[1]AGENDA
OCEANSIDE DEVELOPER'S CONFERENCE

Tuesday, August 2, 2016, 8:30 a.m.
City Hall South, 1st Floor, Guajome Room

1. 8:30 - 9:30 a.m. Proposed expansion (approx. 1669 sq. ft.) of an existing animal hospital located at 3876 Mission Ave (Surfside Animal Hospital)

Zoning: CS-L-H (Special Commercial-Limited, Historic Overlay)
Land Use: Special Commercial
Neighborhood Area: San Luis Rey
Assessor Parcel Number: 158-052-02
Contact Person: Kathy Akhavi
Tel.: (714) 998-3790
Email: kakhavi@dlsbuilders.com

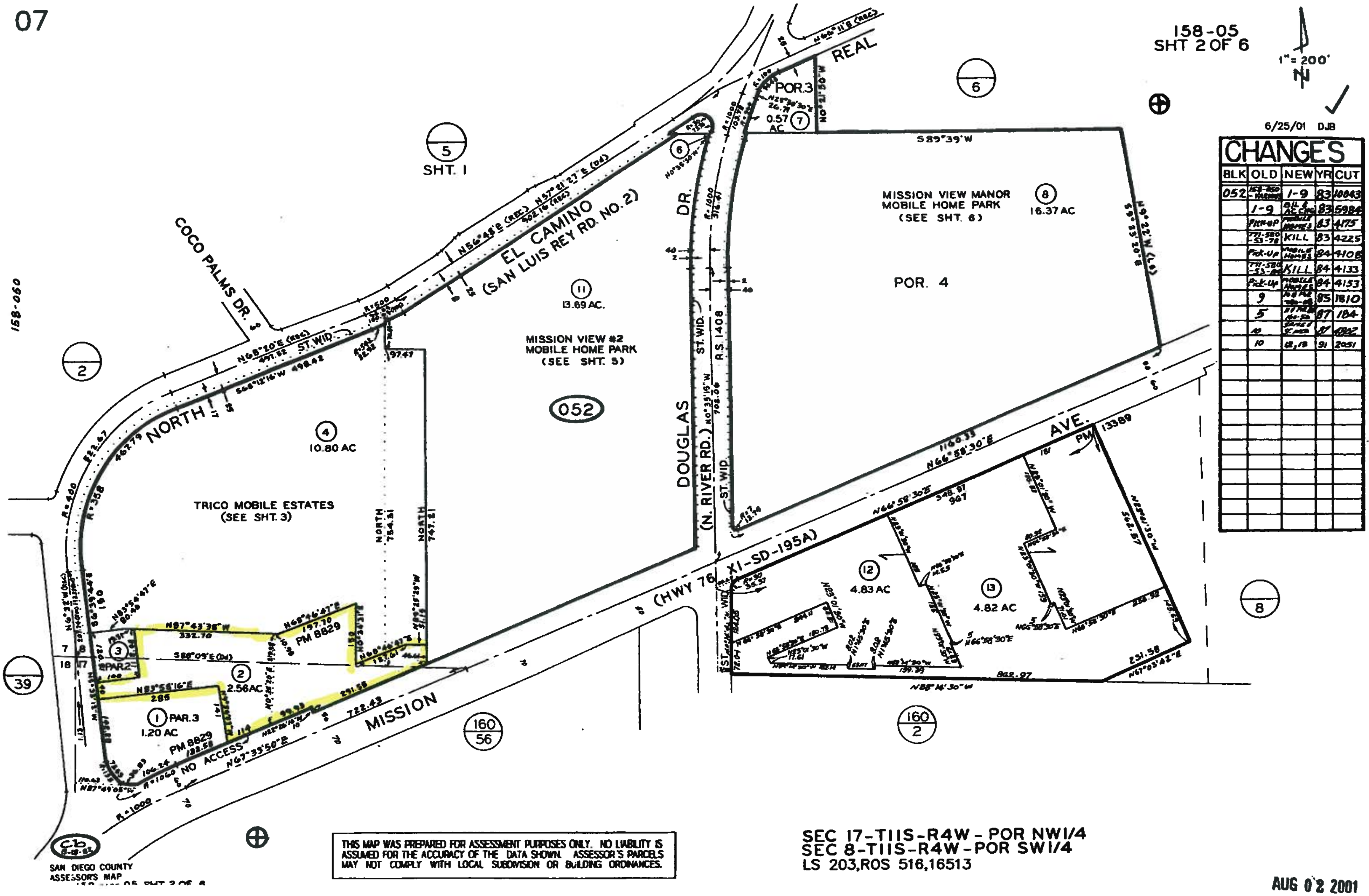
2. 9:30 - 10:30 a.m. Proposed 15,000 to 25,000 sq. ft. energy storage facility located at SE corner of SR 76 and Mission Ave

Zoning: CL (Limited Commercial)
Land Use: General Commercial
Neighborhood Area: Loma Alta
Assessor Parcel Number: 160-290-68
Contact Person: Jamie Nagel (ZGlobal Inc.)
Tel.: (916) 672-2025
Email: jamie@zglobal.biz

Attachments:
1. Parcel Map
2. Project Description Letter
3. Conceptual Site Plans
4. Vicinity/Regional Maps

[1] *The Developer's Conference provides an informal forum for prospective applicants to receive preliminary input from City staff on conceptual plans that may or may not ultimately evolve into formal application submittals. These conferences do not constitute public meetings; consequently, conference attendance by the public is at the discretion of the prospective applicant. Interested parties may contact the prospective applicant, whose contact information is included on the conference agenda. Questions and comments can also be addressed to Planning Division staff.*

ITEM #1



07
158-05
SHT 2 OF 6
1" = 200'
N
6/25/01 DJB
CHANGES
BLK OLD NEW YR CUT
158-050
EL CAMINO REAL
(SAN LUIS REY RD. NO. 2)
COCO PALMS DR.
NORTH
DOUGLAS DR.
(N. RIVER RD.)
MISSION AVE.
(HWY 76 XI-SD-195A)
SHT. 1
TRICO MOBILE ESTATES
(SEE SHT. 3)
10.80 AC
MISSION VIEW #2
MOBILE HOME PARK
(SEE SHT. 5)
13.69 AC.
052
MISSION VIEW MANOR
MOBILE HOME PARK
(SEE SHT. 6)
16.37 AC
POR. 4
POR.3
0.57 AC
4.83 AC
4.82 AC
2.56AC
PAR.3
1.20 AC
PM 8829
PAR2
NO ACCESS
160
56
160
2
39
SAN DIEGO COUNTY
ASSESSOR'S MAP
THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.
SEC 17-T11S-R4W-POR NW1/4
SEC 8-T11S-R4W-POR SW1/4
LS 203,ROS 516,16513
AUG 02 2001

DLS BUILDERS

LICENSE NO. 467925

July 21, 2016

Tiffany Chen
City of Oceanside
Planning Department
300 North Coast Highway
Oceanside, CA 92054

RE: Developer's Conference on 8/2/16 at 8:30 am
3876 Mission Ave.
APN# 158-052-02

Hi Tina,

We are in the process of putting together plans for an expansion of an existing commercial property at the above location. We would like to extend the building out by approx. 1669 square feet. This will allow the tenant to add more boarding and kennels, etc to his space.

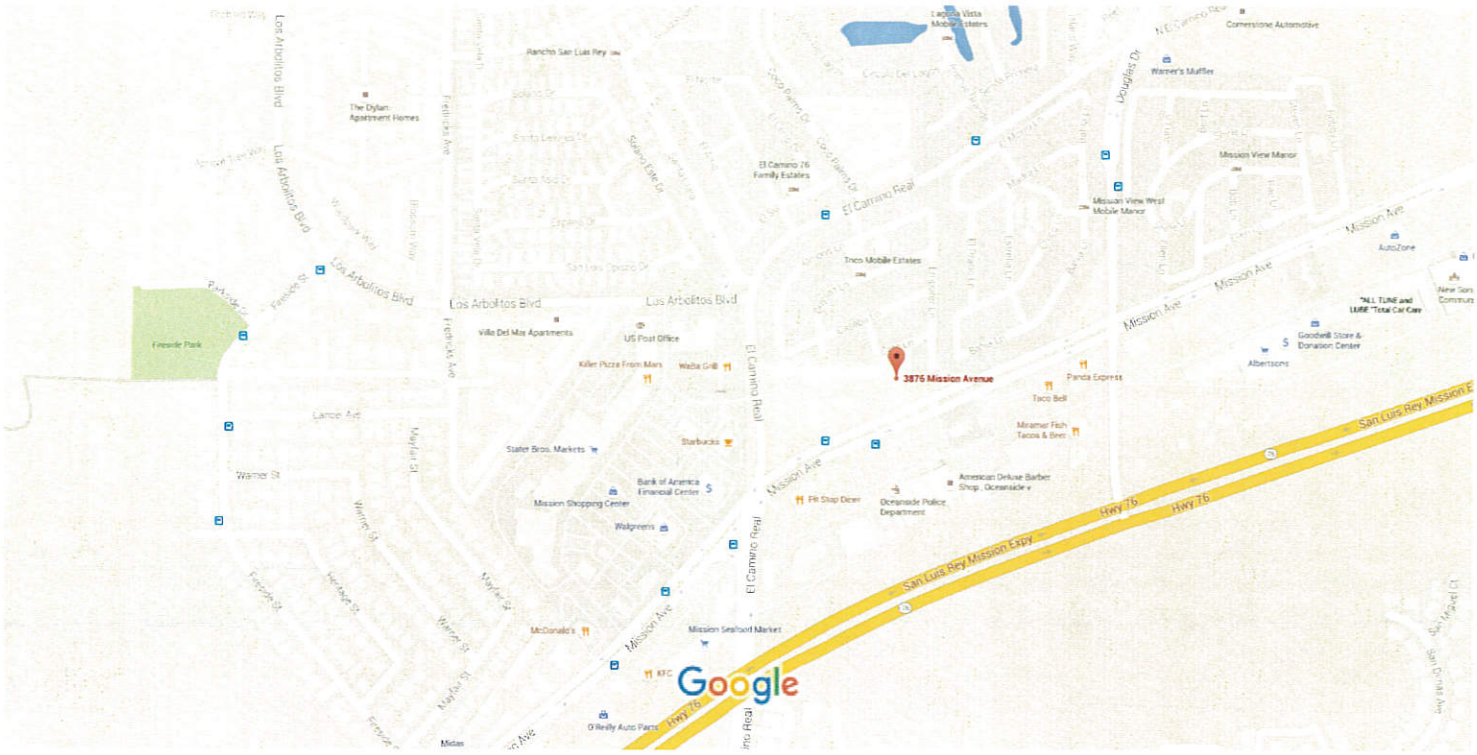
I have attached a Study "G" that we would like to review with all the departments and get their input on codes, etc. This study will give you more information on the project description and location.

If you should have any further questions, please feel free to call me at 714-998-3790. Please let me know if we are approved for that date.

Sincerely,

Kathy Akhavi
Project Manager
DLS Builders, Inc.

Google Maps 3876 Mission Ave



Map data ©2016 Google 200 ft

3876 Mission Ave

Oceanside, CA 92058

At this location

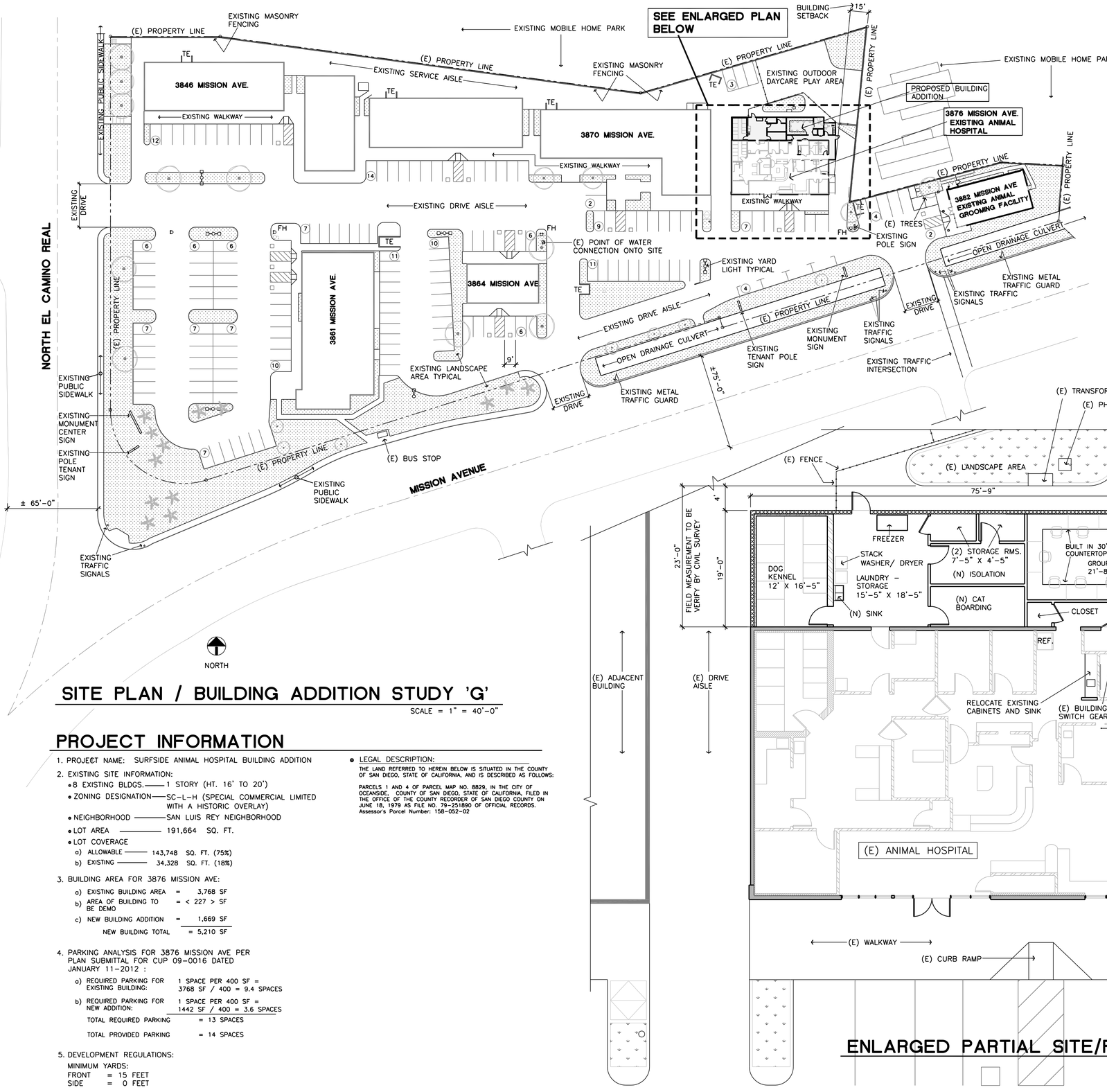
Google Maps 3876 Mission Ave

Imagery ©2016 Google, Map data ©2016 Google 20 ft

3876 Mission Ave

Oceanside, CA 92058

At this location



SITE PLAN / BUILDING ADDITION STUDY 'G'

SCALE = 1" = 40'-0"

PROJECT INFORMATION

1. PROJECT NAME: SURFSIDE ANIMAL HOSPITAL BUILDING ADDITION
2. EXISTING SITE INFORMATION:
   - 8 EXISTING BLDGS. —— 1 STORY (HT. 16' TO 20')
   - ZONING DESIGNATION —— SC-L-H (SPECIAL COMMERCIAL LIMITED WITH A HISTORIC OVERLAY)
   - NEIGHBORHOOD —— SAN LUIS REY NEIGHBORHOOD
   - LOT AREA —— 191,664 SQ. FT.
   - LOT COVERAGE
     a) ALLOWABLE —— 143,748 SQ. FT. (75%)
     b) EXISTING —— 34,328 SQ. FT. (18%)
3. BUILDING AREA FOR 3876 MISSION AVE:
   a) EXISTING BUILDING AREA = 3,768 SF
   b) AREA OF BUILDING TO BE DEMO = < 227 > SF
   c) NEW BUILDING ADDITION = 1,669 SF
   NEW BUILDING TOTAL = 5,210 SF
4. PARKING ANALYSIS FOR 3876 MISSION AVE PER PLAN SUBMITTAL FOR CUP 09-0016 DATED JANUARY 11-2012 :
   a) REQUIRED PARKING FOR EXISTING BUILDING: 1 SPACE PER 400 SF = 3768 SF / 400 = 9.4 SPACES
   b) REQUIRED PARKING FOR NEW ADDITION: 1 SPACE PER 400 SF = 1442 SF / 400 = 3.6 SPACES
   TOTAL REQUIRED PARKING = 13 SPACES
   TOTAL PROVIDED PARKING = 14 SPACES
5. DEVELOPMENT REGULATIONS:
   MINIMUM YARDS:
   FRONT = 15 FEET
   SIDE = 0 FEET

- LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCELS 1 AND 4 OF PARCEL MAP NO. 8829, IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY ON JUNE 18, 1979 AS FILE NO. 79-251890 OF OFFICIAL RECORDS.
Assessor's Parcel Number: 158-052-02

ENLARGED PARTIAL SITE/FLOOR PLAN

SCALE = 1" = 8'-0"

PLAN LEGEND

- EXISTING LANDSCAPE AREA
- TE — EXISTING TRASH ENCLOSURE
- FH — EXISTING FIRE HYDRANT
- EXISTING TREES
- EXISTING ACCESSIBLE PARKING STALLS AND CURB RAMP
- LOADING AREA

18' / 9' / 9'
8' AT VAN STALL
5' ALL OTHERS

Andy Perez & Associates

2070 BUSINESS CENTER DRIVE, SUITE 102
Irvine, California 92612

Ph. (949) 756-1363

Project Name:
EXTERIOR BUILDING ADDITION for SURFSIDE ANIMAL HOSPITAL at

3876 MISSION AVENUE OCEANSIDE, CA

Owner:

Sheet Title:

STUDY 'G'
EXISTING OVERALL SITE PLAN & ENLARGED FLOOR/SITE PLAN

Revisions:

No.	Description	Date

Job Number:
Date: **JULY 27, 2016**
Drawn:

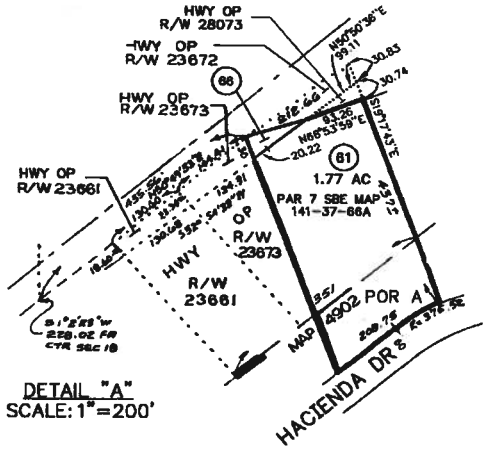
Sheet No.

1 of 1

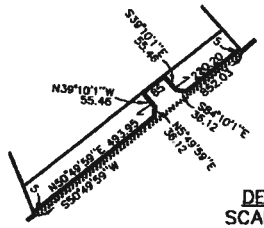
ITEM #2

07

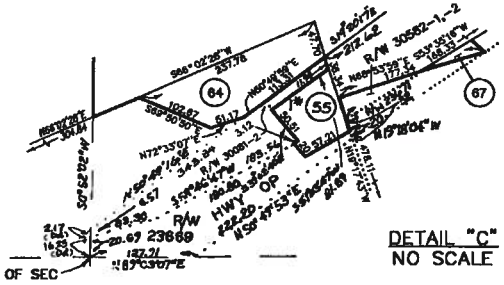
160-29



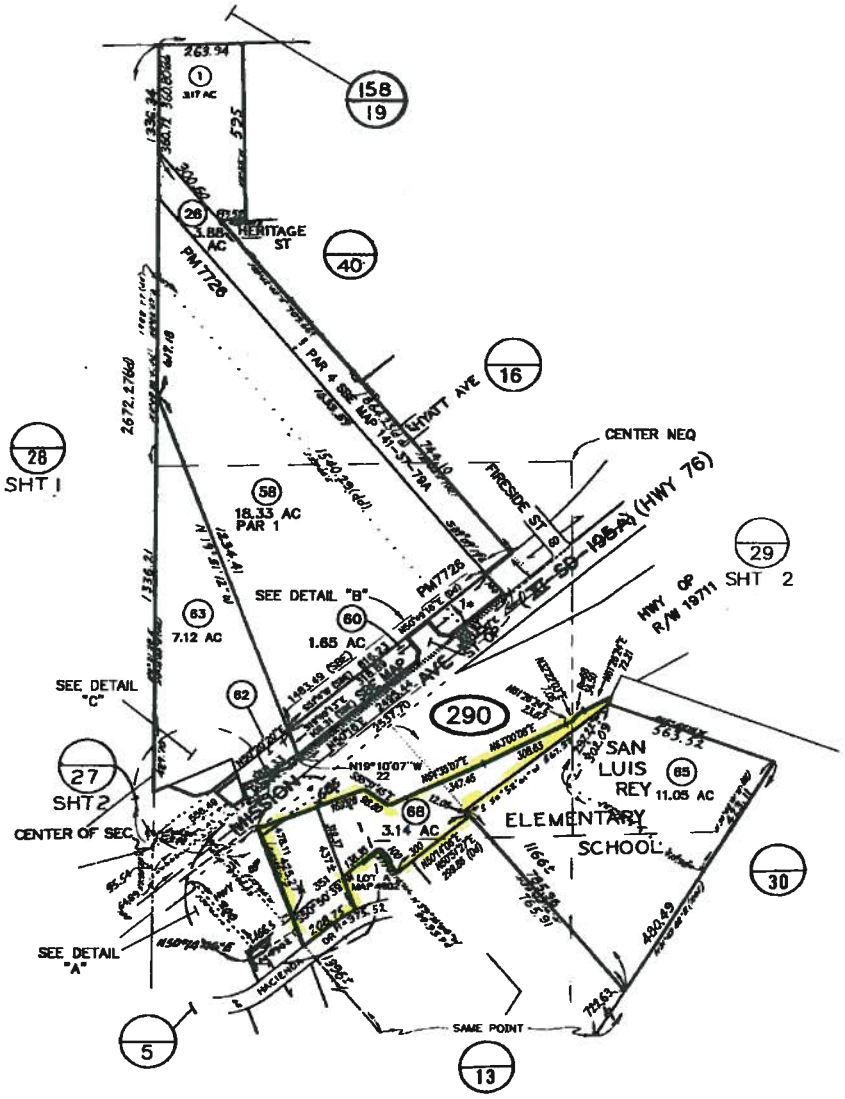
DETAIL "A"
SCALE: 1"=200'



DETAIL "B"
SCALE: 1"=400'



DETAIL "C"
NO SCALE



160-29
SHT 1 OF 2
1"=400'

10/17/2014 CS

CHANGES

BLK	OLD	NEW	YR	CUT	
270	14,15,25	44&45	79	2207	
		46	80	2754	
		47	81	2946	
	9&47	AS ADJ	83	5041	
	29		87	1747	
			87	10026	
	44	48&49	92	1552	
	18&24		93	1363	
			93	1073	
	23		94	4623	
	50&51	HWY OP	94	1179	
	52		94	4784	
	14&52	53-56	94	2038	
			96	1281	
	48&49	58	96	1282	
	56	HWY OP	97	1269	
	45	99	97	1271	
	54	59 & ST OP	97	1748	
	23	61 & HWY OP	97	1837	
	57	62 & HWY OP	98	1853	
	59	63&64	99	1710	CANC
	20&21	65	06	1224	
	PICKUP	66	10	1301	
	PICKUP	67	10	1302	
			15	10002	VOID
			15	10002	
	PICKUP	68	15	1170	

1• POR PAR 3 SBE MAP 804-37-6A

FRW 10-22-69

SAN DIEGO COUNTY
ASSESSOR'S MAP
BOOK 160 PAGE 29 SHT 1 OF 2

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

MAP 4902 – SAN LUIS REY ESTATES UNIT NO 9– LOT A
SEC 18–T11S–R4W – POR E 1/2
ROS 3211,9047,16513,17920

EXHIBIT A

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

19711-01-01

THAT PORTION OF THE EAST HALF OF SECTION 18, TOWNSHIP 11 SOUTH, RANGE 4 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF, BEING A PORTION OF PARCEL 1A AS CONVEYED TO THE STATE OF CALIFORNIA IN THAT FINAL ORDER OF CONDEMNATION RECORDED MARCH 26, 1970 AS DOCUMENT NO. 70-53236 OF OFFICIAL RECORDS, ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, LYING SOUTHERLY AND SOUTHEASTERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE INTERSECTION OF THE WESTERLY LINE OF SAID PARCEL 1A AND COURSE (327) OF THAT PARCEL DESCRIBED ON PAGE 28 OF 29 OF DOCUMENT RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY MARCH 2, 2000 AS DOCUMENT NO. 2000-0106756 OF OFFICIAL RECORDS, SAID INTERSECTION BEING DISTANT SOUTH 68°53'59" WEST, 169.28 FEET FROM THE NORTHEASTERLY TERMINUS OF SIAD COURSE (327);

THENCE EASTERLY, SOUTHEASTERLY AND NORTHEASTERLY ALONG SAID PARCEL DESCRIBED ON PAGES 27 AND 28 OF 29 FOLLOWING NUMBERED COURSES:

1) ALONG SAID COURSE (327) NORTH 68°53'59" EAST, 169.28 FEET;
2) SOUTH 55°31'45" EAST, 98.80 FEET;
3) NORTH 64°35'07" EAST, 347.45 FEET;
4) NORTH 63°00'08" EAST, 308.63 FEET;
5) NORTH 61°26'24" EAST, 23.87 FEET;
6) NORTH 32°22'03" EAST, 7.06 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE SOUTHEASTERLY HAVING A RADIUS OF 68.00 FEET;
7) NORTHEASTERLY ALONG SAID CURVE THROUGH A CNETRAL ANGLE OF 29°04'21", AN ARC DISTANCE OF 34.50 FEET;
8) TANGENT TO SAID CURVE NORTH 61°26'24" EAST, 72.21 FEET TO ITS INTERSECTION WITH THE SOUTHEASTERLY LINE OF SAID PARCEL 1A DESCRIBED AS "S.24°54'42"W., 578.81 FEET" AND THE POINT OF TERMINUS.

CONTAINING 3.137 ACRES MORE OR LESS.

THERE SHALL BE NO ABUTTER'S RIGHTS, INCLUDNIG ACCESS RIGHTS APPURTENANT TO THE ABOVE DESCRIBED REAL PROPERTY IN AND TO THE ADJACENT STATE HIGHWAY.

THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTIONS ARE ON THE CALIFORNIA COORDINATE SYSTEM OF 1927, ZONE 6. MULTIPLY

ALL DISTANCES USED IN THE ABOVE DESCRIPTIONS BY 1.00004586 TO OBTAIN GROUND LEVEL DISTANCES.

SUBJECT TO SPECIAL ASSESSMENTS IF ANY, RESTRICTIONS, RESERVATIONS, AND EASEMENTS OF RECORD.

THE ABOVE PROPERTY IS BEING SOLD AS IS AND HAS AN EXISTING ENCROACHMENT THAT IS APPROXIMATELY 2742 SQUARE FEET.

19711-01-02

TOGETHER WITH A 27 FOOT WIDE EASEMENT FOR INGRESS AND EGRESS UPON, OVER AND ACROSS THE FOLLOWING DESCRIBED AREA, THE CENTERLINE OF WHICH IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH SIDE OF PARCEL 19711-01-01, AS DESCRIBED ABOVE, WHICH, BEARS NORTH 68°53'34" EAST, 16.50 FEET FROM THE NORTHWESTERLY CORNER OF PARCEL 19711-01-01, THENCE NORTH 19°17'43" WEST A DISTANCE OF 67.01 FEET TO THE SOURTHERLY RIGHT OF WAY FOR MISSION AVENUE, AND BEING THE **POINT OF TERMINUS.**

THE SIDELINES OF SAID EASEMENT SHALL BE SHORTENED OR EXTENDED TO CLOSE UPON THE SOUTHERLY RIGHT OF WAY LINE OF MISSION AVENUE.

THE INTENT OF THIS EASEMENT IS TO PROVIDE ACCESS FROM PARCEL 19711-01-01 TO MISSION AVENUE, AND NO DIRECT ACESS TO THE FREEWAY.

THERE SHALL BE NO ABUTTER'S RIGHTS, INCLUDING ACCESS RIGHTS APPURTENANT TO THE ABOVE DESCRIBED REAL PROPERTY IN AND TO THE ADJACENT STATE HIGHWAY.

THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTIONS ARE ON THE CALIFORNIA COORDINATE SYSTEM OF 1927, ZONE 6. MULTIPLY ALL DISTANCES USED IN THE ABOVE DESCRIPTIONS BY 1.00004586 TO OBTAIN GROUND LEVEL DISTANCES.

SUBJECT TO SPECIAL ASSESSMENT IF ANY, RESTRICTIONS, RESERVATIONS, AND EASEMENTS OF RECORD.

APN: 160-290-61-00

Stingray Energy Storage Project Description

City of Oceanside, California

July 2016

Prepared For:

REGENERATE Power

770 Menlo Ave, Suite 100
Menlo Park, CA 94025

Prepared by:

ZGLOBAL
Power Engineering & Energy Solutions

604 Sutter Street, Suite 250
Folsom, California 95630

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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1 PROJECT SUMMARY

In an effort to reduce greenhouse gas (GHG) emission and expand the availability of alternative energy resources locally and regionally, the project proponent/applicant, Regenerate Power LLC ("Regenerate") proposes to develop, own, and operate a 20-megawatt (MW) battery energy storage system (BESS) facility on 3.14 undeveloped leased acres in the City of Oceanside, San Diego County, California. The project site is designated City of Oceanside General Commercial and zoned CL (Limited Commercial). The proposed project would include batteries, mounting racks, and electronic equipment as well as the installation of ancillary components to enable its interconnection to the San Diego Gas and Electric ("SDG&E") San Luis Rey Substation. The project would provide operational support and a more secure electrical power system for SDG&E's distribution and transmission system.

The applicant intends to file an emergency exemption justification with the City of Oceanside ("City") for review and accelerated approval of a Conditional Use Permit (CUP). Accelerated City approval would allow for the *immediate* construction, operation, and maintenance of the BESS to support energy reliability in Southern California, which is at imminent risk as a result of a sudden and unexpected natural gas leak at the Aliso Canyon Natural Gas Storage Facility in Los Angeles in October 2015. The project would be constructed over a 2 to 4 month period and is anticipated to operate for a period of up to 25 years. The BESS building would not be designed for permanent occupancy and the equipment will be serviced on in intermittent basis by technicians.

2 PROJECT SETTING

The Stingray BESS (proposed project) would be located south of State Route 76, north of Hacienda Drive, east of Mission Road and west of El Camino Real, in the City of Oceanside, CA. The site lies directly east and adjacent to the SDG&E Transmission Corridor, which consists of multiple transmission lines ranging in size from 69 kV to 230 kV. The site occurs within a Wildlife Corridor Planning Zone and is classified as potentially occurring within a Gnatcatcher Corridor Constrained Area in the City of Oceanside Subarea Plan.

A Biological Resource Assessment (BRA) conducted by ECORP on March 18, 2014, indicated the majority of the proposed project site was comprised of lands mapped as disturbed. These areas are dominated by nonnative vegetation, though native and nonnative vegetation communities were found to occur in isolated scattered patches. The report went on to conclude, "Although the parcel occurs within the Oceanside Subarea Plan's Wildlife Corridor Planning Zone, most of the habitat comprises disturbed, isolated patches that are not contiguous. Furthermore, no suitable nesting habitat for coastal California gnatcatcher occurs at the site, and no gnatcatchers were detected during the site visit."

Just north and outside of the parcel, a slope below State Route 76 is dominated by hottentot fig, eucalyptus, and other ornamental vegetation. A habitat conservation area (i.e., Westminster Open Space Preserve) is located near the eastern end of the survey area. This conservation area consists primarily of willow thickets.

2.1 Location

The project would be located in northwestern San Diego County in the City of Oceanside, California, just south of the intersection of Mission Avenue and Highway 76 and northwest of San Luis Rey Elementary School. The Marine Corps Base Camp Pendleton lies just to the north, and San Diego is approximately 47 miles to the south. The project area falls within the San Luis Rey 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle map. The project area comprises a portion of Township 11 South, Range 4 West, and Section 10. Figure 2-1 shows the project vicinity and Figure 2-2 shows the project site location.

2.1.1 Site Acreage

The project would be developed on a portion of parcel no. 160-290-68-00. Temporary and permanent disturbance acreages are anticipated to be up to one (1) acre carved out of the 3.14-acre site, or up to approximately 31.9% of the total parcel acreage.

2.1.2 Existing Conditions and Land Uses

The project site is designated as General Commercial, and the City of Oceanside zoning designation for the project site is Limited Commercial.

Figure 2-1 Vicinity Map

Figure 2-2 Project Location

3 PROJECT OBJECTIVES

The applicant's primary purpose for the ESS will be to improve local grid reliability by providing instantaneous frequency regulation and responsive reserves to SDG&E. In essence, this project will help substitute the need for a new power plant in the region.

Regenerate Power LLC has identified the following additional objectives to complement the primary purpose of the proposed project:

- Support the efforts of City of Oceanside and the State of California to reduce greenhouse gas (GHG) emissions consistent with the timeline established by California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006. Establish an alternative energy-generating facility that will help the State achieve the RPS goal of having 33% of the State's energy come from renewable sources by 2020;
- Provide an investment in California and the City of Oceanside that would create jobs and other economic benefits;
- Develop an economically feasible and commercially financeable project.
- Maximize the use of existing transmission infrastructure while minimizing the network upgrade costs borne by the California ratepayer;
- Minimize environmental effects by:
    - Using existing electrical distribution facilities, rights-of-way, roads, and other existing infrastructure where practicable,
    - Minimizing impacts on threatened and/or endangered species,
    - Minimizing water use; and
    - Reducing greenhouse gas emissions by providing an alternate source of renewable energy;
- Use technology that is available, proven, efficient, easily maintained, recyclable, and environmentally sound.

4 PROPOSED ONSITE FACILITIES AND PROJECT OPERATION

The Stingray energy storage project consists of a 20MW/80MWh battery system, which would provide dispatchable energy under various operating conditions. The ability to store energy would improve the SDG&E's operability and enhance the integration of as available energy resources into the transmission network by offering additional ramp rate control and more consistent energy flows. The power generated by the project would be interconnected to existing SDG&E power grid infrastructure for delivery to the purchaser of the power. The proposed project would have an operational lifespan of up to approximately 25 years.

4.1 Energy Storage System Building

The BESS would be constructed as a single building facility, the footprint of which would be up to 25,000 square feet. The facility will house the batteries, mounting racks and electric equipment. The building will be of a metal frame construction, insulated and air-conditioned for battery reliability, with separate rooms for the electronic controls, inverters, and rectifiers. The BESS building will not be designed for permanent occupancy and the equipment will be serviced on an intermittent basis by technicians.

4.2 Battery Technology

The primary storage components would consist of self-contained electrochemical battery systems using conventional storage technologies with proven safety and performance records. Two battery storage technologies are being considered for the project: lithium ion and vanadium flow. The characteristics of each technology are described below.

4.2.1 Lithium Ion Battery Technology

The lithium ion (Li-ion) battery is a rechargeable battery where the negative electrode (anode) and positive electrode (cathode) materials serve as a host for the lithium ion (Li+). Lithium ions move from the anode to the cathode during discharge and are intercalated into (i.e., inserted into voids in the crystallographic structure of) the cathode. This is illustrated graphically by Figure 2-1. The ions reverse direction during charging. Because lithium ions are intercalated into host materials during charge or discharge, there is no free lithium metal within a Li-ion cell. In a Li-ion cell, alternating layers of anode and cathode are separated by a porous film (separator). An electrolyte composed of an organic solvent and dissolved lithium salt provides the media for Li-ion transport. For most commercial Li-ion cells, the voltage range is approximately 3.0 volts (V) (discharged or 0 % state-of-charge [SOC]) to 4.2 V (fully charged or 100% SOC) (Portable Rechargeable Battery Association n.d.).

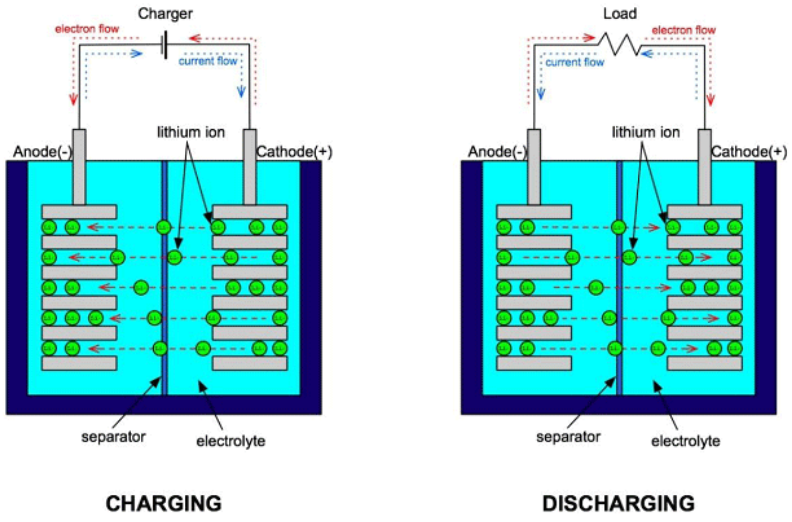


Figure 4-1 Lithium Ions Charging and Discharging

4.2.1.1 Components of Li-Ion Energy Storage System

Each Li-ion battery cell is wired series/parallel in order to increase the voltage and amp hours into larger and larger battery blocks. The battery blocks, in turn, are wired into larger modules to increase voltage and amp hours. The battery modules are housed in a standard 40-ft shipping container that is self-contained and self-sufficient to charge, store, and discharge energy. The energy storage modules can also be wired in series/parallel to increase voltage and discharge duration. The general arrangement of the battery storage module is depicted below in Figure 2-2.

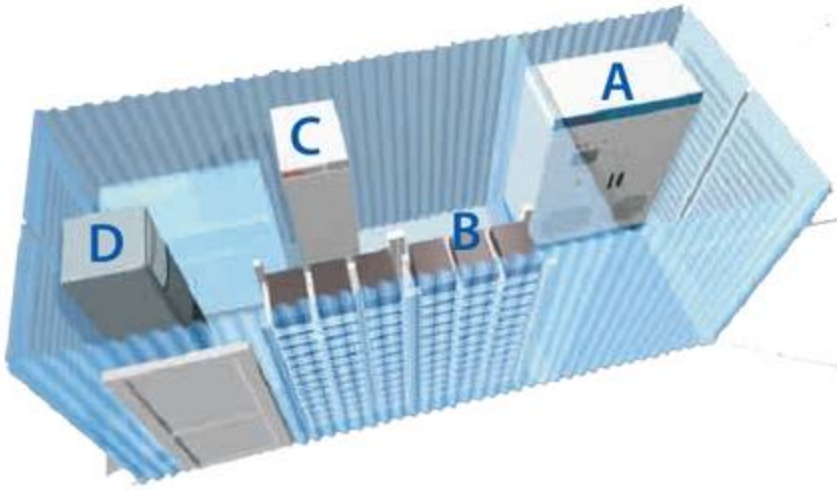


Figure 4-2 Battery Storage Module

4.2.1.2 Power Conversion System

The Power Conversion System (PCS) (component A in Figure 4-2), refers to the general class of devices that use power electronics technologies to convert electric power from one form to another—for example, converting

between DC and AC; converting between different voltage levels; or providing specific power qualities required by the subsystems being interfaced by the PCS (National Institute of Standards and Technology 2012).

4.2.1.3 Battery Module

The battery module (component B in Figure 4-2 Battery Storage ModuleFigure 4-2) contains all the cells harnessed with monitoring equipment and wired to generate the required voltages.

4.2.1.4 Control Cabinet

The control cabinet (component C in Figure 4-2) contains all the computer and monitoring components to operate the battery module and maintain safe operating conditions. This includes the battery management system (BMS) that coordinates information from the cells, contactors, current sensors and end-user inputs to continually monitor and adjust the operation of the battery system. The BMS embedded controllers include software with highly developed algorithms for diagnostic and control decisions. In addition to safety, the BMS functions as a monitor that helps to ensure a long lifespan for the battery system.

- Cell-level monitoring for over-temperature detection.
- Cell-level monitoring for over-charge detection.
- Cell-level monitoring for over-discharge detection.
- System-level monitoring for over-current / current surge detection.
- System-level monitoring for contactor malfunction detection.
- High-voltage measurement and isolation detection implementation (EN 60950 compliant).
- Cell voltage measurement and cell balance circuit hardware isolation between electronic controllers (CAN Bus topology).

4.2.1.5 Air Conditioning and Fire Suppression System

The air conditioning and fire suppression system (not pictured) equipment is used to maintain safe ambient operating temperature conditions. Fire suppression equipment may include sprinklers or flame-retardant chemical dispersants.

4.2.1.6 Potential Hazards

While Li-ion batteries can be recharged time after time and contain no free lithium metal, they do contain lithium ions and highly flammable electrolytes. Li-ion batteries are capable of spontaneous ignition and subsequent explosion due to overheating. Overheating may be caused by electrical shorting, rapid discharge, overcharging, manufacturers defect, poor design, or mechanical damage, among many other causes. Overheating results in a process called thermal runaway, which is a reaction within the battery causing internal temperature and pressure to rise at a quicker rate than can be dissipated.

Once one battery cell goes into thermal runaway, it produces enough heat to cause adjacent battery cells to also go into thermal runaway. This produces a fire that repeatedly flares up as each battery cell ruptures and releases its contents. The result is the release of flammable electrolyte from the battery and, in the case of disposable lithium batteries, the release of molten burning lithium. Handling and extinguishing these types of fires requires specific training, planning, storage, and extinguishing interventions.

The amount of data relative to the fire behavior of large format batteries is limited; however, there are certain battery behavior characteristics that indicate when a battery goes into thermal runaway. The fire may be a progressive burn-off or one that is explosive in nature. Both of these types of thermal events, as well as their negative by-products (e.g., jetted shrapnel, molten metal, burning electrolytes, and other matter), can be managed and contained in the appropriate storage and transport environments (Butler 2013).

The report, Lithium-Ion Batteries Hazard and Use Assessment, published by the Fire Protection Research Foundation of the National Fire Protection Association (NFPA), provides suppressant research data, limited fire test data, and other information relative to fire and safety issues in small-capacity Li-ion batteries. This research is used to identify and assess fire protection strategies for Li-ion battery storage and NFPA safety standards are commonly used in applications such as those for this project.

4.2.1.7 Safe Handling

Li-ion battery fire risks can be managed through proper planning, risk assessment, storage methods, and response protocols. The following areas will be addressed in the project's strategy for managing battery fire risks and emergency response. There is inherent danger associated with the handling of batteries. In most cases, mechanical damage would probably rank as the highest risk factor for initiating a thermal runaway (fire/explosion) event. Improper handling can result in crush or puncture damage possibly leading to the release of electrolyte material or short-circuiting. These actions could result in thermal runaway and a resulting fire and/or explosion.

Proper battery storage and transport strategies will help manage the risks. An effective method for Li-ion battery storage is to use a fire containment and suppression system that would deal with a battery fire event. Such systems contain the fire event and encourage suppression through cooling, isolation, and containment (SCIC). It is important when using this approach to ensure batteries are housed in environments that feature fire suppression systems that extinguish through cooling. Suppressing a lithium ion (secondary) battery is best accomplished by cooling the burning material (Butler 2013).

The project would use a fire protection system with the SCIC strategy for fire containment. To that end, the containerized BESS would include a gaseous fire suppressant agent (e.g., FM 200, FE-25) and an automatic fire extinguishing system with sound and light alarms. The system would be designed in accordance with NFPA safety standards including an automatic shut-down system for fans and windows that keep the container sealed when the fire extinguishing system is activated. The fire suppressant agent is released by a releasing panel that uses an aspirating smoke detection system and has a manual release. The aspirating smoke detection system provides for four levels of signaling before release of the fire suppressant agent. A disable switch is provided for maintenance personnel to allow for work on the container without accidental discharge.

Personnel training would be required to help address the unique issues this type of battery technology presents, such as battery fire behavior, emergency response procedures, and fire extinguisher use (Li-ion battery focus). In order to comply with the Occupational Safety and Health Administration's (OSHA) Emergency Action Plan Standard, 29 Code of Federal Regulations (CFR) 1910.38, and to prepare personnel for dealing with emergency situations, an emergency action plan would be developed. This emergency action plan would be developed to effectively address all emergencies that may be reasonably expected to occur at the BESS. Such a plan may

include a designated emergency coordinator who would be responsible for notification of emergency personnel, safely evacuating project employees and the proper use of fire extinguishers (if applicable). All personnel working onsite would receive instruction and training on the emergency action plan.

Effective battery standard operating procedures for battery use and storage would include processes that guide shipping and receiving, installation, handling, daily use, storage, and other functions involving the batteries. Proper procedures include keeping batteries from exposure to direct sunlight, high temperature, and high humidity (Battery University 2014).

4.2.2 Vanadium Redox Flow Battery Technology

The vanadium redox battery (VRB) (or Vanadium flow battery) is a type of rechargeable flow battery that employs vanadium ions in different oxidation states to store chemical potential energy. The vanadium redox battery exploits the ability of vanadium to exist in solution in four different oxidation states, and uses this property to make a battery that has just one electroactive element instead of two.

A vanadium redox battery consists of an assembly of power cells in which the two electrolytes are separated by a proton exchange membrane. Both electrolytes are vanadium based, the electrolyte in the positive half-cells contains VO_2^+ and $VO^2{}_+$ ions, the electrolyte in the negative half-cells, V^{3+} and V^{2+} ions. The electrolytes may be prepared by any of several processes, including electrolytically dissolving vanadium pentoxide (V_2O_5) in sulfuric acid (H_2SO_4). The solution remains strongly acidic in use.

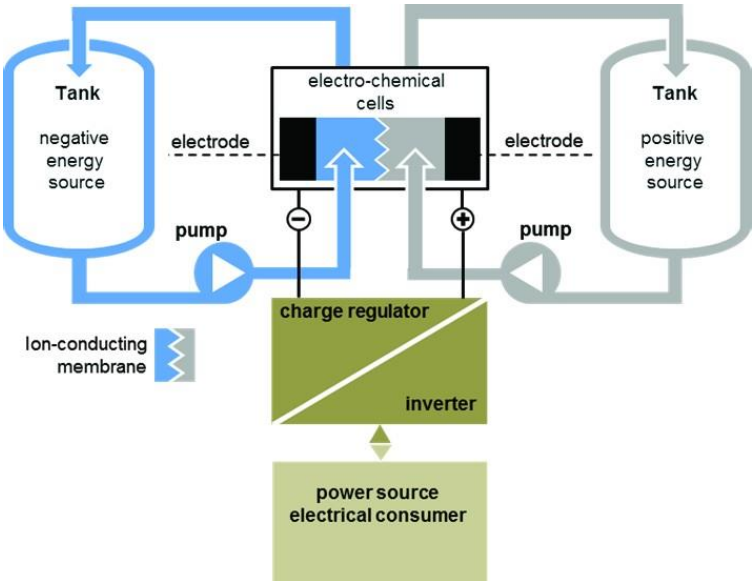


Figure 4-3 Diagram of a Vanadium Flow Battery

In vanadium flow batteries, both half-cells are additionally connected to storage tanks and pumps so that very large volumes of the electrolytes can be circulated through the cell. This circulation of liquid electrolytes is somewhat cumbersome and does restrict the use of vanadium flow batteries in mobile applications, effectively confining them to large fixed installations.

When the vanadium battery is charged, the VO^{2+} ions in the positive half-cell are converted to VO_2^+ ions when electrons are removed from the positive terminal of the battery. Similarly in the negative half-cell, electrons are introduced converting the V^{3+} ions into V^{2+}. During discharge this process is reversed and results in a typical open-circuit voltage of 1.41 V at 25°C.

Other useful properties of vanadium flow batteries are their very fast response to changing loads and their extremely large overload capacities. Studies by the University of New South Wales have shown that they can

achieve a response time of under half a millisecond for a 100% load change, and allowed overloads of as much as 400% for 10 seconds. The response time is mostly limited by the electrical equipment. Sulfuric acid-based vanadium batteries only work between about 10 to 40 °C. Below that temperature range, the ion-infused sulfuric acid crystallizes. Round trip efficiency in practical applications is around 65–75 %.

The extremely large capacities possible from vanadium redox batteries make them well suited to use in large power storage applications such as helping to average out the production of highly variable generation sources such as wind or solar power, helping generators cope with large surges in demand or leveling out supply/demand at a transmission constrained region.

The limited self-discharge characteristics of vanadium redox batteries make them useful in applications where the batteries must be stored for long periods of time with little maintenance while maintaining a ready state. This has led to their adoption in some military electronics, such as the sensor components of the GATOR mine system. Their ability to fully cycle and stay at 0% state of charge makes them suitable for solar + storage applications where the battery must start each day empty and fill up depending upon the load and weather. Lithium Ion batteries, for example, are typically damaged when they are allowed to discharge below 20% state of charge, so they typically only operate between about 20% and 100%, meaning they are only using 80% of their nameplate capacity.

Their extremely rapid response times also make them superbly well suited to UPS type applications, where they can be used to replace lead–acid batteries and even diesel generators. Also the fast response time makes them well-suited for frequency regulation. Economically neither the UPS or frequency regulation applications of the battery are currently sustainable alone, but rather the battery is able to layer these applications with other uses to capitalize on various sources of revenue. Also, these capabilities make Vanadium redox batteries an effective "all-in-one" solution for microgrids that depend on reliable operations, frequency regulation and have a need for load shifting (from either high renewable penetration, a highly variable load or desire to optimize generator efficiency through time-shifting dispatch).

The main advantages of the vanadium redox battery are:

- It can offer almost unlimited energy capacity simply by using larger electrolyte storage tanks.
- It can be left completely discharged for long periods with no ill effects.
- If the electrolytes are accidentally mixed the battery suffers no permanent damage.
- A single state of charge between the two electrolytes avoids the capacity degradation due to a single cell in non-flow batteries.
- The electrolyte is aqueous and inherently safe and non-flammable.
- The generation 3 formulation using a mixed acid solution developed by the Pacific Northwest National Laboratory operates at a high temperature allowing for passive cooling.

The main disadvantages with vanadium redox technology are a relatively poor energy-to-volume ratio, although the Generation 3 formulation has doubled the energy density the system complexity in comparison with standard storage batteries, and the aqueous electrolyte makes the battery heavy and therefore only useful for stationary applications.

4.3 Electrical Collection and Distribution System

4.3.1 Direct Current Collection System

DC electricity is collected from the batteries via a battery management system (BMS) and conveyed to the inverters(s). Each battery module is connected with a BMS to form a rack mountable module assembly. Multiple module assemblies are then combined into a rack, or battery-integrated cabinet (BIC) to optimize battery voltage and battery current. A number of series circuits are combined together to form an individual parallel circuit; parallel circuits are grouped together in individual BICs which are sized appropriately and each BIC contains a rack-level BMS. The number of BICs will vary according to final project specficiations and can be sized to accommodate electrical design. BICs combine multiple parallel circuits through a fused bus system to collect the energy into one set of DC collection cables. The fuses within the BICs create another line of protection from overcurrent. These cables run from the BICs to the inverters, where they would terminate in the DC side of the inverter.

The DC output of the BESS is collected to a series of common DC feeders to a series or group of DC / AC inverters. The AC inverter output thereafter is combined and stepped up to a site collection voltage and further collected and fed to a final site Generator Step-Up (GSU) transformer to utility grid voltage. The proposed Energy Storage facility will utilize a GSU transformer, 69 kV breaker, and associated disconnects and protection connecting the 69 kV gen-tie to the SCE San Luis Rey substation buss.

4.3.2 Power Conversion System

A Power Conversion System (PCS) consists of inverters and a medium voltage transformer. These components are often mounted on either a metal platform, referred to as a skid, or set directly on a concrete pad, with or without an enclosure.

Each PCS collects DC power from the BICs. From the BICs to the PCS, the DC cables will be enclosed in underground conduit buried to a depth of at least 18 inches and will meet or exceed compliance with National Electric Code (NEC) building standards along with local jurisdiction standards and/or requirements.

At the PCS, the DC power cables originating from the BICs are terminated on the DC side of the power inverter. The inverter converts the DC power from the BICs into three-phase AC power for movement across the project site to the high voltage project substation. The inverters consist of a DC side and an AC side, and more than one inverter may reside on the PCS pad. The combined quantity of inverters creates the AC rating for the PCS. The project AC rating for the PCS pads may be 1 to 2.5 MW. This rating, optimized for the site, determines how many PCS pads would be present on the project site. The conceptual layout for the proposed project assumes 20 PCS pads.

Once power has been inverted to AC, it can be effectively moved longer distances by transforming the power (varying the voltage) through medium voltage transformers (MVTs). Each PCS pad would have one MVT that would step up the voltage of the electrical power to 34.5 kV for movement along the medium voltage collection system. Each MVT would have a fuse system for each of the three phases transformed for the medium voltage collection system (MVCS), offering another level of protection from overcurrent.

The medium-voltage power would be conveyed underground, or aboveground where necessary to cross over any sensitive site features, to an aboveground three-pole interconnection. The three-pole interconnection would connect to the existing utility-approved point of interconnection (POI) utility pole on the Ortiga 1106 12.47-kV distribution line at the southeast corner of the project site. The poles would be located in a line between the underground connection point on the site and the PG&E POI. The pole closest to the POI would support a 12.47-kV utility-approved air switch along with utility-grade metering and a 12.47-kV gen-tie from an overhead line that would run from this pole to the PG&E POI, allowing the project to use the existing PG&E distribution infrastructure to deliver the power generated. The second pole would house a 12-kV recloser (circuit breaker), and the third pole would consist of a 12.47-kV riser, switch, and full dead end. The poles would be spaced between the onsite inverter, transformer, and the PG&E utility pole.

Each pole would be approximately 40 feet high. All required electrical breaker systems and protective relay systems would be installed as part of the project. Surge arrestors would be used to protect the facility and auxiliary equipment from lightning strikes or other disturbances.

The generated power would be transmitted off site through existing PG&E distribution lines located along Evans Ranch Road. The power would travel downstream (away from PG&E's Ortiga Substation) and upstream (toward PG&E's Ortiga Substation), satisfying local residential, agricultural, commercial, and industrial electrical needs. When all electrical demands downstream are satisfied, power would then be pushed back upstream and delivered to the Ortiga Substation, which is approximately 3.15 miles east southeast of the project site on Charleston Rd, just south of Jersey Road. This excess power would be distributed from the Ortiga Substation to local distribution lines, sending the power downstream and satisfying additional local residential, agricultural, commercial, and industrial electrical demands.

4.3.3 Medium Voltage Collection System

The power that exits the MVT from the PCS pad travels in three-phase cables that will be enclosed in underground conduit buried to a depth of at least 36 inches and will meet or exceed compliance with NEC building standards along with local jurisdiction standards and/or requirements. The MVCS travels between the MVTs found on each PCS pad, adding power in parallel until the quantities reached are optimized for a given MVCS circuit. The initial design for the proposed project assumes that 5 MW of power would be carried by one circuit; however, this will depend on the length of the underground, conduit enclosed cable and what amount of line loss would be considered acceptable for the system.

Alternatively, the project would route approximately of the MVCS as a medium voltage overhead (MVOH) distribution line (and associated poles) within the project boundaries to the project substation. A final optimized design would determine whether overhead line components, underground line components, or some combination of both would be used in the MVCS incorporating potential shading issues from pole sets and conductors.

All circuits of the MVCS would be routed across the project site to the project substation. The MVCS would then be collected into the substation through a series of circuit breakers and into the low voltage side of the electrical bus system of the substation.

4.4 Electrical Components in the High Voltage Systems

4.4.1 Project Substation

The project substation is the portion of the system where project power is transformed to match the specification of the interconnection into the electric grid. The project substation is characterized as having a low side and a high side, as defined by the point of power transformation from 34.5 kV (low side) stepped up in voltage to match the grid specifications in the transmission system (high side). Under the proposed project, the power would be stepped up to 69 kV at the project substation. The footprint of the substation would be approximately 1/4 acres.

The low side of the substation is composed of the MVCS terminations into a low side bus. This power is fed through automated circuit breakers that can be controlled remotely from a control room or can automatically open the circuit if a phase fault is detected anywhere in the portion of the BESS routed through that circuit breaker. The low side bus is tied directly to the generation step up (GSU) transformer.

Within the low side and high side of the substation bus work, there are several points where air disconnect switches would be installed. By manually operating these switches and locking them out for safety, portions of the substation could be electrically isolated. Substation design related to breakers and switches would comply with all relevant interconnection codes, NEC standards, and local jurisdiction requirements.

4.4.2 Project Transmission Line

The project would include an electric transmission line (gen-tie line) to connect the project to generation facilities owned and operated by SDG&E. The gen-tie line would be composed of a span of three conductors between the project substation dead end structures and the adjacent switching station dead end structures. The line would be approximately 0.63 miles in length, and sizing of the conductor would be relative to the exact length of the span necessary for the project and the avoidance of calculated line losses. The dead end structures on both sides of the facilities would also carry a fiber communications system between the control rooms of the facilities.

4.5 Communications and Metering

The project would have a Supervisory Control and Data Acquisition (SCADA) system that would allow for remote monitoring and control of inverters and other project components. The SCADA system would be able to monitor project output and availability, and to run diagnostics on the equipment. The project would also have a local overall plant control system (PCS) that would provide monitoring of the BESS as well as control of the balance of facility systems. The microprocessor-based PCS would provide control, monitoring, alarm, and data storage functions for plant systems as well as communication with the project's SCADA system. Redundant capability would be provided for critical PCS components so that no single component failure would cause a plant outage. All field instruments and controls would be hardwired to local electrical panels. Local panels would be hard-wired to the plant PCS. Wireless technology would be considered as a potential alternative during final project design.

5 SECURITY FENCING AND LIGHTING

5.1 Site Security

The project would be remotely monitored by the applicant or an affiliated company. Site security would consist of an 8-foot-high chain-link fence with three-strand barbed wire installed around the perimeter of the BESS facility. Controlled-access gates would be located at the main entrance to the site. These would either be swinging or sliding gates, with a minimum width of 20 feet, as required for access by the property owner(s) and for the convenience of the proponent in accessing and maintaining their facilities; this access point would be keyed and a KNOX box installed to prevent unauthorized access to the project site. All easements already recorded would be honored. Additional site security measures may include a monitored camera system designed to cover the entire facility. This system would be remotely monitored and security breaches would be reported to emergency responders as well as site operations. An intrusion detection system may be installed along perimeter fences to alert monitors of fence breaches. A camera working in conjunction with the fence intrusion system would decrease the number of false positives reported. Furthermore, the proposed project would comply with North American Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) requirements for regulatory control and security systems.

5.2 Outdoor Lighting

Project lighting would be installed for ongoing maintenance and security purposes. Low-level lighting would be installed at entry and egress gates and at strategic locations around the facility. All project lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent ownerships. Lighting would be used from dusk to dawn. Project lighting would conform to National Electric Safety Code (NESC) requirements and all applicable City of Oceanside outdoor lighting codes.

5.3 Signage

Signs warning of high voltage danger and citing 18 USC 1366 would be posted along the perimeter fence at regular intervals and at all entry and egress points. These signs would also include a no trespassing statement. Signage would identify the project operator and owner and provide emergency contact information. All signage would conform to City of Oceanside signage requirements.

5.4 Wildlife Corridor Planning Zone and Fencing Design

Fences installed on the perimeter of the project site and arrays would be wildlife friendly. All fencing will leave a 4- to 8-inch opening between the fence mesh and the ground, and the bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that pass under the fence. The incorporation of such fencing into the project design is intended as a precautionary measure to prevent a complete barrier to wildlife movement within the project boundaries.

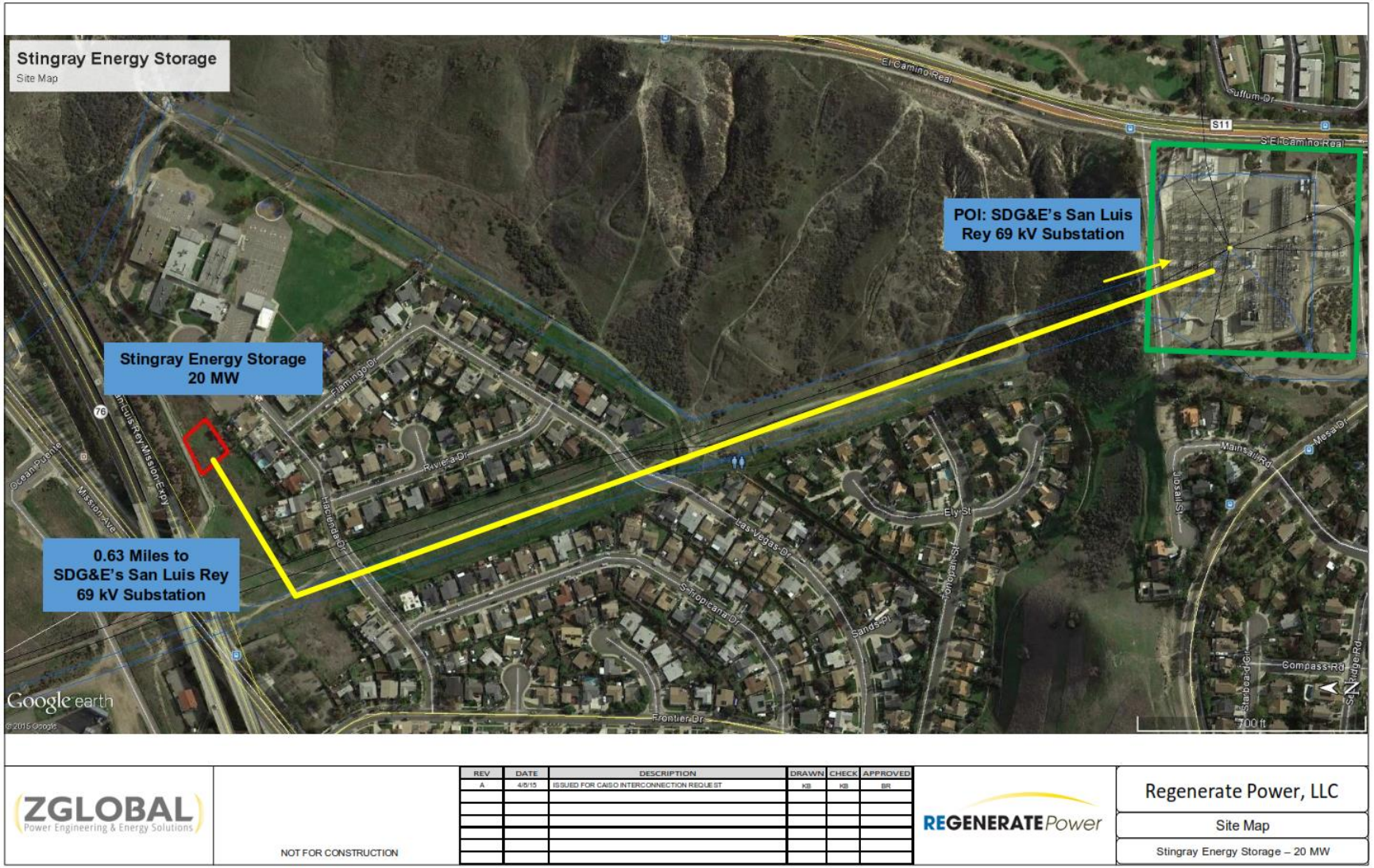


Figure 5-1 Preliminary Site Plan

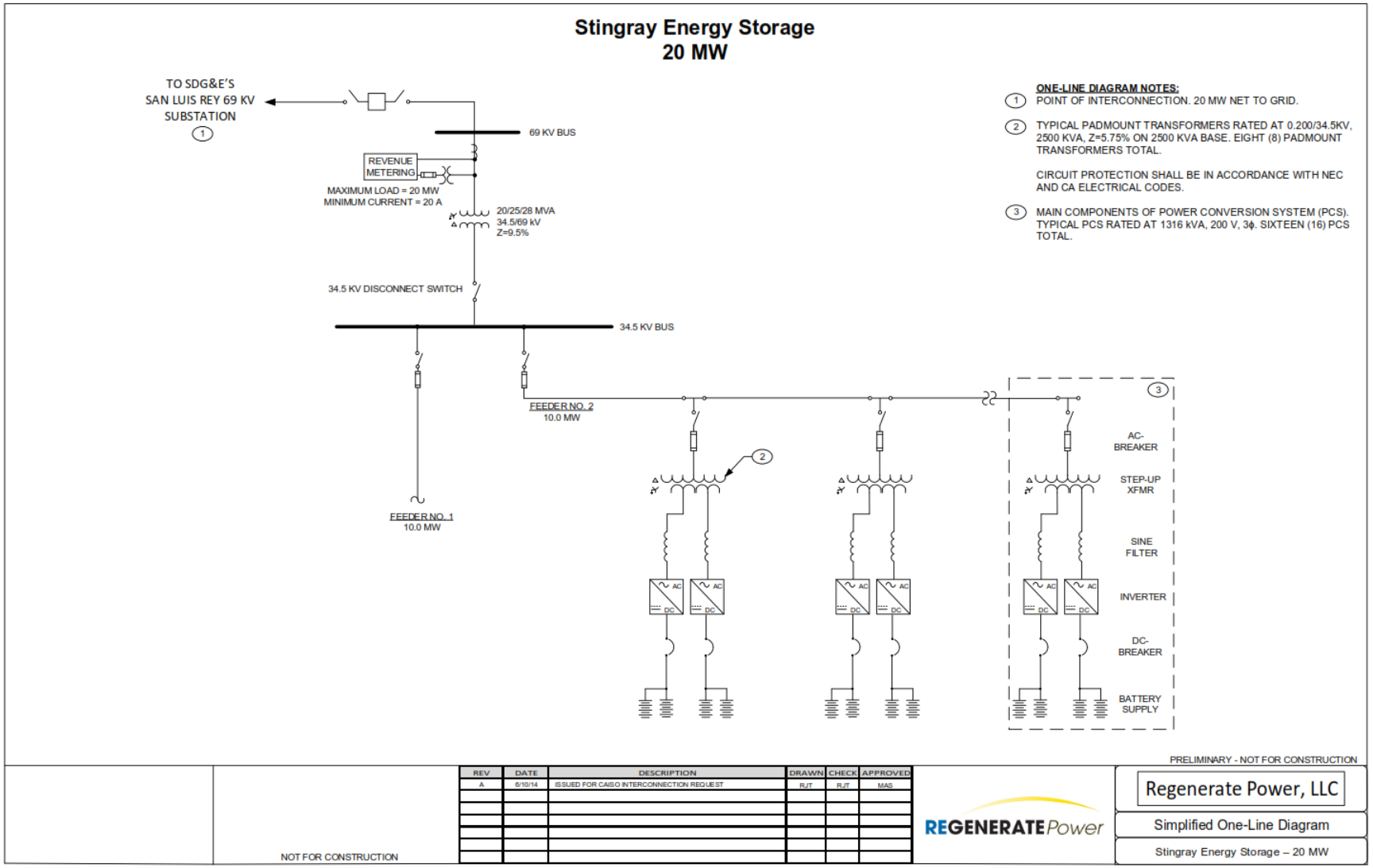


Figure 5-2 Preliminary Single Line Diagram

Figure 5-3 Elevations and Details

Figure 5-4 CellCube Confirgurations

6 CONSTRUCTION

6.1 Construction Schedule

Construction of the BESS facilities is scheduled to begin in the third quarter of 2016 and anticipated to be completed by the fourth quarter of 2016. The project is anticipated to commence commercial operations and begin delivering energy to the grid by the fourth quarter of 2016. The overall construction period, including commissioning and testing, is expected to be up to 5 months. Major milestones in the construction schedule for the site are summarized in Table 6-1 Preliminary Construction Schedule.

Table 6-1 Preliminary Construction Schedule

Activity	Estimated Date
Site Preparation	Q3
Begin Mechanical Installation	Q3
Begin Electrical Installation	Q3
Commissioning	Q4
Commercial Operations	Q4

Construction would generally occur between 7 a.m. and 6 p.m. on a 5-day-per-week, 8-hour-per-day basis. Additional work hours and days may be necessary to make up for unanticipated schedule delays or to perform certain testing and checkout activities. All construction work performed outside of the normal work schedule would be coordinated with the appropriate agencies and conform to the appropriate jurisdiction Noise Ordinance.

6.2 Site Preparation

Various site preparation and construction activities would be needed to complete the project. These activities include:

- Rough grading, if needed, for preparation of the PCS and substation pads
- Cut existing vegetation no more than 2 inches above existing grade, including minimal grubbing and clearing of shrubs as required
- Construct drainage routes for storm water management utilizing the existing drainage and natural slope of the project site to the maximum extent possible

No grading is anticipated for the installation of the BESS system; however, as listed above, rough grading may be needed for the preparation of the proposed pads if the pads cannot be constructed using the existing slope. If rough grading is required, any trees and/or vegetation that are removed from the site during minor grading activities would be taken to a composting facility or chipped and used as mulch. Any cut and fill as a result of any rough grading would be contained within the project site. No removal of soil from the project site is contemplated.

Areas disturbed by project construction activities would be stabilized during construction to minimize wind and water erosion, as well as the generation of fugitive dust, by watering and/or implementing the San Diego Air Pollution Control District (SDAPCD) or the California Air Resources Board (CARB) recommended dust control

measures. Chipped mulch created as a result of selective vegetation removal may be spread on site for this purpose, as appropriate and applicable

Onsite temporary disturbances would be primarily associated with construction activities in equipment staging and laydown areas, along temporary access roads, or within graded or disturbed areas, which would be restored following completion of construction. No temporary offsite disturbances are contemplated.

Onsite permanent disturbances would be associated with the operational facilities and would include: access roads, equipment pads, fencing, and data monitoring equipment that would remain in place for the life of the project. No permanent offsite disturbances are contemplated.

Trenches would be excavated using ditch digging equipment or backhoes to install the underground wiring and conduits that would collect power from the BICs and deliver it to the inverter(s) located at the appropriate pads.

6.3 Construction Workers, Hours, and Equipment

The construction workers employed for the project would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. The onsite assembly and construction workforce is expected to reach a peak of 50 workers.

Construction work would generally occur during daylight hours, Monday through Friday. Non-daylight work hours may be necessary to make up for schedule deficiencies or complete critical construction activities, including activities that could not be completed during daylight. For instance, during hot weather, it may be necessary to start work earlier to avoid pouring concrete during high ambient temperatures.

Temporary construction trailers and associated work facilities could be installed during site mobilization. It is expected that the majority of these temporary facilities would be located at an assembly or staging area throughout the construction period.

The batteries and other materials for the BESS facilities would be manufactured off site and delivered to the project site by truck. Construction materials such as concrete, conduit, wire and cable, fuels, reinforcing steel, small tools, and consumables would be delivered to the site by truck. The construction activities described may overlap with one another, with grading and access road construction preceding installation of the BESS and associated equipment and appurtenances.

Construction may require the use of graders, compactors, trenchers, backhoes, forklifts, skid steers, front-end loaders, material hauling trucks, and a 5,000-gallon water truck. Other details regarding construction are provided below.

Table 6-2 summarizes the project's proposed construction activities. As previously noted, some of the construction activities described below may overlap.

Table 6-2 Construction Activities

Project Construction Activities

Activity	Duration	Equipment	Number of Workers
Site Work	2 ½ months	One tracked dozer Two motor graders Two sheep's-foot compactors Two smooth-drum compactors Two backhoes/excavators Two water trucks One wheel loader Two rear/belly dump trucks	20 (Average)
Mechanical and electrical work	4 ½ months	One bobcat loader One backhoe excavator One forklift One water truck One backhoe/front-end loader One gradall One trencher Two pickup trucks (1 ton)	50 (average)
Commissioning	½ month	One water truck Two pickup trucks (1 ton)	5 (average)
Closeout/restoration	1 month	One motor grader One water truck Two pickup trucks (1 ton)	8 (average)

Note: Some activities would occur concurrently.

6.4 Electrical Supply

Temporary power for construction is expected to be provided by mobile diesel-driven generator sets and/or a temporary electrical service connection from the local power provider.

6.5 Water Usage

Water for construction would be hauled in by truck. It is conservatively estimated that up to 4 acre-feet of water would be required during the construction period to support project site roadway compaction, dust control, and sanitary use.

6.6 Wastewater

Wastewater generated during construction would consist primarily of sanitary waste, which would be managed through the use of portable toilets. Other wastewater generated during construction may include storm water runoff and equipment wash water. Construction would adhere to a storm water pollution prevention plan (SWPPP), which would incorporate BMPs for runoff and erosion control. Site-specific BMPs would be designed by the contractor in compliance with the regulations and permit conditions of the storm water pollution prevention plan. The project would also comply with applicable post-construction water quality requirements adopted by the RWQCB—San Diego Region (Region 9).

6.7 Solid and Non-Hazardous Waste

A small amount of solid waste would be generated by construction activities at the site. Such waste may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation wastes. These wastes would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Vegetation wastes generated by site clearing and grubbing would be chipped/mulched and spread on site or hauled off site to an appropriate "green" waste facility.

6.8 Hazardous Materials

The hazardous materials used for construction would be typical of most construction projects of this type. Materials would include small quantities of gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, ethylene glycol, and welding materials/supplies. If required by the City of Oceanside, a hazardous materials business plan would be provided to the City of Oceanside Environmental Health Services Department/Hazardous Materials Section, which would include a complete list of all materials that would be used on site and information regarding how the materials would be transported and in what form they would be used. This information would be recorded to maintain safety and prevent possible environmental contamination or worker exposure. During project construction, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel.

6.9 Hazardous Waste

Small quantities of hazardous wastes would most likely be generated over the course of construction. These wastes may include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Workers would be trained to identify and handle hazardous materials properly. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped off site for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler.

7 OPERATIONS AND MAINTENANCE

7.1 Operational Time Limits

Once placed into service, the facility would operate on a twenty-four by seven (24 x 7) basis, charging and discharging energy as-needed, with the schedule to be determined by SDG&E's needs.

7.2 Personnel

The project would be a private facility and, for safety reasons, would not be open to the public. Only authorized personnel would be permitted onsite and generally would be limited to the employees monitoring and maintaining the facility. An estimated two or three offsite workers would be required for operation, maintenance, and security of the site. Operation and security would be conducted from an offsite location, and maintenance crews would be dispatched to the site (as needed) during operation.

7.3 Facility Maintenance

Facility maintenance would include the periodic maintenance of structures and project components. The level of vehicle activity entering and leaving the site during operation would be limited to scheduled and emergency maintenance visits and infrequent delivery vehicles. Regular maintenance performed on the site would consist of equipment inspection and replacement and would occur primarily during daylight hours. Emergency maintenance would occur at any time, as needed for the situation; however maintenance and emergency service during daylight hours would be encouraged to maximize worker safety. Maintenance schedules would be developed to include periodic maintenance and equipment replacement in accordance with manufacturer recommendations. No heavy equipment would be used during normal operation. Operation and maintenance vehicles would include trucks (pickups, flatbeds, and dump trucks), forklifts, and loaders for routine and unscheduled maintenance. Large heavy-haul transport equipment may be brought to the site infrequently for equipment repair or replacement.

8 DECOMMISSIONING AND RECLAMATION

At the end of the project's operational term, the project proponent may determine that the project should be decommissioned and deconstructed, or it may seek an extension of the CUP. Because the BESS's supporting equipment would sit on the surface of the land, when they are removed after the project's lifetime the land would be largely unaltered from its natural state. The project proponent would work with the locality to put an agreement in place that would ensure decommissioning of the project after its productive lifetime. The project would use BMPs to ensure the collection and recycling of batteries and minimize the potential for batteries to be disposed of as municipal waste.

Decommissioning and reclamation may include: 1) packaging batteries for removal and recycling or otherwise ensuring removal; 2) removing ancillary facilities; and 3) reclamation, re-vegetation, restoration, and soil stabilization to return the site to its native conditions; or 4) return to agricultural production as dictated by any agreements that may be put into place between the applicant and the property owner(s). Material and equipment such as such as the battery structures and mechanical assemblies will be recycled. The inverters and transformer(s) will also be reused or recycled. The equipment pads made of concrete will be crushed and recycled. Any underground conduit and wire will be removed by uncovering the trenches and backfilling when done. The remaining balance of material and/or waste generated from the project would either be recycled as appropriate for the type of material or disposed of at the local transfer station and/or landfill facility.

9 REPRESENTATIVE SITE PHOTOGRAPHS

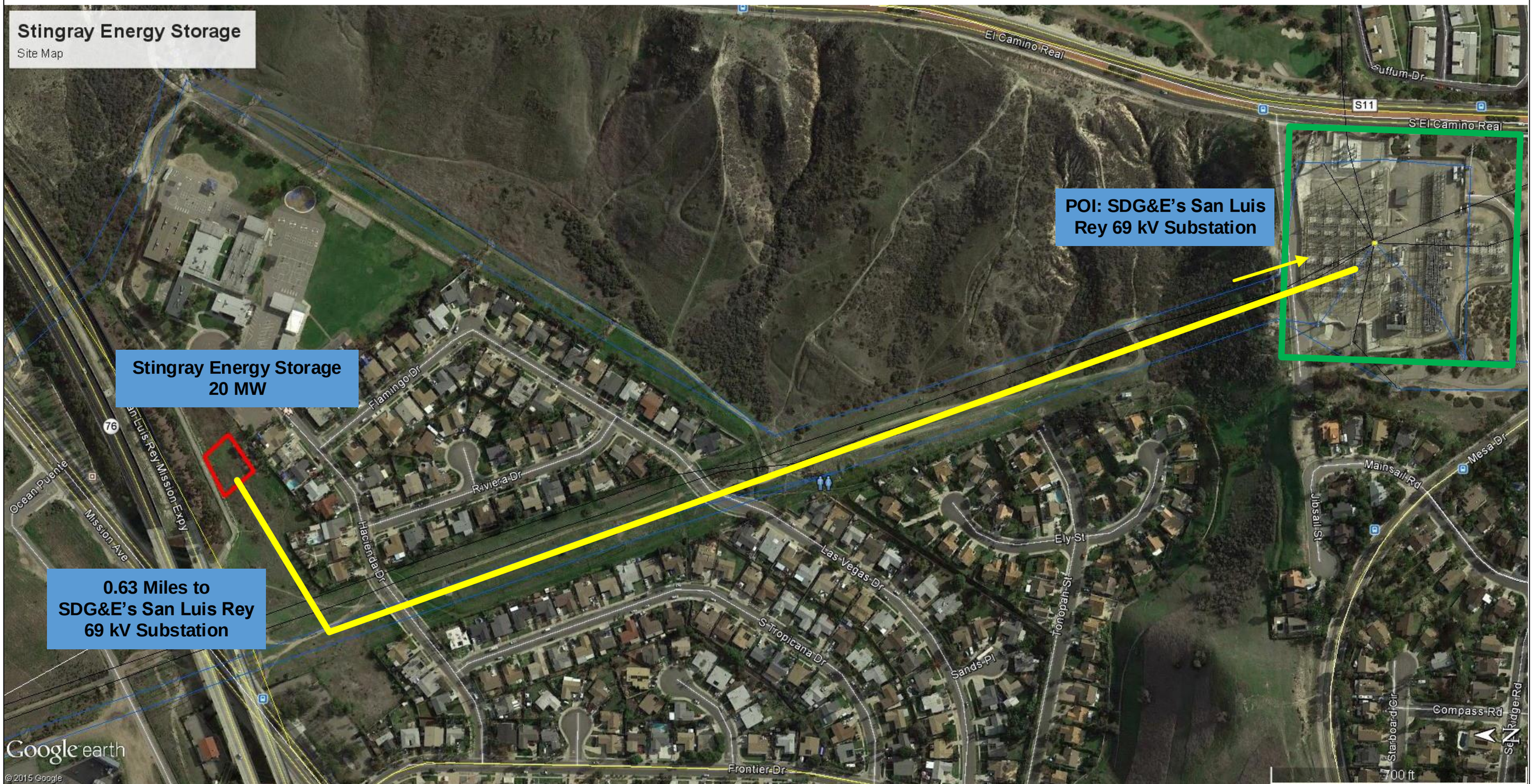
Figure 9-1 West end of survey area, facing east.

Figure 9-2 West end of survey area, facing Annual Brome Grassland area.

Figure 9-3 Transitional zone of Annual Brome Grassland and ornamental vegetation.

Figure 9-4 Central portion of survey area, facing west.

Figure 9-5 Eastern end of survey area, facing west.



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A	4/□/15	□SS□E□ □O□ CA□SO□NTE□CONNECT□ON □E□ □EST	□□	□□	□□

REGENERATE Power

Regenerate Power, LLC

Site Map

Stingray Energy Storage – 20 M□

STINGRAY ENERGY STORAGE PROJECT

JUSTIFICATION FOR CEQA EXEMPTION
(Emergency – Public Resources Code, § 21080(b)(4))

[attach to Notice of Exemption]

Project Description. Regenerate Power ("Regenerate") proposes to construct a 20MW/80MWh battery energy storage system ("Project") on an approximately 3.14 acre vacant site located south of State Route 76, north of Hacienda Drive, east of Mission Road and west of El Camino Real, in the City of Oceanside, assessor's parcel number 160-290-68 ("Project Site"). The Project will be contained within an approximately 25,000 square foot metal frame structure housing approximately 20MW of lithium ion batteries, mounting racks and electric equipment. The building will be insulated and air-conditioned for battery reliability, with separate rooms for the electronic controls, inverters, and rectifiers. The primary storage components would consist of self-contained electrochemical battery systems using conventional storage technologies with proven safety and performance records. The Project would also include the installation of ancillary components to enable its interconnection to the San Diego Gas and Electric ("SDG&E") San Luis Rey Substation. The Project Site is zoned CL (Limited Commercial) and the proposed use is permitted by applicable zoning regulations with a conditional use permit. The Project will contain the project design features attached hereto as Exhibit A.

The Project will contribute to energy reliability in Southern California, which is at imminent risk as a result of a sudden and unexpected natural gas leak at the Aliso Canyon Natural Gas Storage Facility in Los Angeles last Fall. On January 6, 2016, Governor Brown issued a Proclamation of a State of Emergency for the Aliso Canyon gas leak ("Emergency Proclamation").[1] The Emergency Proclamation imposed a moratorium on the injection of natural gas for storage into the Aliso Canyon facility indefinitely. The loss of this substantial storage capacity threatens the energy reliability of the region, which in turn presents significant health and safety risks to the public at large. In response to the Emergency Proclamation, therefore, the California Public Utilities Commission directed utility providers to solicit energy storage projects that can be operational by December 31, 2016.[2] The Project could be operational by the end of the year and would enhance energy reliability to the electrical grid by providing dispatchable energy under various operating conditions. The ability to store energy would improve SDG&E's operability and enhance the integration of available energy resources into the transmission network by offering additional ramp rate control and more consistent energy flows.

Collateral to its value in restoring reliability to the electrical grid is the fact that the project is a green technology that displaces the need for more natural gas peaker power plants. The project prevents the need to emit higher levels of greenhouse gas emissions, thus assisting the City in

[1] https://www.gov.ca.gov/news.php?id=19264

[2] http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M161/K921/161921835.PDF (see p. 2).

meeting whatever greenhouse gas reductions the City may set as a target in any future Climate Action Plan it may be considering.

Statutory CEQA Exemption for Emergency: The City of Oceanside hereby makes a factual determination that the above-described activities are exempt from compliance with the California Environmental Quality Act ("CEQA") due to the existence of an emergency, and that such finding is supported by the substantial evidence set forth below.

Pursuant to CEQA Guidelines[3] section 15269, the following emergency projects are exempt from the requirements of CEQA.

> (a) Projects to maintain, repair, restore, demolish, or replace property or facilities damaged or destroyed as a result of a disaster in a disaster stricken area in which a state of emergency has been proclaimed by the Governor pursuant to the California Emergency Services Act, commencing with Section 8550 of the Government Code.
>
> (b) Emergency repairs to publicly or privately owned service facilities necessary to maintain service essential to the public health, safety or welfare.
>
> (c) Specific actions necessary to prevent or mitigate an emergency. This does not include long-term projects undertaken for the purpose of preventing or mitigating a situation that has a low probability of occurrence in the short-term.

(See also, Pub. Resources Code, § 21080(b)(4).)

> "Emergency" means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as riot, accident or sabotage.

(Pub. Resources Code, § 21060.3.)

Applying the guidelines set forth above, the project qualifies for a CEQA exemption under CEQA Guidelines, §15269(a) because the Emergency Proclamation was made pursuant to the California Emergency Services Act, in response to a disaster - the massive gas leak at Aliso Canyon. Consistent with the Emergency Proclamation, the Project proposes to maintain or restore reliability of the electrical grid, which is a facility that was damaged by the disaster at Aliso Canyon Gas Storage Facility.

The project also qualifies for a CEQA exemption under CEQA Guidelines, §15269(b) as it is an emergency repair to the system of privately and publicly owned electrical grid infrastructure necessary to maintain the reliable delivery of electrical power that protects public health, safety and welfare, particularly during high heat days in the summer or very cold days in the winter,

[3] 14 Cal. Code Regs., §15269(a)-(c)

when energy demand his high. Public Utilities Code section 451 requires public utilities to maintain adequate, efficient, just, and reasonable service, instrumentalities, equipment and facilities to ensure the safety, health, and comfort of the public. The Project provides supplemental energy storage required to maintain reliability of the electrical grid which is necessary to maintain service essential to the public health, safety or welfare,

The project qualifies for a CEQA exemption under CEQA Guidelines, §15269(c) because approval of the energy storage project in Oceanside is an action necessary to mitigate the emergency to the reliability of the electrical grid caused by the Aliso Canyon Gas Storage Disaster. As further discussed below, this electrical reliability emergency is projected to cause power outages for up to 14 days in the "summer season" which ends October 31, 2016,[4] with additional energy curtailments expected to continue during the winter of 2017 and beyond.

As noted above, both the Governor and the California Public Utilities Commission found the Aliso Canyon natural gas leak and its resulting threat to energy reliability constitute an emergency that requires immediate action to prevent or mitigate loss of, or damage to, life, health, property or essential public services. The CPUC further found that such immediate action should include quick implementation of new energy storage capacity. Construction and operation of the Project provides new energy storage capacity that will mitigate the imminent threat to public health, safety and welfare caused by the substantially diminished storage capacity of Aliso Canyon resulting from gas leak. Aliso Canyon stored gas is currently only 20% of its capacity and no new injections of stored gas can be made for the foreseeable future. As further discussed below, a real risk of rolling blackouts or "brownouts" exists imminently and will continue in the coming months (and beyond) due to the loss of Aliso Canyon. It is likely that the risk of these energy curtailments will increase as the limited supply of gas storage from Aliso Canyon is exhausted to address immediate energy needs in the near term. The forecasted energy curtailments, if not mitigated, have a high probability of resulting in loss of, or damage to, life, health, property, or essential public services. Below are just a few examples of dangerous conditions that have recently arisen and can be expected to occur again during or following a brownout:

- 2011 power outage left Chula Vista hospital without power for 2 hours when back-up generator failed. Several patients were left in peril as a result. (http://www.sandiegouniontribune.com/news/2011/sep/16/scripps-mercy-probed-after-generator-fails/.)
- 2011 power outage leads to sewer spills that contaminate local drinking water; loss of sewer pump power also causes raw sewage flows into ocean. (http://www.scpr.org/news/2011/09/09/28741/power-restored-14-million-socal/)
- San Diego residents told to drink bottled water for several days following 2011 power outage because loss of pressure in pipelines could have contaminated drinking water.

[4] "Winter is defined as November 1 through March 31, and summer is April 1 to October 31." See Aliso Canyon Action Plan, at 10, FN 10 (available at http://www.energy.ca.gov/2016_energypolicy/documents/2016-04-08_joint_agency_workshop/Aliso_Canyon_Action_Plan_to_Preserve_Gas_and_Electric_Reliability_for_the_Los_Angeles_Basin.pdf.)

(http://www.sandiegouniontribune.com/news/2011/sep/11/boil-water-advisory-lifted-san-diego-neighborhoods/.)

- Man dies when dialysis machine fails during brownout. (http://www.dailykos.com/story/2007/9/9/382711/.)
- Nursing home resident dies in Stockton, CA when air conditioning is lost to brownout. (http://www.cbsnews.com/news/california-braces-for-more-blackouts/)

The California Department of Public Health also warns about numerous public health and safety dangers that can arise from a brownout. (See http://www.bepreparedcalifornia.ca.gov/BeInformed/NaturalDisasters/Pages/SafetyinaPowerOutage.aspx.) These hazards include risk to food safety resulting from the loss of refrigeration; risk to clean water due to loss of water purification systems; risk to human life and well-being due to the risk for heat stroke, heat exhaustion and other life threatening heat stress conditions that can be brought on very quickly and result in death or severe injury if brownouts make air conditioning unavailable when it gets hot; risk to human life and well-being from hypothermia caused when heating is not available due to brownouts during cold temperatures; risk of carbon monoxide poisoning; risk of electrical or traumatic injuries as power lines are reenergized and equipment is reactivated; and risk to vaccine storage. (*Id.*) The foregoing only describes a few of the significant public health, safety and welfare risks a brownout can cause. Past experience and common sense inform that brownouts also lead to gridlock on the streets, greater potential for car accidents when signal light controls fail, taxing police and fire conditions, and huge economic losses when businesses are forced to close operations because product (i.e., food and other perishables) are spoiled and cash register and computer systems become inoperable.

A heat wave can put extreme stress on the electrical grid causing brownouts even when facilities and resources are functioning well and at capacity, as was the case just last year, even before the Aliso Canyon Crisis began, when high temperatures led to record-high demand on power grids and then brownouts. (http://www.latimes.com/local/lanow/la-me-ln-power-outages-extreme-heat-southern-california-20150909-story.html.) The loss of Aliso Canyon now significantly increases the likelihood of future brownout and the threats to public health and safety. Energy storage projects, such as the Project, help mitigate the risk of such an emergency.

Other Facts Supporting Emergency Finding: As described in the "Aliso Canyon Action Plan to Preserve Gas and Electric Reliability for the Los Angeles Basin" prepared by the expert stff of the California Public Utilities Commission, California Energy Commission, the California Independent System Operator and the Los Angeles Department of Water and Power ("Aliso Canyon Action Plan"), the Aliso Canyon Natural Gas Storage Facility is essential to maintaining natural gas and electric reliability in the greater Los Angeles Area.[5] A technical advisory group from these expert agencies explain that the natural gas stored in Aliso Canyon is critical in meeting gas usage demands in winter months, and also providing gas needed for operation of natural gas-fired power plants that supply electrical demands during peak summer months, which extends through October 31. (*Id.*) There are limitations in gas pipeline capacity, the ability to import natural gas from the region's suppliers in New Mexico, Texas or the Rocky Mountains

[5] http://www.energy.ca.gov/2016_energypolicy/documents/2016-04-08_joint_agency_workshop/Aliso_Canyon_Action_Plan_to_Preserve_Gas_and_Electric_Reliability_for_the_Los_Angeles_Basin.pdf (see p. 3.)

on-demand and the ability to balance demand with pipeline capacity due to a variety of factors. (*Id*. at pp. 7-18.) Therefore, without the ability to store and withdraw natural gas from Aliso Canyon, even under the best possible conditions, regional energy demands cannot be satisfied based upon pipeline capacity alone.

Currently, there are not adequate alternative storage facilities to replace the storage capacity that Aliso Canyon provides and it is unknown when Aliso Canyon will be available for use again, if ever.[6] In June, 2016, 15 billion cubic feet of gas (less than one-fifth capacity) was available for withdrawal from Aliso Canyon. With careful planning, the Aliso Canyon Action Plan hopes that very limited supply, along with implementation of other measures, can reduce, but not eliminate energy curtailment through the Summer of 2016 (as noted above, the summer season for electricity ends October 31, 2016). (Aliso Canyon Action Plan, p. 4.) During the winter months and beyond as stored gas capacity at Aliso Canyon continues to decline, the risk of energy curtailment will remain. (CPUC, Aliso Canyon Working Gas Inventory, Production Capacity, Injection Capacity and Well Availability for Summer, 2016 (June, 28, 2016).[7] Recognizing the imminent threat to energy reliability, on May 26, 2016, the CPUC adopted Resolution E-4791 directing that alternative storage capacity be brought online by the December, 2016 to reduce reliance on Aliso Canyon. The CPUC Press Release[8] for the resolution stated:

> In support of Governor Brown's State of Emergency Proclamation, the CPUC is pursuing activities that could be quickly implemented to alleviate the electric reliability risks to the Los Angeles Basin, such as the expedited procurement authority granted to Edison today. The CPUC identified energy storage systems as one potential solution because they can be fast-responding, firm, and dispatchable. Energy storage resources can be potentially constructed, interconnected, and deployed on a short timeline. Under current conditions, energy storage systems may help alleviate the reliability risks associated with the partial shutdown of Alison Canyon.
>
> Said CPUC President Michael Picker, "Southern California faces a number of energy reliability challenges – for electricity and for residential heating - this summer, next winter, and at least for the next summer after that - all related to the loss of gas storage at Aliso Canyon. Historically, our energy system in the L.A. Basin was built around that facility. Now we're doing what we can to expedite the next generation of energy solutions in that very constrained piece of California's infrastructure. This is one important part of the overall effort.

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[6] Resolution E-4791 authorizes Southern California Edison to enter into procurement contracts with a term of up to ten years.

[7] See, e.g., at p. 6-7: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/News_Room/News_and_Updates/Preliminary%20Report%20-%20Section%20715%20of%20the%20Public%20Utilities%20Code.pdf

[8] http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M162/K541/162541191.PDF

As further evidence of the emergency nature of the Aliso Canyon response, it is relevant to note that the CPUC adopted Resolution E-4791 as an emergency resolution reducing the public review and comment period from thirty to just five-days. In doing so, the CPUC stated the Aliso Canyon situation consisted "an unforeseen emergency" concerning "activities that severely impair or threaten to severely impair public health or safety" and /or "crippling disasters that severely impair public health or safety." (See Resolution E-4791, p. 6.). The City finds that the following findings that the CPUC made also support an emergency finding under CEQA:

1. On October 23 2016, a massive methane leak was detected at the Aliso Canyon Natural Gas Storage Facility.

2. The leak has been permanently sealed; 15 billion cubic feet of working gas remains the underground reservoir—less than one-fifth of the capacity of the facility.

3. No new gas may be injected into the facility until safety tests are completed on all the facilities' wells.

4. The facility is critical to meeting peak gas usage demands in winter months and peak electrical demands during the summer months in the Los Angeles Basin.

5. With limited gas supply from Aliso Canyon, there could be gas curtailments severe enough to cause electric generation shortages that lead to electric service interruptions during upcoming summer and winter days in 2016-2017.

6. On January 6, 2016, Governor Brown proclaimed a state of emergency in Los Angeles County due to the Aliso Canyon leak.

7. Paragraph 10 of the Proclamation directs the CPUC to take all actions necessary to ensure the continued reliability of natural gas and electricity supplies in the coming months during the moratorium on gas injections into the Aliso Canyon Natural Gas Storage Facility.

8. On April 5, 2016, a joint agency Reliability Action Plan analyzing the reliability risks to electrical service this summer in the greater Los Angeles area found that there are 14 days this coming summer during which gas curtailments could be high enough to cause electricity service interruptions to millions of utility customers.

9. There is limited time to undertake remedial actions or activities that will help alleviate electric reliability risk concerns, thus it is necessary to accelerate regulatory processes that might delay remedial actions.

10. The Commission recognizes energy storage can be fast-responding, firm, and dispatchable, and may be able to alleviate the reliability risks associated with the injection moratorium at Aliso Canyon.

11. Energy storage resources can be potentially constructed on a short timeline.

12. Allowing SCE to execute an expedited competitive solicitation to procure energy storage that can help mitigate outage risks in the coming months due to limited availability of gas supplies from Aliso Canyon is consistent with Paragraph 10 of the Governor's State of Emergency Proclamation.

13. SCE shall solicit "In-front-of-the-Meter" (IFOM) energy storage that can be operational by December 31, 2016.

14. It is reasonable that energy storage procurements interconnect in a location that will help alleviate electric reliability concerns and qualify for resource adequacy credit.

15. It is unclear how long the injection moratorium will last; therefore, SCE is authorized to enter into contracts with terms of 10 years or less.

16. The partial shutdown of the Aliso Canyon Natural Gas Storage Facility will impact all customers connected in the area.

17. Public Utilities Code Section 451 requires that every public utility maintain adequate, efficient, just, and reasonable service, instrumentalities, equipment and facilities to ensure the safety, health, and comfort of the public.

18. This Resolution responds to the Governor's Emergency Proclamation to address the electric reliability concerns in the Los Angeles Basin area due to partial shutdown of the Aliso Canyon Gas Storage Facility.

Although Aliso Canyon is located in the L.A. Basin, it is essential to providing grid stability for all of Southern California. Providing energy storage capacity in San Diego helps restore energy reliability to the grid in a similar way. Based on the foregoing, the Emergency Proclamation, Resolution E-4791 and the Aliso Canyon Action Plan (copies of which are all attached hereto and incorporated herein), the City concludes that substantial evidence supports a finding that the Project is necessary prevent or mitigate an emergency and is therefore exempt from CEQA pursuant to Public Resources Code section 21008(b)(4) and 14 Cal. Code of Regulations, section 15269(c).)

EXHIBIT A

STINGRAY ENERGY STORAGE PROJECT

PROJECT DESIGN FEATURES

Application for Discretionary Permit

Development Services Department / Planning Division
(760) 435-3520
Oceanside Civic Center 300 North Coast Highway
Oceanside, California 92054-2885

STAFF USE ONLY

ACCEPTED	BY

Please Print or Type All Information

HEARING

PART I – APPLICANT INFORMATION

1. APPLICANT	2. STATUS
Regenerate Power LLC	Developer
3. ADDRESS 770 Menlo Ave, Suite 100 Menlo Park, CA 94025	4. PHONE/FAX/E-mail (650) 387-4982 Rfezzani@regeneratepowerllc.com
5. APPLICANT'S REPRESENTATIVE (or person to be contacted for information during processing) ZGlobal Inc., Jamie Nagel, Sr. Project Developer	
6. ADDRESS 604 Sutter Street, Suite 250 Folsom, CA 95630	7. PHONE/FAX/E-mail (916) 672-2025 jamie@zglobal.biz

	GPA
	MASTER/SP.PLAN
	ZONE CH.
	TENT. MAP
	PAR. MAP
	DEV. PL.
	C.U.P.
	VARIANCE
	COASTAL
	O.H.P.A.C.

PART II – PROPERTY DESCRIPTION

8. LOCATION	9. SIZE
Hacienda Drive, Oceanside, CA 92054	3.140 Acres

10. GENERAL PLAN	11. ZONING	12. LAND USE	13. ASSESSOR'S PARCEL NUMBER
GC General Commercial	CL Limited Commercial	Vacant	160-290-68-00

14. LATITUDE	15. LONGITUDE
33.220217	-117.336647

PART III – PROJECT DESCRIPTION

16. GENERAL PROJECT DESCRIPTION

Expedited conditional use permit for 15,000 to 25,000 square foot steel building for commercial operation of an Energy Storage System located south of Mission Avenue and Hwy. 76 and north of San Luis Rey Elementary School on general property.

17. PROPOSED GENERAL PLAN	18. PROPOSED ZONING	19. PROPOSED LAND USE	20. NO. UNITS	21. DENSITY
N/A	N/A	N/A	N/A	N/A

22. BUILDING SIZE	23. PARKING SPACES	24. % LANDSCAPE	25. % LOT COVERAGE or FAR
15,000 to 25,000 sq. ft.		15%	

PART IV – ATTACHMENTS

	26. DESCRIPTION/JUSTIFICATION		27. LEGAL DESCRIPTION		28. TITLE REPORT
	29. NOTIFICATION MAP & LABELS		30. ENVIRONMENTAL INFO FORM		31. PLOT PLANS
	32. FLOOR PLANS AND ELEVATIONS		33. CERTIFICATION OF POSTING		34. OTHER (See attachment for required reports)

PART V – SIGNATURES

SIGNATURES FROM ALL OWNERS OF THE SUBJECT PROPERTY ARE NECESSARY BEFORE THE APPLICATION CAN BE ACCEPTED. IN THE CASE OF PARTNERSHIPS OR CORPORATIONS, THE GENERAL PARTNER OR CORPORATION OFFICER SO AUTHORIZED MAY SIGN. (ATTACH ADDITIONAL PAGAES AS NECESSARY).

35. APPLICANT OR REPRESENTATIVE (Print):	36. DATE	37. OWNER (Print)	38. DATE
Jamie Nagel, Sr. Project Developer ZGlobal Inc.	7/22/2016	Ziad Alaywan, P.E., Managing Member Cedar Investments, LLC	7/22/2016
Sign:		Sign:	

- **I DECLARE UNDER PENALTY OF PERJURY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT. FURTHER, I UNDERSTANDING THAT SUBMITTING FALSE STATEMENTS OR INFORMATION IN THIS APPLICATION MAY CONSTITUTE FRAUD, PUNISHABLE IN CIVIL AND CRIMINAL PROCEEDINGS.**
- **I HAVE READ AND AGREE TO ABIDE BY THE CITY OF OCEANSIDE DEVELOPMENT SERVICES DEPARTMENT AND ECONOMIC AND COMMUNITY DEVELOPMENT DEPARTMENT POLICY NO. 2011-01/POLICY AND PROCEDURE FOR DEVELOPMENT DEPOSIT ACCOUNT ADMINISTRATION.**

Application for Discretionary Permit

Development Services Department / Planning Division
(760) 435-3520
Oceanside Civic Center 300 North Coast Highway
Oceanside, California 92054-2885

STAFF USE ONLY	
ACCEPTED	BY

Please Print or Type All Information

HEARING		
	GPA	
	MASTER/SP.PLAN	
	ZONE CH.	
	TENT. MAP	
	PAR. MAP	
	DEV. PL.	
	C.U.P.	
	VARIANCE	
	COASTAL	
	O.H.P.A.C.	

PART I – APPLICANT INFORMATION

1. APPLICANT	2. STATUS
egenerate o er C	eveloper
3. ADDRESS	4. PHONE/FAX/E-mail
770 Menlo Ave, Suite 100 Menlo ar , CA 4025	50 3 7 4 2 fe ani regeneratepo erllc.com
5. APPLICANT'S REPRESENTATIVE (or person to be contacted for information during processing)	
lo al nc., amie Nagel, Sr. roject eveloper	
6. ADDRESS	7. PHONE/FAX/E-mail
04 Sutter Street, Suite 250 olsom, CA 5 30	1 72 2025 jamie glo al.i

PART II – PROPERTY DESCRIPTION

8. LOCATION	9. SIZE
acienda rive, Oceanside, CA 2054	3.140 Acres

10. GENERAL PLAN	11. ZONING	12. LAND USE	13. ASSESSOR'S PARCEL NUMBER
C eneral Commercial	C limited Commercial	acant	1 0 2 0 00

14. LATITUDE	15. LONGITUDE
33.220217	117.33 47

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N/A	N/A	N/A	N/A	N/A

22. BUILDING SIZE	23. PARKING SPACES	24. % LANDSCAPE	25. % LOT COVERAGE or FAR
15,000 to 25,000 s . ft.		15%	

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35. APPLICANT OR REPRESENTATIVE (Print):	36. DATE	37. OWNER (Print)	38. DATE
amie Nagel, Sr. roject eveloper lo al nc.	7/22/201	iad Alay an, .E., Managing Mem er Cedar nvestments, C	7/22/201
Sign:		Sign:	

- **I DECLARE UNDER PENALTYOF PERJURY THAT THE ABOVE INFORMATION IS TRUE AND CORRECT. FURTHER, I UNDERSTANDING THAT SUBMITTING FALSE STATEMENTS OR INFORMATION IN THIS APPLICATION MAY CONSTITUTE FRAUD, PUNISHABLE IN CIVIL AND CRIMINAL PROCEEDINGS.**
- **I HAVE READ AND AGREE TO ABIDE BY THE CITY OF OCEANSIDE DEVELOPMENT SERVICES DEPARTMENT AND ECONOMIC AND COMMUNITY DEVELOPMENT DEPARTMENT POLICY NO. 2011-01/POLICY AND PROCEDURE FOR DEVELOPMENT DEPOSIT ACCOUNT ADMINISTRATION.**

City of Oceanside Planning Division
Environmental Information Form

TO BE COMPLETED BY APPLICANT

Date Filed:_____
Environmental Fee Paid:_____

MAPS REQUIRED:

1. The project site and surrounding area within 1000-ft. from the project's property lines must be shown on an aerial map (less than 2-years old).

2. The project must be shown on a copy of a page or pages of a street map (i.e. Thomas Brothers Map). The project site must be labeled and the page numbers shown.

GENERAL INFORMATION:

1. Name of Applicant: □egenerate □o□er □□C
   Address: 770 Menlo Ave, Suite 100
   City: Menlo □ar□ State: CA Zip: □4025
   Telephone: □□50□31□□7770 Office □□50□3□7□4□□2 Mo□ile
2. Name of Applicant's Representative: □□lo□al, □nc., □amie Nagel, Sr. □roject □eveloper
   Address: □04 Sutter Street, Suite 250
   City: □olsom State: CA Zip: □5□30
   Telephone: □□1□□□□5□□4□1 Office □□1□□□72□2025 Mo□ile
3. Project Title and/or Application Number(s): Stingray Energy Storage
4. If a Specific Plan has been prepared on the project site, give Specific Plan title:_____
5. List any other related permits or approvals, required from agencies other than the City of Oceanside: City of Oceanside □uilding permit, City of Oceanside grading permit, City of Oceanside encroachment permit
6. Has the project site had any prior environmental review as part of this or another project? If so, please provide the Planning Application file number(s) of the permits previously applied for (i.e., A-1-92, D-1-92, C-1-92, Z-1-92, S-1-92, T-1-92) and the name of the project: No
7. Is the project part of a larger project or series of projects? No If so, describe the project's relationship to the project or series of projects: _____
8. If the project is included in an approved Specific Plan, is it in conformance with the plan? _____ If not, explain how it differs: _____
9. Existing zoning: C□ □□td commercial Proposed zoning: N/A
   Existing General Plan Land Use Designation: □C □□eneral Commercial
   Proposed General Plan Land Use Designation: N/A

LOCATION:

10. Address of project: □acienda □rive, Oceanside, CA □2054
11. Project site is located on the N.S.E.W. (circle one) side of S□□7□/Mission Avenue between □rontier □rive and S11/El Camino □eal streets.
12. Is the project located within the Airport Influence Area? _____
13. Is the project located within the Coastal Zone? _____
14. What is the distance in miles on existing roadways from the project site to the nearest: Fire Station 0.5 miles Airport 1.2 miles
    Hospital 5 miles
    Public Transportation 0.10 miles
15. Is the site within ½ mile of a former sanitary landfill? No

PROJECT DESCRIPTION:

16. Site size: 3.14 acres acres/square feet.
17. Please describe all off-site improvements proposed as part of the project. (Such improvements might include: drainage facilities, street improvements, extension of utilities, cut and fill slopes, pedestrian and bicycle paths, etc., that would be constructed outside of the project boundaries).

FOR RESIDENTIAL PROJECTS: (IF PROJECT IS COMMERCIAL OR INDUSTRIAL, SKIP ITEMS 18 THROUGH 26).

18. Number of lots/dwelling units: _____
19. Maximum building height: _____
20. Amount of off-street parking: _____
    (a) Number required: _____
    (b) Number proposed: _____
    (c) Type of parking (size, whether covered): _____
21. Please describe any recreational facilities to be provided: _____
22. What is the distance in miles on existing roads from the project site to the nearest:
    Elementary School _____ Shopping Center _____
    High School _____ Public Library _____
23. If applicable, describe the project's relationship to larger project or series of projects: (How does it relate or conform to the larger project?)
24. Will air conditioning or mechanical ventilation be provided? _____
25. Describe the proposed scheduling or phasing of the project: _____
26. What percentage of the project site will be covered by:
    Paving _____%; Buildings _____%; Landscaping _____%

FOR COMMERCIAL, INDUSTRIAL OR AGRICULTURAL PROJECTS: (IF PROJECT IS RESIDENTIAL, SKIP ITEMS 27 THROUGH 39.)

27. Describe the type of uses proposed: Operation of an energy storage system
28. Size of proposed buildings: 15,000 to 25,000 square feet.
29. Number of buildings proposed: 1
30. Maximum building height: 1□ feet
31. Amount of off-street parking to be provided: 0
    (a) Will there be a structure? _____ If so, how many aboveground levels? _____
32. Projected number of employees: _____ total _____ per shift. For agricultural projects, give maximum number of employees at harvesting time: _____; and specify harvesting times: _____
33. What will be the hours of operation? 24 x 7
34. Describe the proposed scheduling or phasing of the project: _____
35. For restaurants, how many seats will there be? N/A
36. If applicable, describe the project's relationship to larger projects or series of projects:
37. What percentage of the project site will be covered by:
    Paving 10□ %; Buildings 15□ %; Landscaping 15 %
38. Does the project involve the handling, storage or disposal of any toxic or hazardous substance? □ossi□ly If so, what safety measures have been incorporated into the project: □ire suppresion plan, sprin□ler system
39. Will the project result in the emission of any odor, vibration, glare or electrical disturbance? No, the project □ill contri□ute to□ards increased po□er grid sta□ility

ENVIRONMENTAL SETTING:

40. Please attach copies of any special studies that have been prepared in regard to this project or the project site. Examples would include: archaeological survey, biological survey, noise study, geo-technical report, slope analysis, traffic analysis, environmental impact reports, etc.
41. Describe the following environmental conditions as they presently exist: (Use additional sheets, if necessary)

    (a) Topography Project Site:
    The site is relatively □ith flat □ith an average slope of approximately □□
    Within ½ mile: _____

    (b) Water Bodies Project Site:
    No □odies of □ater identified
    Within ½ mile: No □odies of □ater identified

    (c) Vegetation Project Site:
    Mostly distur□ed, non native vegetaion

    (d) Wildlife Project Site:
    □ hile the site resides in a designated □ildlife corridor, there □ere no special status species o□served during site visit

    (e) Historical/Archaeological/Paleontological Resources Project Site:
    No potential resources noted during site visit.
    Within ½ mile: _____

    (f) Land Use Project Site:
    □istur□ed
    Within ½ mile: □tility transmission corridor, residences, school

42. Has the project site been previously graded? No. The project site is in it's native state.
If so, what percent of the site was graded? _____
43. If mature trees, wetlands, or riparian vegetation exist on site, please attach a map indicating their location.
44. Does the project contain slopes of more than 10 percent? No If the project area includes hillsides with slopes of 20 percent or more, the Hillside Development Regulations require that a slope analysis be provided, even if the slopes are not to be graded. The slope analysis must be done on an accurate and recent topographic map with minimum five (5) foot contour lines and a scale of at least 200 feet. The slope categories must be as follows: slopes of less than 20 percent; slopes of 20-40 percent; and slopes over 40 percent. Within these areas, the following must be depicted and labeled: areas with slopes of 20-40 percent and a minimum 50-foot differential, and areas with slopes of more than 40 percent and having a 25-foot differential.

45. Describe any existing structures on the project site and the current use of the structures There are no current structures on the project site.
_____
_____

ENVIRONMENTAL IMPACT:

46. What is the street classification of proposed new streets? (e.g., “two-lane collector” or “four-lane major street”, per Circulation Element of the General Plan) N/A
47. What is the percentage grade of the steepest street involved in the project? N/A
48. What is the right-of-way standard for proposed new streets? (e.g., private, dedicated, to be acquired, etc.)
49. If new water mains for this project will serve areas beyond the project boundary, please indicate the approximate service area on the map. N/A
50. If new sewer mains for this project will serve areas beyond the project boundary, please indicate the approximate service area on the map. N/A
51. Describe the improvements and extensions of existing electrical lines that will be required to serve the project. _____
52. If improvements are to be demolished or removed by the project, please describe them briefly. No existing improvements on project site.
53. Identify any roadway or train track located within 500 feet of the project site. Mission Ave
54. List any other potential noise sources which could affect the project site (i.e., industrial projects, etc.) and give approximate distances. _____
55. Describe any noise that will be produced by the project during construction and after the project is completed. (Include equipment operation, blasting, etc. E□uipment operation
56. Estimate the number of motor vehicle trips generated by the project site currently: 0 ; after development 10 to 20 annually.
57. If the project is commercial or industrial, list any air pollutants that the project will emit.
58. To what extent will be project be located within a floodplain? (Specify whether U.S. Army Corps of Engineers Standard Project Flood or 100-year flood.) A□□ □ema □lood □one □100yr storm□
59. If the drainage from the project will not be discharged into an existing public stormwater drainage system, please describe how it will be accommodated. _____

60. What percentage of the project site will be graded? T□□ □ill full civil design _____%
61. Volume of cutting: T□□_____ cubic yards; maximum cut-slope ratio will be T□□_____; maximum cut-slope height will be T□□_____ feet.
62. Volume of fill: T□□_____ cubic yards; maximum fill-slope ratio will be T□□_____; maximum fill-slope height will be T□□_____ feet.
63. Does the cut-and-fill volume balance? □es_____. If not, how will import/export be handled?_____
64. Will the entire site be graded with the first phase? No_____ If not, indicate those areas that will be left natural and those areas that will be used as temporary borrow sites. If so, please describe: T□□_____
65. Will the project extract or preclude the extraction of any rock, sand, gravel, or other mineral resources? No_____ If so, please describe:_____
66. Describe or indicate on a map any areas of vegetation to be removed by the project (May be combined with Item 40). _____

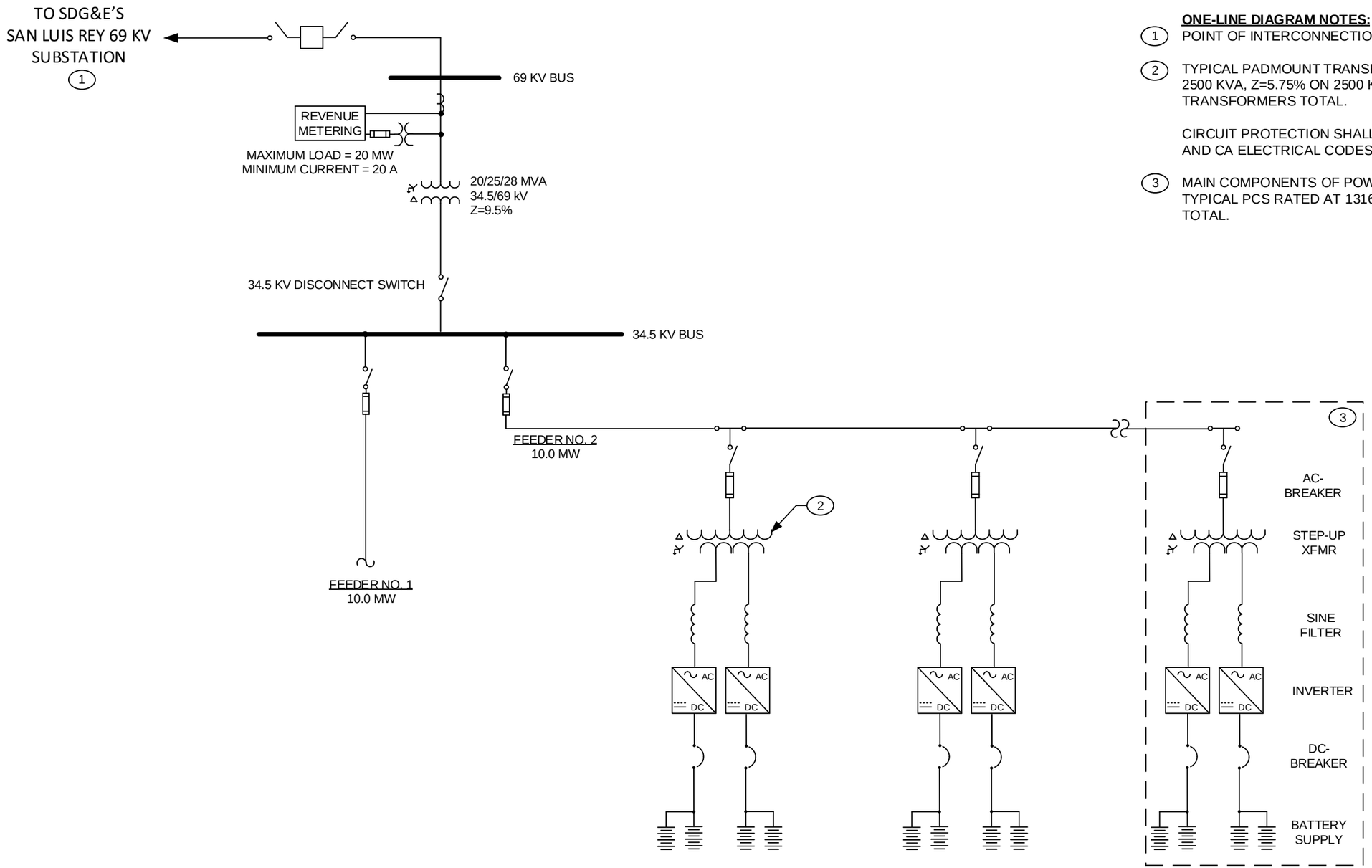
CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge or belief.

Date_____ Signature of Preparer_____

For_____

Stingray Energy Storage
20 MW



ONE-LINE DIAGRAM NOTES:

1. POINT OF INTERCONNECTION. 20 MW NET TO GRID.
2. TYPICAL PADMOUNT TRANSFORMERS RATED AT 0.200/34.5KV, 2500 KVA, Z=5.75% ON 2500 KVA BASE. EIGHT (8) PADMOUNT TRANSFORMERS TOTAL.

   CIRCUIT PROTECTION SHALL BE IN ACCORDANCE WITH NEC AND CA ELECTRICAL CODES.
3. MAIN COMPONENTS OF POWER CONVERSION SYSTEM (PCS). TYPICAL PCS RATED AT 1316 kVA, 200 V, 3ϕ. SIXTEEN (16) PCS TOTAL.

PRELIMINARY - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DRAWN	CHECK	APPROVED
A	6/10/14	ISSUED FOR CAISO INTERCONNECTION REQUEST	RJT	RJT	MAS

NOT FOR CONSTRUCTION

REGENERATE Power

Regenerate Power, LLC

Simplified One-Line Diagram

Stingray Energy Storage – 20 MW