when added to the local background;
- Does not conform with the applicable attainment or maintenance plan(s); or
- Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to ten in a million, and/or a health index (non-cancerous) greater than or equal to one.

The February 2020 revised MDAQMD guidelines also provide background information and guidance on its preferred analysis approach for GHG emissions. The 2020 revisions established significant emissions thresholds for GHGs of 100,000 tons per year or 548,000 pounds per day.

GHGs are emitted by natural processes and human activities. Natural GHG sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Human activities known to emit GHGs include industrial manufacturing, utilities, transportation, residential, and agricultural activities.

For this Project, the major source of GHG is the combustion of fuel in construction equipment, in vehicles used to haul materials, and in vehicles used by workers commuting to and from the site.

There are three types of GHG from fuel combustion, including CO_2, CH_4 and N_2O. GHG emissions are presented as CO_2e. CO_2e is computed based on global warming equivalence. The CH_4 global warming equivalence is 25 times that of CO_2, and the N_2O global warming equivalence is 298 times that of CO_2. Mathematically, the CO_2e can be represented by the following equation:

$$CO_2e \text{ Emissions} = CO_2 \text{ Emissions} + 25 \times CH_4 \text{ Emissions} + 298 \times N_2O \text{ Emissions}$$

The pollutant-specific daily and annual significant emissions thresholds are provided in Table 3.

Table 3. MDAQMD Significance Thresholds

Pollutant	Annual Threshold (short tons)	Daily Threshold (pounds)
Greenhouse Gas (CO_2e)	100,000	548,000
Carbon Monoxide (CO)	100	548
Oxides of Nitrogen (NO_X)	25	137
Volatile Organic Compounds (VOCs)	25	137
Oxides of Sulfur (SO_X)	25	137
Particulate Matter (PM_{10})	15	82
Particulate Matter ($PM_{2.5}$)	12	65
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3

3.0 EMISSIONS CALCULATION APPROACH AND RESULTS

Air pollutant emissions associated with the project would occur over the short term (i.e., 7 to 8 months) from decommissioning related construction activities including fugitive dust from decommissioning activities, mobile source emissions, travel on paved and unpaved roads, and emissions from equipment exhaust. Decommissioning activities would produce combustion emissions from construction equipment engines, portable generators, and motor vehicles transporting the construction crew and materials. Exhaust emissions from decommissioning activities would vary daily as activity levels change. Emissions quantification related to these decommissioning activities is necessary for comparison to the MDAQMD significance thresholds. In addition, the emissions documentation must include the quantification methodology used, including emission factors, emission factors sources, assumptions, and sample calculations where necessary. Because the emission calculation tool CalEEMod was used, the emissions calculation assumption section presents the general assumptions for the specific inputs and settings used for the air quality analysis.

The Project Owner's decommissioning schedule and anticipated construction equipment and vehicles were used to determine emissions. The construction will occur in the following four main phases/stages:

- Mobilization;
- Heat Transfer Fluid (HTF) Removal and De-Energize Verification;
- Mirror Farm Demolition; and
- Power Generation Facility Demolition.

A summary of the decommissioning phases and anticipated duration are provided in Table 4. A summary of equipment used in the analysis for each decommissioning phase is provided in Tables 5, 6, and 7.

Table 4. Decommissioning Schedule

Phase	Duration (days)
Mobilization	10
HTF Removal and De-energize	9
Mirror Farm Removal	90
Power Generation Facility Demolition	66

Table 5. Decommissioning Construction Equipment Assumptions

Decommissioning Phase	Equipment				
	Equipment Type	Quantity	Usage Hours/Day	No. Days	Equipment Size (hp)
Mobilization	Mobile Shears Backhoe	5	8	10	358
	Excavators	6	8	10	158
	Wheel Loaders	4	8	10	203
	Skid Steer Loaders	4	8	10	65
	Bulldozers	4	8	10	247
	Water Trucks	5	8	10	402
	Pick-up/Crew Trucks	10	1	10	402
	Semi-truck	24	2	10	402
	Portable Generators	5	8	10	84

Decommissioning Phase	Equipment				
	Equipment Type	Quantity	Usage Hours/Day	No. Days	Equipment Size (hp)
HTF Removal and De-energize	Mobile Shears Backhoe	5	10	9	358
	Excavators	7	8	9	158
	Wheel Loaders	4	8	9	203
	Skid Steer Loaders	5	8	9	65
	Bulldozers	4	8	9	247
	Water Trucks	5	8	9	402
	Pick-up/Crew Trucks	24	1	9	402
	Semi-truck	8	2	9	402
	Portable Generators	5	8	9	84
Mirror Farm Removal	Mobile Shears Backhoe	5	8	90	358
	Excavators	7	8	90	158
	Wheel Loaders	4	8	90	203
	Skid Steer Loaders	5	8	90	65
	Bulldozers	4	8	90	247
	Water Trucks	5	8	90	402
	Pick-up/Crew Trucks	24	1	90	402
	Semi-truck	25	2	90	402
	Portable Generators	5	8	90	84
Power Generation Facility Demolition	Mobile Shears Backhoe	3	8	66	358
	Excavators	4	8	66	158
	Wheel Loaders	2	8	66	203
	Skid Steer Loaders	3	8	66	65
	Bulldozers	2	8	66	247
	Water Trucks	5	8	66	402
	Pick-up/Crew Trucks	24	1	66	402
	Semi-truck	7	2	66	402
	Portable Generators	5	8	66	84
	Crushing/Proc. Equipment	3	8	66	85

Table 6. Summary of Worker Trips per Day

Decommissioning Phase	No. One-way Trips/Day	No. Days Total	Average One-way Travel Distance (Miles)
Mobilization	30	10	40 (Victorville)
HTF Removal and De-energize	50	9	40 (Victorville)
Mirror Farm Removal	125	90	40 (Victorville)
Power Generation Facility Demolition	125	66	40 (Victorville)

Table 7. Summary of Haul Trips per Day

Decommissioning Phase	No. Vehicles	No. One-way Trips/Day	No. Days Total	Average One-way Travel Distance (Miles)
Mobilization	24	50	10	75
HTF Removal and De-energize	7	16	9	180
Mirror Farm Removal	25	30	90	180
Power Generation Facility Demolition	7	28	66	180

Concrete crushing emissions were also calculated using USEPA's AP-42 Section 11.19.

3.1 EMISSION CALCULATION ASSUMPTIONS

3.1.1 On-Road Equipment Assumptions

1. Trip lengths were adjusted to reflect that trips would be between the SEGS III-VII facilities and various landfill facility, recycling facility, and hazardous waste facility locations.
2. Exhaust emissions for on-road equipment were calculated using CalEEMod for year 2021.
3. All on-road construction equipment emissions were determined using on-road emission factors; none were estimated using off-road emission factors.
4. Fugitive dust emissions were estimated for both paved roads and unpaved roads, where applicable.

A summary of on-road equipment and distances are provided in Tables 5, 6, and 7.

3.1.2 Off-Road Equipment Assumptions

1. Exhaust emissions were calculated using the CalEEMod for year 2021.
2. Fugitive dust emissions were estimated for grading activities and truck loading using the CalEEMod.
3. Concrete crushing fugitive dust emissions were calculated based on the information from the USEPA document, *AP-42 Compilation of the Air Pollutant Emission Factors,* Final Section 11.19.2 (Crushed Stone Processing and Pulverized Mineral Processing), updated August 2004. All reference emission calculations are provided in the footnotes of the spreadsheet provided in Attachment B of this analysis. The specific construction equipment list was obtained from the Project Owner.

A list of the types, sizes and quantity of construction equipment is provided in Table 5.

3.1.3 Construction Information and Assumptions

Construction-related emissions are based on the following:

1. The site total acreage inside the proposed fence-line is approximately 1,019 acres. The maximum acreage to be disturbed in any single stage is approximately 780 acres.
2. Mobilization of the construction equipment may occur in the open spaces of the shared facilities area. Equipment and vehicle travels may also occur within the 1,019-acre project site and the shared facilities area during the decommissioning period.
3. Construction activity is expected to last for a total of 7-8 months.

3.1.4 Fugitive Dust

Fugitive dust emissions from the decommissioning activities will result from:

1. Dust entrained during mobilization and decommissioning at the construction site;
2. Dust entrained during off-site travel on paved and unpaved surfaces; and
3. Dust entrained during recycled concrete loading, crushing, and unloading operations.

3.1.5 Combustion

Combustion emissions during construction will result from:

1. Exhaust from the diesel construction equipment used for mobilization and demolition of on-site structures;

2. Exhaust from water trucks used to control construction dust emissions;
3. Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the project site;
4. Exhaust from diesel trucks used to deliver metals, glass, concrete, and HTF supplies to the construction recycling, and landfill sites; and
5. Exhaust from automobiles used by workers to commute to the project site.

To determine the potential worst-case daily construction impacts, exhaust and dust emission rates have been evaluated for each source of emissions. Worst-case daily dust emissions are expected to occur during the power generation facility generation decommissioning. The worst-case daily exhaust emissions are expected to occur during mirror farm removal during the truck hauling of materials to recycling centers and landfill sites. Daily emissions are based on the maximum equipment mix and use rates during the peak construction day. Annual emissions are derived from the daily values using the estimated construction time frame.

3.1.6 Construction Emissions Management

Prior to the issuance of decommissioning permits or approvals, the Project Owner is required to develop a Dust Control Plan (DCP) in accordance with the requirements of MDAQMD Rule 403.2. The DCP will comply with MDAQMD rules to control fugitive dust by addressing objectives, key contacts, roles and responsibilities, dust sources, and control measures. The DCP follows control strategies required by the MDAQMD's 2017 *Dust Control Plan Guidance Document* (MDAQMD 2017). An analysis of construction emissions is presented in Attachment B. This analysis incorporates the following mitigation measures or control strategies as required by the MDAQMD's *Dust Control Plan Guidance Document* and the DCP:

- The Project Owner will have an on-site construction mitigation manager who will be responsible for the implementation and compliance of the construction mitigation program. Documentation of ongoing implementation and compliance with the proposed construction control strategies will be provided on a periodic basis.
- All unpaved roads and disturbed areas in the project and laydown areas will be watered as frequently as necessary to control fugitive dust. Watering may be reduced or eliminated during periods of precipitation.
- On-site vehicle speeds will be limited to 15 miles per hour on unpaved areas within the project site.
- The project site entrance(s) will be posted with visible speed limit signs.
- All construction equipment vehicle tires will be inspected and cleaned as necessary to be free of dirt prior to leaving the construction site via paved roadways.
- Gravel ramps will be provided at the tire cleaning area.
- All unpaved exits from the construction site will be graveled or treated to reduce track-out to public roadways.
- All construction vehicles will enter the project site through the treated entrance roadways, unless an alternative route has been provided.
- The first 500 feet of any public roadway exiting the construction site will be cleaned on a periodic basis (or less during periods of precipitation), using wet sweepers or air-filtered dry vacuum sweepers, when construction activity occurs or on any day when dirt or runoff from the construction site is visible on the public roadways.
- Any soil storage piles and/or disturbed areas that remain inactive for longer than 10 days will be covered or shall be treated with appropriate dust suppressant compounds.
- All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions will be covered, or the materials shall be sufficiently wetted

and loaded onto the trucks in a manner to minimize fugitive dust emissions. A minimum freeboard height of two feet will be required on all bulk materials transport.

- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition will remain in place until the soil is stabilized or permanently covered with vegetation.

To reduce exhaust emissions from construction equipment, the Project Owner is proposing the following:

- The Project Owner will work with the construction contractor to utilize USEPA/ California Air Resources Board (ARB) Tier IV engine compliant equipment.
- Ensure periodic maintenance and inspections per the manufacturers' specifications.
- Reduce idling time through equipment and construction scheduling.
- Use ultra-low sulfur diesel fuels (<=15 ppmw S).

Based on the temporary nature and the time frame for decommissioning, these measures will reduce construction emissions and impacts to levels that are in compliance with the MDAQMD air quality regulations. Use of these emission control strategies will ensure that the site does not cause any violations of existing air quality standards as a result of construction-related activities. Attachment B presents the evaluation of construction-related emissions.

3.1.7 Emissions Modeling Results

The annual unmitigated and mitigated CalEEMod emissions modeling results are presented in Table 8. The results demonstrate that mitigated emissions are below the MDAQMD significance thresholds for all pollutants.

Table 8. Estimated Maximum Annual Construction Criteria Air Pollutant Emissions

Maximum Annual	Emissions (tons per year)						
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	$CO2_e$
Unmitigated	1.7	17.2	12.1	0.04	3.3	1.7	3,872
Mitigated	1.2	10.7	13.5	0.04	2.0	0.9	3,872
MDAQMD Threshold	*25*	*25*	*100*	*25*	*15*	*12*	*100,000*
Below Threshold?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

The daily unmitigated and mitigated CalEEMod emissions modeling results are presented in Table 9. The results demonstrate that mitigated emissions are below the MDAQMD significance thresholds for all pollutants.

Table 9. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Maximum Daily	Emissions (lbs/day)						
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	$CO2_e$
Unmitigated	22.5	221.4	154.7	0.5	48.3	23.6	53,936
Mitigated	15.0	135.2	174.3	0.5	25.9	12.1	53,936
MDAQMD Threshold	*137*	*137*	*548*	*137*	*82*	*65*	*548,000*
Below Threshold?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

4.0 REFERENCES CITED

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Attachment A. Detailed CalEEMod Output

SEGS III-VII Decommissioning

Kern-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1,019.00	User Defined Unit	1,019.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Annual

Project Characteristics -

Land Use - 1,019-acre fenced area

Construction Phase - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Trips and VMT - Provided by applicant

Grading - Provided by applicant

Construction Off-road Equipment Mitigation - Tier 4 engines in all diesel equipment (not including generators and trucks)

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	0	150000
tblAreaCoating	Area_Nonresidential_Interior	0	450000
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	24.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	17.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	18.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	15,500.00	9.00

tblConstructionPhase	NumDays	15,500.00	90.00
tblConstructionPhase	NumDays	15,500.00	66.00
tblConstructionPhase	NumDays	6,000.00	10.00
tblGrading	AcresOfGrading	0.00	780.00
tblGrading	AcresOfGrading	0.00	15.00
tblGrading	MaterialExported	0.00	160,000.00
tblLandUse	LotAcreage	0.00	1,019.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	8.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		Co-generation Demolition

tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	75.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	500.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,800.00
tblTripsAndVMT	HaulingTripNumber	15,820.00	1,400.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripNumber	168.00	30.00
tblTripsAndVMT	WorkerTripNumber	168.00	50.00
tblTripsAndVMT	WorkerTripNumber	210.00	125.00
tblTripsAndVMT	WorkerTripNumber	145.00	125.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	1.7432	17.2172	12.0604	0.0430	2.7150	0.6255	3.3405	1.1419	0.5834	1.7253	0.0000	3,852.9630	3,852.9630	0.7718	0.0000	3,872.2586
Maximum	**1.7432**	**17.2172**	**12.0604**	**0.0430**	**2.7150**	**0.6255**	**3.3405**	**1.1419**	**0.5834**	**1.7253**	**0.0000**	**3,852.9630**	**3,852.9630**	**0.7718**	**0.0000**	**3,872.2586**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	1.1597	10.6993	13.4919	0.0430	1.5374	0.3138	1.8511	0.5990	0.2966	0.8956	0.0000	3,852.9600	3,852.9600	0.7718	0.0000	3,872.2555
Maximum	**1.1597**	**10.6993**	**13.4919**	**0.0430**	**1.5374**	**0.3138**	**1.8511**	**0.5990**	**0.2966**	**0.8956**	**0.0000**	**3,852.9600**	**3,852.9600**	**0.7718**	**0.0000**	**3,872.2555**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**33.48**	**37.86**	**-11.87**	**0.00**	**43.38**	**49.84**	**44.59**	**47.54**	**49.16**	**48.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2021	7-31-2021	7.7078	4.6368
2	8-1-2021	9-30-2021	5.2727	3.2301
		Highest	7.7078	4.6368

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3485	9.0000e-005	9.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0194
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3485**	**9.0000e-005**	**9.3800e-003**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0182**	**0.0182**	**5.0000e-005**	**0.0000**	**0.0194**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3485	9.0000e-005	9.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0194
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3485**	**9.0000e-005**	**9.3800e-003**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0182**	**0.0182**	**5.0000e-005**	**0.0000**	**0.0194**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	5/1/2021	5/14/2021	5	10	
2	HTF Removal De-energize	Grading	5/15/2021	5/27/2021	5	9	
3	Mirror Farm Removal	Grading	5/28/2021	9/30/2021	5	90	
4	Power Generation Demolition	Grading	10/1/2021	12/31/2021	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization	Excavators	6	8.00	158	0.38
Mobilization	Generator Sets	5	8.00	84	0.74
Mobilization	Off-Highway Trucks	10	1.00	402	0.38
Mobilization	Off-Highway Trucks	5	8.00	402	0.38
Mobilization	Off-Highway Trucks	24	2.00	402	0.38
Mobilization	Rubber Tired Dozers	4	8.00	247	0.40
Mobilization	Rubber Tired Loaders	4	8.00	203	0.36
Mobilization	Skid Steer Loaders	4	8.00	65	0.37
Mobilization	Tractors/Loaders/Backhoes	5	8.00	358	0.37
HTF Removal De-energize	Excavators	7	8.00	158	0.38
HTF Removal De-energize	Generator Sets	5	8.00	84	0.74
HTF Removal De-energize	Off-Highway Trucks	8	2.00	402	0.38

HTF Removal De-energize	Off-Highway Trucks	5	8.00	402	0.38
HTF Removal De-energize	Off-Highway Trucks	24	1.00	402	0.38
HTF Removal De-energize	Rubber Tired Dozers	4	8.00	247	0.40
HTF Removal De-energize	Rubber Tired Loaders	4	8.00	203	0.36
HTF Removal De-energize	Skid Steer Loaders	5	8.00	65	0.37
HTF Removal De-energize	Tractors/Loaders/Backhoes	5	8.00	358	0.37
Mirror Farm Removal	Excavators	7	8.00	158	0.38
Mirror Farm Removal	Generator Sets	5	8.00	84	0.74
Mirror Farm Removal	Off-Highway Trucks	24	1.00	402	0.38
Mirror Farm Removal	Off-Highway Trucks	5	8.00	402	0.38
Mirror Farm Removal	Off-Highway Trucks	25	2.00	402	0.38
Mirror Farm Removal	Rubber Tired Dozers	4	8.00	247	0.40
Mirror Farm Removal	Rubber Tired Loaders	4	8.00	203	0.36
Mirror Farm Removal	Skid Steer Loaders	5	8.00	65	0.37
Mirror Farm Removal	Tractors/Loaders/Backhoes	5	8.00	358	0.37
Power Generation Demolition	Crushing/Proc. Equipment	3	8.00	85	0.78
Power Generation Demolition	Excavators	4	8.00	158	0.38
Power Generation Demolition	Generator Sets	5	8.00	84	0.74
Power Generation Demolition	Off-Highway Trucks	7	2.00	402	0.38
Power Generation Demolition	Off-Highway Trucks	5	8.00	402	0.38
Power Generation Demolition	Off-Highway Trucks	24	1.00	402	0.38
Power Generation Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Power Generation Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Power Generation Demolition	Skid Steer Loaders	3	8.00	65	0.37
Power Generation Demolition	Tractors/Loaders/Backhoes	3	8.00	358	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization	67	30.00	0.00	500.00	40.00	7.30	75.00	LD_Mix	HDT_Mix	HHDT
HTF Removal De-energize	67	50.00	0.00	100.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT
Mirror Farm Removal	84	125.00	0.00	1,800.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT
Power Generation Demolition	58	125.00	0.00	1,400.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Mobilization - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1204	0.0000	0.1204	0.0662	0.0000	0.0662	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0927	0.8866	0.6299	1.7500e-003		0.0369	0.0369		0.0343	0.0343	0.0000	153.2745	153.2745	0.0457	0.0000	154.4176
Total	**0.0927**	**0.8866**	**0.6299**	**1.7500e-003**	**0.1204**	**0.0369**	**0.1574**	**0.0662**	**0.0343**	**0.1005**	**0.0000**	**153.2745**	**153.2745**	**0.0457**	**0.0000**	**154.4176**

3.2 Mobilization - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.4900e-003	0.1664	0.0289	6.5000e-004	0.0162	7.0000e-004	0.0169	4.4400e-003	6.7000e-004	5.1100e-003	0.0000	61.7034	61.7034	1.3000e-003	0.0000	61.7359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	1.1700e-003	0.0113	4.0000e-005	4.4700e-003	3.0000e-005	4.5000e-003	1.1900e-003	3.0000e-005	1.2100e-003	0.0000	3.8813	3.8813	9.0000e-005	0.0000	3.8834
Total	**7.0600e-003**	**0.1675**	**0.0402**	**6.9000e-004**	**0.0206**	**7.3000e-004**	**0.0214**	**5.6300e-003**	**7.0000e-004**	**6.3200e-003**	**0.0000**	**65.5847**	**65.5847**	**1.3900e-003**	**0.0000**	**65.6193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0542	0.0000	0.0542	0.0298	0.0000	0.0298	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0561	0.4640	0.7237	1.7500e-003		0.0173	0.0173		0.0164	0.0164	0.0000	153.2743	153.2743	0.0457	0.0000	154.4174
Total	**0.0561**	**0.4640**	**0.7237**	**1.7500e-003**	**0.0542**	**0.0173**	**0.0715**	**0.0298**	**0.0164**	**0.0461**	**0.0000**	**153.2743**	**153.2743**	**0.0457**	**0.0000**	**154.4174**

3.2 Mobilization - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.4900e-003	0.1664	0.0289	6.5000e-004	0.0162	7.0000e-004	0.0169	4.4400e-003	6.7000e-004	5.1100e-003	0.0000	61.7034	61.7034	1.3000e-003	0.0000	61.7359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	1.1700e-003	0.0113	4.0000e-005	4.4700e-003	3.0000e-005	4.5000e-003	1.1900e-003	3.0000e-005	1.2100e-003	0.0000	3.8813	3.8813	9.0000e-005	0.0000	3.8834
Total	**7.0600e-003**	**0.1675**	**0.0402**	**6.9000e-004**	**0.0206**	**7.3000e-004**	**0.0214**	**5.6300e-003**	**7.0000e-004**	**6.3200e-003**	**0.0000**	**65.5847**	**65.5847**	**1.3900e-003**	**0.0000**	**65.6193**

3.3 HTF Removal De-energize - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1084	0.0000	0.1084	0.0596	0.0000	0.0596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0787	0.7589	0.5514	1.4700e-003		0.0319	0.0319		0.0297	0.0297	0.0000	129.0628	129.0628	0.0383	0.0000	130.0197
Total	**0.0787**	**0.7589**	**0.5514**	**1.4700e-003**	**0.1084**	**0.0319**	**0.1403**	**0.0596**	**0.0297**	**0.0893**	**0.0000**	**129.0628**	**129.0628**	**0.0383**	**0.0000**	**130.0197**

3.3 HTF Removal De-energize - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4900e-003	0.0726	0.0132	3.0000e-004	7.7500e-003	3.3000e-004	8.0800e-003	2.1300e-003	3.2000e-004	2.4500e-003	0.0000	28.6740	28.6740	3.6000e-004	0.0000	28.6830
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3600e-003	1.7500e-003	0.0170	6.0000e-005	6.7100e-003	4.0000e-005	6.7500e-003	1.7800e-003	4.0000e-005	1.8200e-003	0.0000	5.8219	5.8219	1.3000e-004	0.0000	5.8251
Total	**4.8500e-003**	**0.0744**	**0.0301**	**3.6000e-004**	**0.0145**	**3.7000e-004**	**0.0148**	**3.9100e-003**	**3.6000e-004**	**4.2700e-003**	**0.0000**	**34.4959**	**34.4959**	**4.9000e-004**	**0.0000**	**34.5081**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0488	0.0000	0.0488	0.0268	0.0000	0.0268	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0449	0.3708	0.6395	1.4700e-003		0.0137	0.0137		0.0130	0.0130	0.0000	129.0626	129.0626	0.0383	0.0000	130.0195
Total	**0.0449**	**0.3708**	**0.6395**	**1.4700e-003**	**0.0488**	**0.0137**	**0.0624**	**0.0268**	**0.0130**	**0.0398**	**0.0000**	**129.0626**	**129.0626**	**0.0383**	**0.0000**	**130.0195**

3.3 HTF Removal De-energize - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4900e-003	0.0726	0.0132	3.0000e-004	7.7500e-003	3.3000e-004	8.0800e-003	2.1300e-003	3.2000e-004	2.4500e-003	0.0000	28.6740	28.6740	3.6000e-004	0.0000	28.6830
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3600e-003	1.7500e-003	0.0170	6.0000e-005	6.7100e-003	4.0000e-005	6.7500e-003	1.7800e-003	4.0000e-005	1.8200e-003	0.0000	5.8219	5.8219	1.3000e-004	0.0000	5.8251
Total	**4.8500e-003**	**0.0744**	**0.0301**	**3.6000e-004**	**0.0145**	**3.7000e-004**	**0.0148**	**3.9100e-003**	**3.6000e-004**	**4.2700e-003**	**0.0000**	**34.4959**	**34.4959**	**4.9000e-004**	**0.0000**	**34.5081**

3.4 Mirror Farm Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4976	0.0000	1.4976	0.6405	0.0000	0.6405	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.9025	8.5955	6.2034	0.0173		0.3563	0.3563		0.3308	0.3308	0.0000	1,512.4501	1,512.4501	0.4545	0.0000	1,523.8130
Total	**0.9025**	**8.5955**	**6.2034**	**0.0173**	**1.4976**	**0.3563**	**1.8539**	**0.6405**	**0.3308**	**0.9713**	**0.0000**	**1,512.4501**	**1,512.4501**	**0.4545**	**0.0000**	**1,523.8130**

3.4 Mirror Farm Removal - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0449	1.3068	0.2367	5.4200e-003	0.1395	6.0200e-003	0.1455	0.0383	5.7600e-003	0.0441	0.0000	516.1320	516.1320	6.4800e-003	0.0000	516.2938
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0589	0.0437	0.4243	1.6100e-003	0.1677	1.0600e-003	0.1688	0.0445	9.7000e-004	0.0455	0.0000	145.5477	145.5477	3.2300e-003	0.0000	145.6283
Total	**0.1038**	**1.3505**	**0.6611**	**7.0300e-003**	**0.3072**	**7.0800e-003**	**0.3143**	**0.0829**	**6.7300e-003**	**0.0896**	**0.0000**	**661.6796**	**661.6796**	**9.7100e-003**	**0.0000**	**661.9222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6739	0.0000	0.6739	0.2882	0.0000	0.2882	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5647	4.7143	7.0845	0.0173		0.1735	0.1735		0.1636	0.1636	0.0000	1,512.4483	1,512.4483	0.4545	0.0000	1,523.8112
Total	**0.5647**	**4.7143**	**7.0845**	**0.0173**	**0.6739**	**0.1735**	**0.8475**	**0.2882**	**0.1636**	**0.4519**	**0.0000**	**1,512.4483**	**1,512.4483**	**0.4545**	**0.0000**	**1,523.8112**

3.4 Mirror Farm Removal - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0449	1.3068	0.2367	5.4200e-003	0.1395	6.0200e-003	0.1455	0.0383	5.7600e-003	0.0441	0.0000	516.1320	516.1320	6.4800e-003	0.0000	516.2938
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0589	0.0437	0.4243	1.6100e-003	0.1677	1.0600e-003	0.1688	0.0445	9.7000e-004	0.0455	0.0000	145.5477	145.5477	3.2300e-003	0.0000	145.6283
Total	**0.1038**	**1.3505**	**0.6611**	**7.0300e-003**	**0.3072**	**7.0800e-003**	**0.3143**	**0.0829**	**6.7300e-003**	**0.0896**	**0.0000**	**661.6796**	**661.6796**	**9.7100e-003**	**0.0000**	**661.9222**

3.5 Co-generation Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4148	0.0000	0.4148	0.2208	0.0000	0.2208	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4755	4.3354	3.4490	9.0100e-003		0.1867	0.1867		0.1756	0.1756	0.0000	788.2446	788.2446	0.2143	0.0000	793.6027
Total	**0.4755**	**4.3354**	**3.4490**	**9.0100e-003**	**0.4148**	**0.1867**	**0.6014**	**0.2208**	**0.1756**	**0.3964**	**0.0000**	**788.2446**	**788.2446**	**0.2143**	**0.0000**	**793.6027**

3.5 Co-generation Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0349	1.0164	0.1841	4.2200e-003	0.1085	4.6800e-003	0.1132	0.0298	4.4800e-003	0.0343	0.0000	401.4360	401.4360	5.0400e-003	0.0000	401.5619
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0321	0.3112	1.1800e-003	0.1230	7.7000e-004	0.1238	0.0327	7.1000e-004	0.0334	0.0000	106.7350	106.7350	2.3700e-003	0.0000	106.7941
Total	**0.0781**	**1.0484**	**0.4953**	**5.4000e-003**	**0.2315**	**5.4500e-003**	**0.2370**	**0.0625**	**5.1900e-003**	**0.0677**	**0.0000**	**508.1709**	**508.1709**	**7.4100e-003**	**0.0000**	**508.3560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1866	0.0000	0.1866	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3002	2.5096	3.8175	9.0100e-003		0.0956	0.0956		0.0907	0.0907	0.0000	788.2437	788.2437	0.2143	0.0000	793.6018
Total	**0.3002**	**2.5096**	**3.8175**	**9.0100e-003**	**0.1866**	**0.0956**	**0.2823**	**0.0993**	**0.0907**	**0.1900**	**0.0000**	**788.2437**	**788.2437**	**0.2143**	**0.0000**	**793.6018**

3.5 Co-generation Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0349	1.0164	0.1841	4.2200e-003	0.1085	4.6800e-003	0.1132	0.0298	4.4800e-003	0.0343	0.0000	401.4360	401.4360	5.0400e-003	0.0000	401.5619
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0321	0.3112	1.1800e-003	0.1230	7.7000e-004	0.1238	0.0327	7.1000e-004	0.0334	0.0000	106.7350	106.7350	2.3700e-003	0.0000	106.7941
Total	**0.0781**	**1.0484**	**0.4953**	**5.4000e-003**	**0.2315**	**5.4500e-003**	**0.2370**	**0.0625**	**5.1900e-003**	**0.0677**	**0.0000**	**508.1709**	**508.1709**	**7.4100e-003**	**0.0000**	**508.3560**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3485	9.0000e-005	9.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0194
Unmitigated	0.3485	9.0000e-005	9.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0194

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.7000e-004	9.0000e-005	9.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0194
Total	**0.3485**	**9.0000e-005**	**9.3800e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0182**	**0.0182**	**5.0000e-005**	**0.0000**	**0.0194**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.7000e-004	9.0000e-005	9.3800e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0182	0.0182	5.0000e-005	0.0000	0.0194
Total	**0.3485**	**9.0000e-005**	**9.3800e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0182**	**0.0182**	**5.0000e-005**	**0.0000**	**0.0194**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SEGS III-VII Decommissioning

Kern-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1,019.00	User Defined Unit	1,019.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Summer

Project Characteristics -

Land Use - 1,019-acre fenced area

Construction Phase - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Trips and VMT - Provided by applicant

Grading - Provided by applicant

Construction Off-road Equipment Mitigation - Tier 4 engines in all diesel equipment (not including generators and trucks)

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	0	150000
tblAreaCoating	Area_Nonresidential_Interior	0	450000
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	24.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	17.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	18.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	15,500.00	9.00

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Summer

tblConstructionPhase	NumDays	15,500.00	90.00
tblConstructionPhase	NumDays	15,500.00	66.00
tblConstructionPhase	NumDays	6,000.00	10.00
tblGrading	AcresOfGrading	0.00	780.00
tblGrading	AcresOfGrading	0.00	15.00
tblGrading	MaterialExported	0.00	160,000.00
tblLandUse	LotAcreage	0.00	1,019.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	8.00

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		Co-generation Demolition

tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	75.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	500.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,800.00
tblTripsAndVMT	HaulingTripNumber	15,820.00	1,400.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripNumber	168.00	30.00
tblTripsAndVMT	WorkerTripNumber	168.00	50.00
tblTripsAndVMT	WorkerTripNumber	210.00	125.00
tblTripsAndVMT	WorkerTripNumber	145.00	125.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	22.4380	219.5854	154.7104	0.5436	40.2315	8.0750	48.3065	16.1052	7.5010	23.6062	0.0000	53,651.9552	53,651.9552	11.3788	0.0000	53,936.4246
Maximum	**22.4380**	**219.5854**	**154.7104**	**0.5436**	**40.2315**	**8.0750**	**48.3065**	**16.1052**	**7.5010**	**23.6062**	**0.0000**	**53,651.9552**	**53,651.9552**	**11.3788**	**0.0000**	**53,936.4246**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	14.9310	133.3364	174.2907	0.5436	21.9279	4.0135	25.9414	8.2769	3.7858	12.0627	0.0000	53,651.9552	53,651.9552	11.3788	0.0000	53,936.4246
Maximum	**14.9310**	**133.3364**	**174.2907**	**0.5436**	**21.9279**	**4.0135**	**25.9414**	**8.2769**	**3.7858**	**12.0627**	**0.0000**	**53,651.9552**	**53,651.9552**	**11.3788**	**0.0000**	**53,936.4246**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**33.46**	**39.28**	**-12.66**	**0.00**	**45.50**	**50.30**	**46.30**	**48.61**	**49.53**	**48.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**	**0.0000**	**0.2377**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**	**0.0000**	**0.2377**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	5/1/2021	5/14/2021	5	10	
2	HTF Removal De-energize	Grading	5/15/2021	5/27/2021	5	9	
3	Mirror Farm Removal	Grading	5/28/2021	9/30/2021	5	90	
4	Co-generation Demolition	Grading	10/1/2021	12/31/2021	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization	Excavators	6	8.00	158	0.38
Mobilization	Generator Sets	5	8.00	84	0.74
Mobilization	Off-Highway Trucks	10	1.00	402	0.38
Mobilization	Off-Highway Trucks	5	8.00	402	0.38
Mobilization	Off-Highway Trucks	24	2.00	402	0.38
Mobilization	Rubber Tired Dozers	4	8.00	247	0.40

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Mobilization	Rubber Tired Loaders	4	8.00	203	0.36
Mobilization	Skid Steer Loaders	4	8.00	65	0.37
Mobilization	Tractors/Loaders/Backhoes	5	8.00	358	0.37
HTF Removal De-energize	Excavators	7	8.00	158	0.38
HTF Removal De-energize	Generator Sets	5	8.00	84	0.74
HTF Removal De-energize	Off-Highway Trucks	8	2.00	402	0.38
HTF Removal De-energize	Off-Highway Trucks	5	8.00	402	0.38
HTF Removal De-energize	Off-Highway Trucks	24	1.00	402	0.38
HTF Removal De-energize	Rubber Tired Dozers	4	8.00	247	0.40
HTF Removal De-energize	Rubber Tired Loaders	4	8.00	203	0.36
HTF Removal De-energize	Skid Steer Loaders	5	8.00	65	0.37
HTF Removal De-energize	Tractors/Loaders/Backhoes	5	8.00	358	0.37
Mirror Farm Removal	Excavators	7	8.00	158	0.38
Mirror Farm Removal	Generator Sets	5	8.00	84	0.74
Mirror Farm Removal	Off-Highway Trucks	24	1.00	402	0.38
Mirror Farm Removal	Off-Highway Trucks	5	8.00	402	0.38
Mirror Farm Removal	Off-Highway Trucks	25	2.00	402	0.38
Mirror Farm Removal	Rubber Tired Dozers	4	8.00	247	0.40
Mirror Farm Removal	Rubber Tired Loaders	4	8.00	203	0.36
Mirror Farm Removal	Skid Steer Loaders	5	8.00	65	0.37
Mirror Farm Removal	Tractors/Loaders/Backhoes	5	8.00	358	0.37
Power Generation Demolition	Crushing/Proc. Equipment	3	8.00	85	0.78
Power Generation Demolition	Excavators	4	8.00	158	0.38
Power Generation Demolition	Generator Sets	5	8.00	84	0.74
Power Generation Demolition	Off-Highway Trucks	7	2.00	402	0.38
Power Generation Demolition	Off-Highway Trucks	5	8.00	402	0.38
Power Generation Demolition	Off-Highway Trucks	24	1.00	402	0.38

Power Generation Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Power Generation Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Power Generation Demolition	Skid Steer Loaders	3	8.00	65	0.37
Power Generation Demolition	Tractors/Loaders/Backhoes	3	8.00	358	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization	67	30.00	0.00	500.00	40.00	7.30	75.00	LD_Mix	HDT_Mix	HHDT
HTF Removal De-energize	67	50.00	0.00	100.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT
Mirror Farm Removal	84	125.00	0.00	1,800.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT
Power Generation Demolition	58	125.00	0.00	1,400.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Mobilization - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					24.0883	0.0000	24.0883	13.2409	0.0000	13.2409			0.0000			0.0000
Off-Road	18.5392	177.3272	125.9830	0.3497		7.3866	7.3866		6.8627	6.8627		33,791.2479	33,791.2479	10.0802		34,043.2537
Total	**18.5392**	**177.3272**	**125.9830**	**0.3497**	**24.0883**	**7.3866**	**31.4749**	**13.2409**	**6.8627**	**20.1036**		**33,791.2479**	**33,791.2479**	**10.0802**		**34,043.2537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0935	31.8993	5.6828	0.1301	3.2843	0.1405	3.4249	0.9007	0.1344	1.0351		13,646.0455	13,646.0455	0.2749		13,652.9186
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3330	0.2171	2.7890	9.4900e-003	0.9120	5.6300e-003	0.9176	0.2418	5.1800e-003	0.2470		946.3427	946.3427	0.0218		946.8886
Total	**1.4265**	**32.1164**	**8.4718**	**0.1396**	**4.1963**	**0.1462**	**4.3424**	**1.1425**	**0.1396**	**1.2821**		**14,592.3881**	**14,592.3881**	**0.2968**		**14,599.8072**

3.2 Mobilization - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					10.8398	0.0000	10.8398	5.9584	0.0000	5.9584			0.0000			0.0000
Off-Road	11.2225	92.7976	144.7376	0.3497		3.4585	3.4585		3.2693	3.2693	0.0000	33,791.2479	33,791.2479	10.0802		34,043.2537
Total	**11.2225**	**92.7976**	**144.7376**	**0.3497**	**10.8398**	**3.4585**	**14.2983**	**5.9584**	**3.2693**	**9.2277**	**0.0000**	**33,791.2479**	**33,791.2479**	**10.0802**		**34,043.2537**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0935	31.8993	5.6828	0.1301	3.2843	0.1405	3.4249	0.9007	0.1344	1.0351		13,646.0455	13,646.0455	0.2749		13,652.9186
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3330	0.2171	2.7890	9.4900e-003	0.9120	5.6300e-003	0.9176	0.2418	5.1800e-003	0.2470		946.3427	946.3427	0.0218		946.8886
Total	**1.4265**	**32.1164**	**8.4718**	**0.1396**	**4.1963**	**0.1462**	**4.3424**	**1.1425**	**0.1396**	**1.2821**		**14,592.3881**	**14,592.3881**	**0.2968**		**14,599.8072**

3.3 HTF Removal De-energize - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					24.0883	0.0000	24.0883	13.2409	0.0000	13.2409			0.0000			0.0000
Off-Road	17.4806	168.6415	122.5350	0.3272		7.0975	7.0975		6.5968	6.5968		31,614.9615	31,614.9615	9.3764		31,849.3709
Total	**17.4806**	**168.6415**	**122.5350**	**0.3272**	**24.0883**	**7.0975**	**31.1858**	**13.2409**	**6.5968**	**19.8377**		**31,614.9615**	**31,614.9615**	**9.3764**		**31,849.3709**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5527	15.3722	2.9089	0.0671	1.7513	0.0742	1.8255	0.4803	0.0710	0.5512		7,033.4314	7,033.4314	0.0856		7,035.5707
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5550	0.3618	4.6484	0.0158	1.5199	9.3800e-003	1.5293	0.4030	8.6400e-003	0.4116		1,577.2378	1,577.2378	0.0364		1,578.1477
Total	**1.1077**	**15.7340**	**7.5573**	**0.0829**	**3.2712**	**0.0836**	**3.3548**	**0.8832**	**0.0796**	**0.9629**		**8,610.6692**	**8,610.6692**	**0.1220**		**8,613.7184**

3.3 HTF Removal De-energize - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					10.8398	0.0000	10.8398	5.9584	0.0000	5.9584			0.0000			0.0000
Off-Road	9.9736	82.3926	142.1152	0.3272		3.0360	3.0360		2.8815	2.8815	0.0000	31,614.9615	31,614.9615	9.3764		31,849.3709
Total	**9.9736**	**82.3926**	**142.1152**	**0.3272**	**10.8398**	**3.0360**	**13.8757**	**5.9584**	**2.8815**	**8.8400**	**0.0000**	**31,614.9615**	**31,614.9615**	**9.3764**		**31,849.3709**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5527	15.3722	2.9089	0.0671	1.7513	0.0742	1.8255	0.4803	0.0710	0.5512		7,033.4314	7,033.4314	0.0856		7,035.5707
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5550	0.3618	4.6484	0.0158	1.5199	9.3800e-003	1.5293	0.4030	8.6400e-003	0.4116		1,577.2378	1,577.2378	0.0364		1,578.1477
Total	**1.1077**	**15.7340**	**7.5573**	**0.0829**	**3.2712**	**0.0836**	**3.3548**	**0.8832**	**0.0796**	**0.9629**		**8,610.6692**	**8,610.6692**	**0.1220**		**8,613.7184**

3.4 Mirror Farm Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					33.2794	0.0000	33.2794	14.2333	0.0000	14.2333			0.0000			0.0000
Off-Road	20.0557	191.0109	137.8535	0.3834		7.9180	7.9180		7.3516	7.3516		37,048.6843	37,048.6843	11.1338		37,327.0280
Total	**20.0557**	**191.0109**	**137.8535**	**0.3834**	**33.2794**	**7.9180**	**41.1973**	**14.2333**	**7.3516**	**21.5849**		**37,048.6843**	**37,048.6843**	**11.1338**		**37,327.0280**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9949	27.6700	5.2360	0.1207	3.1524	0.1336	3.2859	0.8645	0.1278	0.9922		12,660.1765	12,660.1765	0.1540		12,664.0273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3874	0.9045	11.6210	0.0395	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,943.0944	3,943.0944	0.0910		3,945.3693
Total	**2.3823**	**28.5745**	**16.8570**	**0.1602**	**6.9522**	**0.1570**	**7.1092**	**1.8719**	**0.1494**	**2.0213**		**16,603.2709**	**16,603.2709**	**0.2450**		**16,609.3966**

3.4 Mirror Farm Removal - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.9757	0.0000	14.9757	6.4050	0.0000	6.4050			0.0000			0.0000
Off-Road	12.5487	104.7619	157.4337	0.3834		3.8565	3.8565		3.6364	3.6364	0.0000	37,048.6842	37,048.6842	11.1338		37,327.0280
Total	**12.5487**	**104.7619**	**157.4337**	**0.3834**	**14.9757**	**3.8565**	**18.8322**	**6.4050**	**3.6364**	**10.0414**	**0.0000**	**37,048.6842**	**37,048.6842**	**11.1338**		**37,327.0280**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9949	27.6700	5.2360	0.1207	3.1524	0.1336	3.2859	0.8645	0.1278	0.9922		12,660.1765	12,660.1765	0.1540		12,664.0273
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3874	0.9045	11.6210	0.0395	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,943.0944	3,943.0944	0.0910		3,945.3693
Total	**2.3823**	**28.5745**	**16.8570**	**0.1602**	**6.9522**	**0.1570**	**7.1092**	**1.8719**	**0.1494**	**2.0213**		**16,603.2709**	**16,603.2709**	**0.2450**		**16,609.3966**

3.5 Co-generation Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.5682	0.0000	12.5682	6.6893	0.0000	6.6893			0.0000			0.0000
Off-Road	14.4102	131.3756	104.5160	0.2731		5.6569	5.6569		5.3214	5.3214		26,330.0279	26,330.0279	7.1592		26,509.0070
Total	**14.4102**	**131.3756**	**104.5160**	**0.2731**	**12.5682**	**5.6569**	**18.2252**	**6.6893**	**5.3214**	**12.0108**		**26,330.0279**	**26,330.0279**	**7.1592**		**26,509.0070**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0552	29.3469	5.5533	0.1280	3.3434	0.1417	3.4851	0.9169	0.1355	1.0524		13,427.4599	13,427.4599	0.1634		13,431.5441
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3874	0.9045	11.6210	0.0395	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,943.0944	3,943.0944	0.0910		3,945.3693
Total	**2.4426**	**30.2515**	**17.1743**	**0.1676**	**7.1432**	**0.1651**	**7.3083**	**1.9243**	**0.1571**	**2.0814**		**17,370.5543**	**17,370.5543**	**0.2544**		**17,376.9134**

3.5 Co-generation Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.6557	0.0000	5.6557	3.0102	0.0000	3.0102			0.0000			0.0000
Off-Road	9.0961	76.0472	115.6832	0.2731		2.8977	2.8977		2.7471	2.7471	0.0000	26,330.0279	26,330.0279	7.1592		26,509.0070
Total	**9.0961**	**76.0472**	**115.6832**	**0.2731**	**5.6557**	**2.8977**	**8.5534**	**3.0102**	**2.7471**	**5.7573**	**0.0000**	**26,330.0279**	**26,330.0279**	**7.1592**		**26,509.0070**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0552	29.3469	5.5533	0.1280	3.3434	0.1417	3.4851	0.9169	0.1355	1.0524		13,427.4599	13,427.4599	0.1634		13,431.5441
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.3874	0.9045	11.6210	0.0395	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,943.0944	3,943.0944	0.0910		3,945.3693
Total	**2.4426**	**30.2515**	**17.1743**	**0.1676**	**7.1432**	**0.1651**	**7.3083**	**1.9243**	**0.1571**	**2.0814**		**17,370.5543**	**17,370.5543**	**0.2544**		**17,376.9134**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Unmitigated	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.6900e-003	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**		**0.2377**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.6900e-003	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**		**0.2377**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

SEGS III-VII Decommissioning

Kern-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1,019.00	User Defined Unit	1,019.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	7			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Winter

Project Characteristics -

Land Use - 1,019-acre fenced area

Construction Phase - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Off-road Equipment - Provided by applicant

Trips and VMT - Provided by applicant

Grading - Provided by applicant

Construction Off-road Equipment Mitigation - Tier 4 engines in all diesel equipment (not including generators and trucks)

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	0	150000
tblAreaCoating	Area_Nonresidential_Interior	0	450000
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	24.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	17.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	18.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	15,500.00	9.00

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Winter

tblConstructionPhase	NumDays	15,500.00	90.00
tblConstructionPhase	NumDays	15,500.00	66.00
tblConstructionPhase	NumDays	6,000.00	10.00
tblGrading	AcresOfGrading	0.00	780.00
tblGrading	AcresOfGrading	0.00	15.00
tblGrading	MaterialExported	0.00	160,000.00
tblLandUse	LotAcreage	0.00	1,019.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	HorsePower	97.00	358.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	5.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	8.00

SEGS III-VII Decommissioning - Kern-Mojave Desert County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		Co-generation Demolition

tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblOffRoadEquipment	PhaseName		HTF Removal De-energize
tblOffRoadEquipment	PhaseName		Mirror Farm Removal
tblOffRoadEquipment	PhaseName		Co-generation Demolition
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	75.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripLength	20.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	500.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,800.00
tblTripsAndVMT	HaulingTripNumber	15,820.00	1,400.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripLength	10.80	40.00
tblTripsAndVMT	WorkerTripNumber	168.00	30.00
tblTripsAndVMT	WorkerTripNumber	168.00	50.00
tblTripsAndVMT	WorkerTripNumber	210.00	125.00
tblTripsAndVMT	WorkerTripNumber	145.00	125.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	22.5201	221.4356	151.9897	0.5380	40.2315	8.0753	48.3068	16.1052	7.5013	23.6065	0.0000	53,091.3153	53,091.3153	11.3738	0.0000	53,375.6592
Maximum	**22.5201**	**221.4356**	**151.9897**	**0.5380**	**40.2315**	**8.0753**	**48.3068**	**16.1052**	**7.5013**	**23.6065**	**0.0000**	**53,091.3153**	**53,091.3153**	**11.3738**	**0.0000**	**53,375.6592**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	15.0132	135.1866	171.5699	0.5380	21.9279	4.0138	25.9417	8.2769	3.7861	12.0630	0.0000	53,091.3153	53,091.3153	11.3738	0.0000	53,375.6592
Maximum	**15.0132**	**135.1866**	**171.5699**	**0.5380**	**21.9279**	**4.0138**	**25.9417**	**8.2769**	**3.7861**	**12.0630**	**0.0000**	**53,091.3153**	**53,091.3153**	**11.3738**	**0.0000**	**53,375.6592**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**33.33**	**38.95**	**-12.88**	**0.00**	**45.50**	**50.30**	**46.30**	**48.61**	**49.53**	**48.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**	**0.0000**	**0.2377**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**	**0.0000**	**3.7000e-004**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**	**0.0000**	**0.2377**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	5/1/2021	5/14/2021	5	10	
2	HTF Removal De-energize	Grading	5/15/2021	5/27/2021	5	9	
3	Mirror Farm Removal	Grading	5/28/2021	9/30/2021	5	90	
4	Co-generation Demolition	Grading	10/1/2021	12/31/2021	5	66	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization	Excavators	6	8.00	158	0.38
Mobilization	Generator Sets	5	8.00	84	0.74
Mobilization	Off-Highway Trucks	10	1.00	402	0.38
Mobilization	Off-Highway Trucks	5	8.00	402	0.38
Mobilization	Off-Highway Trucks	24	2.00	402	0.38
Mobilization	Rubber Tired Dozers	4	8.00	247	0.40

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Mobilization	Rubber Tired Loaders	4	8.00	203	0.36
Mobilization	Skid Steer Loaders	4	8.00	65	0.37
Mobilization	Tractors/Loaders/Backhoes	5	8.00	358	0.37
HTF Removal De-energize	Excavators	7	8.00	158	0.38
HTF Removal De-energize	Generator Sets	5	8.00	84	0.74
HTF Removal De-energize	Off-Highway Trucks	8	2.00	402	0.38
HTF Removal De-energize	Off-Highway Trucks	5	8.00	402	0.38
HTF Removal De-energize	Off-Highway Trucks	24	1.00	402	0.38
HTF Removal De-energize	Rubber Tired Dozers	4	8.00	247	0.40
HTF Removal De-energize	Rubber Tired Loaders	4	8.00	203	0.36
HTF Removal De-energize	Skid Steer Loaders	5	8.00	65	0.37
HTF Removal De-energize	Tractors/Loaders/Backhoes	5	8.00	358	0.37
Mirror Farm Removal	Excavators	7	8.00	158	0.38
Mirror Farm Removal	Generator Sets	5	8.00	84	0.74
Mirror Farm Removal	Off-Highway Trucks	24	1.00	402	0.38
Mirror Farm Removal	Off-Highway Trucks	5	8.00	402	0.38
Mirror Farm Removal	Off-Highway Trucks	25	2.00	402	0.38
Mirror Farm Removal	Rubber Tired Dozers	4	8.00	247	0.40
Mirror Farm Removal	Rubber Tired Loaders	4	8.00	203	0.36
Mirror Farm Removal	Skid Steer Loaders	5	8.00	65	0.37
Mirror Farm Removal	Tractors/Loaders/Backhoes	5	8.00	358	0.37
Power Generation Demolition	Crushing/Proc. Equipment	3	8.00	85	0.78
Power Generation Demolition	Excavators	4	8.00	158	0.38
Power Generation Demolition	Generator Sets	5	8.00	84	0.74
Power Generation Demolition	Off-Highway Trucks	7	2.00	402	0.38
Power Generation Demolition	Off-Highway Trucks	5	8.00	402	0.38
Power Generation Demolition	Off-Highway Trucks	24	1.00	402	0.38

Power Generation Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Power Generation Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Power Generation Demolition	Skid Steer Loaders	3	8.00	65	0.37
Power Generation Demolition	Tractors/Loaders/Backhoes	3	8.00	358	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization	67	30.00	0.00	500.00	40.00	7.30	75.00	LD_Mix	HDT_Mix	HHDT
HTF Removal De-energize	67	50.00	0.00	100.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT
Mirror Farm Removal	84	125.00	0.00	1,800.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT
Power Generation Demolition	58	125.00	0.00	1,400.00	40.00	7.30	180.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Mobilization - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					24.0883	0.0000	24.0883	13.2409	0.0000	13.2409			0.0000			0.0000
Off-Road	18.5392	177.3272	125.9830	0.3497		7.3866	7.3866		6.8627	6.8627		33,791.2479	33,791.2479	10.0802		34,043.2537
Total	**18.5392**	**177.3272**	**125.9830**	**0.3497**	**24.0883**	**7.3866**	**31.4749**	**13.2409**	**6.8627**	**20.1036**		**33,791.2479**	**33,791.2479**	**10.0802**		**34,043.2537**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1067	33.5656	5.9021	0.1291	3.2843	0.1413	3.4256	0.9007	0.1352	1.0359		13,544.2134	13,544.2134	0.3024		13,551.7739
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3515	0.2483	2.1204	8.2300e-003	0.9120	5.6300e-003	0.9176	0.2418	5.1800e-003	0.2470		821.5650	821.5650	0.0180		822.0155
Total	**1.4582**	**33.8138**	**8.0224**	**0.1374**	**4.1963**	**0.1469**	**4.3432**	**1.1425**	**0.1404**	**1.2829**		**14,365.7784**	**14,365.7784**	**0.3204**		**14,373.7894**

3.2 Mobilization - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					10.8398	0.0000	10.8398	5.9584	0.0000	5.9584			0.0000			0.0000
Off-Road	11.2225	92.7976	144.7376	0.3497		3.4585	3.4585		3.2693	3.2693	0.0000	33,791.2479	33,791.2479	10.0802		34,043.2537
Total	**11.2225**	**92.7976**	**144.7376**	**0.3497**	**10.8398**	**3.4585**	**14.2983**	**5.9584**	**3.2693**	**9.2277**	**0.0000**	**33,791.2479**	**33,791.2479**	**10.0802**		**34,043.2537**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1067	33.5656	5.9021	0.1291	3.2843	0.1413	3.4256	0.9007	0.1352	1.0359		13,544.2134	13,544.2134	0.3024		13,551.7739
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3515	0.2483	2.1204	8.2300e-003	0.9120	5.6300e-003	0.9176	0.2418	5.1800e-003	0.2470		821.5650	821.5650	0.0180		822.0155
Total	**1.4582**	**33.8138**	**8.0224**	**0.1374**	**4.1963**	**0.1469**	**4.3432**	**1.1425**	**0.1404**	**1.2829**		**14,365.7784**	**14,365.7784**	**0.3204**		**14,373.7894**

3.3 HTF Removal De-energize - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					24.0883	0.0000	24.0883	13.2409	0.0000	13.2409			0.0000			0.0000
Off-Road	17.4806	168.6415	122.5350	0.3272		7.0975	7.0975		6.5968	6.5968		31,614.9615	31,614.9615	9.3764		31,849.3709
Total	**17.4806**	**168.6415**	**122.5350**	**0.3272**	**24.0883**	**7.0975**	**31.1858**	**13.2409**	**6.5968**	**19.8377**		**31,614.9615**	**31,614.9615**	**9.3764**		**31,849.3709**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5555	16.3280	2.9452	0.0668	1.7513	0.0744	1.8257	0.4803	0.0712	0.5514		7,010.8020	7,010.8020	0.0916		7,013.0925
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5858	0.4138	3.5339	0.0137	1.5199	9.3800e-003	1.5293	0.4030	8.6400e-003	0.4116		1,369.2749	1,369.2749	0.0300		1,370.0259
Total	**1.1413**	**16.7417**	**6.4792**	**0.0806**	**3.2712**	**0.0838**	**3.3550**	**0.8832**	**0.0798**	**0.9630**		**8,380.0770**	**8,380.0770**	**0.1217**		**8,383.1184**

3.3 HTF Removal De-energize - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					10.8398	0.0000	10.8398	5.9584	0.0000	5.9584			0.0000			0.0000
Off-Road	9.9736	82.3926	142.1152	0.3272		3.0360	3.0360		2.8815	2.8815	0.0000	31,614.9615	31,614.9615	9.3764		31,849.3709
Total	**9.9736**	**82.3926**	**142.1152**	**0.3272**	**10.8398**	**3.0360**	**13.8757**	**5.9584**	**2.8815**	**8.8400**	**0.0000**	**31,614.9615**	**31,614.9615**	**9.3764**		**31,849.3709**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5555	16.3280	2.9452	0.0668	1.7513	0.0744	1.8257	0.4803	0.0712	0.5514		7,010.8020	7,010.8020	0.0916		7,013.0925
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5858	0.4138	3.5339	0.0137	1.5199	9.3800e-003	1.5293	0.4030	8.6400e-003	0.4116		1,369.2749	1,369.2749	0.0300		1,370.0259
Total	**1.1413**	**16.7417**	**6.4792**	**0.0806**	**3.2712**	**0.0838**	**3.3550**	**0.8832**	**0.0798**	**0.9630**		**8,380.0770**	**8,380.0770**	**0.1217**		**8,383.1184**

3.4 Mirror Farm Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					33.2794	0.0000	33.2794	14.2333	0.0000	14.2333			0.0000			0.0000
Off-Road	20.0557	191.0109	137.8535	0.3834		7.9180	7.9180		7.3516	7.3516		37,048.6843	37,048.6843	11.1338		37,327.0280
Total	**20.0557**	**191.0109**	**137.8535**	**0.3834**	**33.2794**	**7.9180**	**41.1973**	**14.2333**	**7.3516**	**21.5849**		**37,048.6843**	**37,048.6843**	**11.1338**		**37,327.0280**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9999	29.3903	5.3014	0.1203	3.1524	0.1339	3.2862	0.8645	0.1281	0.9925		12,619.4437	12,619.4437	0.1649		12,623.5665
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.4645	1.0344	8.8348	0.0343	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,423.1873	3,423.1873	0.0751		3,425.0647
Total	**2.4644**	**30.4248**	**14.1362**	**0.1546**	**6.9522**	**0.1573**	**7.1095**	**1.8719**	**0.1497**	**2.0216**		**16,042.6310**	**16,042.6310**	**0.2400**		**16,048.6312**

3.4 Mirror Farm Removal - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.9757	0.0000	14.9757	6.4050	0.0000	6.4050			0.0000			0.0000
Off-Road	12.5487	104.7619	157.4337	0.3834		3.8565	3.8565		3.6364	3.6364	0.0000	37,048.6842	37,048.6842	11.1338		37,327.0280
Total	**12.5487**	**104.7619**	**157.4337**	**0.3834**	**14.9757**	**3.8565**	**18.8322**	**6.4050**	**3.6364**	**10.0414**	**0.0000**	**37,048.6842**	**37,048.6842**	**11.1338**		**37,327.0280**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9999	29.3903	5.3014	0.1203	3.1524	0.1339	3.2862	0.8645	0.1281	0.9925		12,619.4437	12,619.4437	0.1649		12,623.5665
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.4645	1.0344	8.8348	0.0343	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,423.1873	3,423.1873	0.0751		3,425.0647
Total	**2.4644**	**30.4248**	**14.1362**	**0.1546**	**6.9522**	**0.1573**	**7.1095**	**1.8719**	**0.1497**	**2.0216**		**16,042.6310**	**16,042.6310**	**0.2400**		**16,048.6312**

3.5 Co-generation Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.5682	0.0000	12.5682	6.6893	0.0000	6.6893			0.0000			0.0000
Off-Road	14.4102	131.3756	104.5160	0.2731		5.6569	5.6569		5.3214	5.3214		26,330.0279	26,330.0279	7.1592		26,509.0070
Total	**14.4102**	**131.3756**	**104.5160**	**0.2731**	**12.5682**	**5.6569**	**18.2252**	**6.6893**	**5.3214**	**12.0108**		**26,330.0279**	**26,330.0279**	**7.1592**		**26,509.0070**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0605	31.1716	5.6227	0.1276	3.3434	0.1420	3.4854	0.9169	0.1358	1.0527		13,384.2585	13,384.2585	0.1749		13,388.6311
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.4645	1.0344	8.8348	0.0343	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,423.1873	3,423.1873	0.0751		3,425.0647
Total	**2.5250**	**32.2060**	**14.4575**	**0.1619**	**7.1432**	**0.1654**	**7.3087**	**1.9243**	**0.1574**	**2.0817**		**16,807.4458**	**16,807.4458**	**0.2500**		**16,813.6958**

3.5 Co-generation Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.6557	0.0000	5.6557	3.0102	0.0000	3.0102			0.0000			0.0000
Off-Road	9.0961	76.0472	115.6832	0.2731		2.8977	2.8977		2.7471	2.7471	0.0000	26,330.0279	26,330.0279	7.1592		26,509.0070
Total	**9.0961**	**76.0472**	**115.6832**	**0.2731**	**5.6557**	**2.8977**	**8.5534**	**3.0102**	**2.7471**	**5.7573**	**0.0000**	**26,330.0279**	**26,330.0279**	**7.1592**		**26,509.0070**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0605	31.1716	5.6227	0.1276	3.3434	0.1420	3.4854	0.9169	0.1358	1.0527		13,384.2585	13,384.2585	0.1749		13,388.6311
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.4645	1.0344	8.8348	0.0343	3.7998	0.0235	3.8233	1.0075	0.0216	1.0290		3,423.1873	3,423.1873	0.0751		3,425.0647
Total	**2.5250**	**32.2060**	**14.4575**	**0.1619**	**7.1432**	**0.1654**	**7.3087**	**1.9243**	**0.1574**	**2.0817**		**16,807.4458**	**16,807.4458**	**0.2500**		**16,813.6958**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Unmitigated	1.9145	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.6900e-003	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**		**0.2377**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.9048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.6900e-003	9.5000e-004	0.1042	1.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004		0.2230	0.2230	5.9000e-004		0.2377
Total	**1.9145**	**9.5000e-004**	**0.1042**	**1.0000e-005**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**		**0.2230**	**0.2230**	**5.9000e-004**		**0.2377**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment B. Additional Emissions Calculations

Crusher Equipment Data:

340 TPH Recycled Concrete Material
2720 TPD Recycled Concrete Material
300000 TPY Recycled Concrete Material
8 hr/day (Recycled Material Production)
528 hr/yr (Recycled Material Production)

Recycled Material Crusher Process Emissions

Equipment Category	Description	Feed Rate (TPH)	Emission Controls	PM10 EF (lb/ton)	PM2.5 EF (lb/ton	PM10 EF lb/hr	PM2.5 EF lb/hr	PM10 EF lb/day	PM2.5 EF lb/day	PM10 EF ton/yr	PM2.5 EF ton/yr	Notes	Source Type
Recycled Material Feeder Bin	Recycled Material Loaded to Feeder	340	Wet Suppression	1.60E-05	2.40E-06	5.44E-03	8.16E-04	4.35E-02	6.53E-03	1.44E-03	2.15E-04	1	Volume
Recycled Material Jaw Crusher	Recycled Material Crushing	340	Wet Suppression	5.40E-04	8.10E-05	1.84E-01	2.75E-02	1.47E+00	2.20E-01	4.85E-02	7.27E-03	2	Volume
Recycled Material Transfer Conveyor	Transfer Conveyor	170	Wet Suppression	4.60E-05	6.90E-06	7.82E-03	1.17E-03	6.26E-02	9.38E-03	2.06E-03	3.10E-04	2	Volume
Recycled Material Transfer Conveyor	Transfer Conveyor	170	Wet Suppression	4.60E-05	6.90E-06	7.82E-03	1.17E-03	6.26E-02	9.38E-03	2.06E-03	3.10E-04	2	Volume
Recycled Material Stacker Conveyor	Stacker Conveyor	170	Wet Suppression	4.60E-05	6.90E-06	7.82E-03	1.17E-03	6.26E-02	9.38E-03	2.06E-03	3.10E-04	2	Volume
Recycled Material Stacker Conveyor	Stacker Conveyor	170	Wet Suppression	4.60E-05	6.90E-06	7.82E-03	1.17E-03	6.26E-02	9.38E-03	2.06E-03	3.10E-04	2	Volume
Recycled Material 3-Deck Screen	Recycled Material Screening	340	Wet Suppression	7.40E-04	1.11E-04	2.52E-01	3.77E-02	2.01E+00	3.02E-01	6.64E-02	9.96E-03	2	Volume
							Total	**3.78**	**0.57**	**0.12**	**0.02**		

Notes:
1. Based on emission factor for truck unloading of fragmented stone to the feeder provided in Table 11.19.2-2., AP-42 5th Ed. Final Section 11.19.2 updated August 2004.
2. Based on controlled emission factors (with wet suppression) for applicable activity provided in Table 11.19.2-2 (Crushed Stone Processing and Pulverized Mineral Processing), AP-42 5th Ed. Final Section 11.19.2 updated August 2004. Since there was no data for PM4, the controlled emission factor for PM10 was used and scaled to PM4 using the ratio 0.15, provided in AP-42, Section 13.2.4, dated November 2006. The PM2.5 emission factors were calculated as follows:
Crusher: 5.4E-04 lbs/ton x 0.15 = 8.1E-05 lbs/ton
Screens: 7.4E-04 lbs/ton x 0.15 = 1.11E-04 lbs/ton.
Conveyors: 4.6E-05 lbs/ton x 0.15 = 6.90E-06 lbs/ton.

APPENDIX D: BIOLOGICAL SURVEY REPORT

TETRA TECH

January 29, 2021

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Project Manager, Environmental Services
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Subject: **Biological Report, SEGS III – VII Solar Project Site, San Bernardino County, California**

This report presents findings of the biological survey to support decommissioning of the existing Solar Energy Generating System (SEGS) III – VII thermal solar facility currently owned by NextEra Energy Operating Services as Agent for Luz Solar Partners III -VII, and the repowering of the site as a solar photovoltaic (PV) project by Resurgence Solar I, LLC, a subsidiary of NextEra Energy Resources, LLC, as the Resurgence Solar Project in San Bernardino County, California. The term "Project" herein refers to both the decommissioning of the existing site and the repowering of the site with solar PV. The purpose of the survey was to characterize the habitats and species present on the site and determine additional surveys that could be required, if any. This report summarizes the biological survey methods and results.

The Project site is located at 41100 U.S. Highway 395 in Boron, California, about 1 mile north of the town of Kramer Junction in San Bernardino County, California (Figure 1 [all figures are included in Attachment 1]). SEGS III-VII are shown in Figure 1 (Sites 3 through 7) and are located within five fenced areas on the site. The existing Project site is approximately 1,019 acres. The existing developed areas within the Project site are shown in Figure 1, which include the existing SEGS III-VII sites, structures and buildings, access roads, evaporation ponds, and staging areas.

The Project site is located on private land and is bounded to the east by U.S. Highway 395 and to the south by State Highway 58. The surrounding land is open space. The proposed Project would decommission and demolish the existing SEGS III-VII and repower SEGS III-VII with solar photovoltaic panels, a battery energy storage system, and supporting facilities within the footprint of the existing facility. New facilities that would be constructed within the existing facility footprint include solar arrays and inverter blocks, electrical collection system, battery energy storage system, switchyard, internal access roads, desert tortoise (*Gopherus agassizii*) fencing, and construction laydown yards. All work will occur within the existing developed areas of the Project site shown as Sites 3-7 on Figure 1.

METHODS

Literature Search

A literature search was completed to determine special-status plant and wildlife species that may occur within the Project site and surrounding area, which included the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2020) and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants (CNPS 2020). The site is located within the Saddleback Mountain quadrangle, therefore a search containing this quadrangle and the eight surrounding quadrangles was conducted to identify

species with the potential to occur. Special-status species are defined herein as plants and wildlife holding a status of sensitive, threatened, endangered, rare, or candidate as defined by CDFW, U.S. Fish and Wildlife Service (USFWS), CNPS, or the Bureau of Land Management. Other sources were also reviewed for biological resources information, including National Wetlands Inventory (NWI) data (USFWS 2020a), USFWS Critical Habitat data (USFWS 2020b), special-status species range maps, and aerial imagery. The special-status species presented in Table 1 are those with a potential to occur in the vicinity of the Project site or within the Project site based on regional occurrence and habitat present. The existing facilities (Sites 3 to 7 on Figure 1) are fenced and developed. A security fence also surrounds the entire facility. No native habitats occur within Sites 3 to 7 and soils within these sites are highly compacted.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Plants						
Canbya candida	white pygmy-poppy	None	None/4.2	Gravelly, sandy, and granitic substrates in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Elevations of 600 – 1,460 meters (m).	**Low.** This species was documented on and adjacent to the site in 1939 (CDFW 2020). While sandy soil and desert scrub habitat occur in the vicinity of the site, woodland habitats this rare plant would occur within are not in the immediate vicinity. Therefore, this species has a low potential to occur.	**Very Low.** This species was documented on and adjacent to the site in 1939 (CDFW 2020). The site no longer has woodland habitats this rare plant would occur within. Therefore, this species has a very low potential to occur.
Chorizanthe spinosa	Mojave spineflower	None	None/4.2	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and playas, sometimes with alkaline substrates. Elevations of 6 – 1,300 m.	**Low.** This species has not been documented within 10 miles from the site (CDFW 2020). Therefore, this species has a low potential to occur.	**Very Low.** This species has not been documented within 10 miles from the site (CDFW 2020). In addition, the Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.
Cymopterus deserticola	desert cymopterus	None	None/1B.2	Sandy substrates in Joshua tree woodland and Mojavean desert scrub. Elevations of 630 – 1,500 m.	**Moderate.** This species was documented 1 mile from the site in 2009 (CDFW 2020). Sandy soil and desert scrub habitat occur in the vicinity of the site. Therefore, this species has a moderate potential to occur.	**Very Low.** This species was documented 1 mile from the site in 2009 (CDFW 2020). The Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Delphinium recurvatum	recurved larkspur	None	None/1B.2	Alkaline substrates in chenopod scrub, cismontane woodland, and valley and foothill grassland. Elevations of 3 - 790 m.	**Low.** This species was documented 10 miles from the site in 1952 (CDFW 2020). Therefore, this species has a low potential to occur.	**Very Low.** This species was documented 10 miles from the site in 1952 (CDFW 2020). The Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.
Eremothera boothii ssp. *boothii*	Booth's evening-primrose	None	None/2B.3	Joshua tree woodland and pinyon and juniper woodland. Elevations of 815 – 2,400 m.	**Low.** This species was documented 6 miles from the site in 1988 (CDFW 2020). Woodland habitats this rare plant would occur within do not exist in the project vicinity. Therefore, this species has a low potential to occur.	**Very Low.** This species was documented 6 miles from the site in 1988 (CDFW 2020). The site does not contain woodland habitats this rare plant would occur within. Therefore, this species has a very low potential to occur.
Eriophyllum mohavense	Barstow woolly sunflower	None	None/1B.2	Chenopod scrub, Mojavean desert scrub, and playas. Elevations of 500 - 960 m.	**High.** This species was documented on and adjacent to the site in 1987, 1995, and 2011 (CDFW 2020). Desert scrub habitat occurs in the vicinity of the site. Therefore, this species has a high potential to occur.	**Very Low.** This species was documented on and adjacent to the site in 1987, 1995, and 2011 (CDFW 2020). However, the Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	None	None/2B.2	Sandy substrates in desert dunes, Great Basin scrub, and Sonoran desert scrub. Elevations of 700 – 1,615 m.	**Low.** This species was documented 8 miles from the site in 1977 and 2003 (CDFW 2020). The desert dune and Great Basin scrub habitats required for this species are not present in the vicinity of the site. Therefore, this species has a low potential to occur.	**Very Low.** This species was documented 8 miles from the site in 1977 and 2003 (CDFW 2020). The desert dune and Great Basin scrub habitats required for this species are not present on the site. Therefore, this species has a very low potential to occur.
Lycium torreyi	Torrey's box-thorn	None	None/4.2	Sandy and rocky substrates, washes, streambanks, and desert valleys in Mojavean desert scrub and Sonoran desert scrub. Elevations of 0 – 1,220 m.	**Low.** This species has not been documented within 10 miles from the site (CDFW 2020). Therefore, this species has a low potential to occur.	**Very Low.** This species has not been documented within 10 miles from the site (CDFW 2020). In addition, the Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.
Muilla coronata	crowned muilla	None	None/4.2	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Elevations of 670 – 1,960 m.	**Low.** This species has not been documented within 10 miles from the site (CDFW 2020). Woodland habitats this rare plant would occur within do not exist in the project vicinity. Therefore, this species has a low potential to occur.	**Very Low.** This species has not been documented within 10 miles from the site (CDFW 2020). The site does not contain woodland habitats this rare plant would occur within. Therefore, this species has a very low potential to occur.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Nemacladus gracilis	Slender nemacladus	None	None/4.3	Sandy or gravelly substrates in cismontane woodland and valley and foothill grassland. Elevations of 120 – 1,900 m.	**Low.** This species has not been documented within 10 miles from the site (CDFW 2020). The habitats required for this species do not occur in the project vicinity. Therefore, this species has a low potential to occur.	**Very Low.** This species has not been documented within 10 miles from the site (CDFW 2020). The habitats required for this species do not occur onsite. Therefore, this species has a very low potential to occur.
Pediomelum castoreum	Beaver Dam breadroot	None	None/1B.2	Sandy substrates, washes, and roadcuts in Joshua tree woodland and Mojavean desert scrub. Elevations of 610 – 1,525 m.	**Low.** This species has been documented 8 miles from the site in the 1900's (CDFW 2020). Therefore, this species has a low potential to occur.	**Very Low.** This species has been documented 8 miles from the site in the 1900's (CDFW 2020). The Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.
Yucca brevifolia	western Joshua tree	None	Candidate	Joshua tree woodland, montane chaparral, pinyon and juniper woodland, and Sonoran and Mojavean desert scrub. Elevations of 750-2200 m.	**Observed.** This species was observed in the buffer area during the Project-specific survey.	**Very Low.** This species was not observed in the Project site during the Project-specific survey. In addition, the Project site is developed and does not contain native habitats. Therefore, this species has a very low potential to occur.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Birds						
Aquila chrysaetos	golden eagle	None	None/FP, WL, BCC, S	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons and large trees in open areas provide nesting habitat.	**Moderate.** This species was documented 9 miles from the site in 1977 (CDFW 2020). Desert habitat in the vicinity of the site may provide foraging habitat. Therefore, this species has a moderate potential to occur.	**Moderate.** This species was documented 9 miles from the site in 1977 (CDFW 2020)Trees to the east and north of the northernmost evaporation pond could be used by nesting birds and raptors. Therefore, this species has a moderate potential to occur.
Athene cunicularia	burrowing owl	None	None/SSC, BCC, S	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Can occur in agricultural areas, pastures, roadsides, and other areas created by humans (pipes, etc.). Subterranean nester, dependent upon burrowing mammals.	**Observed.** One individual burrowing owl was observed occupying a burrow complex in the survey area, but outside of the Project site, during the Project-specific survey.	**Moderate.** A burrowing owl was observed occupying a burrow complex in the survey area, but outside of the Project site, during the Project-specific survey. Given the nearby observed burrowing owl, this species has a moderate potential to occur within the Project Site as a transient visitor.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Falco mexicanus	prairie falcon	None	None/WL, BCC	Inhabits dry, open terrain. Breeding sites are located on cliffs and rarely in trees.	**Moderate.** This species was documented within 1 mile from the site in 2006 (CDFW 2020). Desert habitat in the vicinity of the site may provide foraging habitat. Therefore, this species has a moderate potential to occur.	**Moderate.** A small amount of marginal disturbed Atriplex scrub habitat that occurs within the Project site may provide foraging habitat for this species. Trees to the east and north of the northernmost evaporation pond could be used by nesting birds and raptors. Therefore, this species has a moderate potential to occur.
Mammals						
Vulpes macrotis arsipus	desert kit fox	None	State Protected*	Flat, arid desert habitats such as creosote bush scrub, white bursage desert scrub, and mixed desert salt scrub.	**Moderate.** This species is not tracked in the CNDDB and no records were found in the literature review. However, habitat for this species occurs in the vicinity of the site. In addition, one burrow complex consisting of two holes that would be suitable for kit fox use was found in the survey area, but outside of the Project site during the Project-specific survey. Therefore, this species has a moderate potential to occur.	**Moderate.** Gaps and erosional features along the security fence could allow this species to access the Project site. This species could utilize the site for foraging and could occur on the Project site as a transient visitor. Therefore, this species has a moderate potential to occur.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Xerospermophilus mohavensis	Mohave ground squirrel	None	Threatened/ S	Open desert scrub, alkali scrub, Joshua tree woodland, and annual grasslands. Prefers sandy to gravely soils and avoids rocky areas. Nests in burrows.	**High.** This species was documented on and adjacent to the site in 1940, 1981, and 1987 (CDFW 2020), prior to the development of the existing onsite facilities. The CNDDB record of this species on the site is marked as possibly extirpated (no longer present) on the site (CDFW 2020). Sandy soil and desert scrub habitat occur in the project vicinity, and numerous small mammal burrows also occur. Therefore, this species has a high potential to occur.	**Low.** Given that the Project site is developed with no native habitats, and that the soils within the Project site are highly compacted, the potential for this species to occur is low..

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Reptiles						
Gopherus agassizii	desert tortoise	Threatened	Threatened	Occurs in almost every desert habitat. Requires friable soil for burrow and nest construction.	**High.** A CNDDB record of this species from 2004 was found on and adjacent to the site (CDFW 2020). However, the 2004 record represents an entire population area of approximately 1,700 square miles that spans Kern, Los Angeles, and San Bernardino Counties and numerous USGS quads (CDFW 2020). Given that the existing facility has been in place since 1987, it is very unlikely that this record represents a known occurrence of the species on the Project site. However, specific occurrences of the species have been documented approximately 2 miles (2002) and 3 miles (2017) from the site (CDFW 2020). Designated Critical Habitat for this species also occurs nearby to the north, south, and east of the site (USFWS 2020). Although this species or recent sign was not identified during the Project-specific survey, areas immediately adjacent to the site likely provide suitable habitat for desert tortoise.	**Low.** Given that the Project site is developed with no native habitats, fenced, and that the soils within the Project site are highly compacted, the potential for this species to occur is low.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Invertebrates						
Bombus crotchii	Crotch bumble bee	None	Candidate Endangered	Open grassland and scrub. Documented food plant genera include *Antirrhinum*, *Asclepias*, *Chaenactis*, *Clarkia*, *Dendromecon*, *Eriogonum*, *Eschscholzia*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia*. Nests underground and overwinters in soft soil or under leaf litter or other debris.	**Moderate.** This species was documented 5 miles from the site in 1966 (CDFW 2020). The site is within the current extent of occurrence of this species (Xerces Society 2018). In addition, soft, sandy soil occurs in the project vicinity which are suitable for underground nests and these areas may support floral resources for this species. Therefore, this species has a moderate potential to occur.	**Low.** This species was documented 5 miles from the site in 1966 (CDFW 2020). The Project site is within the current extent of occurrence of this species (Xerces Society 2018). However, the Project site is comprised of very compacted soils and lacks the soft, sandy soil suitable for underground nests. Therefore, this species has a low potential to occur.

Table 1: Special-status Species with Potential to Occur in or Adjacent to the Project Site

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur in the Vicinity	Potential to Occur in the Project Site
Bombus occidentalis	western bumble bee	None	Candidate Endangered	Meadows and grasslands with abundant floral resources. Documented food plant genera include *Cirsium*, *Eriogonum*, *Solidago*, "Aster", *Ceanothus*, *Centaurea*, and *Penstemon*. Nests in underground cavities or in above-ground locations such as logs.	**Low.** This species was documented 8 miles from the site in 1978 (CDFW 2020). While soft, sandy soil occurs in the vicinity of the site and these areas may support floral resources for this species, the site is outside the current extent of occurrence of this species (Xerces Society 2018). Therefore, this species has a low potential to occur.	**Low.** This species was documented 8 miles from the site in 1978 (CDFW 2020). Given that the site is developed and does not contain native habitats, and since the site is outside the current extent of occurrence of this species (Xerces Society 2018) this species has a low potential to occur.

Notes: *Desert kit fox is a fur-bearing mammal that is protected under Title 14, Chapter 5, Section 460 of the California Code of Regulations which prohibits take of the species at any time. Therefore, CDFW does not have a mechanism for take of the species by development Projects.

BCC USFWS Birds of Conservation Concern
FP CDFW Fully Protected
S BLM Sensitive Species
SSC CDFW Species of Special Concern
WL CDFW Watch List
CNPS Rank 1B Plants rare, threatened, or endangered in California and elsewhere.
CNPS Rank 2B Plants rare, threatened, or endangered in California but more common elsewhere.
CNPS Rank 4 Watch List: Plants of limited distribution.
0.2 Moderately threatened in California (20-80 percent of occurrences threatened).
0.3 Not very threatened in California (less than 20 percent of occurrences threatened).

Biological Survey

A biological survey was completed on December 10, 2020. The survey was conducted from 0900 to 1330 hours, with temperatures ranging from 46 to 68 degrees Fahrenheit, wind speeds ranging from 1-3 to 5-7 miles per hour, and cloud cover ranging from 75 to 85 percent. The survey area included the entire Project site and a 500-foot to 2,000-foot buffer around the site (Figure 1). The purpose of the survey was to characterize the habitats and species present. A qualified biologist with knowledge of the species that could occur on or in the vicinity of the Project site completed the survey. The biologist surveyed for desert tortoise individuals and their sign (e.g., burrows, scat, tracks) by performing meandering transects throughout the site. Any locations of tortoises and sign were planned to be recorded onto data sheets, photographed, and recorded with a Global Positioning System (GPS) unit. However, since the survey was performed in December 2020, the survey was conducted outside the spring (April and May) and fall (September and October) desert tortoise active periods. Therefore, the focus was on assessing the survey area for the potential to support desert tortoise by searching for burrows and sign.

The biologist also surveyed for other special-status species that have the potential to occur within the Project site, as determined during the literature search (Table 1). Any special-status species observed or detected during the survey were recorded on datasheets and documented using a GPS unit. A list of plant and wildlife species observed was also recorded. Vegetation communities and habitats were mapped. Any potential jurisdictional features were also verified in the field to the extent feasible. Binoculars were used in areas that were not accessible on foot.

RESULTS

Jurisdictional Features

Potential jurisdictional features are shown in Figure 2. The spatial data shown in the figure is from the NWI dataset (USFWS 2020a) and some of the features were identified during the field survey. All riverine features are located outside the area to be decommissioned. Three man-made evaporation ponds used by the Project are included in the NWI dataset.

Vegetation Mapping and Habitats

Vegetation communities within the Project site and buffer area were mapped. Results of the vegetation mapping are shown in Figure 3.

Habitat for special-status species was assessed during the survey and is described below in the context of the vegetation communities and Project features shown in Figure 3. No designated Critical Habitat occurs within the site (USFWS 2020b).

Project Site

The Project site only contained disturbed and developed areas. These areas contain staging areas, buildings, solar panels, roads, and other infrastructure such as water tanks. Soils in these areas were very compact and vegetation was nearly non-existent other than sparse prickly non-native Russian thistle (*Salsola tragus*) and non-native grasses. Almost no vegetation was present under the existing solar panels other than sparse prickly Russian thistle and non-native grasses. Within the interior developed portions of the site (disturbed/developed areas in Figure 3), existing structures and ornamental trees may provide habitat for nesting birds and raptors. The ornamental trees consisted of large pine trees (*Pinus* sp.) that line the north and east sides of the northernmost evaporation pond. Three evaporation ponds occur east of Sites 3 and 4 within the Project site. The evaporation ponds were lined with plastic and did not have standing water during the survey. The Project site was fenced but erosional features were sporadically present at the base of the

fence and it was evident that larger mammals have been accessing the interior of the site on occasion and could potentially be present within the site (Attachment 2, Photograph 6), which may include the desert kit fox (*Vulpes macrotis arsipus*). The desert kit fox can be opportunistic and has been known to occupy active and defunct solar facilities and could potentially be present within the Project site. Overall, the majority of the site was developed and was not suitable for special-status plants or wildlife besides those described above.

Area Outside Project Site

Table 2 describes the vegetation communities observed and their corresponding acreages that are present within the Project site. Representative photographs of the vegetation communities are included in Attachment 2. Areas of high habitat quality had no previous disturbance, areas of moderate quality had low to moderate levels of disturbance and invasive plants, and areas of low quality had a high level of disturbance and invasive plants.

Table 2: Vegetation Communities Outside of the Project Site

Vegetation Communities	Description
Atriplex Scrub	Dominated by allscale (*Atriplex polycarpa*). Other shrubs within this community included cheesebush (*Ambrosia salsola*) and burrobush (*Ambrosia dumosa*). Understory was dominated by various non-native grasses and red stemmed filaree (*Erodium cicutarium*). Areas of this community on the south, west, and north sides of the survey area were high quality habitat, while the east side near U.S. Highway 395 was lesser quality than the other areas.
Creosote Bush Scrub	Dominated by creosote bush (*Larrea tridentata*). Other shrubs within this community included allscale, cheesebush, and burrobush. Understory was dominated by various non-native grasses and red stemmed filaree. The majority of this community was outside the Project site but within the 500-foot buffer area. All areas of this community were high quality habitat.
Disturbed Atriplex Scrub	Similar plant composition to the undisturbed Atriplex scrub community but with signs of recent or historical disturbance, thereby lessening overall habitat quality. Areas of this community were low quality habitat.
Tamarisk Thicket	Dominated by non-native tamarisk (*Tamarix ramosissima*) but allscale was also present. Understory was dominated by various non-native grasses and red stemmed filaree.

A vegetated but disturbed man-made earthen bottom channel (disturbed Atriplex scrub in Figure 3) separates Sites 3-5 from Sites 6-7 and extends south along the west side of Site 3. This area is outside of the Project site. This channel may provide marginally suitable habitat for special-status species including nesting birds. White-tailed antelope ground squirrels (*Ammospermophilus leucurus)* were observed within this area, which indicates that it could also be used by the Mohave ground squirrel (*Xerospermophilus mohavensis*). Burrowing owls, desert kit fox, and desert tortoise can utilize also ground squirrel burrows. The presence of white-tailed antelope squirrels within this channel indicates that these other special-status species could in this area, which is outside of the Project site.

Additional areas outside the Project site predominantly consisted of Atriplex scrub with moderate to high habitat quality for special-status desert species and small areas of high-quality creosote bush scrub (Figure 3). Atriplex scrub provides suitable habitat for special-status desert species, including rare plants, Mohave ground squirrel, desert tortoise, burrowing owl (*Athene cunicularia*), and desert kit fox. Outside of the Project site, west of Site 7 is high quality, undisturbed Atriplex scrub habitat that transitioned to creosote bush scrub moving north. Winterfat (*Krascheninnikovia lanata*), a plant species often associated with Mohave ground squirrel habitat, was observed in

moderate to high numbers within undisturbed Atriplex scrub and creosote bush scrub habitats outside of the Project site.

Special-status Species Observations

Project Site
No special-status species were observed within the Project site.

Area Outside Project Site
Three western Joshua trees (*Yucca brevifolia*) were found south of Site 3. The locations of these trees are shown in Figure 4. Western Joshua tree is a State Candidate species that occurs in Joshua tree woodland, montane chaparral, pinyon and juniper woodland, and Sonoran and Mojavean desert scrub habitats at elevations of approximately 750 to 2,200 meters. There is a substantial possibility that the western Joshua tree could be listed as threatened or endangered under the California Endangered Species Act in the winter of 2021 (California Fish and Game Commission 2020).

One burrowing owl (*Athene cunicularia*) was observed outside of the Project site approximately 750 feet south of Site 3. This individual was flushed from a burrow complex consisting of two holes. The location of the burrow complex is shown in Figure 4. No additional special-status species or sign was observed during the survey.

Plant and Wildlife Observations

Table 3 lists the common plant and wildlife species that were observed in the survey area (Project site and buffer area). The only special-status species observed during the survey were observed outside the Project site and included western Joshua tree and burrowing owl, as shown on Figure 4.

Table 3: Common Species Observed in the Survey Area

Scientific Name	Common Name
Ambrosia dumosa	burrobush
Ambrosia salsola	cheesebush
Amsinckia menziesii	small flowered fiddleneck
Atriplex polycarpa	allscale
Atriplex spp.	saltbush species
*Brassica nigra**	black mustard*
*Bromus diandrus**	ripgut brome*
*Erodium cicutarium**	red stemmed filaree*
Krascheninnikovia lanata	winterfat
Larrea tridentata	creosote bush
Pinus sp.	pine tree
*Salsola tragus**	prickly Russian thistle*
*Schismus arabicus**	Mediterranean grass*
*Tamarix ramosissima**	tamarisk
Mammals	
Ammospermophilus leucurus	white-tailed antelope ground squirrel
Canis latrans	coyote
Dipodomys sp.**	kangaroo rat
Lepus californicus	black-tailed jackrabbit

Table 3: Common Species Observed in the Survey Area

Scientific Name	Common Name
Birds	
Corvus corax	common raven
Eremophila alpestris	horned lark
Falco sparverius	American kestrel
Zonotrichia leucophrys	white-crowned sparrow

* Non-native plant species.

** This kangaroo rat observation was determined to be a common species because it is outside the known ranges of special-status kangaroo rats and they have not been documented in a nine quadrangle search of the Project site.

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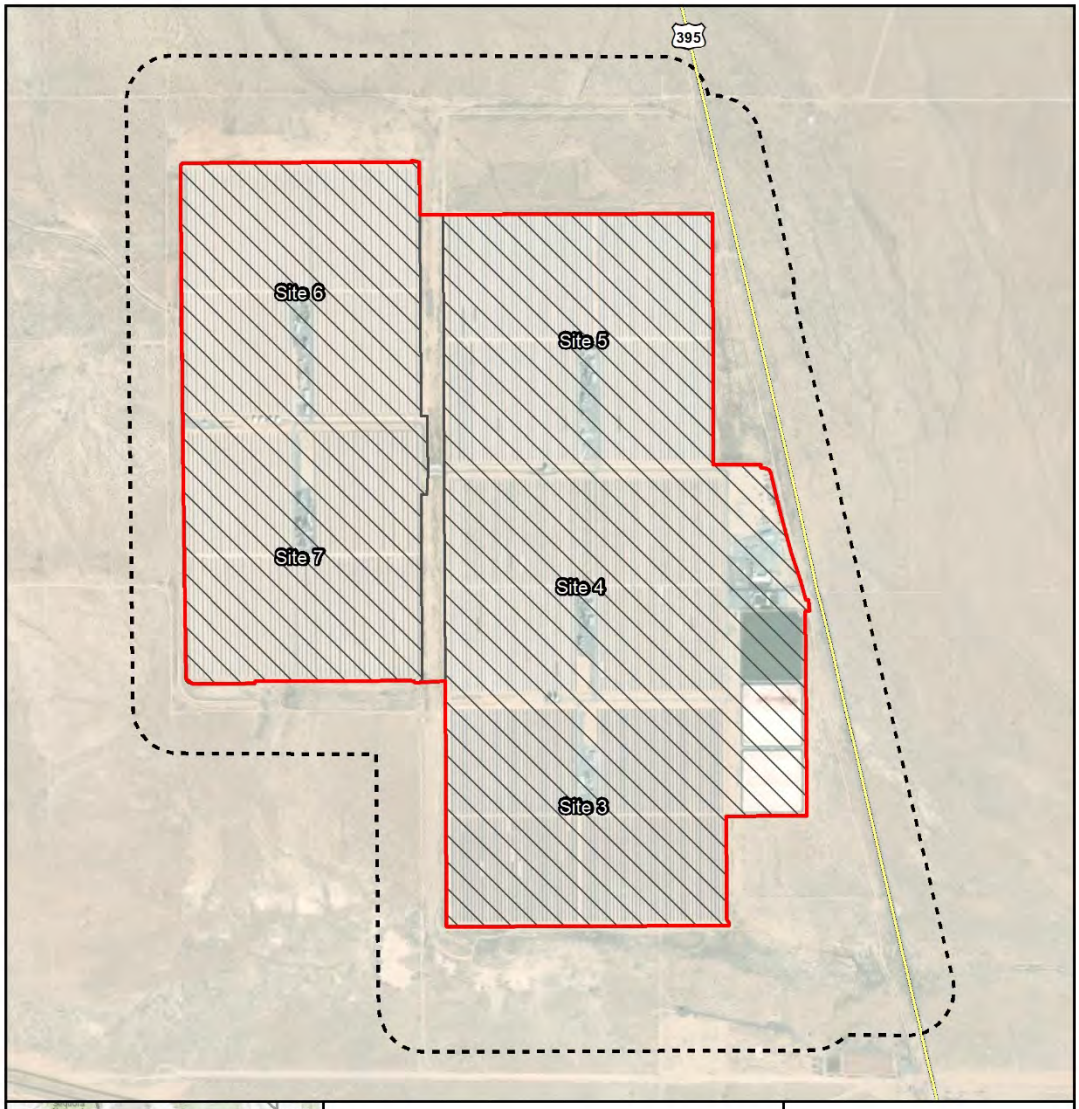
TETRA TECH

ATTACHMENT 1 – FIGURES



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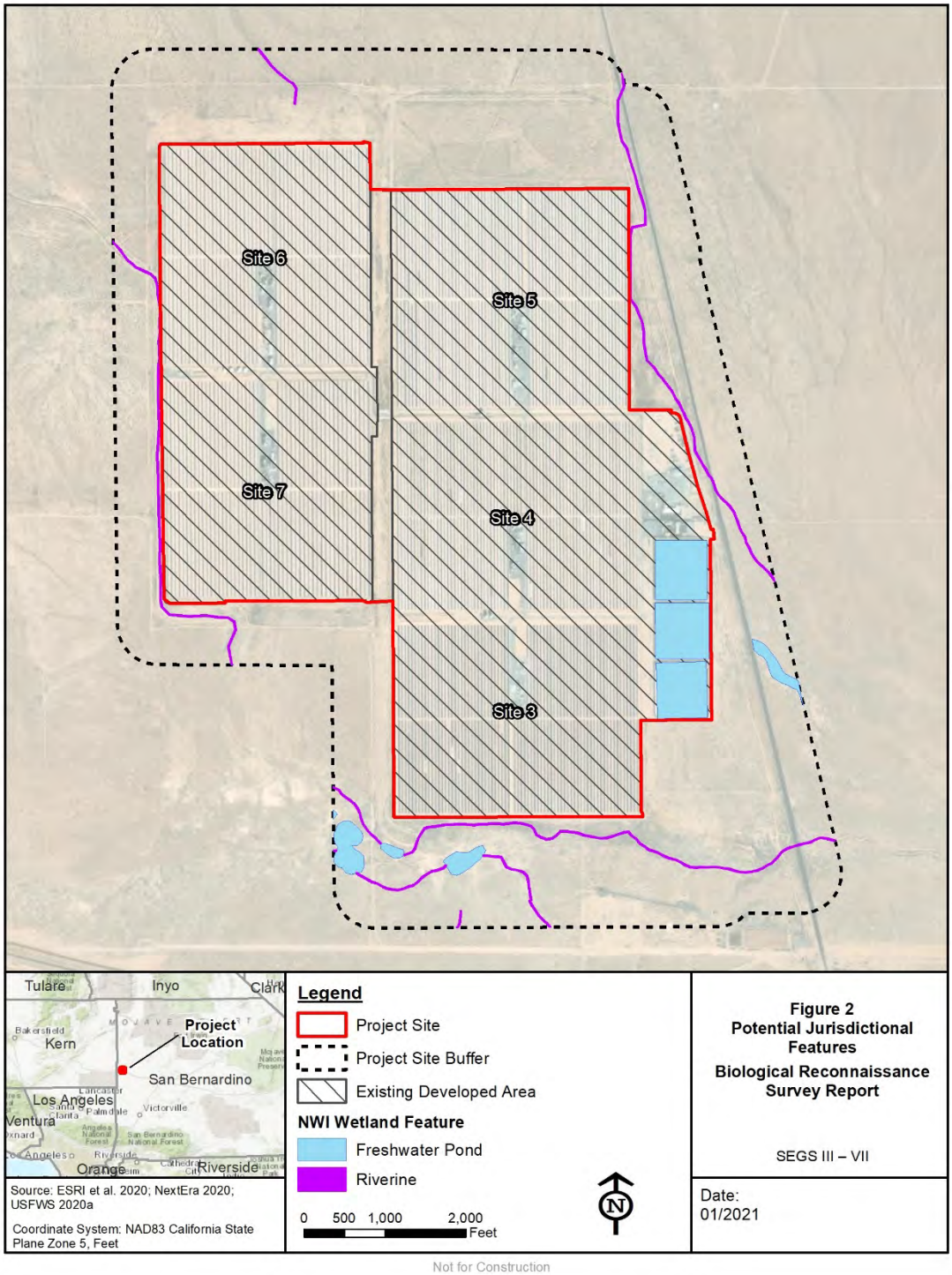
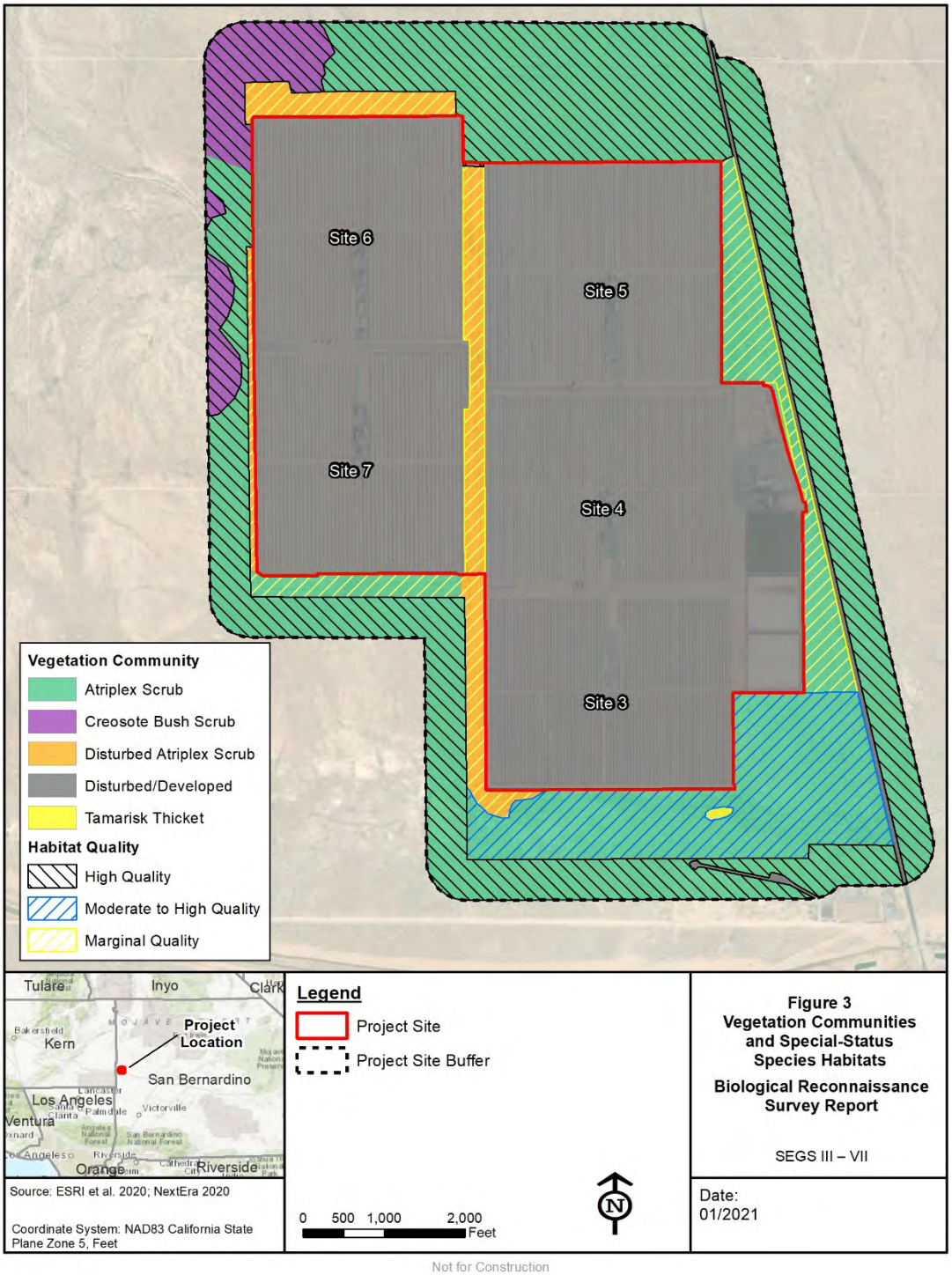

Site 6
Site 5
Site 7
Site 4
Site 3
Tulare
Inyo
Kern
Project Location
San Bernardino
Los Angeles
Ventura
Orange
Riverside
Legend
Project Site
Project Site Buffer
Existing Developed Area
NWI Wetland Feature
Freshwater Pond
Riverine
0 500 1,000 2,000
Feet
N
Source: ESRI et al. 2020; NextEra 2020; USFWS 2020a
Coordinate System: NAD83 California State Plane Zone 5, Feet
Figure 2
Potential Jurisdictional Features
Biological Reconnaissance Survey Report
SEGS III – VII
Date:
01/2021
Not for Construction



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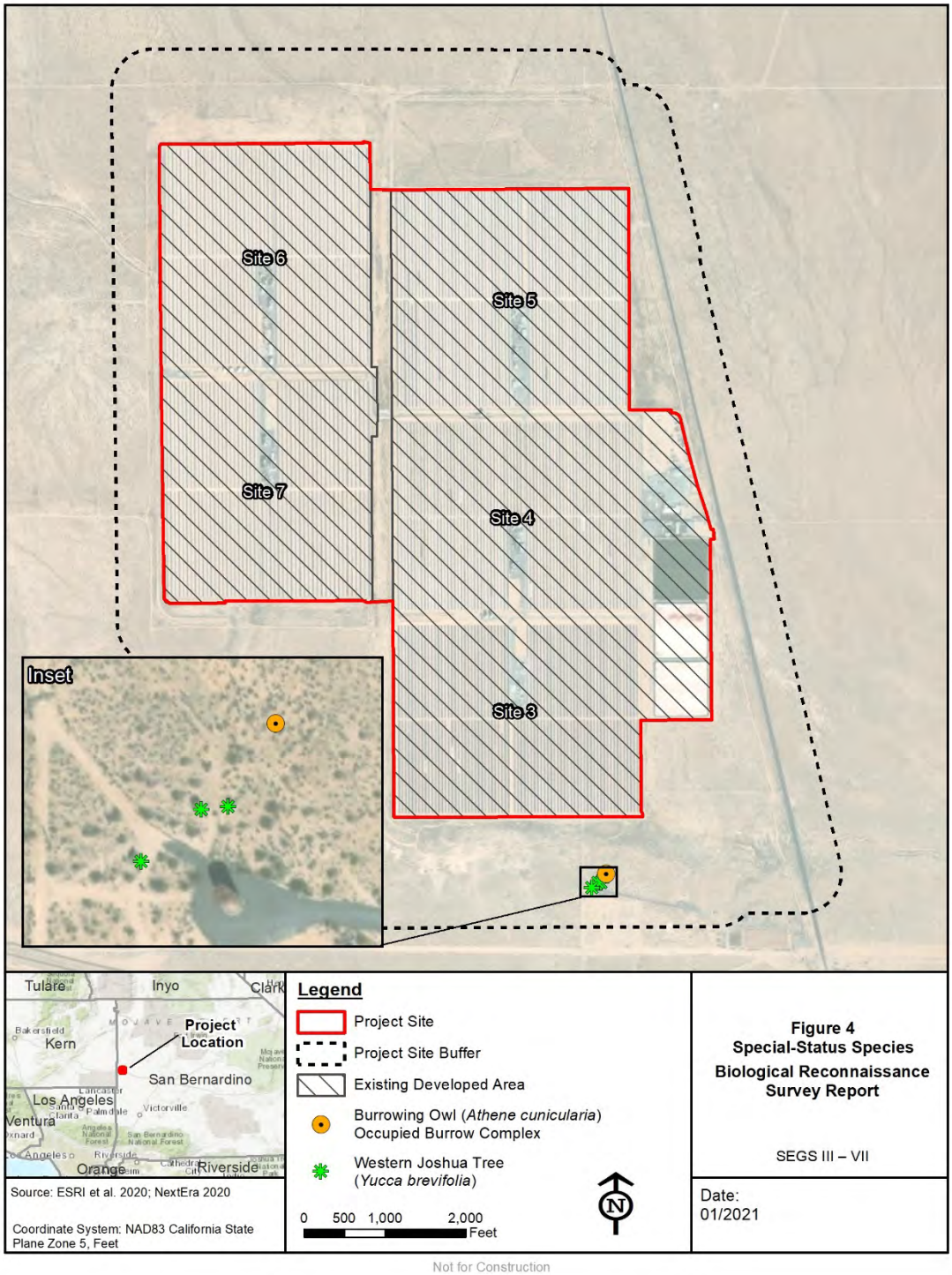
Site 6
Site 5
Site 7
Site 4
Site 3
Inset
Tulare
Inyo
Kern
Project Location
San Bernardino
Los Angeles
Ventura
Orange
Riverside
Source: ESRI et al. 2020; NextEra 2020
Coordinate System: NAD83 California State Plane Zone 5, Feet
Legend
Project Site
Project Site Buffer
Existing Developed Area
Burrowing Owl (Athene cunicularia) Occupied Burrow Complex
Western Joshua Tree (Yucca brevifolia)
0 500 1,000 2,000 Feet
N
Figure 4
Special-Status Species
Biological Reconnaissance Survey Report
SEGS III – VII
Date:
01/2021
Not for Construction

TETRA TECH

ATTACHMENT 2 – SITE PHOTOGRAPHS

Photograph 1	
Notes: Representative photo of Atriplex scrub habitat in the buffer area.	

Photograph 2	
Notes: Representative photo of creosote bush scrub habitat in the buffer area.	

Photograph 3	
Notes: Representative photo of disturbed Atriplex scrub habitat in the buffer area.	

Photograph 4	
Notes: Representative photo of the Project site.	

Photograph 5	
Notes: Representative photo of tamarisk thicket in the project vicinity.	

Photograph 6	
Notes: Representative photo of erosional washout under the Project site with wildlife tracks along the east border of Site 5 that provides wildlife access to the existing solar panel areas.	

Photograph 7	
Notes: Representative photo of potential nesting bird habitat (ornamental trees) in the Project site that lines the northernmost evaporation pond to the east of Site 4.	

Photograph 8	
Notes: Representative photo of small mammal burrows in the vicinity of the project.	

Photograph 9	
Notes: Occupied burrowing owl burrow complex in the vicinity of the project. Entrance would also be potentially suitable for desert tortoise and desert kit fox.	

Photograph 10	
Notes: Occupied burrowing owl burrow complex in the vicinity of the project. Entrance would also be potentially suitable for desert tortoise and desert kit fox.	

Photograph 11	
Notes: Young western Joshua tree in the vicinity of the project.	

Photograph 12	
Notes: Mature western Joshua tree in the vicinity of the project.	